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ABSTRACTS OF SUBMISSIONS ACCEPTED FOR PRESENTATION

CLINICAL VIGNETTES

A CASE OF ACYCLOVIR-INDUCED RESPIRATORY DEPRESSION IN PATIENT WITH END-STAGE RENAL DISEASE. W. Hester[1]; V.T. Martin[1]; S. Bansil[1]; C.J. Fichtenbaum[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #115632)*

LEARNING OBJECTIVES: 1. Recognize the clinical setting of acyclovir-induced neurotoxicity. 2. Diagnose and manage acyclovir-induced neuroxicity.
CASE: A 46 year-old woman with AIDS (recent CD 4 + lymphocyte count 145 per mL & plasma HIV RNA level <400 copies per mL) and ESRD on continuous ambulatory peritoneal dialysis (CAPD) presented with pain in her right thigh for three months. Doppler ultrasounds were negative for deep venous thrombosis on two different tests. She had been in stable health without recent opportunistic infections. Her past medical history was significant for a history of shingles, orolabial herpes simplex disease, pancreatitis secondary to nucleosides, Candida esophagitis, and asthma. Her physical exam revealed an edematous right thigh and a tender 3×5 cm irregular ecchymotic area present on her lateral thigh near a small shallow ulcer. A small vesicle has preceded the ulcer. Laboratory data included a white blood cell count of 8.1K with 74% neutrophils; blood urea nitrogen of 74 mg/dL; creatinine of 15.7 mg/dL; and creatinine kinase 1,303 U/L. The Alveolar-arterial gradient was 71053.25 mmHg. Computerized Tomography of the right lower extremity with contrast and multiplanar 3D reconstructions revealed no abscess. Empiric therapy with intravenous acyclovir 5 mg/kg/day was empirically started on hospital day 2. The next day the patient developed delirium and hypoxemia. The arterial blood gas revealed a pH 7.21, $PaCO_2$ 67 mmHg, PaO_2 163, HCO_3 27 mmol/L, O_2 saturation 97.8% on 100% oxygen via a non-rebreathable mask. Chest radiography demonstrated pulmonary edema. Cultures of the peritoneal fluid, bronchoalveolar lavage, blood, and spinal fluid, were all negative. The skin biopsy demonstrated findings consistent with calciphylaxis and pressure necrosis and the absence of viral inclusions. Acyclovir was discontinued on the sixth hospital day and a serum acyclovir level 12 hours after stopping the acyclovir was 5.5 mcg/mL (reported therapeutic peak range of 0.40–2.0 mcg/mL). Twenty-four hours after stopping the acyclovir the patient became alert and was extubated within 48 hours. Given all of these findings, the patient was diagnosed with acyclovir-induced respiratory depression.
DISCUSSION: Neurotoxicities such as lethargy, confusion, and delirium have been reported with acyclovir and seem to be more prevalent in the setting of kidney dysfunction, but have been identified in otherwise healthy individuals. To our knowledge, this is the first case report of acyclovir leading to respiratory failure in a patient with chronic renal disease. As demonstrated in this case, acyclovir should be used cautiously in those with renal failure to prevent neurotoxicities.

A CASE OF AMIODARONE-INDUCED THYROTOXICOSIS. J.E. Adams[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115759)*

LEARNING OBJECTIVES: 1. Review Amiodarone's effects on thyroid function. 2. Diagnose and treat thyrotoxic effects of Amiodarone.
CASE: 62 y/o male presented to his primary medical doctor complaining of a several month history of weakness, fatigue, hand tremor, and a ten pound weight loss. The patient was started on Amiodarone 2 years ago for paroxysmal atrial fibrillation and had remained in sinus rhythm without further complications. Upon initial work-up patient was found to have an undetectable TSH, and an elevated free T4.
DISCUSSION: Up to 20% of patients on long-term therapy will develop hypothyroidism as a result of toxic effects of Amiodarone, and 3% will develop hyperthyroidism. Hypothyroidism occurs by several mechanisms, the most common being a destructive thyroiditis which is often preceded by a hyperthyroid phase. Additionally, Amiodarone decreases the peripheral conversion of T4 to T3 and acts to directly block the T3 receptor. Lastly, synthesis of thyroid hormone is inhibited by high levels of iodine in Amiodarone (Wolff-Chaikoff effect). Treatment of hypothyroidism is with replacement therapy and is rarely an indication to discontinue therapy. Hyperthyroidism secondary to Amiodarone toxicity also occurs by a variety of mechanisms. In Type 1, synthesis of T4 is increased due to iodine load in a patient with underlying autonomy secondary to a nodule or goiter. In Type 2, patients develop a destructive thyroiditis often followed by hypothyroidism. Clinically, determining the mechanism of hyperthyroidism can be challenging but can direct therapy. Detectable uptake on thyroid scan or nodules on exam suggest Type 1. Patients with Type 2 sometimes have elevated IL-6 levels. Doppler sonography to assess vascularity and diagnose small nodules is successful in classifying 80% of cases. Type 1 disease is treated with anti-thyroid drugs such as Methimazole and response may be slow. Patients with Type 2 are treated with steroids and often respond quickly. In clinical practice, patients are often treated with both, with the rapidity of response guiding further treatment. In considering stopping therapy, it is important to weigh the risks of chronic hyperthyroidism against the risk of arrhythmia. Amiodarone has a very long half-life which prevents any immediate benefit in stopping the drug, and symptoms may actually be exacerbated when the beta-blocking effects of Amiodarone are lost. In general, thyrotoxicity is not an absolute contraindication for continuation of Amiodarone and risks and benefits must be weighed carefully. In monitoring patients on long-term therapy, TSH and FT4 should be followed every six months.

A CASE OF AMNESIA RESPONSIVE TO PHLEBOTOMY. H.A. Younes[1]; R. Parker[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116839)*

LEARNING OBJECTIVES: 1) To diagnose and recognize the different kinds of erythrocytosis and polycythemia, 2) To learn about the complications of erythrocytosis, 3) To learn about the treatment options of different kinds of erythrocytosis.
CASE: A 63 y.o. gentleman, with a past medical history significant for CAD, hypertension, and recurrent DVT's, presented to his PCP office complaining of frequent forgetfulness for 2 weeks. He reported the problem starting while he was on a plane trip from Denver to Pittsburgh where he felt some shortness of breath with mild headache. When he reached Pittsburgh, he couldn't tell where he came from, or the time of the day. He was even somewhat confused about his personal belongings. This episode was followed with several incidences of forgetfulness in his daily tasks, such as forgetting the water tap was open and forgetting his daily schedule of activities. Physical exam revealed no localized neurological deficit. An MRI of brain showed no evidence of a new ischemic or hemorrhagic stroke, although it showed an old right MCA occipital lobe infarct. A hypercoagulable workup was negative. A CBC showed a Hgb of 18 g/dL, a Hct of 54.3, and an RBC mass of 5.83×10 to power 12 per L. WBC count was 6.6, and platelet count 147,000. A repeat CBC confirmed above values. Serum viscosity and erythropoitin level proved normal. A blood volume study showed normal RBC volume, with a low plasma volume, and a low normal total blood volume; all findings consistent with a relative polycythemia. In view of the persistent neurological findings, therapeutic phlebotomy of the patient was done, with 500 ml removed each time. After a few sessions, the patient reported his symptoms improving significantly, with a decrease in his hemoglobin and hematocrit levels.
DISCUSSION: As opposed to absolute polycythemia (polycythemia vera or PV) where there is an absolute increase in red cell mass, 'relative', 'stress', or 'apparent' polycythemia is defined as an increase in hematocrit with normal red cell mass. Approximately 25% of cases have reduced plasma volume. Possible causes of this relative polycythemia include dehydration, alcohol, smoking, obesity, hypoxia, acute MI, and hypertension. PV is known to cause both microvascular disturbances, such as peripheral ischemia and atypical cerebral ischemic attacks, as well as major arterial and venous thromboembolism. However, the risk of vascular occlusive

episodes in relative polycythemia is not well known. A study by Schwartz et al. comparing relative polycythemia with PV revealed significantly more thromboembolic events (DVT/PE) in PV, but equal risk of cardiac and cerebrovascular events. The fact that our patient's symptoms improved after phlebotomy as his hematocrit decreased, suggests that his symptoms were atypical cerebral attacks. Although phlebotomy is not considered a typical treatment modality of relative polycythemia, it worked well with our patient.

A CASE OF CAMPYLOBACTER FETUS MENINGITIS IN A FORTY-YEAR OLD MAN. M.S. Divakaruni[1]; A. Hwang[2]. [1]Stanford University, Palo Alto, CA; [2]Santa Clara Valley Medical Center, San Jose, CA. *(Tracking ID #116215)*

LEARNING OBJECTIVES: 1. Recognize Camplyobacter species as a potential etiology of bacterial meningitis in patients with predisposing illness, including recent or distant neurosurgery, or alcohol abuse. 2. Treat CNS infections with C. fetus with carbapenems or a third-generation cephalosporin and an aminoglycoside.
CASE: Campylobacter is an uncommon cause of bacterial meningitis in adults. We report the case of a 40-year old Vietnamese gentleman with a prior history of partial craniotomy and alcohol abuse who was admitted with headache, fever, neck pain, and weight loss over the preceding two weeks. The patient had reported a history of a flu-like illness preceded by one day of non-bloody diarrhea, but these symptoms had resolved several days prior to admission. On admission, he was febrile to 39.4 degrees centigrade and had prominent nuchal rigidity and positive Kernig's and Brudzinski's signs, but an otherwise normal neurological exam except for marked confusion. Laboratory data showed serum WBC 15,000/mm^3 with a left shift. Cerebrospinal fluid analysis showed 543 WBC/mm^3 with 85% neutrophils and 15% lymphocytes, glucose of 24 mg/dl, and protein of 117 mg/dl. The fluid was India ink negative, cryptococcal antigen negative, and acid-fast bacilli negative. The patient was initially treated with intravenous vancomycin and cetriaxione. On the third hospital day, one out of four blood cultures began to grow out gram-negative rods. The subsequent day, the patient's cerebrospinal fluid grew out comma-shaped gram-negative rods suspicious for Campylobacter species. Vancomycin was discontinued, and the patient was started on gentamicin in addition to ceftriaxone. The patient responded rapidly to antibiotic therapy. Both the patient's blood and cerebrospinal fluid cultures eventually returned with a final result of Campylobacter fetus species. The patient was treated with a total of five days of parenteral gentamicin, fifteen days of parenteral ceftriaxone, and an additional seven days of oral ciprofloxacin for a total antibiotic course of twenty-one days. At the time of discharge the patient was doing well, and had no further gastointestinal or neurologic symptoms.
DISCUSSION: In this case of Campylobacter fetus meningitis, the patient had predominately extra-intestinal manifestations as is normally seen with C. fetus species, though with a one-day history of diarrheal illness not usually reported with the organism. The patient had a predisposing immunosuppressed state secondary to his alcohol abuse, as well as a prior history of neurosurgery, consistent with previously reported cases. Given the incidence of mortality reported in the case literature, and this patient's rapid response to the selected antibiotic regimen, the early and appropriate treatment of C. fetus meningitis appears to be clinically important.

A CASE OF HERPES ZOSTER ENCEPAHLITIS. S. Ramamurthy[1]; M. Graham[2]. [1]Medical College of Wisconsin, Germantown, WI; [2]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #115575)*

LEARNING OBJECTIVES: Viral pathogens can cause a variety of syndromes when affecting the central nervous system including aseptic meningitis and encephalitis.Varicella zoster virus (VZV) is a rare cause of central nervous system syndromes. We discuss a patient who initially presented with dermatomal zoster whose clinical course was complicated by the development of VZV encephalitis with complications both from the primary disease process and the appropriate therapy.
CASE: 66 yr old Caucasian female with history of rheumatoid arthritis treated with methotrexate who presented with mental status changes. Seven days prior to admission she developed an erythematous rash on back and chest confined to right side of thorax. She was treated with valacyclovir for two days and complained of pain at the site for which she was prescribed vicodin and amitryptyline. The next day she was noted to be disoriented by family and brought to ER. Physical exam revealed an erythematous vesicular rash on her chest and back confined to the T2–T3 dermatome on right side. Neurological exam was within normal limits except that she had difficulty finding words. CT scan of the head on admission was normal and her labs were significant for hyponatremia (123 mmol/l). Urine osmolality was 708 mosm/kg and serum osmolality was 267 mosm/kg consistent with SIADH. She was placed on intravenous (IV) acyclovir and fluid restriction for SIADH. Cerebrospinal fluid (CSF) analysis revealed an elevated white blood cell count (321/cmm) with lymphocytic predominanace (90%) and elevated protein level (115 mg/dL). CSFanalysis for VZV by PCR was positive. On day 3 her creatinine level increased and urinalysis revealed numerous crystals consistent with acyclovir induced nephropathy. The acyclovir dose was adjusted based on renal function and she was given IV fluids. On day 4 she complained of hallucinations and double vision. MRI of the head was normal. She continued to improve with IV acyclovir and hyponatremia resolved. A repeat CSF analysis was negative for VZV by PCR. Patient completed a two week course of IV acyclovir and was discharged on oral valacyclovir for an additional week and neurontin for pain.
DISCUSSION: Herpes zoster encephalitis is rare and very few cases have been reported.We postulate that in this case her immunosuppresed state on methotrexate was the main predisposing factor. This case also highlights the complications of disease process, specifically hyponatremia (SIADH) and adverse effect of treatment (acyclovir induced nephropathy) and how to manage them astutely.

A CASE OF INTERNAL MAMMARY ARTERY STEAL SYNDROME. H.L. Korlakunta[1]; D. Lakkireddy[1]; N. Mehta[1]; T. Lanspa[1]; I. Khan[1]. [1]Creighton University, Omaha, NE. *(Tracking ID #115718)*

LEARNING OBJECTIVES: To report a case of a patient with IMA steal syndrome after a LIMA bypass grafting to the LAD who was successfully treated with percutaneous transcatheter endovascular coiling of the anomalous lateral internal thoracic artery.
CASE: A 53-year male presented for evaluation of recurrent exertional angina more so with upper body exercise. He had known diabetes, hypertension, hyperlipidemia, paroxysmal atrial fibrillation and coronary artery disease with a 3-vessel coronary artery bypass surgery done 4 years prior to presentation. A transradial coronary angiogram revealed total occlusion of the RCA graft with 99% stenosis of mid RCA, which was successfully treated with angioplasty and stent placement. The LCX graft was patent, LIMA was patent but appeared to be a small vessel. There was 80% stenosis of mid LAD just proximal to the LIMA insertion. During LIMA injection a parallel branch running lateral to the LIMA graft was seen giving rise to anterior intercostals and perforating branches. This fits the anatomic description of an anomalous IMA with a lateral internal mammary artery. Patient then underwent an adenosine cardiolyte stress perfusion imaging which showed mild to moderate reversible ischemia in the antero-septal and anterior walls. Patient was started on a long acting nitrate in addition to his regular dose of beta blockers, diuretic, angiotensin converting enzyme inhibitor and was advised to abstain from upper body exertional activities. He was brought back a month later and a selective catheterization followed by a coil embolization of the lateral internal thoracic artery was performed with successful closure. There was a dramatic improvement to the flow through the LIMA graft after closing the lateral branch. An exercise stress was performed with no ischemic symptoms or EKG manifestations.
DISCUSSION: The internal mammary artery (IMA) is a conduit of choice for myocardial revascularization, especially when the target vessel is the left anterior descending artery (LAD). Occasionally IMA hypo perfusion occurs when there is inadequate flow through the IMA graft to the LAD artery. The graft hypo perfusion can occur both acutely and chronically resulting in Malperfusion Syndrome and Dysfunctional Graft with persistent ischemia in the region of supply. This is a case of symptomatic LAD ischemia from a hypoperfusing IMA graft which was experiencing vaso-steal phenomenon from a persistent anomalous lateral internal thoracic artery. It was subsequently embolized with coils with improved perfusion in LAD and symptomatic improvement.

A CASE OF MONDOR'S DISEASE: SUPERFICIAL THROMBOPHLEBITIS OF THE BREAST. D. Cywinski[1]; E. Caiola[1]. [1]University of Rochester, Rochester, NY. *(Tracking ID #117108)*

LEARNING OBJECTIVES: 1. Recognize that thrombophlebitis of superficial veins of the breast is an uncommon condition that is usually self-limited. 2. Review the potential etiologies of Mondor's disease: most commonly idiopathic, post breast surgery and uncommonly due to underlying breast cancer. 3. Review that Mondor's disease can be diagnosed with color flow Doppler examination of the breast and if no other abnormalities are detected can be followed and treated symptomatically.
CASE: A previously healthy 26-year-old female presented with a two-day history of a painful left breast with a palpable cord. She denied a history of breast-feeding, trauma, fever or chills. She was G2P1011 with a 2-year-old child. Depo-Provera was her only medication. She denied alcohol, tobacco or drug use. She had no previous history of thrombophlebitis or deep venous thrombosis. Family history was negative for thromboembolism or breast cancer. Physical examination was notable for an approximate 10-cm palpable, tender venous cord over the upper outer quadrant of the left breast. There was minimal surrounding erythema and induration. There were no palpable breast masses or axillary adenopathy. There was no extension to the axillary veins and there was no arm edema or asymmetry. The remainder of the exam was nonfocal. A Doppler examination demonstrated a hypoechoic tubular structure without vascular flow consistent with Mondor's thrombophlebitis. No other abnormalities were detected. The patient was treated symptomatically with warm compresses and NSAIDs and had complete resolution of her symptoms 4 weeks post presentation.
DISCUSSION: Mondor's disease is a rare condition of superficial thrombophlebitis of the breast veins. It is usually a self-limited condition that can be followed and treated supportively with NSAIDs. In most cases a cause is not found but Doppler examination and possible mammography are indicated. Mondor's disease may be a complication of breast surgery and uncommonly associated with underlying breast cancer.

A CASE OF NON-MENSTRUAL STAPHYLOCOCAL TOXIC SHOCK SYNDROME. S. Arora[1]. [1]University of Connecticut, Farmington, CT. *(Tracking ID #117432)*

LEARNING OBJECTIVES: To recognize and manage toxic shock syndrome (TSS).
CASE: A 24-year old previously healthy male deli worker presented with a painful, marble sized swelling posterior to right greater trochanter, high fever and vomiting for 2 days with generalized red skin rash involving the entire body for a day. He had not passed urine for 12 hours. There was no preceding history of trauma or any outdoor activity. Examination revealed tachycardia with HR of 140 bpm, fever with temperature of 104oF and hypotension with BP of 80/58, pierced lower lip with lip ring, intensely red, blanchable erythema involving the entire skin and oro-pharyngeal mucous membranes. There was 2 × 2 cm tender, fluctuant swelling, mobile over underlying muscle located 5 cm posterior to right greater trochanter over the posterolateral aspect of right hip. Incision and drainage of the swelling yielded 5 ml of yellow pus which grew staphylococcus aurues sensitive to oxacillin. Investigations revealed WBC of 28,000/cmm with 18% bands and 81% neutrophils, platelets: 90,000/cmm, BUN/Cr: 44/4.8 and FeNa of 0.4%, the patient was diagnosed with

staphylococcal toxic shock syndrome and was treated with IV fluids, IV Vancomycin and supportive care of acute renal failure. The patient's renal function started improving by D2, he became afebrile on D4 with gradual resolution of rash subsequently. He was discharged on D4 on Dicloxacillin and recovered with no sequelae.
DISCUSSION: Staphylococcal TSS is an acute life-threatening toxin-mediated intoxication caused by TSS toxin 1 or staphylococcal enterotoxin B. Although menstruation remains the most well-known setting for TSS, 50% of TSS is non-menstrual and can complicate the use of barrier contraceptives, child birth, superinfection of various skin lesions including burns, insect bites, varicella, surgical wounds and post-influenza pneumonia. The primary site of colonization often appears entirely benign. CDC criteria for diagnosis includes presence of all of the following: hypotension or orthostatic drop in BP, temperature >102oF, diffuse macular erythroderma, desquamation of palms and soles 1–2 weeks after onset, negative results of blood, throat or CSF cultures which may suggest an alternative diagnosis and involvement of at least three of the following organ systems: gastrointestinal (nausea and vomiting), muscular (severe myalgias or elevated CPKs, mucous membranes, renal, hepatic, hematological (thrombocytopenia <100,000, central nervous system (disorientation but no focal neurological signs). Treatment includes site drainage, aggressive fluid resuscitation, anti-staphylococcal antibiotics for 14 days, pressors for hypotension and correction of dyselectrolytemia. Critically ill or unstable patients benefit from intravenous immunoglobulin.

A CASE OF POLYMICROBIAL ENDOCARDITIS IN AN INTRAVENOUS DRUG ABUSER DUE TO ANAEROBES. S. Oh[1]; N. Hussain[1]; P.R. Havlen[1]. [1]University of Texas Medical Branch at Galveston, Galveston, TX. *(Tracking ID #115818)*

LEARNING OBJECTIVES: 1. Gain awareness of Infective Endocarditis (IE) due to anaerobic organisms 2. Compare IE in intravenous drug abusers (IVDA) from other cases 3. Recognize that peculiar habits of IVDA can result into unusual polymicrobial IE.
CASE: A 33-year-old white male presented to our hospital with a two-week history of subjective fevers, chills, and rigors. He had history of intravenous drug abuse and a habit of licking the needle to the dorsum of the tongue before injection into his arm. Blood cultures grew Actinomyces odontolytica, Veillonella species, and Prevotella melaninogenica. CT of the thorax showed multiple cavitary lesions in both lungs and echocardiogram showed vegetations on the tricuspid valve. The patient was treated with a six-week course of penicillin G and metronidazole. He responded well with complete resolution of symptoms.
DISCUSSION: Endocarditis in intravenous drug users are usually right sided and of the tricuspid valve. Right-sided endocarditis presents with a syndrome of persistent fever and pulmonary symptoms due to septic emboli including cough, dyspnea, and hemoptysis. The peripheral stigmata of endocarditis are not classically found in right-sided endocarditis. Although the most common organism isolated is Staphlococcus aureus, it is important to consider other more fastidious causes of infection in this population including those of endogenous origin. Anaerobes are predominant components of normal human skin and mucous membranes and are an uncommon cause of endocarditis. Most cases are caused by anaerobic cocci, Propionibacterium acnes and Bacteroides fragilis group. Actinomyces odontolytica, Veillonella species, and Prevotella melaninogenica reside predominantly in saliva and the dorsum of the tongue as compared to other organisms. We believe that his peculiar habit of licking the needle to the dorsum of the tongue to gauge the strength of the injection, subjected our patient to infection by these particular anaerobes. Polymicrobial endocarditis is a rare entity that is found almost exclusively in intravenous drug abusers. Although uncommon, it is important to consider since it carries a mortality rate exceeding 30%. There are documented cases in which cultures from the vegetations grew more organisms than the blood cultures, further exemplifying the fastidious nature of the organisms causing endocarditis in intravenous drug users. Therefore, some authors recommend empiric coverage of both skin and oral flora when endocarditis is suspected in this population. Penicillin G or other bactericidal agents appear to be the treatment of choice for these three organisms. Metronidazole is often added due to the growing resistance of anaerobes towards penicillins.

A CASE OF POST-OBSTRUCTIVE PNEUMONIA SECONDARY TO BRONCHOLITHIASIS. S.E. Luckhaupt[1]; L. Coberly[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #115743)*

LEARNING OBJECTIVES: 1) Distinguish post-obstructive pneumonia from uncomplicated community acquired pneumonia 2) Recognize broncholithiasis as a cause of bronchial obstruction 3) Manage bronchial obstruction to prevent recurrent pneumonia.
CASE: A 54-year-old male smoker with an unremarkable past medical history presented with a 2-week history of shortness of breath, cough, purulent sputum, pleuritic chest pain, and orthopnea. On exam, he had a temperature of 101.4, respirations of 28 and a pulse ox of 89% on room air. Chest exam revealed bibasilar rhonchi and intermittent wheezing over the left lung base. Initial laboratory data: WBC 20.5 with 12% bands, Hb 15.6. ABG on room air: pH 7.44, pCO2 36, pO2 64. A chest x-ray suggested left lower lobe consolidation with pleural effusion. Despite treatment with iv antibiotics, his oxygen requirement increased and serial x-rays showed increasing infiltrate and effusion. A CT on hospital day #3 revealed extensive loculated left pleural effusion with a compressed lower lobe, possibly caused by calcified left hilar lymph nodes. An ultrasound was negative for free-flowing fluid, so chest tubes were placed, and t-PA was used to assist in drainage. A repeat CT showed improvement in the effusion, but compression of the left lower lobe persisted. Bronchoscopy ultimately revealed obstructing broncholiths. The broncholiths could not safely be removed, so left lower lobectomy was performed. Pathology showed four hard tan-gray stones measuring 0.4 cm to 1.5 cm in diameter and lymph nodes with necrotizing granulomas, negative for neoplasia. No fungi, acid fast bacilli, or other organisms were identified in the pathology specimens or in the pleural fluid.
DISCUSSION: This patient's presentation provided several clues that he did not have a typical case of community acquired pneumonia. Despite having an unremarkable medical history, he was very ill on presentation with hypoxemia, which progressed even after treatment with antibiotics. Localized wheezing raised suspicion for bronchial obstruction and concern about the possibility of carcinoma. Broncholithiasis is a less common cause of bronchial obstruction, which usually presents with hemoptysis (from erosion of pulmonary vessels), wheezing, shortness of breath, or chronic cough. It is often associated with fungal infection, such as histoplasmosis, or tuberculosis. The cause of broncholithiasis in this case was unclear. The diagnosis can usually be confirmed by bronchoscopy, but bronchoscopic removal carries a high risk of bleeding, so surgical resection is often required to relieve obstruction.

A CASE OF RAPIDLY FATAL ASPERGILLOSIS IN AN IMMUNOCOMPETANT PATIENT. F.K. Salahuddin[1]; S. Chitavellue[2]; K. Karamchandanni[3]. [1]University of Illinois at Peoria,SFMC., Peoria, IL; [2]University of Illinois College of Medicine,@Peoria,SFMC, Peoria, IL; [3]University of Illinois College Of Medicine,@Peoria, Peoria, IL. *(Tracking ID #117272)*

LEARNING OBJECTIVES: 1. Diagnosis of massive hemoptysis. 2. Aspergilloma as a cause of hemoptysis. 3. Management of life threatening hemoptysis using various means.
CASE: A 60 year old male was admitted into the hospital because of pleuritic chest pain, hemoptysis, fever, lethargy and significant weight loss. He was a retired janitor in a school. At the time of presentation, he was in respiratory distress and examination revealed bilateral crackles and wheezes. Chest X-ray and CT scan showed consolidation and cavitation of right upper lobe (Figure below). He underwent diagnostic flexible bronchoscopy which confirmed the bleeding from right upper lobe without any intra-bronchial pathology. Bronchoalveolar lavage grew aspergillious. Patient was treated with Amphotericin B because of massive hemoptysis. He continued to have massive hemoptysis which required mechanical ventilatory support with double lumen endotracheal intubation. Patient was sent for an emergent bronchial arteriogram and had control of bleeding with coiling. After 24 hours patient developed another episode of maasive hemoptysis which lead to his demise. Autopsy confimed the angioinvasive aspergillosis.
DISCUSSION: Angioinvasive pulmonary aspergillosis is commonly seen as a serious complication in immunosupressed individuals such as patients with AIDS and leukemia. It is rare to encounter angioinvasive aspergillosis in immunocompetant individuals. Aspergillosis can develop as a fungal ball in preexisting pulmonary cavities causing lifethreatening massive hemoptysis. Routine surgical recection of aspergillious is not recommended but should be reserved for patients with recurrent severe refractory hemoptysis. Pleuro-pneumonectomy should be avoided. Lung necrosis can result from invasion of fungus into the vasculature, leading to vascular thrombosis and hemorrhage. Massive hemoptysis can be managed with mechanical ventilation using double lumen endotracheal tube, bronchial artery embolization and or surgery. Prognosis in immunocompetant patients is usually good with above therapies.

A CASE OF RHODOCOCCUS EQUI PNEUMONIA IN A RENAL TRANSPLANT PATIENT. T.S. Bischof[1]; J. Hariharan[1]; M. Graham[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #116015)*

LEARNING OBJECTIVES: (1) To recognize the clinical presentation of atypical pneumonia in transplant patients. (2) To educate the clinician on the presentation, radiography, pathology, and treatment of Rhodococcus equi pneumonia.
CASE: A 48 y/o male with IgA nephropathy and 4 renal transplants presented with a one week history of nausea, vomiting, and diarrhea. He related dehydration, weakness, low-grade fevers, night sweats, and weight loss. He denied chest pain, shortness of breath or cough. The patient was taking immunosuppressive and antihypertensive medicines. Physical exam revealed an afebrile, normotensive, cachectic male in no acute distress. Exam was within normal limits, and lungs were clear. BMP was normal except for Bun/Cr of 37 mg/dL and 2.0 mg/dL. WBC was 9.0, Hgb 11.9 g/dL, and urinalysis revealed no proteinuria or white cells. Blood, urine and stool cultures were negative. Patient was hydrated, and CXR revealed a new opacity in the left lung. A chest CT revealed a 4.5 × 2.3-cm consolidation in the left lower lobe, but was negative for bony lesions and lymphadenopathy. A bronchoscopy and CT guided biopsy were done, and cultures from both subsequently grew Rhodococcus equi. On directed questioning, it was found the patient lives near a farm with routine exposures to horses and had a new dog. Therapy with moxifloxacin and azithromycin was planned until the lesion cleared on repeat CT scan.
DISCUSSION: Rhodococcus equi is a gram-positive coccobacillus that usually causes infections in grazing animals. Infection in humans is rare, but over 100 cases have been reported. Rhodococcus is often overlooked in cultures as a non-pathogenic organism and its insidious onset often leads to delays in diagnosis. Pulmonary infection is the most common, and symptoms include fever, cough, and weight loss. On radiography, the superior lobes are mainly involved, and cavitation is frequent, as well as effusion and empyema. Diagnosis is based on positive culture. Most isolates are susceptible to erythromycin, ciprofloxacin, and aminoglycosides. Oral and parenteral combinations of the above are used for treatment for at least two months. This patient was treated for 5 months and repeat CT 3 months later showed decreased consolidation. It is well known that immunocompromised patients are more prone to atypical infections. This case represents a rare cause of a treatable bacterial infection in a transplant patient and the value of social and

personal history in medical management. It is important to recognize that when patients present with vague complaints and lack of physical signs, a good history and continually pursuing identification of treatable causes is important. Rhodococcus equi pneumonia is rare but understanding the nature of its presentation is highlighted in this case.

A CASE OF UNSTABLE ANGINA IN A YOUNG MAN. B. Barmar[1]; G. Tabas[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #103913)*

LEARNING OBJECTIVES: Learning Objectives: (1) Recognize angina in young patients. (2) Consider cardiac and noncardiac causes of chest pain in young patients.
CASE: A 30-year-old Korean man with a history of gastritis and gastroesophageal reflux disease presented to his primary care physician's office with exertional chest pain relieved by rest. Because of his underlying gastrointestinal problems, young age, and lack of cardiac risk factors, his physician prescribed pantoprazole, obtained a complete blood count (CBC), and scheduled him for a treadmill stress test later that week. The next day, when the CBC revealed a platelet count of 2,800,000/uL (normal range 150–450,000/uL) the patient was instructed to go to the emergency department. He reported chest pain at rest, but this resolved after 2 sessions of emergent platelet pheresis and treatment with aspirin and nitroglycerin. Cardiac enzyme levels and electrocardiographic findings were normal. Peripheral smear showed numerous platelets, and bone marrow biopsy confirmed the diagnosis of essential thrombocytosis. After the initiation of anagrelide, a platelet-reducing agent, the patient's platelet count dropped to 1,700,000/uL by the second hospital day. To avoid a positive stress test result attributable only to platelet sludging in the coronary arteries, the physician waited until the platelet count was below 600,000/uL to perform a stress test. When the test was performed, it yielded negative results for ischemia. At 8 months after diagnosis, the patient is asymptomatic and has a platelet count of about 300,000/uL.
DISCUSSION: In young patients, cardiac causes of chest pain can be found in about 16% of cases, noncardiac causes in 68%, and unknown causes in 16%. The common noncardiac causes include musculoskeletal problems (in 36% of cases), gastrointestinal problems (in 19%), psychological problems (in 8%), and pulmonary problems (in 5%). The noncardiac causes that are most serious and require immediate treatment are pulmonary embolus, pneumothorax, and aortic dissection. A thorough history and physical examination and focused laboratory studies usually exclude life-threatening causes of cardiac chest pain. Although the patient in this case was young, his chest pain was typical for angina, so further investigation was initiated. Investigation uncovered essential thrombocytosis, an unusual cause of angina.

A CASE OF WIDE ANION GAP NON-ACIDOSIS. E. Cichowski[1]; H. Sakowski[1]; H. Hashish[1]; R. Baltaro[1]. [1]Creighton University, Omaha, NE. *(Tracking ID #117266)*

LEARNING OBJECTIVES: 1) Recognize laboratory error in the measurement of serum bicarbonate. 2) Utilize the Henderson-Hasselbach equation to indentify blood gas analysis errors. 3) Identify a previously unrecognized interfering substances as potential causes of laboratory errors.
CASE: A 72 year-old male was admitted for respiratory distress and confusion, and found to have a right upper lobe lung mass and hypercalcemia. He was intubated on the second hospital day due to worsening of his respiratory status. Propofol was initiated for sedation and methylprednisolone and levofloxacin were given for a presumed post-obstructive pneumonia. His initial arterial blood gas after intubation showed a pH 7.38 pCO2 38 pO2 143 on an Fio2 of .60. His measured HCO3 was 26 meq/l. Over the next 4 days, his measured bicarbonate progressively dropped to 8 meq/l despite no change in his arterial blood gas (pH 7.38 pCO2 36 pO2 103 on an FiO2 of .45). His anion gap was calculated at 19. Serum lactate was normal, and serum ketones were absent. Consultation with the pathology department revealed the patient's serum to be grossly lipemic. A review of the chart revealed the patient did receive lipid infusions with TPN 36 and 18 hours prior to this discovery. A lipid panel was obtained and revealed marked hypertriglyceridemia at 4,426 mg/dl. The lipid infusions were discontinued, and the propofol was weaned off. The bicarbonate level dropped to a low of 3 meq/l approximately 7 hours after the medication was discontinued. Four hours later, the bicarbonate had corrected to 21 meq/l. The serum, however, remained grossly lipemic. The patient's condition continued to decline with the development of septic shock, multi-organ failure and ventricular arrythmias. Results of a previous bronchoscopy demonstrated small cell carcinoma. The patient's family requested no further aggressive treatment and he expired later that day.
DISCUSSION: This patient developed marked derangement in his measured bicarbonate levels that did not correspond to his arterial blood gas analysis (according to the Henderson-Hasselbach equation). A laboratory error was hypothesized as the cause. Due to the finding of lipemic serum, the hypertriglyceridemia was initially suspected as the interfering substance. Upon discontinuing the propofol, the serum bicarbonate level normalized, the serum, however remained lipemic. In a review of the literature, neither propofol nor hypertriglyceridemia have been reported as potential causes of this lab error. Further testing is needed to determine the role of propafol as an interfering substance in bicarbonate laboratory analysis.

A CASE REPORT OF OXYGEN EMBOLISM FOLLOWING HYDROGEN PEROXIDE INGESTION. D. Misra[1]; B. Legere[1]. [1]New Hanover Regional Medical Center, Wilmington, NC. *(Tracking ID #116225)*

LEARNING OBJECTIVES: Recognize that ingestion of concentrated solution of hydrogen peroxide can result in significant morbidity and mortality owing to venous or arterial oxygen embolization. We intend to share our experience through a case report to emphasize this fact .
CASE: We present the case of an 82 yr old caucasian female with prior history of emphysema who had inadvertently ingested a large quantity of concentrated hydrogen peroxide solution. Following this, she vomited and developed resiratory distress which required intubation and mechanical ventilation. On examination, she was sedated, tachycardic and had hemoccult positive stool. Blood work revealed elevated white cell count and a low hematocrit. Her basic metabolic panel, urine drug screen, liver function tests were within normal limits. Chest xray showed emphysema. CT scan of abdomen/pelvis was significant for portal venous gas and pneumatosis involving duodenal and jejunal wall. Upper endoscopy revealed hemorrhagic gastritis and distal esophagitis. She was started on empiric antibiotics and followed with serial abdominal radiographs. CT scan of the abdomen obtained five days later revealed no free air or pneumatosis. On the sixth day of hospitalization, patient was extubated and at that point of time was noted to have right sided hemiparesis. MRI scan of the brain revealed multiple areas of acute/subacute non-hemorrhagic infarction. Patient was evaluated by a neurologist and it was felt that her neurologic deficits were a result of oxygen embolization. Patient gradually improved with physical and occupational therapy and currently awaits discharge to a rehabilitation facility.
DISCUSSION: Hydrogen peroxide is widely used as an oxidant/disinfectant. It is sold in health food stores also as means of "improving oxygenation" in people with coronary artery disease. Literature search revealed several cases of accidental hydrogen peroxide ingestion. A retrospective review of all exposures reported to a poison control center revealed that 0.34% were hydrogen peroxide related. Although exposure to diluted (3%) hydogen peroxide is benign, ingestion of the concentrated form can be dangerous. Following ingestion, hydrogen peroxide breaks up into water and oxygen in the presence of catalase. When the amount of oxygen produced exceeds the maximum blood solubility, embolization occurs. We emphasize that physicians should be alert to the possibilty of multiorgan embolization in patients presenting with accidental ingestion of concentated hydrogen peroxide.

A CASE REPORT OF RECURRENT COCCIDIOIDES MENINGITIS (CM). S.M. Maiorano[1]; P. Radhakrishnan[2]. [1]St. Joseph's Medical Center, Phoenix, Phoenix, AZ; [2]Catholic Healthcare West, Phoenix, AZ. *(Tracking ID #117418)*

LEARNING OBJECTIVES: 1. Recognize that CM recurrence can occur despite prolonged antifungal treatment. 2. Recognize that indwelling CFS shunt can mask the hallmark symptoms of hydrocephalus associated with CM. 3. Recognize that diagnosis of CM can be made on serum serologies without positive CSF cultures.
CASE: A 62 year old male, presented with a 2 month history of worsening diplopia, ataxia and headache. Past History-CM with obstructive hydrocephalus and VP shunt. He was treated with Amphotericin B (intrathecal and systemic) for 2 years followed by Fluconazole for 8 years. He had been off Fluconazole for the last 5 years. Physical exam—He was somnolent, but arousable. Eyes-limited upward movement with downbeating nystagmus, disconjugate gaze with mild right lateral ocular deviation. Lab. data-CT head—mild right encephalomalcia, enlargement of 3rd and 4th ventricles, catheter in the right lateral ventricle. CSF-(from the shunt and a lumber puncture)-including Gram stain-negative. Positive CSF Coccidioides IgG and serum IGG,IGM antibodies. Complement fixation (CF) titer 1:64. Catheter tip-Coagulase negative Staphylococcus. MRI of the head—ventriculomegaly, increased periventricular and meningeal enhancement. He was diagnosed with recurrent CM, shunt failure due to presumed Staphyloccal infection. He was started on Voriconazole and Vancomycin. The shunt was replaced. He improved with resolution of his neurological symptoms and signs. He was discharged with the plan to continue the Voriconazole indefinitely.
DISCUSSION: CM is a grave form of disseminated Coccidiodes infection. Of the nearly 100,000 cases per year, only 0.1 percent present as meningitis. This case has several interesting aspects, the first being the recurrence of the CM after several years. Recurrences usually occur shortly after discontinuing therapy, as despite adequate antifungal penetration the fungus is not easily cleared. In this case, the patient remained symptom free for 5 years after stopping therapy. Second, the temporal association of shunt blockage and recurrence of symptoms of CM made us postulate that the patient remained symptom free due to the drainage of CSF and clearance of the fungus. Little data is available as to the incidence or common etiologies of shunt failure, but many case reports have found bacterial shunt obstruction through colonization as well as fungal biofilm occlusion. Third, the diagnosis of CM recurrence was made based on the CSFand serum studies. As CSF cultures are positive in only one third of cases, positive CSF IgG or IgM and CF antibodies are very helpful in diagnosing CM in patients with a high pre-test probability and negative cultures. While there are definitive guidelines for the duration of treatment of CM, patients who experience a relapse should be continued lifelong therapy.

A DIAGNOSIS AT BOTH ENDS: A CASE OF CELIAC DISEASE AND MICROSCOPIC COLITIS. D. Nataraj[1]; R. Granieri[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115730)*

LEARNING OBJECTIVES: (1) To recognize the clinical history and histopathology of celiac disease and microscopic colitis (2) To recognize an association of celiac disease with microscopic colitis (3) To manage celiac disease and microscopic colitis.
CASE: A 31 year-old female presents with 6 months of nausea, bilious emesis, abdominal cramps, watery diarrhea, and 30 lb weight loss. Diarrhea occurs 5 to 15 times daily. Physical examination reveals cachexia, tachycardia, dry mucous membranes, normal bowel sounds, and abdominal distention with mild but diffuse tenderness to palpation. Initial laboratory values demonstrate hypokalemia,

contraction alkalosis, normal amylase and lipase, hypoalbuminemia, normal liver function tests, hemoglobin of 13, leukocytosis of 22,000, and urinalysis suggestive of an infection. Additional studies show low iron level, increased RDW and decreased % saturation. EGD and colonoscopy are grossly normal. Colonic biopsy reveals increased intraepithelial lymphocytes. Duodenal and jejunal biopsies show villous atrophy with cryptitis, and mucosal lymphocytes and plasma cells. She is found to have antigliadin and antiendomysial antibodies. The diagnoses of both celiac sprue and microscopic colitis are made. With initiation of a gluten/lactose-free diet, prednisone, and octreotide, her symptoms improve considerably.
DISCUSSION: Iron deficiency anemia is the most common presentation of celiac disease. Abdominal discomfort and bloating, also common features, often incorrectly lead to the diagnosis of irritable bowel syndrome. Significant diarrhea is present in 50% of patients. Serologic studies including antiendomysial antibody (sensitivity 85%–98%; specificity 97%–100%) and tissue transglutaminase antibody (sensitivity 90%–98%; specificity 95%–97%) have facilitated diagnosis of this disease; however, the gold standard remains small bowel biopsy. Standard therapy is dietary gluten restriction, which results in symptomatic improvement in 70% of patients within 2 weeks and a decrease in antibody titers within 6 months. Conditions associated with celiac disease include type 1 diabetes and microscopic colitis (either lymphocytic or collagenous). Lymphocytic colitis typically presents in the sixth decade as watery diarrhea. The diagnosis is made by colonic biopsy revealing increased intraepithelial lymphocytes. Medications such as lansoprazole and NSAIDS have been associated with this condition. Large randomized controlled trials regarding treatment have not been conducted. Therapy is based on case reports involving small numbers of patients and includes removal of the offending drug and addition of antidiarrheals, aminosalicylates, octreotide, prednisone, or budesonide. A prospective study of 81 patients treated with a variety of the above medications demonstrated a 70% resolution of diarrhea. Bismuth subsalicylate has been promising in small trials.

A DIFFERENT TWIST TO AN ABDOMINAL PAIN. C.E. Landaverde[1]; S. Dea[1]. [1]UCLA-San Fernando Valley Program, Sylmar, CA. *(Tracking ID #115130)*

LEARNING OBJECTIVES: 1) Recognize that a volvulus can have an atypical age of presentation and occur in someone with no predisposing risk factors. 2) Recognize clinical and radiological features of a volvulus.
CASE: A 39 y/o Hispanic nulliparous female presented to the emergency room with a one day history of abdominal pain, distension, nausea and vomiting. The abdominal pain was described as sudden onset, continuous, severe, crampy, lower abdominal pain worse with eating. The patient reported having explosive, watery, brown diarrhea soon after the onset of the abdominal pain for a couple of hours but since had not had a bowel movement nor passed flatus. Patient denied prior history of constipation or use of psychotropic medications or a diet high in fiber. The patient was afebrile with a blood pressure of 168/56. The abdominal exam revealed moderate distension, no bowel sounds, tympanic with tenderness to palpation in the lower abdominal quadrants, left more than the right. There was no rebound tenderness or guarding. The rest of the physical exam was unremarkable. Laboratory results were unremarkable except for a bicarbonate level of 31. An abdominal plain film revealed a dilated, ahaustral loop of large bowel extending from the pelvis to the right upper quadrant in an "inverted U" appearance. A CT scan of the abdomen confirmed the diagnosis of a sigmoid volvulus with findings of a dilated sigmoid colon. A gastrograffin enema revealed a partial sigmoid volvulus, which had reduced upon the post-evacuation examination. Subsequently, the patient had a sigmoid resection with primary anatamosis performed.
DISCUSSION: Sigmoid volvulus is produced when a long redundant sigmoid twists about its mesenteric axis in either direction and forms a partial or complete loop obstruction. It occurs more commonly in the elderly, individuals with neurologic conditions, and in patients in nursing homes or mental health facilities. The common factor is chronic constipation. Other predisposing risk factors include megacolon, an excessively mobile colon, high-roughage diet, and lead poisoning. Furthermore, volvulus has been observed to occur most commonly in young patients in settings such as Crohn's disease, pregnancy, Chagas and in individuals with prior history of roundworm infestation. Patients present with abdominal pain, distension, nausea and absolute constipation with vomiting as a late sign. Findings on abdominal plain films include a markedly distended sigmoid loop, inverted U-shaped appearance, loss of colonic haustra and elevation of the sigmoid loop under one of the diaphragms. The involved bowel walls are edematous, resulting in a coffee bean–shaped structure (the "coffee bean" sign). CT findings of ischemia in a sigmoid volvulus include the "whirl sign", which represents tension on the tightly twisted mesocolon by the afferent and efferent limbs of the dilated colon.

A FATAL CASE OF VARICELLA-ZOSTER PANENCEPHALO-MENINGO-RADICULOMYELITIS IN A PATIENT WITH AIDS. D.B. Van Schyndel[1]. [1]Hennepin County Medical Center Internal Medicine Dept., Minneapolis, MN. *(Tracking ID #117292)*

LEARNING OBJECTIVES: 1. Recognize that varicella-zoster virus infection of the central nervous system is a sign of probable immunocompromise. 2. Recognize that the characteristic rash often seen in varicella-zoster infections may not appear in immunocompromised patients. 3. Diagnose varicella-zoster infection of the central nervous system using PCR amplification.
CASE: A 38 year old previously healthy Canadian woman presented to the emergency department with a four-day history of frontal headache and one day of lower extremity weakness and numbness. The initial exam revealed 4/5 lower extremity strength. The initial head CT was normal and a lumbar puncture was performed. CSF studies revealed increased protein and white blood cell counts. Empiric acyclovir was started. Six hours after the patient was admitted, she complained of worsening leg weakness and numbness extending to her chest. On exam she was areflexic in her lower extremities, paraplegic, and had a sensory level at T4. She became hypoxic and was intubated. Several hours later the patient was reexamined and no brain stem reflexes were present. A repeat head CT revealed brain stem swelling and leptomeningeal enhancement of the brain stem and cerebellum. The next day, the varicella-zoster PCR performed on cerebrospinal fluid was found to be positive. The patient's family reported that she had been exposed to a child with chicken pox two weeks before her admission. They did not remember the patient complaining of a rash. An HIV test was also positive. A MRI showed changes consistent with acute disseminated encephalomyelitis. Her neurologic exam was unchanged. The patient's family decided to withdraw support and the patient died approximately 72 hours after admission. An autopsy revealed lymphocytic encephalomeningoradiculomyelitis.
DISCUSSION: Zoster is not viewed as an AIDS-defining illness, but it can indicate immunodeficiency and tends to occur more often in patients with HIV. Varicella-zoster virus is likely to be associated with HIV in central and east Africa, where the positive predictive value of a history of VZV can be up to 90%. Among opportunistic CNS infections in AIDS patients, VZV accounts for 2–4% of neurological disease. In one series of 11 AIDS patients with VZV encephalitis, four did not report a rash. Health care providers should therefore keep VZV on their differential in patients with HIV risk factors who present with neurologic symptoms but do not report a rash. Examination of the CSF usually reveals mild mononuclear pleocytosis, a normal or elevated level of protein, and a normal glucose level. Varicella-zoster virus cannot be cultured from cerebrospinal fluid, but the virus can be detected with PCR. The varicella-zoster PCR has a specificity of 98.6% and a sensitivity of 100%.

A FIRM HANDSHAKE. PRESENTATION OF AN ECTOPIC GROWTH HORMONE SECRETING TUMOR. M. Chan[1]; M. Ziebert[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #116152)*

LEARNING OBJECTIVES: 1. Recognize the importance and early diagnosis and treatment of acromegaly. 2. Recognize the importance of a good history and physical exam. 3. To develop a basic understanding of pathophysiology and current treatment modalities.
CASE: A 58-year old Caucasian woman who presented to establish primary care was noted to have very large hands on initial introduction. Her only complaints were chronic bilateral hip and knee pain. Past medical history included hypertension, hypercholesterolemia, and scoliosis. Review of systems revealed difficulty sleeping with excessive daytime sleepiness, back pain, headaches, and polyuria. Physical exam revealed a woman with significant mandibular overgrowth and prognathism, a deep resonant voice, a large fleshy nose and very large hands. The patient was asked to bring an old ring and pictures for comparison. Laboratory studies included a basic metabolic panel, complete blood count, TSH, prolactin, FSH, LH, cortisol, ACTH, growth hormone (GH), and somatomedin C or insulin-like growth factor-1 (IGF-1). Both GH and IGF-1 were extremely elevated, up to five times the upper limit of normal. An MRI of her pituitary revealed a large 1.7 cm ectopic tumor in the sphenoid sinus. The patient was referred to endocrinology, neuroophthalmology, and neurosurgery for evaluation. The patient subsequently underwent sublabial, transphenoidal resection of her tumor and pathology confirmed isolated GH producing cells. The patient currently feels like a "new person". Her arthralgias, headaches, and probable obstructive sleep apnea have significantly diminished. She is currently on cabergoline or Dostinex and finishing her adjuvant radiation.
DISCUSSION: Acromegaly is a rare, chronic syndrome that is often diagnosed by the general internist. Most commonly, it is caused by excessive secretion of GH by the somatotroph adenoma of the anterior pituitary. However, very rarely, ectopic tumors may secrete GH and present in an indolent fashion. Diagnosis is usually delayed for many years resulting in significant morbidity and mortality. In the era of healthcare reform, the emphasis is on a problem focused clinical encounter. This case illustrates that a rare, debilitating disease can be diagnosed by simply shifting the focus back to the patient. A firm handshake or first impression can still be a valuable clinical tool.

A GIFT FROM THE TOOTH FAIRY. D. Blackmon[1]; M. Panda[1]. [1]University of Tennessee, Chattanooga, chattanooga, TN. *(Tracking ID #106696)*

LEARNING OBJECTIVES: To recognize the similarities in clinical and radiographical presentation of pulmonary actinomycosis and neoplasms.
CASE: 53 year old male with a heavy tobacco history, presented with malaise, nonproductive cough and weight loss for 3 months. On exam he had normal vitals, appeared non-toxic but cachetic, with dental caries and diminished breath sounds on the left. Labs were only significant for an elevated wbc count with microcytic anemia. CXR showed opacity in left hemithorax. CT chest revealed $10 \times 10 \times 7$ cm necrotic mass abutting the pericardium and pleural suspicious for carcinoma. Biopsy revealed no neoplastic cells. Aspirate cytology revealed filamentous sulfur granules consistent with Actinomycosis confirmed by culture. Patient was treated sucessfully with penicillin and dental extractions.
DISCUSSION: Actinomycosis is a gram-positive anaerobic filamentous bacteria. Humans are the only host. It resides in the oropharynx, GI and female genital tract and commonly causes cervicofacial infections. Aspiration of oropharyngeal secretions commonly cause pulmonary actinomycosis—50% of which is associated with dental caries. These bacteria invade bony structures and cross-anatomic borders,

making its appearance similar to neoplasms. Diagnosis is by identification of "sulfur granules" on cytology or isolation of organism on culture. Bronchoscopy, CT guided biopsy/aspiration or thoracotomy is often required for diagnosis due similarity in presentation to neoplasm. Treatment requires PCN for 12 months and extraction of dental caries when indicated. Diagnosis of Actinomycosis requires a high clinical index of suspicion and must be considered in individuals with lung masses and poor dental hygiene in order to spare the patient from unnecessary tests and invasive procedures.

A HIGHLY FUNCTIONING CASE OF DEMENTIA. G. Prakash[1]; P. Koneru[1]; R.D. Hobbs[1]. [1]Oakwood Healthcare System, Dearborn, MI. *(Tracking ID #117199)*

LEARNING OBJECTIVES: To recognize a common error in making the diagnosis of dementia.
CASE: A 74-year-old woman with Alzheimer's disease presented for a physical exam. She had been institutionalized in another city and had recently moved to be near her sister. Her history was significant for resection of a pituitary tumor with resultant hypopituatrism, hypogonadism, hypothyroidism and later, diabetes mellitus. She was a nurse by profession. Her husband had died two years before. Physical examination revealed a dysconjugate gaze, a dilated fixed right pupil and a visual field defect. During the exam she remarked "Oh, you're checking my visual fields by direct confrontation." She then explained how these findings were "chronic since 1955." She was alert and oriented, performed serial sevens accurately, interpreted proverbs abstractly, and had only minor difficulty remembering a name and address. When asked to spell "world" backwards she did so and then asked the examiner if he would like to hear the alphabet spelled backwards. Without an error or pause, she then accurately spelled the alphabet backwards. The examiner later remarked jokingly, "This was the most highly functioning case of Alzheimer's disease" that he had ever seen. Her miraculous improvement had occurred after moving closer to her sister.
DISCUSSION: Studies done during the 1970's showed that between 10–20% of nursing home patients diagnosed with dementia were actually suffering from untreated depression. Unfortunately, since most dementia is incurable, such a diagnosis frequently labels an individual as medically untreatable and condemns them to their continued existence with scant hope of improvement. With more modern care the contribution of depression to dementia has been recognized and is now frequently treated. Our patient did not have Alzheimer's disease but was suffering from severe bereavement and isolation that improved when she moved nearer her sister. This case should serve as a cautionary tale to clinicians and underscore the point that in 2004 there are still individuals whose severe depression can mimic dementia to the point of institutionalization.

A HIP FRACTURE ALREADY? C. Christopher[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117403)*

LEARNING OBJECTIVES: 1. Recognize risk factors for osteoporosis in a young woman 2. Distinguish causes of secondary osteoporosis.
CASE: A 44 year-old woman was admitted following a displaced left femur fracture. She also noted four months of irregular menses and depression with poor appetite. Her body mass index was 21, and the early fracture prompted an evaluation for osteopenia. She smoked but did not consume alcohol. She noted a past history of a stomach ulcer that required surgical intervention. She had no pallor, thyromegaly, or dental caries. Her breast exam was normal. Her calcium level was 7.6 mg/dL, albumin 1.7 g/dL, phosphorous 3.0 mg/dL, alkaline phosphatase 279; her renal function and CBC were normal. An intact PTH level was 53 pg/mL (normal 8–97). Her TSH was 1.65 uIU/mL with a free T4 of 0.50 ng/dL (normal 0.8–1.9). FSH, LH, and estradiol levels were consistent with premenopause. Her 1,25-dihydroxycalciferol was 12.5 (15.9–55.6); the 25-hydroxycalciferol was 8.4 (8.9–46.7). Bone densitometry showed T-scores of –2.8 (hip) and –3.3 (spine). Alendronate therapy was initiated with supplemental calcium and vitamin D. An extensive past medical history revealed that the surgery for the duodenal ulcer required a Bilroth I anastomosis, later revised to a Roux-en-Y re-anastomosis.
DISCUSSION: Risk factors for osteoporosis include gender, race, tobacco use, alcohol consumption, low body weight, and nulliparity. Our patient's young age for a hip fracture prompted an evaluation of secondary etiologies of osteoporosis. These include renal or liver disease, malignancy, primary hyperparathyroidism, vitamin D deficiency, malabsorption, malnutrition, myeloma, and hyperthyroidism. In our patient, the Roux-en-Y anastamosis had led to malabsorbtion of fat-soluable vitamin D. She was started on parenteral vitamin D in addition to alendronate and calcium supplements. Diagnosis of osteoporosis is based on T-scores from bone densitometry studies that compare the patient to sex and race matched young controls. T-scores below –1.5 is the recommended level for therapy in patients with risk factors, and therapy should begin at T-scores below –2.0 in the absence of risk factors.

A LARGE SPLENIC CYST: "INCIDENTALOCYST". A. Sequeira[1]; N.K. Atray[1]; T.J. Vachharajani[1]. [1]Louisiana State University Medical Center at Shreveport, Shreveport, LA. *(Tracking ID #116793)*

LEARNING OBJECTIVES: To discuss the differential diagnosis of an incidental splenic cyst.
CASE: A 31-year old type 1 diabetic male presented with a 5 day history of nausea, vomiting, diarrhea and upper abdominal pain, 2 months after a motor vehicle collision. He denied any prior symptoms of gastroparesis. Examination was remarkable for an afebrile patient with epigastric tenderness. Laboratory data: Hb 13.3 g/dL, WBC 15 k/cmm, serum amylase 75 U/L, serum lipase 227 U/L, T.bil 0.5 mg/dL, albumin 3.9 mg/dL, Alk phos 126 U/L, SGOT 12 U/L, SGPT 56 U/L, BUN 28 mg/dL, Creat 1.9 mg/dL, anion gap 18, urine ketones 4 + and an ABG with pH 7.31, $PaCO_2$ 27, PaO_2 120, HCO_3 12, SaO_2 99% on 1.5 liters oxygen. His symptoms of nausea, vomiting and abdominal pain persisted despite correcting his ketoacidosis. A CT abdomen showed a calcified multiseptate splenic cyst measuring 12×8 cm, which was compressing the stomach. The possibility of a splenic abscess precipitating ketoacidosis was entertained. His blood cultures were negative for bacteria, fungi and acid-fast bacilli. The splenic aspirate was sterile for any organisms. Subsequently, he underwent splenectomy for multiseptated cystic spleen with pressure symptoms. Pathology revealed a 490 gm spleen measuring $16 \times 13 \times 8$ cm. Histopathology revealed a cyst without lining cells with organized fibrin and old hemorrhages, suggestive of a posttraumatic pseudocyst.
DISCUSSION: Splenic cysts are rare, many of which are asymptomatic and incidental findings. They are classified as true or false based on the presence or absence of an epithelial lining. In the absence of an Echinococcal infection, cysts are commonly congenital or post traumatic. The above case highlights the need to suspect posttraumatic splenic cyst as a possible differential in a patient with a LUQ mass following an abdominal trauma. As in the above case, large splenic cysts may mimic the symptoms of gastroparesis in a diabetic.

"A LAZY HOUSEWIFE": CASE OF LUPUS PNEUMONITIS. J.E. Cho[1]; D. Yick[1]. [1]University of California, Los Angeles—San Fernando Valley Program, Sylmar, CA. *(Tracking ID #115612)*

LEARNING OBJECTIVES: 1) Recognize lupus pneumonitis as an etiology of pulmonary effusion 2) Describe the typical presentation of lupus pneumonitis 3) Recognize the treatment options and prognosis of lupus pneumonitis.
CASE: A previously healthy 22 year old female presented to the emergency department with acute shortness of breath. Her shortness of breath was worse with exertion and associated with pleuritic chest pain for two days. She also noted fever, non-productive cough, nausea, vomiting, and arthralgia. On presentation, she was febrile with temperature 38.6, blood pressure 88/54, pulse of 104 beats per minute, respiratory rate of 28 and oxygen saturation of 88% on room air improved to 92% with 2 liters of supplemental oxygen. She was in moderate respiratory distress; however, she was speaking in full sentences. Physical examination revealed absent breath sounds throughout right thorax with decreased breath sounds half way up on the left thorax. There was associated egophony, decreased fremitus, and dullness to percussion on the right thorax. There was no jugular venous distension, lower extremity edema, or skin rash. Chest radiograph revealed small pleural effusion on the left side one-fourth way up in addition to the right-sided pleural effusion three-fourths way up with mediastinal shift to the left. She was admitted to the intensive care unit for acute respiratory distress. Chest CT with contrast confirmed findings of right-sided pleural effusion and small left sided effusion. Thoracentesis was performed and it showed negative culture, gram stain, and cytology with increased LDH and protein consistent with Light's criteria for exudative process. The pleural fluid was positive for ANA at 1:10,000, lupus anticoagulant, anti double stranded DNA 1:40, and anticardiolipin antibody. The diagnosis of lupus pneumonitis was made, and she improved on intravenous solumedrol, and discharged home on oral prednisone several days later.
DISCUSSION: Systemic lupus erythematosus (SLE) is a multifactorial autoimmune disorder that may affect one or multiple organ systems. Acute lupus pneumonitis is an uncommon presentation that appears in 1% to 10% of the cases, and the symptoms include severe dyspnea, tachypnea, fever, pleurisy, cough, basilar rales, hypoxia, and no apparent infection with radiographic findings of bilateral lower lobe infiltrate and atelectasis. In addition, pleural effusion is observed in up to 30% of cases. Lupus pneumonitis responds with glucocorticoids. However, intravenous pulse steroid therapy or immunosuppressive drugs may be considered if no improvement in 3 days. Lupus pneumonitis may progress to pulmonary fibrosis and eventually develop into pulmonary hypertension. The prognosis of lupus pneumonitis is poor with short-term mortality approaching as high as 50% with persistent pulmonary function abnormalities, including severe restrictive pulmonary defect.

A METABOLIC MESS: A CASE OF ETHYLENE GLYCOL POISONING. S. Khan[1]; B. Taqui[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116218)*

LEARNING OBJECTIVES: 1. Recognize causes of potentially fatal alcohol intoxication. 2. Recognize clinical features of ethylene glycol poisoning. 3. Review management of ethylene glycol posioning.
CASE: A 55 year old African American female with depression, hypothyroidism, and breast cancer presented with altered mental status. She lives with her mother, but history taking was limited by the mother's Alzheimer's disease. The mother reported that the patient had been vomiting earlier in the day. In the emergency room, patient became unresponsive and was intubated. Her vitals were T 96.9F, HR 96, BP 125/90. Her exam revealed left, fixed pinpoint pupil, flaccid extremities, absent reflexes. Her labs revealed: Na 161, K 3.6, Cl 120, HCO3 7, BUN 14, Cr 1.7, glucose 114, anion gap 34. Her calculated osmolarity was 320, measured osmolarity 551 and osmolar gap 231. Her lactate was 9.5 and ammonia 98. Her WBC was 15.7 (no shift), Hgb 14.4, platelets 151. Her liver function tests and TSH were normal. Her urine showd calcium oxalate crystals. ABG prior to intubation revealed pH 6.93 pCO2 21 HCO3 4. Head CT and LP were negative. Her ethanol level was 31 mg/dl and ethylene glycol level was 900 mg/dl. She received two doses of fomepizole and D5W with 3 amps of bicarbonate. She was then placed on an ethanol

drip. She subsequently improved, was extubated and transferred to inpatient psychiatry after she admitted to drinking antifreeze.
DISCUSSION: Three alcohols can produce fatal intoxication: methanol, isopropanolol, and ethylene glycol. All can increase the osmolal gap, but only methanol and ethylene glycol cause an anion gap metabolic acidosis. Ethylene gylcol is a component of antifreeze and solvents. The lethal dose is 100ml. Clinical presentation ranges from from drunkenness to coma. Complications involve the heart, lungs and kidneys. Two types of urinary calcium oxalate crystals can be seen: needle shaped and envelope shaped. The absence of crystalluria does not preclude the diagnosis. Urine examination by Wood's light may reveal fluorescence if the patient has ingested antifreeze which commonly contains fluorescin dye. Ethylene glycol is metabolized to toxic metabolites: glycolic acid and oxalic acid. Glycolic acid falsely elevates lactate. Management consists of supportive care, prevention of drug absorption, bicarbonate, and antidotes. Fomepizole, which rapidly inhibits alcohol dehydrogenase, is the drug of choice for ethylene glycol and methanol intoxication. Ethanol can also be used, but is not as potent. Both treatments need to be initiated quickly, prior to alcohol metabolism. In severe cases, hemodialysis may be required.

A MIDDLE AGE WOMAN WITH WORSENING SHORTNESS OF BREATH. N. Latif[1]; G.H. Tabas[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115826)*

LEARNING OBJECTIVES: Recognize a non-embolic cause of pulmonary occlusive disease(PVOD) in hypoxemic patients.
CASE: A 55 year old white female with a history of coronary artery disease, insulin dependent diabetes mellitus and hypertension presented with a one week history of worsening shortness of breath, dry cough, wheezing and chest discomfort. She was treated with azithromycin as an outpatient but because her symptoms did not improve she presented herself to the emergency department. There, her temperature was 39 degrees C and her physical examination revealed some neck stiffness. Lumbar puncture was performed and cerebrospinal fluid examination was unremarkable. Her chest X-ray was interpreted as normal. The patient was empirically treated with intravenous levofloxacin. In the hospital her oxygen saturation decreased to 86% and a repeat chest X-ray showed bilateral pleural effusions and pulmonary edema. Computerized tomography of the chest revealed no pulmonary embolism. Because of the onset of atrial flutter, echocardiography was performed and showed an increased pulmonary artery pressure of 55 mmHg. To diagnose the cause of her pleural effusions and hypoxemia she underwent video assisted thoracoscopy and lung biopsy that revealed pulmonary veno-occlusive disease (PVOD). She was treated with prednisone and coumedin with symptomatic improvement.
DISCUSSION: PVOD is rare but important cause of hypoxemia and pulmonary hypertension. PVOD has no known etiology, can present at any age group with equal male and female distribution. The pathologic hallmark of PVOD is occlusion of small pulmonary veins by fibrous tissue; large veins are rarely affected. Pulmonary arteries may exhibit moderate to severe medial hypertrophy and alveolar capillaries may become engorged and tortous. Interstitial fibrosis may develop in the pulmonary parenchyma. There is no curative therapy and immunosuppressive agents including prednisone are of unproved benefit. Anticoagulation may improve survival but long-term prognosis is poor.

A MULTIPLE SCLEROSIS-LIKE ILLNESS ASSOCIATED WITH LEBER'S HEREDITARY OPTIC NEUROPATHY. A.J. Huang[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116277)*

LEARNING OBJECTIVES: 1. Review the clinical features of Leber's hereditary optic neuropathy (LHON). 2. Recognize LHON as a risk factor for developing multiple sclerosis. 3. Distinguish between LHON and the optic neuritis of multiple sclerosis.
CASE: A 27 year-old man with a family history of Leber's hereditary optic neuropathy (LHON) presented for physical examination before enrolling in a rehabilitation program for the visually impaired. The patient reported 2 years of progressive, bilateral central vision loss, similar to a female cousin who had been diagnosed with LHON after genetic testing confirmed the presence of a characteristic mitochondrial DNA mutation, G11778A. Unlike his cousin, the patient also suffered from patchy numbness and clumsiness in both hands and lower extremities, which he attributed to drinking too much alcohol (over 8 pints of beer per day). Physical exam revealed severe bilateral optic atrophy with an otherwise normal cranial nerve exam, decreased vibration and joint position sense in both feet, and a slow and wide-based gait. Routine laboratory studies, including TSH, B12, RPR, and HIV, were normal. The patient was counseled to stop drinking, but continued to have problems with coordination and ambulation after discontinuing alcohol, and returned to clinic 3 months later after a mechanical fall. Follow-up exam revealed interval development of moderate spasticity in both lower extremities, a mildly positive Romberg sign, and worsened vibration and joint position sensory defects. Electromyography was negative for lower motor neuron abnormalities. An MRI showed multiple focal areas of T2 prolongation in the periventricular white matter of the corpus collosum, brainstem, and cervical spinal cord, consistent with a demyelinating disease such as multiple sclerosis. The patient was referred to neurology for management of multiple sclerosis associated with LHON.
DISCUSSION: Leber's hereditary optic neuropathy (LHON) is a mitochondrially transmitted disease affecting young adults, with a male to female ratio of approximately 4 to 1. It is characterized by subacute, bilateral, central vision loss resulting in permanent optic atrophy, with relative sparing of peripheral vision. While a tentative diagnosis of LHON can often be made based solely on patients' clinical history, fluorescein angiography and electrophysiology studies may be helpful in confirming the diagnosis. Over 95% of patients with LHON have one of three mitochondrial DNA point mutations, G3460A, G11778A, or T14484C, but only 50% of men and 10% of women who harbor one of these mutations develop the optic neuropathy. A multiple sclerosis (MS)-like illness has been described in patients with LHON, especially those with mutation G11778A, in which MRI and CSF findings are identical to those of the MS population in general. The vision loss associated with LHON differs from the optic neuritis more commonly seen in multiple sclerosis in that it is bilateral rather than unilateral, is not accompanied by eye pain, is not associated with pupillary reflex defects, and rarely responds to corticosteroids. Screening LHON patients for MS, particularly if they have neurologic symptoms other than visual loss, may be appropriate if one accepts that immunomodulatory treatment should be started early in MS.

A NECROTIC PENIS. M. Glass[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117485)*

LEARNING OBJECTIVES: 1. Recognize the clinical presentation of calciphylaxis. 2. Recognize the risk factors for calciphylaxis.
CASE: A 52-year-old man with was admitted for necrosis at the tip of his penis. He had a history of diabetic renal failure, and was scheduled for dialysis following a permacath placement. He was afebrile and a systolic murmur was noted at the base and apex of the heart. His labs were notable for a phosphate of 8.1, and a calcium of 8.3. An echocardiogram revealed calcified mitral and aortic valves. The necrotic area was treated with surgical debridement. The surgical pathology report described acute and chronic inflammation with extensive coagulative necrosis consistent with calciphylaxis-induced ischemia.
DISCUSSION: Calciphylaxis is the deposition of calcium-phosphate crystals in the setting of either hypercalcemia or hyperphosphatemia. Deposition in peripheral arteries can result in ischemia with subsequent peripheral necrosis. A calcium-phosphate product of greater than fifty should prompt suspicion of this complication. The diagnosis is suggested by ischemic skin lesions and is confirmed by biopsy showing arterial occlusion and calcification without vascultic changes. In this case, a diagnosis of calciphylaxis was suggested by the clinical presentation and his history of renal failure; the elevated calcium-phosphate product of 67 sufficiently increased the pre-test probability to prompt a skin biopsy. In the setting of a calcium-phosphate product greater than 50, physicians should consider calciphalaxis as a potential cause of vascular insufficiency and valvular calcification.

A NOT-SO-BENIGN CASE OF PROSTATIC HYPERPLASIA. A.N. Githaiga[1]; P.K. Han[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115075)*

LEARNING OBJECTIVES: 1) To recognize bladder diverticuli and spontaneous bladder perforation as possible complications of benign prostatic hyperplasia (BPH). 2) To identify clinical findings suggestive of bladder perforation.
CASE: A 69-year-old man with a history of mild BPH, colonic diverticulosis and hyperlipidemia presented to his doctor's office with a two-day history of lower abdominal pain, dysuria, urinary urgency and frequency. He was treated empirically with ciprofloxacin and tamsulosin, but his symptoms progressed to include generalized abdominal pain and distension, constipation, nausea and vomiting. He presented to the emergency room two days later, in distress from pain. Vital signs were normal.On physical examination his abdomen was distended and tympanitic with absent bowel sounds. There was severe generalized tenderness but no peritoneal signs and no masses. Rectal examination revealed an empty rectal vault and a firm, moderately enlarged and non-tender prostate gland. Four attempts were made at bladder catheterization but the catheter failed to pass through the urethra. Bladder ultrasound showed an empty bladder. Laboratory tests included WBC 12.2 K, BUN 38, creatinine 5.2 (baseline 0.9), and normal serum electrolytes. Urinalysis showed 0–3 WBC, 5–10 RBC, and few bacteria. Plain abdominal X-ray demonstrated a dilated transverse colon with absence of gas in the distal colon. A non-contrast CT scan showed inflammatory changes around the mesentery and bladder; gastrograffin enema and renal ultrasound were normal. CT scan of the abdomen and pelvis was repeated with IV contrast, and demonstrated communication in the superior aspect of the bladder with a contrast-filled collection in the extraperitoneal space, consistent with a bladder leak. A cystogram was obtained, which demonstrated bladder perforation along with trabeculation and diverticuli, consistent with chronic bladder outlet obstruction. These findings were confirmed by cystoscopy. The patient was managed conservatively with bladder catheterization and had rapid resolution of his symptoms and renal insufficiency.
DISCUSSION: BPH is a common condition, although serious complications are unusual. Chronic bladder outlet obstruction, however, may occasionally cause urinary retention, bladder diverticuli, and, rarely, spontaneous bladder perforation, which presents with progressive abdominal pain. Intraperitoneal rupture may cause peritonitis; in this particular patient, however, the perforation was extraperitoneal, and thus there were no signs of peritoneal inflammation. The case illustrates that although bladder perforation presents dramatically, affected patients may have minimal prior symptoms of bladder outlet obstruction; therefore, clinicians should be aware of this potential complication.

A PAIN IN THE BUTT. H. Segrest[1]; J. Brice[1]. [1]Tulane Health Sciences Center, New Orleans, LA. *(Tracking ID #117509)*

LEARNING OBJECTIVES: 1. Recognize the criteria for diagnosing endocarditis. 2. Recognize the surgical indications in endocarditis
CASE: A 29-year-old man presented with one week of a right buttock lesion and fevers. He denied any past medical history or IV drug use. His temperature

was 37°C, pulse 113 bt/min, respirations 32 breaths/min, blood pressure of 83/59 mmHg. With the exception of the lesion, his exam was normal. His white count was 33,000 with 40% bands. He was taken to the operating room for incision and drainage of the abscess and started on vancomycin and piperacillin. The wound culture grew methacillin-resistant staph aureus. On the third hospital day, he was noted to have Janeway lesions, a new murmur, and chest X-ray with fluffy infiltrates. Gentamicin was added; an echocardiogram revealed a small vegetation on the mitral valve. Blood cultures were positive for methacillin-resistant staph aureus and remained positive despite antibiotics. CT surgery was consulted, but declined to operate given his positive cultures. On the eighth hospital night he complained of headache and blurred vision. A CT of the head was performed. By the end of the CT scan, his Glasgow Coma scale had decreased to 4. The CT scan revealed a large occipital intra-cranial hemorrhage. He was pronounced brain dead the following morning.
DISCUSSION: While seemingly commonplace in urban hospitals, acute endocarditis carries a high morbidity and mortality. The indications for sugery in endocarditis include acute aortic or mitral regurgitation with heart failure, fungal infection, acute aortic regurgitation with tachycardia and early closure of the mitral valve on echocardiogram, and evidence of annular or aortic abscess. In these situations, surgery should not be delayed due to persistently positive blood cultures. One of the roles of the general internist is to advocate for the patients who cannot advocate for themselves. Internists should be fully aware of the indications for surgery in the setting of endocarditis to permit this advocacy where indicated.

A PAIN IN THE NECK. J.A. Kasher[1]; P.P. Balingit[1]; A. El-Bialy[1]; J. Wheat[1]. [1]UCLA San Fernando Valley Program, Sylmar, CA. *(Tracking ID #115816)*

LEARNING OBJECTIVES: 1. Appreciate the multiple possible clinical manifestations of aortic dissection.
CASE: A 60-year-old male with history of hypertension presented with complaint of neck discomfort and increasing shortness of breath for 2 weeks. Initially, he felt a sudden "severe, pressure sensation" in his jaw which radiated to his chest, neck, and back of the head. In the next few days, the pain localized to the neck and he also developed progressive dyspnea and orthopnea. On examination heart rate was 96, blood pressure was 171/65, and breating rate was 30. Lungs had bibasilar rales, and heart had a diastolic murmur best heard over the aortic area and S3 gallop. Distal extremities revealed normal, equal peripheral pulses and moderate edema. Serum electrolytes, CBC, and EKG were not significant. Troponin level was 1.1, but normalized later. Chest radiograph demonstrated cardiomegaly, an unfolded aorta, bilateral pleural effusions, and pulmonary vascular congestion. Subsequent trans-thoracic and trans-esophageal echocardiograms revealed a type A aortic dissection involving both the ascending and descending aorta and causing significant aortic regurgitation. The patient underwent emergent repair of aortic dissection and was discharged shortly thereafter in good condition.
DISCUSSION: Aortic dissection is a relatively uncommon but catastrophic illness classically thought to present with sudden-onset, unrelenting, tearing pain localized in the thorax and radiating posteriorly. However, clinical presentations are variable, and dependent on which areas of the aorta are involved. For instance, involvement of the coronaries could lead to acute MI. Patient could also present with severe aortic insufficiency, heart failure, cardiac tamponade. Involvement of the carotid or renal arteries may lead to cerebrovascular accident or acute renal failure, respectively. Peripheral vascular involvement may result in pulse and neurologic deficits, whereas abdominal pain may develop with involvement of the mesenteric arteries. Type A dissection can present as severe chest pain (79%), back pain (46%), abdominal pain (22%), syncope (13%), CHF (9%), or cerebrovascular accident (6%). In one case series, only 64% of patients described their pain as being sharp. Another series reports that the treating clinician fails to initially entertain the diagnosis of aortic dissection in up to 35% of cases. Many patients later found to have aortic dissection are initially suspected to have other conditions, such as acute coronary syndrome, non-dissecting aneurysms, pericarditis, pulmonary embolism, aortic stenosis, or even cholecystitis. The high mortality associated with aortic dissection makes its early diagnosis critical. This case serves as a cautionary tale for the clinician to recognize the often "unusual" presentations of this deadly disease, and to consider the diagnosis of aortic dissection in any patient presenting acutely with chest or abdominal pain.

A PUZZLING CASE OF HYPOGYLECEMIA: THE CLUE IN THE MEDICATION HISTORY. S. Estes[1]; M. Panda[1]. [1]University of Tennessee, Chattanooga, Chattanooga, TN. *(Tracking ID #115171)*

LEARNING OBJECTIVES: 1. Recognize the importance of taking a detailed history. 2. Recognize the interactions of herbal medications with prescription drugs.
CASE: A 30 year old white female with well controlled insulin dependent diabetes mellitus for thirteen years presented with 2 months of numerous hypoglycemic episodes. A decrease in her insulin regimen did not resolve the hypoglycemia. On further review of the patient's medications, the only new addition was ginseng, which she began taking 2 months ago for "increased energy". Complete work-up including renal function was normal. The ginseng was discontinued and her hypoglycemia resolved. She was able to resume her previous insulin regimen.
DISCUSSION: Herbal therapy is an ancient practice that appears to be experiencing resurgence in the U.S. In numerous previous studies, the ginseng glycopeptides (GGP) from the roots of Panax ginseng had hypoglycemic activity on both normal and hyperglycemic animals. Studies in diabetic humans have also suggested that ginseng lowers blood glucose. The hypoglycemia is due to the enhancement of aerobic glycolysis. The administration of GGP decreases both the level of plasma lactic acid and the activities of plasma and liver LDH while enhancing the rate limiting enzymes in aerobic glycolysis (tricarboxylic acid cycle). The hypoglycemic action of GGP could last up to 16 hours. This case reflects the increasing frequency of herbal and alternative medication use and supports the fact that patients often neglect to tell their physicians. Direct inquiry about herbal medication use should be a routine part of history taking.

A RARE CASE OF INTRATHORACIC ECTOPIC GOITER. Q. Saleheen[1]; H.J. Freidman[1]; O. Marzouki[1]; S. Nizar[1]. [1]Saint Francis Hospital, Evanston, IL. *(Tracking ID #116561)*

LEARNING OBJECTIVES: 1. To emphasize the need to consider ectopic goiter in the differential of a mediastinal mass. 2. To understand that a mediastinal mass with hemorrhagic changes can cause acute stridor. 3. To think about mediastinal mass as a cause of cough especially when cough is positional.
CASE: A 38-year-old African American woman presented with a history of dry cough for 3 weeks and shortness of breath with a loud noisy breathing for 1 day. Patient also complained of generalized fatigue but no fever, no phlegm or weight loss. Patient is a non-smoker and works as a construction worker. On examination, patient vital signs were stable with 98% O2 saturation on room air with audible stridor. There was fullness in the lower anterior neck but no well-demarcated mass, no lymphadenopathy or thyroid enlargement, and no audible bruit in the neck was appreciated. The rest of examination was unremarkable. Laboratory workup showed microcytic hypochromic anemia with Hemoglobin of 7.4. TSH, FT4 and T3 were normal. Chest x-ray revealed a superior mediastinal mass with deviation of trachea towards the right side. A subsequent CT scan showed a 7 cm mediastinal mass with inhomogeneous enhancement extending from anterior to middle mediastinum with no lymphadenopathy. Patient underwent surgical resection with removal of a cystic mass arising from the chest beneath, but separate from the left inferior lobe of thyroid. Both lobes of the thyroid gland appeared normal. A preliminary post-operative diagnosis of bronchogenic cyst with tracheal compression was made. The final diagnosis was made on biopsy, which showed benign nodular thyroid tissue with involution and hemorrhagic changes. Patient subsequently discharged home without complications.
DISCUSSION: We present here a rare case of an ectopic intrathoracic goiter (a goiter with no attachment to the cervical thyroid gland). Most of the ectopic goiters are reported in the neck but rarely in the mediastinum. On review of the literature, there were sporadic cases reported as ectopic intrathoracic goiters. A study in Germany of 61 surgically treated intra-thoracic goiters from 1980 to 1999 showed that only 2 cases were ectopic. When present as a mediastinal mass the ectopic goiter can cause compression symptoms in about 40%–50% of the cases. A mediastinal goiter can cause stridor that can be gradual in onset or sudden if there are hemorrhagic changes in goiter (as in our patient). Also a mediastinal goiter can cause cough that can be positional in character. Thus it is important to consider ectopic goiter in the differential of a mediastinal mass with the evidence of airway obstruction.

A RARE CAUSE OF CIRRHOSIS IN AN EPILEPTIC. M.A. Kalpakian[1]; S. Dea[2]. [1]UCLA San Fernando Valley Program, Sylmar, CA; [2]University of California, Los Angeles, Sylmar, CA. *(Tracking ID #115614)*

LEARNING OBJECTIVES: 1. Diagnose the etiology of cirrhosis when the cause is not obvious. 2. Review monitoring tests for patients on antiepileptic medications.
CASE: A 31-year-old male with a history of epilepsy for over ten years presented with complaints of nausea, vomiting, and dull left upper quadrant pain developing over the past two months. His generalized tonic-clonic seizures and absence seizures have been controlled with carbamazepine for ten years and valproic acid for three years. The patient did not have diabetes or hyperlipidemia. On review of symptoms, he complained of decreased appetite with 20 lb weight loss over the past year. The patient denied tobacco, alcohol, or drug abuse. Physical exam was significant for a slender afebrile male with tenderness to palpation in the left upper quadrant and hepatosplenomegaly. There was no rebound or guarding. The patient was not jaundiced and did not have stigmata of chronic liver disease. Labs were significant for an ALT of 104, AST of 79, alkaline phosphatase 229, INR 1.04, WBC of 3.2, Hb 12.5, Hct 37.4 and platelet count of 87. Pancytopenia was thought to be a result of massive splenomegaly. An abdominal ultrasound showed a liver span of 18.2 cm and the spleen was 15.2 cm × 15.3 cm with a patent portal vein with appropriate flow. Liver biopsy revealed cirrhosis. Hepatitis B and C serologies were all negative. Antinuclear antibody, anti-smooth muscle antibody, and antimitochondrial antibody were negative. Iron, ferritin, iron saturation and ceruloplasmin levels were normal. A comprehensive literature search showed no reported cases of carbamazepine-induced cirrhosis and a few case reports of valproic acid associated with cirrhosis. Carbamazepine and valproic acid were stopped and the patient was started on levetiracetam.
DISCUSSION: Many drugs are hepatically metabolized but drugs that induce cirrhosis are relatively rare. Valproic acid is one of these drugs and is being used by internists for many indications ranging from migraine headache prophylaxis to seizure disorders. Routine monitoring of transaminases in patients on anti-epileptics is still controversial. Some clinicians argue that since hepatic failure caused by valproic acid is an acute idiosyncratic reaction, checking transaminases in patients who have been on valproic acid for years may not prevent liver failure. However, as this case illustrates, chronic liver damage and cirrhosis can result from chronic anti-epileptic drug use. A toxic metabolite of valproic acid may be responsible for inducing non-alcoholic fatty liver disease that may progress to cirrhosis. Perhaps monitoring transaminases every 6 months in these patients could have diagnosed liver toxicity prior to the onset of cirrhosis. Monitoring may have allowed this patient

to be switched to another anti-epileptic drug earlier, preventing him from developing end-stage liver disease.

A RATHER SIGNIFICANT EOSINOPHILIA. S.Y. Chien[1]; A.M. Fogelman[2]. [1]University of California, Los Angeles, Sylmar, CA; [2]University of California, Los Angeles, Los Angeles, CA. *(Tracking ID #115722)*

LEARNING OBJECTIVES: 1. Recognize the differential diagnosis and clinical aspects of eosinophilia. 2. Distinguish between different vasculitides.
CASE: A 43 year-old female with complicated medical history was transferred to our hospital for six months of bilateral neck swelling and recent right-sided weakness. She reported several other conditions that had begun in the previous 2 years including alopecia, allergy, chronic otitis media, and whole body pruritis. She was now complaining of a new cough, dyspnea, and exertional chest pain. Previous diagnostic work-ups found pulmonary infiltrates, bilateral internal carotid artery aneurysms, and confirmed a recent stroke. Her initial CBC was particularly signifcant for a WBC of 11,000 with 50% eosinophils on the differential. ESR was negative. A work up of this appreciable eosinophilia ensued, with normal infectious cultures and rheumatologic tests (ANA and ANCA). Because of her history of angina, a cardiac nuclear stress perfusion scan was done, showing multiple defects with a depressed ejection fraction. Subsequent cardiac catheterization demonstrated no significant atherosclerosis, but found aneurysmal dilatation of all three main coronary arteries. Based on her carotid and coronary aneurysms and significant eosinophilia, our patient was diagnosed with a vasculitis, most likely Churg-Strauss syndrome or Takayasu's.
DISCUSSION: Eosinophilia is defined as >500 per microliter in the blood or tissue. Patients may have multiple end-organ dysfunction, leading to thrombosis and fibrosis. Besides parasitic or helminthic infections, other common causes are allergies, collagen vascular diseases, and malignancies. However, the etiology of this patient's eosinophilia was due to vasculitides, likely ANCA-associated small to medium-vessel disease (Churg-Strauss syndrome, microscopic polyangitis, or Wegener's granulomatosis) versus large-vessel disease (Takayasu's). It is important to realize that approximately 10% of patients with ANCA-associated vasculitis have negative assays for ANCA. Often, there is a substantial overlap among different vasculitides, such as in this patient. Churg-Strauss syndrome has a characteristic triad: allergic rhinitis and asthma, systemic granulomatous inflammation of small vessel, and virtually all patients have eosinophilia. Ofteh, it has less renal involvement. However, coronary arteritis and myocarditis are very frequent, accounting for major morbidity and mortality. On the other hand, Takayasu's arteritis (aortic arch syndrome) has a strong predilection for the aortic arch and its branches. Pulses are commonly absent, particularly if subclavian artery is involved. Although less common, inflammation can also be found in other major arteries, including carotid and coronary. The mainstay of treatment for most vasculitides includes corticosteroids with or without cytotoxic drugs such as cyclophosphamide. Combined therapy induces improvement in 90% and complete remission in 75% of patients.

A RED EYE AND VISION LOSS: NOT YOUR USUAL CONJUNCTIVITIS. T. Pestana[1]; M. Landry[1]. [1]Tulane Health Sciences Center, New Orleans, LA. *(Tracking ID #117498)*

LEARNING OBJECTIVES: 1) Identify ocular manifestations of fungal infections. 2) Recognize risk factors for fungal ocular infections. 3) Establish available treatments for fungal ocular infections.
CASE: A 25 year-old woman presented with left eye pain and vision loss. She noted eye injection and pain with movement. She also complained of lower back pain. She had fever, chills, night sweats, and a recent fifty-pound weight loss. Her past medical history included hepatitis C and intravenous drug abuse. Her needle-sharing companions had developed similar ocular symptoms several weeks prior. She was afebrile, and had conjunctival, scleral, and limbal injection with a hazy cornea, and clear ocular discharge. The left pupil was fixed at four millimeters; visual acuity was 20/200. Direct fundoscopic exam revealed fluffy white vitreous opacities obscuring the optic disc, and retinal detachment. The L1–L2 right paraspinal region was tender to palpation. MRI of the spine showed discitis, osteomyelitis, and a psoas abscess in the paraspinal region. The patient was diagnosed with retinal detachment and fungal endophthalmitis. Intravitreal and systemic amphotericin B were initiated. Cultures obtained from the psoas abscess yielded Candida albicans, confirming disseminated fungal infection.
DISCUSSION: Fungal endophthalmitis is a serious infection that can lead to visual deficits. Risk factors include intravenous drug abuse, immunosuppression, parenteral nutrition, and ophthalmologic surgery. There is no consensus on standard antifungal treatment, but amphotericin B, flucytosine, and fluconazole may be used. Vitrectomy may also be considered for vision salvage. Early diagnosis, ophthalmologic evaluation, and treatment are essential for preventing vision loss.

A RESTAURANT, AN ONION, A LIVER: A CASE OF FULMINANT HEPATIC FAILURE FROM HEPATITIS A. P.K. Nair[1]; B.S. Berk[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115944)*

LEARNING OBJECTIVES: 1) Recognize the epidemiology of Hepatitis A (HA), 2) Diagnose Fulminant Hepatic Failure (FHF), 3) Manage FHF in HA.
CASE: A 57-year-old male who is on prednisone for ulcerative colitis presented with elevated liver enzymes and change in mental status. He is a non-smoker who drinks about two beers per week. On October 11th, he and his wife ate at a local restaurant. On October 29th, they both developed anorexia, myalgia, and diaphoresis. The patient's wife improved, but he continued to deteriorate. On November 5th, he went to his community hospital. His labs showed the following: ALT 6438, AST 8689, INR 3.0, and Total Bili 2.5. The next day he became poorly responsive and was transferred to our MICU. He was deeply jaundiced, had brisk reflexes, and right ankle clonus. Intracranial pressure was elevated. No stigmata of chronic liver failure was noted. Labs revealed the following: glucose 50, lactate 5, ammonia 101, ferritin >5,000, ALT 3624, AST 1108, Total Bili 11.3, PTT >100, and non-calculable PT/INR. He was promptly transferred to the Liver Transplant ICU. Hepatitis serologies were negative for HepB, HepC, CMV, EBV, HSV, VCZ, Wilson's, and autoimmune markers. HepA IgM was positive. The next morning he underwent orthotopic liver transplantation. He was discharged one month later in stable condition.
DISCUSSION: There were 650 confirmed cases of HA from a recent outbreak in western Pennsylvania. It was linked to a restaurant that served tainted green onions from Mexico. Four people developed FHF, and only this patient survived. In the United States, there has been a gradual decline in the number of confirmed HA cases from 1980 (29,087 reported cases) to 2001 (10,616 reported cases). On average only 0.2% to 0.4% of cases of HA progress to FHF. The risk of developing FHF from HA infection increases with advancing age and in patients with chronic liver disease, especially from hepatitis C. In FHF from HA, there is a rapid progression of severe acute liver injury with impaired synthetic function as evidenced by decreasing AST/ALT and increasing INR. Stigmata of chronic liver disease are absent. To be classified as having FHF one must have encephalopathy develop within eight weeks of onset of symptoms if they had a previously healthy liver, or within two weeks of onset of jaundice regardless of any underlying liver disease. Management of FHF from HA should involve early referral to a liver transplant center of high-risk patients. Transplantation improves survival rates in FHF by as much as 70% to 80%. Based on the King's College Criteria, referral for transplant of FHF from HA should take place if the following criteria are met: 1. PT >100, irrespective of the grade of encephalopathy, or 2. Any three of the following variables: age <10 or >40, duration of jaundice before onset of encephalopathy >7 days, PT >50, or Total Bili >18.

A SEVERE CASE OF ALCOHOLIC HEPATITIS. J.E. Guy[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117466)*

LEARNING OBJECTIVES: 1. Review the differential diagnosis of right upper quadrant abdominal pain. 2. Recognize laboratory findings seen in alcoholic hepatitis. 3. Discuss treatment options for severe cases.
CASE: A 45 year old woman with a 23 year history of significant alcohol abuse presents to the emergency room with a several week history of nausea, nonbloody emesis, constant, nonradiating right upper quadrant pain, and jaundice. She reports intermittent subjective fevers. Her last drink was one day prior to admission, and she reports drinking 9 shots of brandy a week. On physical exam she was afebrile. She was somnolent but arousable. Asterixis was present. Her abdominal exam was distended and diffusely tender to palpation, with marked right upper quadrant pain without rebound. Her liver span was enlarged to 12 cm but there was no fluid wave or frank ascites. Skin exam was markedly jaundice but without spider angiomata or palmar erythema. Pertinent laboratory data included a WBC of 41.5K, total bilirubin 17.6, AST 132, ALT 14, albumin 1.7, Cr 0.9, and PT 21.7. A CXR, urinalysis and blood cultures were negative. A right upper quadrant US did not reveal signs of cholecystitis, obstruction or ascites. An abdominal/pelvic CT was without evidence of cholangitis or masses. Of note, the patient was admitted to the surgical service three weeks prior to admission with similar complaints, a WBC of 14.8K, AST 130, ALT 20, and total bilirubin 4.6. At that time a RUQ ultrasound, HIDA scan, abdominal CT, white blood cell scan, urine and blood cultures were within normal limits. The patient was diagnosed with alcoholic hepatitis and told to abstain from drinking.
DISCUSSION: This patient's clinical picture was consistent with severe alcoholic hepatitis. On two occasions an in-depth evaluation was undertaken to evaluate for cholecystitis, cholangitis, obstructing lesion, systemic infection or other explanations of right upper quadrant pain, abnormal liver function tests and leukocytosis. As this case underscores, alcoholic hepatitis manifests as an inflammatory state of the liver and can be confused for infection or obstruction. Patients often present with right upper quadrant pain, hepatomegaly, jaundice and fever. Hepatic encephalopathy is a poor prognostic indicator. The mortality of the disease is high, and can be stratified by calculating the discriminant function [formula 4.6 (PT-control) + tbili]. In this patient with a discriminant function (DF) of greater than 32, her mortality at one month is 50%. A small mortality benefit at two and six months has been demonstrated with corticosteroids and at four weeks with pentoxifylline in patients with DF >32 and no evidence of infection or bleeding. This patient received pentoxifylline without significant change in her laboratory or clinical parameters after 4 weeks of treatment. She did survive the acute period, and in follow-up six months later, the patient had abstained from drinking with improvement in her physical exam and laboratory values.

A SURPRISING CAUSE OF ACUTE-ONSET ALTERED MENTAL STATUS AND HYPOXIA IN A PREVIOUSLY STABLE PATIENT. M.R. Heller[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115003)*

LEARNING OBJECTIVES: 1) Recognize air embolus as a possible cause of respiratory distress and altered mental status in hospitalized patients. 2) Become familiar with preventative measures and treatment options.
CASE: A 58 year old man with AML was admitted to the hospital for consolidation chemotherapy. Three weeks into his hospital stay, he was found on the ground in

the doorway to his room, confused and unable to get up. The patient was oriented only to person, but did not complain of any localized pain or difficulty breathing. On physical exam, his vitals were stable with the exception of his O2 saturation, which was 84% on room air, but increased to 97% on 10L face mask. He had no obvious signs of trauma, except that the cap to one of the lumens of his central line was off. The remainder of his cardiopulmonary and neurological exam was within normal limits, to the extent that he could cooperate. Labs were unremarkable. A head CT was negative, and a chest x-ray and CT did not show signs of new infection, pneumothorax, or pulmonary embolus. By the following morning, the patient's altered mental status and hypoxia had resolved. His symptoms were ascribed to an air embolus, which likely occurred during a normal tidal volume inhalation after the cap to his central line became disconnected.
DISCUSSION: Air embolus (AE) is most commonly associated with surgical procedures, penetrating chest injuries, barotrauma, and central venous catheterization. Slow infusions of small amounts of air are tolerated better than large rapid boluses —it is thought that 300–500 cc of air infused over a few seconds can be fatal in humans. Dyspnea is found in almost all cases of AE, and may be accompanied by tachypnea, respiratory failure, chest pain, hypotension, and tachycardia. Neurological findings are present in up to 40% of cases, and range from dizziness and a subjective "sense of doom" to altered mental status or focal neurological deficits. Diagnosis of AE can be difficult, as labs, chest x-rays, VQ scans, and chest CTs are most often normal. Therefore, a high index of suspicion is required in a patient undergoing a surgical procedure or with central venous access. Treatment focuses on identifying the source of air entry and preventing further air flow. Hyperbaric oxygen may be helpful in extreme cases to reduce the intravascular air bubble size. Furthermore, positioning the patient in the left lateral decubitus position may help to prevent an air bubble in the right ventricle from obstructing the pulmonary outflow tract. Finally, aspiration through the central venous catheter may be attempted if the introduction of the AE is witnessed. Emphasis should be placed on prevention —patients should be in Trendelenburg position and they should be instructed to valsalva or exhale during the placement or removal of a central venous catheter.

A THORNY PROBLEM: MYCOBACTERIUM KANSASII INFECTION OF THE SKIN. K. Pachipala[1]; S. Naidu[1]; L. Adhikesavan[1]; R. Gotoff[1]; D.R. Gutknecht[1]. [1]Geisinger Medical Center, Danville, PA. *(Tracking ID #103207)*

LEARNING OBJECTIVES: Appreciate that M.kansasii can cause water-borne skin infections.
CASE: A 43-year-old woman developed erythema and swelling over a PIP joint of her left hand three months after cutting that finger on a thorn. Pus was aspirated but no bacteria were found on gram stain or culture. Subsequent biopsy showed a granulomatous reaction and cultures grew pigmented mycobacteria. The patient had a history of exposure to both an inground swimming pool and a hot tub and was empirically treated with Bactrim for presumed infection with M.marinum, since that agent is the commonest pigmented mycobacterium causing skin infections. The organism was later identified as M.kansasii and the patient was given INH, rifampin and ethambutol. INH and rifampin could not be continued because of hepatotoxicity, and after consultation with a national expert, an alternative treatment regimen of clarithromycin, gatifloxacin and ethambutol was instituted and the patient improved.
DISCUSSION: M.kansasii is a slow growing, photochromogenic mycobacterium found in potable water supplies, swimming pools and sewage. Cutaneous M.kansasii infections are rare, with 44 cases so far reported in the literature. These infections are sporadic and usually due to inoculation following minimal cutaneous trauma. Most occur in patients with immunological problems, and patients may present with papules, nodules, pustules, crusted ulcers, cellulitis or sporotrichial lesions. The American Thoracic Society recommends treatment with INH, rifampin and ethambutol. In our patient the history suggested both thorn injury and water exposure as possible vectors of infection. Thorn prick is usually associated with infections with gram-negative bacteria, clostridial species or sporotrichosis. Bacteria associated with water exposure include Aeromonas sps, Edwardsiella tarda, Erysipelothrix rhusiopathiae, Vibrio vulnificus and Mycobacterium marinum. The surprise finding of M.kansasii confirmed this was a water-borne infection, and an unusual one at that.

A VERY RARE PRESENTATION OF A COMMON ILLNESS, INFLUENZA A INFECTION WITH A MASSIVE PERICARDIAL EFFUSION. S.G. Khurshid[1]; U. Ahmed[2]; P. Sherchan[3]. [1]Saint Francis Hospital at Evanston, Evanston, IL; [2]Saint Francis Hospital, Evanston, IL; [3]Saint Fancis Hospital at Evanton, evanston, IL. *(Tracking ID #115934)*

LEARNING OBJECTIVES: To recognize an unusual complication of Influenza A virus.
CASE: 21-year-old previously healthy male presented with seven days history of pleuritic chest pain and fever. Chest pain was persistent and worsened with deep breathing and lying down. Patient also described a recent upper respiratory illness associated with fever, chills and myalgias. Physical examination revealed a temperature of 100.5 F, pulse rate of 111, BP of 105/65 and respiratory rate of 18. The heart sounds were distant with a prominent pericardial rub. Decreased breath sounds and dullness were present at the left lung base. No rales were audible, liver was not enlarged and there was no peripheral edema. No jugular venous pulsation was visible and pulses paradoxus could not be detected. Lab workup revealed WBC count of 11.4 with 40 percent lymphocytes. Serological screening for viruses including CMV, Coxsackie, EBV, VZV, HIV and Echovirus was negative. Rapid influenza antigen detection from nasophyrengeal swab was positive for influenza A virus. EKG revealed sinus tachycardia with no evidence of electrical alternans. CXR showed cardiomegaly with bilateral pleural effusions. CT scan of the chest showed a fluid collection in the pericardium with abnormal enhancement of the pericardial lining indicating pericarditis. Echocardiogram revealed massive pericardial effusion with no evidence of cardiac tamponade. Patient improved with NSAIDs, oseltamivir and fluid resuscitation.
DISCUSSION: Influenza A and B infections are recognized causes of pericarditis. Viral pericarditis may be associated with myocarditis and in this case, the pericardial inflammation was sufficient to cause a massive effusion. Myocarditis and pericarditis were reported in association with influenza viral infection during the 1918–1919 pandemic; these reports were largely based on histopathologic findings, and these complications have been reported only infrequently since then. To our knowledge only a few cases of a massive pericardial effusion causing tamponade secondary to influenza have been reported but all those patients had underlying cardiac disease. This case appears to be unique in that the presence of massive pericardial effusion did not cause clinical or echocardiographic evidence of tamponade. We attribute this to the young age and normal underlying myocardium.

ACQUIRED FACTOR VIII INHIBITOR PRESENTING AS REFRACTORY GI BLEEDING. R.R. Yeldandi[1]; M. Peek[1]. [1]Rush University/Rush- Presbyterian-St. Luke's Medical Center, Chicago, IL. *(Tracking ID #116937)*

LEARNING OBJECTIVES: (1) Recognize underlying coagulopathies as etiologies of refractory GI bleeding. (2) Understand the treatment options for acquired factor VIII inhibitors.
CASE: The patient is a 49 year old woman with a history of hypertension, coronary artery disease, and CHF who presented after two episodes of hematemesis; she denied hematochezia or melena. She had no history of peptic ulcer disease, dyspepsia or NSAIDs use. Nasogastric lavage yielded 500 ccs of coffee grounds and her stool was heme positive. An emergent EGD revealed a gastric ulcer whose actively bleeding vessel was coagulated with electrocautery. She was started on Protonix. Three days later, the patient had hematochezia and hematemesis. Repeat EGDs showed an adherent clot but no active bleeding. H. pylori titers and a colonoscopy were negative. With no other source of active bleeding identified, the gastric ulcer was surgically resected, but the patient had persistent post-operative bleeding. On admission, the patient had a prolonged aPTT (>240 sec) which was previously normal; aPTT mixing studies were positive for a coagulation factor inhibitor. Factor VIII inhibitor levels were elevated, thus diagnosing the patient with an acquired factor VIII inhibitor coagulopathy. The patient was treated with Factor Eight Inhibitor Bypass Activator (FEIBA), recombinant activated factor VIIa, steroids and Imuran. The patient was discharged in stable condition.
DISCUSSION: Factor VIII inhibitor is an autoantibody directed against coagulation factor VIII. Patients can present with hematomas, hematuria, GI bleeding, retropharyngeal or retroperitoneal bleeding, cerebral hemorrhages and/or post-operative bleeding. Recombinant factor VIIa infusions can activate the coagulation cascade by bypassing factor VIII and control acute bleeding. Maintenance therapy with immunosupressants can lower inhibitor titers. Our patient's acute bleeding resolved with infusions of FEIBA and recombinant factor VIIa. Although she presented with a common clinical manifestation of factor VIII inhibitor, the etiology of her uncontrolled bleeding was uncommon. Our patient had a clear source of GI bleeding, but she did not respond to standard treatment. Without her underlying coagulopathy, her bleeding may have ceased with cautery. We present this case in order to bring attention to possible uncommon etiologies for common scenarios. Failure of conventional therapy for GI bleeding should prompt further evaluation for an underlying coagulopathy. Early identification of acquired coagulopathies and treatment with effective agents can reduce excessive blood loss and reduce mortality.

ACTINOMYCOSIS PRESENTING AS A SKIN ABSCESS. J. Blank[1]; M. Traina[1]. [1]UCLA—San Fernando Valley Program, Sylmar, CA. *(Tracking ID #116705)*

LEARNING OBJECTIVES: 1) Recognize Actinomyces as a cause of skin abscess. 2) Discuss the diagnosis and management of disseminated Actinomycosis.
CASE: A 46 year old male presented to the clinic with a three month history of left shoulder pain and progressive loss of range of motion. The patient noticed a lump on his shoulder 6 weeks ago that has been increasing in size. He admits to a productive cough, dyspnea on exertion, and fatigue. The patient smokes 2 packs per day, drinks 6 beers per day, and works as a repairman, often underneath houses. Physical examination revealed a fluctuant 13 × 13 cm mass over the left scapula, poor dentition, and rhonchi over the left lung base without evidence of lymphadenopathy. Significant laboratory results included a WBC 12.9, Hemoglobin 7.8, and Folate 2.7. Chest x-ray showed a nodule in the left lower lobe. CT scan of the chest revealed a 3 cm irregular soft tissue mass in the left lower lobe with apparent sinus tracts extending to the back. Fine needle aspiration of the shoulder mass was completed and Gram stain demonstrated "sulfur granules" consistent with Actinomyces infection. After surgical drainage of the abscess, intravenous ampicillin-sulbactam was initiated for 4 weeks followed by oral penicillin. Repeat CT scan after 4 weeks of treatment revealed a decreased lung mass size.
DISCUSSION: Actinomycosis in humans is commonly caused by Actinomyces israelii. It frequently occurs in adult males with dental infections but also can occur in patients with diabetes, immunosuppression, malnutrition and local tissue damage with neoplastic disease or irradiation. Actinomycosis generally arises from a dental source but in rare cases it can originate from the thyroid gland, thyroidectomy incision sites or lung as seen with this patient. Typically, infection spreads by direct invasion without respect to anatomical barriers including fascial planes, forming multiple abscesses. Pulmonary infections usually arise after aspiration of

oropharyngeal or gastrointestinal secretions. The most common pulmonary clinical presentation is an indolent, progressing pneumonia with or without pleural involvement. Patients present with a productive cough, fever, chest pain, and weight loss. Actinomyces is difficult to culture and should be suspected when "sulfur granules" are seen on visual or microscopic examination. Sulfur granules which are rarely seen with Nocardiosis, are common with Actinomycosis and have a characteristic cauliflower-like appearance upon microscopic examination. Abscesses require surgical drainage and the infection is highly responsive to antibiotic treatment with long term penicillin.

ACUTE ONSET GENERALIZED LYMPHADENOPATHY IN A 58 YO MALE. B.E. Gewurz[1]; J. Beach[2]. [1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Beth Israel Deaconess Medical Center, Brookline, MA. *(Tracking ID #115887)*

LEARNING OBJECTIVES: Distinguish between local and generalized adenopathy. Diagnose etiology of generalized lymphadenopathy. Recognize when a lymph node biopsy is indicated.
CASE: Mr. JW is a 58 yo male with no significant PMHx who presented to an urgent care visit with a chief complaint of "bumps" on his neck of several days duration. He denied associated symptoms, including fevers, chills, night sweats, cough, myalgia or arthralgia. He denied any recent travel, sick contacts, or unusual exposures at the supermarket that he manages. He takes no medications. He has been married for 30 years, has a remote smoking history, and denied IV drug use. He has a pet cat. Physical examination was notable for numerous 1–3 cm nontender, firm, mobile lymph nodes in the preauricular, postauricular, occipital, anterior and posterior cervical, axillary and inguinal chains. There was no hepatosplenomegaly, rashes, or mucosal lesions. An extensive work-up did not reveal likely infectious causes of adenopathy: PPD was negative and serologic tests failed to show acute infection by HIV-1, CMV, EBV, toxoplasma, syphilis, borrelia, or bartonella. No HIV RNA was detected. ESR was 16 mm/hr. No acute cardiopulmonary process was evident on chest film. CBC revealed WBC of 5,000 cells/uL, HCT of 40.8%, and PLT of 282,000 cells/uL. Regressing adenopathy was noted at a subsequent visit, with interval onset of night sweats, low grade fever, 5-lb weight loss over two weeks, fatigue, persistent dry cough and generalized pruritis. A chest CT scan revealed striking systemic adenopathy of all major nodal groups. Submandibular biopsy revealed features consistent with angioimmunoblastic T-cell lymphoma (AILD). Bone marrow biopsy revealed AILD involvement.
DISCUSSION: Peripheral lymphadenopathy may be the only sign of an underlying systemic process. We review the importance of recognizing regional versus generalized adenopathy, their differential diagnoses, and studies that should be considered. Generalized adenopathy signifies a serious associated condition and that requires further evaluation. When should a lymph node biopsy be obtained? Although many patients with adenopathy fear a diagnosis of cancer, adenopathy often results from an infectious illness and only rarely represents malignancy in the primary care setting. The need for definitive diagnosis should be weighed against the morbidity of an invasive procedure. We discuss circumstances where an observation period is a safe alternative and review algorithms that predict the appropriateness of lymph node biopsy.

ACUTE RENAL FAILURE CAUSED BY A RARE BLEEDING COMPLICATION OF ENOXAPARIN. M. Bandara[1]; B.P. Sankarapandian[1]; S.K. Thambidorai[1]; S. Dhanireddy[2]; D. Schuller[1]. [1]Creighton University, Omaha, NE; [2]Creighton University Medical School, Omaha, NE. *(Tracking ID #115704)*

LEARNING OBJECTIVES: 1. Recognize the potential for enoxaparin induced intra-abdominal bleed 2. Identify acute renal failure as a potential secondary complication of intra-abdominal bleed 3. Assess causes for post obstructive uropathy.
CASE: A 43-year-old white female with recent history of multiple upper respiratory tract infections presents to the emergency room with dyspnea. She was found to be in atrial fibrillation with rapid ventricular response. The patient was admitted and treated with enoxaparin and diltiazem infusion. She was subsequently cardioverted to normal sinus rhythm using direct current cardioversion. During the hospitalization she developed left lower quadrant abdominal pain with associated oliguria. She rapidly progressed to anuria prior to the obtaining of urine studies. Renal ultrasound showed bi-lateral hydronephrosis. Urology performed a cystoscopy, which showed a compression of the bladder from an external source. Bi-lateral ureteral stents were placed extending from the renal pelvis into the urethra. Post operatively the patient became severely hypotensive requiring multiple transfusions and vasopressor support. Computerized tomography (CT) of the abdomen showed a massive hematoma in the pelvis surrounding and compressing the bladder. The patient remained anuric for several days requiring continuous venous-venous hemodialysis. Her renal function eventually improved and hemodialysis was discontinued.
DISCUSSION: Enoxaparin is a rare cause for intra-abdominal bleed. This patient presented with obstructive uropathy resulting in acute renal failure. The initial cause for the obstruction was not apparent. Evaluation of the renal failure led to the discovery that the patient had extrinsic bladder compression from a massive intra-pelvic hematoma. The severity of the bleeding led to a prolonged state of renal hypoperfusion, which resulted in acute tubular necrosis. In patients where the cause of obstruction is not readily apparent, one must consider other potential factors. Post-obstructive renal failure is commonly due to tumors, prostatic hypertrophy, calculi, and strictures. This case demonstrates that pelvic bleeding should also be included in the differential diagnoses of post-obstructive renal failure in patients receiving anti-coagulation therapy.

ADRENAL INCIDENTALOMA, CUSHING'S SYNDROME, AND INSULIN RESISTANCE SYNDROME. M.N. Phan[1]; N. Mikhail[1]; M. Rotblatt[1]. [1]UCLA SFVP-Olive View Medical Center Department of Internal Medicine, Sylmar, CA. *(Tracking ID #117285)*

LEARNING OBJECTIVES: 1. Recognize an approach to diagnosing adrenal incidentaloma. 2. Be aware of the possibility of Cushing's syndrome in adult patients with an insulin resistance syndrome.
CASE: A 51 year old male was referred for further evaluation and management of an adrenal incidentaloma found on abdominal CT, which was originally performed to rule out nephrolithiasis. There were no kidney stones, but instead, a 3 cm left adrenal mass was reported. His PMH included hypertension for 6 years and diabetes mellitus for 3 years. The patient did not report easing bruising, headache, sweating, or palpitations. Review of systems was significant for weight gain of 50 lbs over 5 years. Family history was also positive for diabetes and hypertension. Vitals signs were T37, BP 181/90, P115, RR16, and WT 296 lbs. Physical exam was significant for obesity, moon facies, and supraclavicular fat pads, but no buffalo hump or abdominal striae. Cushing's syndrome was suspected, and laboratory investigation revealed an elevated 24-hour urine cortisol of 134.2 ug/24 hrs (4–50), and suppressed ACTH of <5 PG/ML (15–70). Serum renin and aldosterone were normal, as were urine catecholamines. The patient was diagnosed with Cushing's syndrome secondary to an adrenal mass and was subsequently referred for adrenalectomy.
DISCUSSION: The incidental discovery of an adrenal mass is not an uncommon event due to the routine use of common imaging techniques. The prevalence of adrenal incidentaloma is about 2.3 % at autopsy and 0.5–2% by abdominal CT scan. Hyperfunctioning develops in 1.7% of cases, and the risk is higher in patients with lesions larger than 3 cm, of which cortisol hypersecretion is the most likely disorder. Evaluation of an adrenal incidentaloma includes hormone studies to determine whether the patient has pheochromocytoma, glucocorticoid excess, primary aldosteronism, or virilizing or feminizing tumors. This is especially important if signs and symptoms of hormonal excess are present. Cortisol secreting adrenal incidentaloma has been implicated in causing obesity, glucose intolerance/type 2 diabetes, hypertension, and dyslipidemia or the insulin resistance syndrome. Screening for Cushing's syndrome in this patient population, i.e., those with larger masses and/or potential signs or symptoms of hormonal hypersecretion, can be critical. Adrenalectomy should ameliorate insulin resistance as well as the vascular risk profile of these patients.

ADULT PRESENTING WITH A PEDIATRIC DISEASE. M. Bandara[1]; B.P. Sankarapandian[1]; S.K. Thambidorai[1]; S. Dhanireddy[2]; J. Derby[1]. [1]Creighton University, Omaha, NE; [2]Creighton University Medical School, Omaha, NE. *(Tracking ID #115703)*

LEARNING OBJECTIVES: 1. Identify the clinical manifestations of Henoch-Schonlein purpura. 2. Recognize the organ systems affected by the disease. 3. Demonstrate that pediatric diseases can present in adulthood.
CASE: A 21 year old white male with a 4 month history of bloody diarrhea and poly-arthritis presents to an outpatient clinic with pain, stiffness, swelling and purplish discoloration of the right ankle. These skin changes progressed to multiple purpuric lesions over the bilateral lower extremities. Erythrocyte sedimentation rate, urine analysis, rheumatoid factor, human leukocyte antigen B-27 and radiologic studies of the ankles were all normal. Skin puncture biopsy of these lesions showed evidence of leukocytoclastic vasculitis. IgA antigen was positive on the vascular wall confirming the diagnosis of Henoch-Schonlein purpura (HSP). The patient was then started on oral prednisone therapy. He responded well to the steroids, and they were subsequently tapered.
DISCUSSION: HSP is a subtype of Leukocytoclastic vasculitis which affects multiple organ systems. Skin involvement is seen in virtually all patients, manifesting as a palpable purpura in the lower extremities and the buttocks. Polyarthralgias are also a common clinical manifestation. Gastrointestinal symptoms are characterized by colicky abdominal pain, vomiting, diarrhea, and the passage of blood. Renal involvement is seen in almost 80% of the patients and has a nephritic urine sediment and moderate proteinuria. The presence of mesangial IgA on immunofluorescence microscopy is diagnostic. Less than 10% of the patients will progress to chronic renal failure and persistent hypertension. HSP has the highest incidence in children with a median age group of 5 years. Classic skin manifestations occurring early in the disease help diagnose HSP in the pediatric age group. Our case presented with bloody diarrhea demonstrating the need for physicians to be cognizant that HSP may initially manifest in atypical organ systems in adult populations. Steroids are the first line of treatment for this disease.

ALCOHOLIC HEPATITIS—A CAUSE OF FEVER OF UNKNOWN ORIGIN. M. Gaddamanugu[1]; F. Salahauddin[1]; M. Aiyer[2]. [1]University of Illinois at Peoria, Peoria, IL; [2]University of Illinois at Chicago, Peoria, IL. *(Tracking ID #117117)*

LEARNING OBJECTIVES: Identify alcoholic hepatitis as one of the causes of fever of unknown origin. Recognize the classic presentation of alcoholic hepatitis Discuss the diagnostic work up of fever in a patient presenting with alcoholic hepatitis.
CASE: A 52-year-old female with significant history of alcohol and IV drug abuse presented with 3-week history of jaundice, fever, and malaise. Past medical history was significant for hypertension and asthma. Review of systems was remarkable only for a 30 lb weight loss. Initial evaluation revealed markedly elevated liver enzymes, and anemia. Blood cultures, urine cultures and chest radiographs were normal. The diagnosis of alcoholic hepatitis was entertained. However patient was persistently febrile even 10 days after hospital admission. Exam revealed a cachetic

female with marked scleral icterus. Vital signs showed temp 102.3 F, B.P 98/52, RR 20. Abdominal exam revealed hepatosplenomegaly with minimal ascites. Patient underwent an extensive workup including CT scan of abdomen, pelvis and chest, gallium scan, bone marrow studies and temporal artery biopsy, all of which were normal. Her ANA, HIV and hepatitis panel were negative. Liver biopsy revealed alcoholic steatohepatitis. Over the course of 6 weeks of hospital stay, patient gradually deferveresed with supportive treatment and was discharged in stable condition
DISCUSSION: Malaise, fever, jaundice and tender hepatomegaly represent the classic syndrome of alcoholic hepatitis. However, the full syndrome occurs only in a minority of patients with alcoholic liver disease. In addition, the fever in alcoholic hepatitis is very modest usually less than 101 degree Fahrenheit. High temperatures warrant a work up for alternative diagnosis. This case represents a patient who presented with the classic syndrome of alcoholic hepatitis and persistent high fever all attributed to alcoholic hepatitis. Alcoholic hepatitis can be considered as a cause for fever of unknown origin.

ALTERED MENTAL STATUS AND AN ABDOMINAL MASS. L.B. Chun[1]; R.V. Liddicoat[1]. [1]Massachusetts General Hospital, Boston, MA. *(Tracking ID #115932)*

LEARNING OBJECTIVES: 1) To recognize the clinical manifestations of unmanaged renal failure 2) To understand the complications of decompressing a massively distended bladder
CASE: A 59 year old male presented with three months of nausea, altered mental status, difficulty urinating, and a 30lb weight loss. Physical exam revealed a pale, cachectic man with slowed speech, fetor uremicus, and a midline 20×20 cm, hard, nontender abdominal mass. Labs revealed a hematocrit of 15, potassium 5.0, HCO_3 8.6, BUN 243, creatinine 17, phosphorus 8.2 and iCa 0.81, and a reticulocyte count of 2.1. His abdominal CT revealed a markedly distended bladder, severe hydronephrosis, and an enlarged prostate. A foley catheter was placed and 1.7L of blood tinged urine was drained. A renal ultrasound after bladder drainage showed a 10×10 cm bladder mass and moderate hydronephrosis with no significant cortical thinning. Cystoscopy revealed over 4 units of malodorous blood clot in the bladder, a normal sized prostate, and markedly friable bladder walls. The clots were removed and bilateral ureteral stents placed. The patient continued to bleed from the bladder despite the use of desmopressin acetate and required 14 units of packed red blood cells over 9 days to increase his hematocrit from 15 to 32. Despite expedient removal of the patient's obstruction, the patient did not regain full renal function and required dialysis.
DISCUSSION: This case illustrates an unusual cause of renal failure as well as many of its complications. It also demonstrates the problems that can arise from decompression of a massively distended bladder. The electrolyte abnormalities commonly seen in untreated renal failure include uremia, hyperkalemia, metabolic acidosis, and hyperphosphatemia. Nausea, altered mental status, anorexia, and fetor uremicus are classic signs of uremia. High levels of blood urea nitrogen can also inhibit platelet action and lead to excessive bleeding. In addition, hypocalcemia and anemia can result from decreased 1,25- OH vitamin D and erythropoetin production. Acute decompression of the bladder can result in bleeding through re-expansion of previously compressed bladder wall veins. This is difficult to ameliorate through intermittent clamping. Reflex vasodilation occurs with bladder decompression leading to hypotension, particularly in hypovolemic patients. Although it has been suggested that more gradual bladder decompression can reduce hypotensive episodes, this is of unproven efficacy. Post-renal causes of acute renal failure account for 5–15% of cases of renal failure cases, the vast majority due to BPH. Early recognition of renal failure secondary to obstruction and prompt relief of the obstruction are important in preventing permanent renal damage. Normal urine output does not rule out obstructive causes of renal failure. Most recovery of renal function occurs within 7–10 days after relief of the obstruction.

AN ESSENTIAL CASE OF NON-ESSENTIAL HYPERTENSION. M. Guidry[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117468)*

LEARNING OBJECTIVES: 1. Recognize the symptoms and signs that suggest secondary hypertension 2. Diagnose adrenal adenoma using clinical and radiographic criteria
CASE: A 31-year-old man presented with five days of shortness of breath. His baseline dyspnea on exertion increased from shortness of breath at five blocks, to walking 30 feet. His one-pillow orthopnea increased to sleeping for minutes at a time sitting straight up in bed; he developed new onset paroxysmal nocturnal dyspnea and pedal edema. The shortness of breath was associated with a cough productive of clear sputum and fatigue. He has a past history of hypertension and systolic dysfunction. His out-patient medications included clonidine, metoprolol, and K-dur 40 meq. His blood pressure was 195/126 mmHg, pulse 80 beats/min, respiratory rate 26 breaths/min, and temperature 38.3°C. He had eight cm of JVD, an S3 gallop, and bibasilar crackles. Despite his supplementation, his potassium was 2.7 mg/L. He had LVH on EKG and bilateral cephalization on chest X-ray. He was admitted with the diagnosis of a CHF exacerbation and treated with diuresis and blood pressure control. The inability to control his blood pressure despite several medications and the continuing potassium supplementation requirements in the absence of a diuretic prompted an evaluation for the diagnosis of primary hyperaldosteronism. This was confirmed with a serum aldosterone of 21.3 (normal <16) and a rennin level of <0.8. An abdominal/pelvic CT showed an 18×14 mm round adrenal mass with central attenuation.
DISCUSSION: Primary hypertension is so common as to mask the red flags of secondary hypertension. A search for secondary causes of hypertension should be initiated when faced with any of the following: hypertension in youth, hypertension requiring multiple medications, episodes of flash pulmonary edema or unexplained congestive heart failure, hypertension with unexplained electrolyte abnormalities, and any of the above coupled with an incidentaloma found on CT. The patient in this case presented was diagnosed with hypertension at the age of 26, and his blood pressure was poorly controlled while being treated with multiple medications. He required potassium supplementation despite not being on potassium-wasting medications. He was hospitalized twice for unexplained congestive heart failure and had a benign adenoma was discovered on abdominal CT. Following the removal of his adrenal adenoma, his hypertension resolved.

AN INTERESTING CASE OF HYPERTHYROIDISM IN PREGNANCY. N. Mehta[1]; R.O. Powrie[2]; L. Larson[2]; K. Rosene-Montella[2]. [1]Women and Infants' Hospital, Providence, RI; [2]Brown University, Providence, RI. *(Tracking ID #116673)*

LEARNING OBJECTIVES: LEARNING OBJECTIVES: 1) Correctly interpret thyroid function tests (TFTs) in pregnancy 2) Review the relevant differential diagnosis and management of hyperthyroidism in the pregnant patient.
CASE: We were asked to consult on a 22-year-old woman at 18 weeks gestation for elevated blood pressure and abnormal TSH. She had been healthy until 3 months prior to presentation when she first noted increasing lower extremity edema. She had also noted blurry vision and headache in the preceding week. In the emergency room, she was noted to be tachycardic (102/min) and hypertensive (190/110 mmhg). Her physical exam was unremarkable except for a fine tremor of the hands and 3+ pitting pedal edema. A urine dipstick revealed 3+ proteinuria. Lab abnormalities were consistent with preeclampsia. A TSH level was found to be <.01 U/ml. Her full thyroid function panel was consistent with hyperthyroidism. She was admitted with a diagnosis of thyrotoxicosis and severe preeclampsia at early gestational age. A fetal ultrasound revealed multiple congenital anomalies consistent with triploidy. The patient chose to terminate the pregnancy. Placental pathology was consis-tent with a partial hydatiform mole. Postpartum, the patient's tachycardia, hypertension and tremor resolved within a day. A -hCG level on the third postpartum day was still elevated at 42,700 u/ml. At her 6-week postpartum check, the patient was well, with normal thyroid function tests and -hCG level <5 u/ml.
DISCUSSION: Hyperthyroidism is the second most common endocrine problem encountered in pregnant women. Recent evidence has emphasized the importance of a euthyroid state in pregnancy for favorable maternal and fetal outcomes. Internists should be prepared to diagnose and manage thyroid disease in pregnancy. Changes in serum concentrations of thyroid hormones and thyroxine-binding globulin during pregnancy make the interpretation of TFTs in pregnancy difficult. The expected changes in TFTs with each trimester and their relationship to hCG levels will be dis-cussed. The pathophysiology, clinical presentation and management of hyperthyroidism in pregnancy will be discussed. Typical causes of hyperthyroidism in pregnancy, including Grave's disease and Hashimoto's thyroiditis will be reviewed and differentiated from hyperthyroidism associated with gestational trophoblastic disease and hyperemesis gravidarum.

AN OVERLOOKED DIAGNOSIS IN THE ELDERLY. C.L. Cullinane[1]. [1]Boston Medical Center, Boston, MA. *(Tracking ID #116564)*

LEARNING OBJECTIVES: 1. To enhance clinician awareness of the need for HIV testing in the elderly. 2. To recognize the importance of a complete history. 3. To recognize the need for further research on HIV prevention and treatment among the elderly.
CASE: A 77 year old Cape Verdean-male was admitted with trigeminal zoster. Past medical history was significant for hypertension, pneumonia with sepsis, recurrent urinary tract infections, anemia of chronic disease, malnutrition, ischemic cardiomyopathy, and renal insufficiency. He was a nonsmoker and denied IVDU or prior transfusions. His wife had recently died of unknown causes. Three years prior to admission, a persistently elevated total protein prompted an evaluation for multiple myeloma. Bone marrow biopsy revealed a polyclonal gammopathy and a skeletal survey was negative. Subsequently a leukemia and lymphoma panel was unremarkable. Prior to admission he was being followed by a hematologist for Monoclonal Gammopathy of Undetermined Significance. As an inpatient with trigeminal zoster he tested positive for HIV with a CD4 count of 70 and a viral load of 38,386, suggesting advanced disease. HAART therapy was instituted after discharge with suppression of his viral load. He died of an arrhythmia almost 2 years later in the setting of decompensated heart failure.
DISCUSSION: Individuals over 50 years of age account for up to 10% of AIDS cases reported to the CDC, a number that is expected to rise as a result of improved survival of patients with treated disease. Older adults are less likely to use a condom during sexual intercourse or to participate in HIV testing. Older adults with HIV infection are more likely to be diagnosed late in disease due to delayed recognition, they experience progression more quickly, and they survive for shorter periods of time than their younger counterparts. Co-morbidities often complicate management and controlled data on tolerability and responses to HAART are lacking. The possibility of HIV infection must be considered among elderly patients with clinical features of immunodeficiency in order to avoid delay in counseling and treatment. This case emphasizes the importance of conducting the sexual history, regardless of age, and it underscores the need for age-appropriate prevention and treatment strategies.

AN UNCOMMON CAUSE OF CIRRHOSIS, OR IS IT? S. Evans[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117456)*

LEARNING OBJECTIVES: 1. Recognize the complications of jejeunoileal bypass prior to the onset of liver failure 2. Recognize the presentation of vitamin deficiency.
CASE: A 62 year-old white woman presented with a two-year history of intermittent jaundice and a three-week history of increasing abdominal girth. She had a history of jejeunoileal bypass in 1978 for morbid obesity. She had been admitted fourteen months prior with a hemoglobin of 4 g/dl, an elevated bilirubin, and a prolonged prothrombin time. She was diagnosed with B12 deficiency and malabsorption of fat soluble vitamins. A CT at that time showed diffuse fatty infiltration of the liver. On exam she had peripheral wasting, spider angiomas, shifting dullness, jaundice, and peripheral edema. On admission, she had a prolonged prothrombin time, a normal hemoglobin, an elevated bilirubin, and low cholesterol levels. An abdominal CT revealed large volume ascites and a cirrhotic liver. Paracentesis was consistent with portal hypertension as an etiology for the ascitic fluid. A liver biopsy showed severe steatosis with cirrhosis.
DISCUSSION: Jejeunoileal bypass has been a common treatment for morbid obesity, but has rapidly lost favor due to its severe long term consequences, including arthritis, B12 deficiency, cirrhosis, and chronic diarrhea. Patients who received this procedure are now coming to the attention of physicians because of cirrhosis. Unfortunately, this patient was regularly followed in the medicine clinic but did not undergo hepatic evaluation because her symptoms were attributed to the altered physiology of bypass. The intermittent episodes of jaundice following the correction of the B12 deficiency suggested another underlying pathology. Similarly, the prolongation in the prothrombin time following replacement of vitamin K should have been a clue that there was impaired hepatic synthetic function. The CT scan of the abdomen was also potentially confusing: because of the morbid obesity, hepatic steatosis was attributed to NASH. Prompt recognition of this complication of jejeunoileal bypass is important to refer patients to a hepatologist to prevent the expected fifty percent mortality after the development of ascites. At present our patient is awaiting liver transplant.

AN UNEXPECTED CAUSE OF TREMOR AND MYOCLONUS. K. Nashar[1]; E. Anish[1]; N. Busis[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116914)*

LEARNING OBJECTIVES: 1. To recognize Creutzfeldt-Jakob Disease (CJD) as a cause of tremor and myoclonus. 2. To appreciate the value of performing a brain biopsy to confirm a diagnosis of CJD.
CASE: A 70 year-old female presented with a 6-week history of abnormal motor movements. Initially, she developed an action tremor in the right arm. After 4 weeks, the left arm also became affected and she began to experience myoclonus in both arms. On physical exam, the patient appeared well-nourished and was afebrile. Her Mini-Mental Status Exam score was 30/30. CNs II-XII were intact. Action-induced myoclonic jerks were noted in both arms (R > L). Strength was 5/5 in all extremities. Sensory testing was normal. DTR's were +2 and symmetric. Romberg test was negative. Cerebellar testing was normal. A brain MRI was performed revealing "gyriform" signal changes in the parietal-occipital region bilaterally. This raised suspicion for a diagnosis of encephalitis. As a result, a lumbar puncture was performed that showed no evidence of pleocytosis or increased protein. Over the next 4 weeks, the patient developed worsening neurological changes, including: dysarthria, ataxia, and increased myoclonus. A repeat brain MRI was unchanged. An EEG was normal. Serological studies looking for evidence of an autoimmune disease were negative. Anti-Hu and anti-Yo antibodies were negative. Since a diagnosis remained elusive and the patient's clinical condition continued to deteriorate, a brain biopsy was performed. The pathology revealed spongiform changes consistent with CJD. The patient's neurological impairment progressed, including the development of dementia, and she died 2 weeks later.
DISCUSSION: CJD is a degenerative disease of the central nervous system that is caused by infectious proteins called prions. Various forms of CJD have been recognized including: sporadic, familial, iatrogenic, and new-variant CJD. Most patients with CJD have the sporadic form and present with some degree of cognitive impairment and tend to progress rapidly to a state of dementia. A myriad of other neurological signs and symptoms may develop throughout the course of the illness with >90% of patients developing myoclonus. A typical clinical course may suggest CJD, but confirming this diagnosis can be challenging. Blood and CSF analyses can help exclude other conditions that may mimic CJD. Most patients demonstrate characteristic periodic complexes on EEG and/or abnormal signal patterns on MRI, but these findings are nonspecific. The gold standard for diagnosis remains brain biopsy. This case is unique in that cognitive impairment did not develop until extremely late in the course of the illness. It also emphasizes how an atypical clinical presentation, the absence of the more common EEG and/or MRI abnormalities, and a lack of risk factors for prion disease, can result in the delay of a diagnosis of CJD being made.

AN UNUSUAL CASE OF ACUTE SICKLE HEPATIC CRISIS. D. Zell[1]; E. Choe[1]; D. Spruill[1]. [1]Tulane Health Sciences Center, New Orleans, LA. *(Tracking ID #117441)*

LEARNING OBJECTIVES: 1. Recognize the common and uncommon abnormal laboratory findings associated with sickle cell disease. 2. Recognize hepatitis as a complication of vaso-occlusive crisis.
CASE: A 36 year-old woman presented with one week of worsening pain in her back, lower extremities, and nauseaand vomiting. She had a history of sickle cell anemia and a recent pulmonary embolism Her vital signs were normal; she had hepatomegaly and tenderness in the right upper quadrant. There was also pain in her back and lower extremities. Her alkaline phosphatase was 71, total bilirubin 1.3, AST 1968, and ALT 2088. Her viral hepatitis panel was negative; she denied alcohol use. Her acetaminophen and salicylate were normal. She was treated for five days with intravenous fluids and pain medication, and her liver enzymes decreased with resolution of her abdominal pain. She returned ten days later; her has AST (53) and ALT (67) has both decreased.
DISCUSSION: Sickle cell disease is characterized by arterial occlusions due to micro-thrombi from the sickled cells. Peripheral vaso-occlusion is the most common since systemic vascular resistance is higher in these vessels and they are of smaller caliber. The result is the typical bone and muscle pain of a sickle cell crisis. Solid organs can also be involved, however, resulting in myocardial infarction, stroke, renal impairment and, in this case, ischemic hepatitis. Although ischemic hepatitis is seen in only ten percent of all sickle patients, physicians should be vigilant for the complication, especially in the setting of right upper quadrant pain, hepatomegaly, jaundice, and a low grade fever. The usual laboratory findings are elevated AST and ALT levels. Treatment is supportive care with IVF and pain control; hepatitis that does not resolve warrants exchange transfusions.

AN UNUSUAL CAUSE OF FEVER IN AN HIV+ PATIENT. R. Gardner[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117316)*

LEARNING OBJECTIVES: 1. Diagnose Multicentric Castleman's Disease. 2. Recognize the association between Castleman's Disease, HHV-8, and HIV.
CASE: The patient is a 39 year-old HIV+ man (CD4 23) who presents with worsening fevers and increasing abdominal pain for 1 week. He reports onset of intermittent fevers 18 months ago; 1 week ago, the fevers began to occur daily, accompanied by abdominal pain, headaches, back pain, and nausea. The patient recalled a similar symptom constellation 7 months before that resolved spontaneously. He has Karposi's Sarcoma (KS) and takes abacavir/3TC/AZT, lopinavir, tenofovir, azithromycin, and TMP/SMX. On admission the patient was afebrile with normal vital signs. His exam was remarkable for axillary and inguinal lymphadenopathy (LAD); a soft abdomen, mildly tender to palpation diffusely; KS lesions on the left lower extremity. Laboratory studies showed anemia but were otherwise normal. While hospitalized the patient spiked daily fevers, unrelated to antiretroviral administration. Blood, urine, CSF and MAC cultures all were negative, as were an influenza panel, monospot test, and cryptococcus serology. Chest radiography and head CT were normal. Abdominal CT revealed splenomegaly and diffuse LAD. Biopsy of an axillary lymph node showed Castleman's disease (CD) and stained positive for human herpes virus 8 (HHV-8).
DISCUSSION: The differential diagnosis for fever and LAD, already extensive, is even broader in patients with advanced HIV. In this case, the leading diagnoses included disseminated TB, MAC, and non-Hodgkin's lymphoma. CD, which also manifests with fever and LAD, is a rare lymphoproliferative disorder which has received renewed interest as increasing case reports link it to HIV and HHV-8. The unicentric form of CD is isolated, usually asymptomatic, and often discovered incidentally. Not typically associated with HHV-8, it can be cured with surgical resection. Multicentric CD (MCD), as seen in this patient, has systemic symptoms. Effective therapeutic options are limited, contributing to a poor prognosis. The disease manifests differently in patients with and without HIV and HHV-8. HIV+ patients with MCD are universally positive for HHV-8, and are more likely to have a rapidly progressive course with a shorter survival. New studies suggest that HHV-8 may contribute more to this pattern than HIV. Patients typically die of fulminant infection or associated malignancies. Optimal treatment is unclear given the rarity of the disease, the variety of clinical presentation, and the paucity of literature. Most therapies offer a temporary response with relapse after discontinuation, but combination chemotherapy and rituximab show promise for more durable responses. Castleman's disease is a rare disorder with a clinical course shaped by the presence of HIV and HHV-8; it should considered in any HIV+ patient with KS, fevers, and lymphadenopathy.

AN UNUSUAL CAUSE OF RECURRENT RHABDOMYOLYSIS. D.L. Stern[1]; R. Warrier[2]; J. Fixley[2]; E. Adickes[2]; J. Derby[3]. [1]Creighton University Medical Center, Omaha, NE; [2]CUMC, Omaha, NE; [3]Creighton University, Omaha, NE. *(Tracking ID #115653)*

LEARNING OBJECTIVES: 1. Recognize that viral infections are a common cause of rhabdomyolysis. 2. Recognize that a muscle biopsy is the gold standard for diagnosis of rhabdomyolysis. 3. Realize that congenital diseases can have initial presentation in adulthood.
CASE: Case Presentation: A 23 yo AA girl with PMH of asthma was admitted to the hospital with a 3 day history of generalized muscle pain. She reported upper respiratory tract symptoms approximately one week prior to admission. She denied muscle weakness, changes in urine color or urine output. She had no history of trauma, no new meds, seizures, or extraordinary physical exertion. She had been admitted two other times with similar symptoms in the past four years. These episodes were treated as rhabdomyolysis believed to be precipitated by viral illnesses. Physical exam was unremarkable except she displayed generalized muscle tenderness without any objective muscle weakness. Her CPK was 35,136 with a serum myoglobin 3207. Other labs of significance included potassium of 3.9, BUN/Cr of 13.0/1.0. Phosphorus was 4.1, AST was 133, ALT was 64, while the remainder of her liver function tests were normal. Complete blood count was normal. A urinalysis showed a myoglobin of 32,300. Free carnitine, acyl carnitine, total carnitine, pyruvate and lactate were all within normal limits. A diagnostic muscle biopsy was performed

which revealed Nemaline myopathy. Patient was treated for rhabdomyolysis and was asymptomatic with low levels of CPK at the time of discharge.
DISCUSSION: Discussion: Nemaline myopathy is a congenital muscle disease with a wide spectrum of phenotypes, ranging from forms with neonatal onset and fatal outcome to asymptomatic forms. Muscle biopsy reveals atrophy, variation in muscle fiber size and a lattice like appearance typical of nemaline rod bodies emanated from the Z-discs of affected muscle fibers. Adult-onset cases usually manifest with symptoms as a child. Our patient denied any problems as a child and was actually was very active in athletics. Most case reports of adult-onset cases are of patients with progressive proximal weakness or generalized weakness. These patients had either a normal or slightly elevated CPK. None of these case reports displayed such a markedly elevated CPK or recurrent rhabdomyolysis as manifested in our patient. We believe that this is the first case report of nemaline myopathy presenting as recurrent rhabdomyolysis.

AN UNUSUAL ETIOLOGY OF LEFT INGUINAL LYMPHADENOPATHY IN A 53 YEAR OLD MAN. D. Takahashi[1]; M.M. Schapira[1]; S.R. Pandit[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #116307)*

LEARNING OBJECTIVES: 1. Recognize unusual etiologies of localized lymphadenopathy. 2. Recognize clinical features of Castleman's disease. 3. Determine when there is a need for biopsy in patients presenting with lymphadenopathy.
CASE: A 53 year old Caucasian male presents with left groin lump and 10 kg weight loss over a period of one month. The lump is painful to touch and has been progressively enlarging in size over the past month. The patient also complains of generalized malaise and night sweats. His past medical history is significant for essential hypertension. The physical exam reveals an ill-appearing, 72 inch, 81 kg male with stable vital signs. The general physical exam is unremarkable except for a left sided groin mass measuring 2 –3 cm in size. The mass is discrete, firm and mobile with moderate tenderness to touch and not associated with erythema or induration. Laboratory exam initially reveals a normal CBC and differential and normal electrolytes. An ultrasound of the groin mass reveals clusters of enlarged inguinal lymph nodes, the largest of which measures 3.6 cm. A CT scan of the chest, abdomen, and pelvis reveals no additional lymphadenopathy. An inguinal lymph node biopsy was done, with initial pathology impression being a low grade lymphoma, but a second opinion from a reference laboratory was reported as follicular hyperplasia with expanded mantle zones, atretic germinal centers and monotypic lambda expression by plasma cells (Castleman's disease like changes).
DISCUSSION: Lymphadenopathy is often a diagnostic challenge for general internists. There is a rather large list of possible etiologies, some of which require immediate attention and management. Definitive diagnosis is often obtained by biopsy, which is invasive and not necessary in some cases. The role of general internists is crucial to identifying patients who require lymph node biopsy through a detailed history and physical exam. Age, location, duration, and associated signs and symptoms aid in deciding when a biopsy is necessary. The presence of enlarging lymphadenopathy and systemic symptoms in this patient indicate the need for a lymph node biopsy. Castleman's disease or angiofollicular lymph node hyperplasia is an uncommon etiology of lymphadenopathy that was first described by Benjamin Castleman. Castleman's disease can present as localized lymphadenopathy (unicentric Castleman's disease) or generalized lymphadenopathy (multicentric Castleman's disease). These two forms of disease carry different prognoses. Unicentric Castleman's disease, as was found in this case, is potentially curable with surgical excision of lymph node. Multicentric Castleman's disease, in contrast, has a median survival of only 8 to 14 months. Clinically, it is difficult to differentiate Castleman's disease from other more malignant lymphoproliferative disorders. Most cases of unicentric Castleman's disease are asymptomatic, the median age of the patient is approximately 35, it occurs equally in males and females, and the median size of the lesion is 5 to 9 cm. Unicentric Castleman's disease is of two subtypes: hyaline-vascular (90%) and the plasma cell type. The hyaline-vascular type is considered a reactive chronic lymphoid hyperplasia. The plasma cell type is considered to have an inflammatory pathogenesis, either through chronic antigenic stimulation (i.e. infection) or via an autoimmune mechanism. A plasma cell dyscrasia which includes polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy and skin changes (POEMS syndrome) is sometimes associated with Castleman's disease. Interleukin-6 has been defined to have a role in the pathophysiology of this disease, and the systemic manifestations of Castleman's disease. In contrast, multicentric Castleman's disease usually occurs in patients with a median age between 52 and 65, and presents with systemic symptoms such as fever, malaise, weight loss, and peripheral lymphadenopathy. Hepatomegaly and splenomegaly are also common findings at presentation. Mediastinal and abdominal lymphadenopathy is less common at presentation although approximately 50% will progress to involve mediastinal or abdominal lymph nodes.

ANAPHYLACTIC REACTION TO TOPICAL LIDOCAINE. A. Pleister[1]; J.L. Sebastian[1]; M. Glisczinski[2]. [1]Medical College of Wisconsin, Milwaukee, WI; [2]Clement J. Zablocki VA Hospital, Milwaukee, WI. *(Tracking ID #116735)*

LEARNING OBJECTIVES: To recognize the potential for topical anesthetic agents to cause severe allergic reactions, including anaphylaxis, in susceptible individuals.
CASE: On the day of admission, a 73-year old man underwent a surveillance cystoscopy for transitional cell carcinoma of the bladder and dilation of a recurrent urethral stricture. During an uneventful 30-minute outpatient procedure, the patient received no medications other than 20 cc of a 2% lidocaine gel that was used as a topical anesthetic. Within 30 minutes of leaving the cystocopy suite, the patient developed intense pruritis and a feeling that he was about to pass out. The patient's wife noticed that he was markedly weak and pale and she immediately brought him to the Emergency Room. Initial physical exam revealed a diaphoretic man with a blood pressure (BP) of 61/34 and a weak pulse at 76 beats/minute. The chest and heart exams were normal but a diffuse urticarial skin rash was noted on the trunk and extremities. The patient's BP responded to the administration of two liters of IV normal saline and 50 mg of IV diphenhydramine. Additional medical history revealed that the patient had a previous allergic reaction to Bactrim that caused a similar urticarial skin rash. His active prescription list included propylthiouracil, lisinopril, felodipine and simvastatin for treatment of hyperthyroidism, hypertension and hyperlipidemia. None of these medications were new and the patient specifically denied use of any over-the-counter medications, supplements or nutraceuticals. A literature search determined that the formulation of topical lidocaine used in this case contained sodium metabisulfite, a sulfite responsible for causing allergic type reactions, including anaphylaxis, in susceptible individuals. The patient's chart was subsequently marked ALLERGIC TO TOPICAL LIDOCAINE and an adverse drug reaction form was filed with the hospital pharmacy. After a brief period of hospital observation, the patient was discharged home in stable condition and an outpatient allergy appointment was scheduled for further evaluation and sensitivity testing.
DISCUSSION: Although usually considered a benign agent, some commercially available formulations of topical lidocaine contain additives that have the potential to cause serious allergic reactions in susceptible individuals. This vignette reinforces the importance of obtaining a thorough allergic history before beginning any new medication or using a new formulation of a previously administered medication. Systemic absorption of topically applied medications can cause serious, and potentially life-threatening, complications.

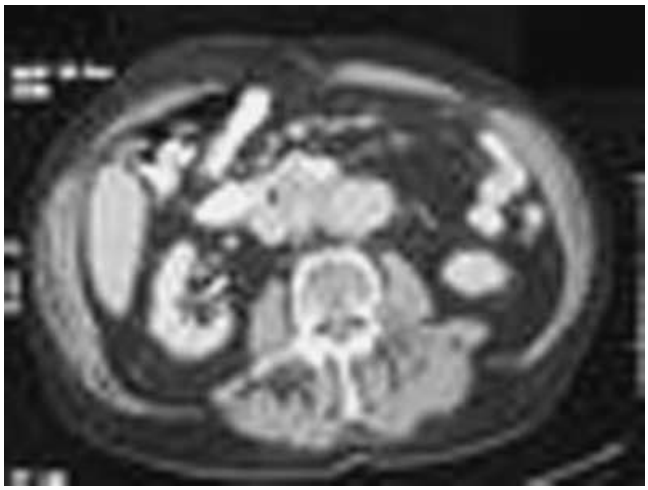
ANEMIA DUE TO LAMOTRIGINE. N. Milojkovic[1]; M. Elnicki[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116715)*

LEARNING OBJECTIVES: Learning Objectives: 1. Recognize possible causes of anemia in a young woman. 2. Recognize the hematologic side effects of Lamotrigine.
CASE: A 28 yo African American female with a history of seizures was admitted for worsening shortness of breath and weakness. Review of systems was otherwise negative. Her seizures were partial complex seizures controlled with Lamotrigine and Levetiracetam. She had been seizure free for over 2 years. Her family history was positive for thyroid disease and iron deficiency anemia. She does not use alcohol, tobacco or street drugs. The patient's vital signs were normal except for a regular heart rate of 108, and her physical exam was otherwise completely normal. Laboratory evaluation revealed Hemoglobin of 4 mg/dL, Hematocrit 8.8%, MCV 93 fL, MCH 32 pg, MCHC 34 g/dL, Platelets 117.000/mcL, WBC 3.000/mcL with 45% neutrophils, 2% bands, 42% lymphocytes, 3% monocytes, 8% nucleated RBCs, reticulocyte count 5%. Serum iron was 150 μg/dL, transferrin saturation 60% and ferritin 600 ng/mL. LDH, haptoglobin and indirect bilirubin were normal as well as her TSH, B12, folate, LFTs and sickle cell prep. Viral antibody titers were negative. Bone marrow biopsy showed trilineage hematopoiesis, marked erythroid predominance and marked megaloblastic changes.
DISCUSSION: In this patient with anemia and seizure disorder, the differential diagnosis of severe anemia includes: 1. Hypoproliferative bone marrow (e.g. medication induced, viral infections, leukemic infiltration) 2. Maturation disorders including thalassemia, sideroblastic anemia; B12 or folate deficiency. 3. Hemorrhage or hemolysis. We can narrow our differential diagnosis based on the initial negative evaluation. The patient's bone marrow has a poor reticulocyte response to this degree of anemia suggesting inefficient erythropoiesis. Viral infections affecting the bone marrow, particularly Parvo B19, can cause an aplastic crisis. However, her parvovirus antibodies were negative. The bone marrow biopsy with evidence of megaloblastic picture in the setting of normal B12, folate can be attributed to medications, particularly to Lamotrigine. Erythroblastopenic crisis secondary to Lamotrigine has been described. Inhibition of dihydrofolate reductase is probably the mechanism of erythroblastopenia and it occurs more often in patients with underlying abnormal hematopoiesis, such as heterozygous [beta]-thalassemia. That brings the question of possible underlying abnormality of hematopoiesis in our patient and need for further work up such as hemoglobin electrophoresis. Treatment with folinic acid results in complete resolution of the erythroblastopenic crisis. Using this therapeutic approach, long-term treatment with Lamotrigine can be administered without any further complication. However, because of the severity of anemia in our patient Lamotrigine was discontinued and her hemoglobin recovered.

AORTODUODENAL FISTULA – A DIAGNOSTIC CHALLENGE. N. Nathan[1]; K. Muniyappa[1]; S. Parikh[1]; H. Friedman[1]. [1]St. Francis Hospital, Evanston, IL. *(Tracking ID #116043)*

LEARNING OBJECTIVES: 1. A high index of suspicion for ADF based on history and physical examination should be maintained in the presence of equivocal or even negative diagnostic tests. 2. The finding of a primary aortoduodenal fistula in a patient with previous aortic aneurysm repair is extremely rare.
CASE: An 84-year-old male with past medical history of hypertension, congestive heart failure, aortic valve replacement (on warfarin) and AAA repair, presented with one episode of bright red blood per rectum. On physical examination, he was afebrile and vitals were stable. Orthostatic hypotension was absent. Hemoglobin was 12 gm/dL, BUN was 55 mg/dL, serum creatinine was 1.8 mg/dL and INR was 2.99. An emergent EGD revealed no active bleeding. An abdominal CT scan with IV contrast revealed a saccular aneurysm arising from the infrarenal abdominal aorta with contrast entering the distal duodenum. This was highly suspicious for an aortoenteric

fistula. Vascular surgery was immediately consulted. The patient suffered another episode of bright red blood per rectum with massive exsanguination and died despite aggressive resuscitation efforts. An autopsy evidenced a fistulous communication between the atherosclerotic aneurysm of orta and the third part of the duodenum, proximal to the suture line of the previous vascular graft. This was consistent with a primary aortoduodenal fistula, as defined below, and was quite unexpected.the a DISCUSSION: A primary aortoduodenal fistula (PADF) is defined as a communication between the native aorta and the duodenum. In contrast, secondary aortoduodenal fistulas (SADF) arise between the suture line of a vascular graft and the duodenum and are far more common than PADFs. The most frequent cause of PADF is atherosclerosis. The triad of pain, GI bleeding and an abdominal mass is seen in only 40% of patients. The initial bleeding, commonly known as a `herald bleed', is often transient and self limiting owing to thrombus formation. EGD is useful to refute other causes of GI bleeding, but does not rule out ADF, which is often in the distal duodenum. Abdominal CT is specific but has low sensitivity for ADF. Treatment consists of emergent exploratory laparotomy with graft repair of the aorta and closure of the fistula tract. A high index of clinical suspicion, based on history and physical examination, is the key to correct diagnosis. Although the suspicion for SADF was high, the presence of a PADF in our patient makes this case unique.



APLASTIC ANEMIA IN PREGNANCY. V.R. Patel[1]; N. Le[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #116919)*

LEARNING OBJECTIVES: 1) Review the presentation of aplastic anemia in pregnancy 2) Review the possible pathogenesis and current treatment options of aplastic anemia in pregnancy.
CASE: A 26 year old G2P1 16 week pregnant African American woman with a history of sickle cell trait and iron deficiency anemia was referred by her doctor for an abnormal CBC: WBC 4.1 (62N, 2B, 31L, 5M), Hgb. 9.1 (MCV 98.5) and platelets of 11K. The patient reported fatigue for several months and easy bruising for 2 years. The patient had a prior uncomplicated pregnancy with a vaginal delivery on 10/01 except for iron deficiency anemia and thrombocytopenia (70K). The patient's vital signs included a temperature of 98.1F, BP 109/64, and HR 88. On exam there was a 2 cm. ecchymosis on her left thigh and numerous petechiae on her chest. Pertinent laboratory results included normal PT, PTT, folate, B12, TSH. Her reticulocyte index was .6, Ferritin 14, and Iron Sat. 31%. Bone marrow biopsy revealed markedly hypocellular marrow (20%) with severely decreased megakaryocyte and myeloid cell content and no tumors or other abnormalities. She was treated successfully with multiple platelet and blood transfusions, along with cyclosporine, antithymocyte globulin (ATG), and corticosteroids.
DISCUSSION: Aplastic anemia (AA) in pregnancy is rare, but has long been recognized. Currently, there is no proven association between pregnancy and AA. Fleming postulated a hormonal mechanism due to an imbalance between erythropoietin and placental lactogen which both increase erythropoiesis and estrogens which inhibit hematopoiesis. This idea could be supported by the spontaneous resolution of aplasia in 1/3 of cases after delivery. Historically, AA results in a high maternal and fetal morbidity and mortality. However, in recent years with modern supportive therapy, maternal mortality has been 15% and more than 90% of patients survive in remission. Treatment options depend on the timing of AA during pregnancy and its severity. AA occurring early in pregnancy may be treated by termination of pregnancy and if necessary a bone marrow transplant. AA occurring in the 2nd half of pregnancy should be treated with ATG +/– cyclosporine and supportive care. ATG is effective for those with non-severe AA who are transfusion dependent and for severe AA in the absence of an HLA compatible sibling. ATG used in combination with cyclosporine results in a 50% survival rate. Supportive care remains the main treatment and includes the minimization of transfusions to decrease the likelihood of sensitization. Transfusion with HLA-matched or single-donor platelets is recommended.

ARTERIAL EMBOLUS PRESENTING AS ACUTE ABDOMINAL PAIN. M. Roschewski[1]. [1]Eisenhower Army Medical Center, Augusta, GA. *(Tracking ID #116713)*

LEARNING OBJECTIVES: 1. Recognize challenges of making diagnosis of arterial embolus 2. Identify risk factors for arterial emboli 3. Recognize management difficulty in patients with unidentifiable cause of arterial emboli.
CASE: 30 y.o. African-American female without significant medical history presented to the emergency department after experiencing the acute onset of sharp, right-sided abdominal pain. Contrasted abdominal CT revealed the presence of a wedge-shaped infarct in the right renal cortex consistent with infarcted tissue. Magnetic resonance imaging of the kidney and its associated arteries confirmed the diagnosis of arterial embolism. Transesophageal echocardiogram and renal arteriogram was unable to identify a source of embolus. Extensive laboratory evaluation to identify an inherited or acquired thrombophilia was negative. Despite the uncertain etiology of the renal infarction, our patient was placed on warfarin anticoagulation indefinitely. Six months later our patient presented again with acute onset of chest pain and EKG changes of her inferior leads. Her cardiac troponin enzymes were elevated, revealing ongoing myocardial infarction. Coronary arteriography revealed the presence of a thrombus in her right coronary artery without associated atherosclerotic disease.
DISCUSSION: Systemic arterial emboli have variable presentations that range from asymptomatic to the acute onset of abdominal pain mimicking surgical emergencies. Arterial embolic phenomena, in general, most often affect older persons with mural thrombus from atrial fibrillation or erosive atheromatous disease following aortic manipulation. Such phenomena have, however, also been described as the presenting feature of inherited and acquired thrombophilias such as antiphospholipid antibody syndrome, hyperhomocysteinemia, and paroxysmal nocturnal hemoglobinuria. This case illustrates the challenge in making diagnoses as well as long-term management in patients who present with unusual embolic phenomena of arterial origin. Despite advances in our understanding of thrombophilias, up to 20% of patients will remain undiagnosed and be subjected to years of anticoagulation without well-studied outcomes.

AUTOIMMUNE HEPATITIS MASQUERADING AS HEMOCHROMATOSIS. B. Konicek[1]; J. Franco[1]; J.L. Sebastian[1]; D. Torre[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #116751)*

LEARNING OBJECTIVES: 1) Recognize the clinical presentation and differential diagnosis of autoimmune hepatitis (AIH) and 2) recognize iron overload as a condition that can accompany many types of acute liver injury.
CASE: A 57-year-old Caucasian man with a history of type 2 diabetes and alcohol use of 40 g/day presented with a one-week history of anorexia, fatigue and dark-colored urine. He denied any history of fever, chills, abdominal pain, pruritis, hematuria, myalgias or change in bowel habits. There was no past history of HIV disease, blood transfusions, IV drug use, exposure to sick contacts or excessive use of acetaminophen. Because the patient was adopted, no family history was available. Physical exam was remarkable for normal vital signs, tanned skin, scleral icterus and hepatomegaly. Admitting lab tests revealed a total bilirubin of 19.2 mg/dl, AST = 3093 U/L, ALT = 2092 U/L, alkaline phosphatase = 171 IU/L, protime = 14.1 seconds, ferritin = 7497 ng/ml and ceruloplasmin = 36 mg/dl. Viral hepatitis titers were all negative as were the titers for ANA and anti-mitochondrial antibodies. Anti-smooth muscle antibody titers were mildly elevated at 1 : 80. An abdominal CT scan demonstrated diffuse hepatosplenomegaly without dense changes in the liver parenchyma or mineralized lymph nodes typical of hemochromatosis. Liver biopsy revealed a minimal amount of stainable iron within hepatocytes and thin, bridging fibrocollagenous strands between hepatocytes. After two weeks, aminotransferase levels declined to 2–3 times normal, but the patient continued to complain of anorexia and fatigue. Follow-up blood work three months later revealed a serum gamma globulin level of 1.62 g/dl, elevated IgG = 1800 mg/dl and IgM = 501 mg/dl. Taken together, all of these findings suggested a probable diagnosis of AIH.
DISCUSSION: Autoimmune hepatitis is a rare disorder of unknown etiology characterized by persistent inflammation of the liver. Clinical manifestations of AIH display marked variability, ranging from asymptomatic periods to fulminant hepatic failure. The diagnosis of AIH is based on a scoring system that includes gender, drug / alcohol history, immunoglobulin levels, antibody titers, viral hepatitis markers, liver histology, HLA serotypes and the presence of additional autoimmune diseases. Although our patient was a middle-aged male, AIH is usually more common in women (3.6 : 1) and younger patients (peak incidence ages 16–30). This clinical vignette reminds clinicians that iron overload can accompany any form of acute hepatitis and reinforces the need to include AIH in the differential diagnosis of suspected hemochromatosis.

AUTOIMMUNE THROMBOCYTOPENIC PURPURA AND GRAVES' DISEASE: A CASE OF WORSENING THROMBOCYTOPENIA DUE TO THYROTOXICOSIS. J. Baez-Escudero[1]; F. Grzywacz[1]; B. Taqui[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116186)*

LEARNING OBJECTIVES: 1. Recognize the rare association between Autoimmune Thrombocytopenic Purpura and Graves' disease. 2. Recognize that treatment of Graves' disease with return to an euthyroid state can improve thrombocytopenia.
CASE: A 23 year old nulliparous Vietnamese woman with Idiopathic Thrombocytopenic Purpura (ITP) presented with palpitations, hair loss, tremor, anxiety, weight loss, heat intolerance and fatigue. She had been diagnosed with steroid responsive ITP two years prior. She denied history of bleeding complications. She had stable platelet counts of 20,000 on 20 mg of oral prednisone. On exam, she was tachycardic.

She had a tremor, exophthalmos, mild epistaxis, gingival bleeding, diffuse nontender non-nodular goiter, hyperreflexia, and a severe petechial rash. Platelet count was 8,000. Her thyroid studies were: TSH 0.00, Total T3,714.9 (80–220 ng/dl), Total T4 24.5 (4.5–12.5 mcg/dl), Free T4 5.6 (1.0–2.3 ng/dl). Thyrotropin receptor autoantibodies were positive. Thyroid radioactive iodine uptake scan showed diffusely increased uptake. Serum beta-hcg and HIV were negative. Graves' disease was diagnosed and propranolol was started for symptomatic treatment. She was given a higher dose of prednisone for her worsening thrombocytopenia, but she did not respond. Due to the risk of bleeding, the patient was not offered a subtotal thyroidectomy. She was treated with a one time dose of radioactive iodine (131 I) after which she became euthyroid. Four weeks after treatment she was tapered off prednisone and maintained platelet counts above 50,000 for the next few months without further need for steroid therapy.
DISCUSSION: Autoimmune Thrombocytopenic Purpura is a rare but previously reported hematologic manisfestation of Graves' disease. The association between hyperthyroidism and thrombocytopenia is a known although infrequent occurrence. Distinct mechanisms are probably active in each condition, but the thyrotoxic state has been implicated as having a key effect on the fall in the number of platelets. Theories for this event include a common immunologic cause or a thyrotoxic-induced decrease in platelet survival. We describe a patient with coexisting Graves' disease and "idiopathic" thrombocytopenic purpura who showed minimal response to treatment of thrombocytopenia in the thyrotoxic state, but who promptly recovered and was able to sustain higher platelet counts while she was euthyroid. Evaluation of the thyroid condition in patients with refractory thrombocytopenia is advised. Specific therapy for the hyperthyroid state might lead to a moderate increase of the platelet count.

B12 DEFICIENCY AND DRUG ABUSE: N0 LAUGHING MATTER. M.T. Reyes[1]; M. Rotblatt[2]. [1]UCLA-SFVP Olive View Medical Center Department of Internal Medicine, Sylmar, CA; [2]UCLA SFVP-Olive View Medical Center Department of Internal Medicine, Sylmar, CA. *(Tracking ID #115053)*

LEARNING OBJECTIVES: 1. Recognize nitrous oxide (N2O) exposure as a cause of subacute combined degenerative (SCD) myelopathy. 2. Recognize the neurologic deficits associated with a dorsal column myelopathy.
CASE: A 24 year old Latino male presented with 2 weeks of progressively worsening balance problems and numbness in his distal extremities. His symptoms started as a tingling sensation in the fingers of both hands and both feet, later progressing to clumsiness with fine motor movements of his hands. Mild balance problems progressed to being chair-bound at the time of admission. He denied taking any medications, but admitted to binge drinking alcohol roughly twice a month for 2 years. He reported having a conventional Western diet. Physical examination was significant for diminished vibration sense and proprioception in both hands and feet, but preserved sensation to light touch and pinprick. His cranial nerves and DTR's were normal. The only weakness noted was in the intrinsic muscles of his hands. Marked ataxia, with a wide-based and unsteady gait, and mild finger-to-nose and heel-to-shin dysmetria, were present. After the initial assessment, the patient's wife disclosed that he had been abusing inhaled N2O for 5 years, increasing his use in the previous 4 weeks. Basic labs were normal. MRI of the C-spine showed increased T2 signal of the posterior columns bilaterally, suggestive of B12 deficiency. Serum B12 level was 110 pcg/ml (normal 250–1000), and methylmalonic acid level was 7236 (90–279). He was started on B12 injections and was transferred to a rehabilitation facility. After 2 weeks of B12 injections and PT, the patient showed mild improvement in his ataxia and sensory complaints. He was subsequently lost to follow up.
DISCUSSION: Layzer et al. first described neuropathy after recreational nitrous oxide (laughing gas) abuse in 1978. Subsequently there have been about 10 published cases of a similar presentation either after exposure to N2O anesthesia or chronic recreational use. The symptoms are consistent with findings of B12 deficiency, that is, the classic picture of subacute combined degeneration of the dorsal and lateral spinal columns. N2O oxidizes cobalamin into its inactive form, thereby causing B12 deficiency. The methionine synthase enzyme and myelin production are inhibited, thus producing the classic neurologic manifestations. Clinically, patients present with parasthesias and ataxia, with diminished vibration sense and proprioception. Patients may or may not have macrocytic anemia. MRI findings typically reflect the pathophysiology of dorsal column demyelination of the cervical spinal cord. Symptoms and MRI findings may be reversible if B12 replacement is initiated early.

BACILLARY PELIOSIS HEPATITIS: IF SCRATCH DEEP ENOUGH, YOU'LL GET THE DIAGNOSIS. S. Irani[1]; B. Taqui[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116209)*

LEARNING OBJECTIVES: 1. Review the diseases caused by Bartonella species. 2. Recognize bacillary peliosis as an important differential in HIV patients with fever and abdominal pain. 3. Review diagnosis and treatment strategies for peliosis hepatitis and splenitis.
CASE: A 34 year old African American female with AIDS (last CD4 207) presented with two week history of fever, malaise, nausea, vomiting, diarrhea, diffuse abdominal pain. On exam, she had T = 102.7, small 1cm sub-mandibular nodule, soft diffusely tender abdomen. Lab data revealed WBC 12.7 without shift, Hgb 7.5. Blood chemistries, liver function tests, blood cultures, stool studies, CXR were all negative. CT abdomen showed multiple 2–7 mm lesions in liver and spleen. During admission, her diarrhea resolved, but fever and malaise persisted. Upon further questioning, patient recalled being scratched one month prior by stray cats that she fed to a ward of rats. Liver biopsy revealed scattered granulomatoid inflammation with rod shaped bacilli on Warthin Starry stain. Electron micrograph showed multiple trilaminar cell-walled bacillary organisms leading to a diagnosis of bacillary peliosis hepatitis.
DISCUSSION: The genus Bartonella contains four species demonstrated to be pathogenic in humans (bacilliformis, henselae, quintana, elizabethae). Disease syndromes are of variable severity, ranging from cat-scratch disease (CSD) to systemic diseases such as trench fever and bartonellosis. In general, immunocompetent patients who are otherwise healthy tend to present with classic CSD. Patients who are immunocompromised tend to have systemic manifestations such as bacillary angiomatosis, extracutaneous lesions, bacteremia, and bacillary peliosis hepatitis and splenitis. Bacillary peliosis was first reported in HIV patients in 1990. It is the occurrence of multiple blood-filled cysts in the liver and/or spleen. Biopsy remains the gold standard for diagnosis, open having higher yield than percutaneous or transvenous. First line treatment is with erythromycin and doxycycline. Optimal duration of treatment is unknown, but most sources recommend 3 months. Relapses are not uncommon and usually occur with shorter courses of treatment. Our case highlights the importance of including bacillary peliosis in the differential of fever and abdominal pain in HIV patients.

BACTEREMIA IN A NURSING HOME RESIDENT: LOOK BEYOND THE FOLEY. S. Kumar[1]; E. Anish[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115905)*

LEARNING OBJECTIVES: 1. To recognize diverticulitis as a potential source of Providencia stuartii bacteremia. 2. To appreciate an atypical presentation of diverticultis.
CASE: A 77 year-old female, nursing home resident presented with a one-week history of malaise and chills. Her PMH was significant for CAD, HTN, and urinary incontinence that resulted in the placement of a chronic, indwelling Foley catheter. Physical exam revealed an elderly appearing female in no acute distress. She was afebrile with a BP-126/78 mmHg and HR-78 beats/minute.The remainder of her exam was unremarkable with no localizing signs of infection. Initial diagnostic tests revealed a UA significant for 5–10 WBCs. CBC and serum chemistries were WNL. A CXR was unremarkable. After obtaining blood and urine cultures, empiric antibiotic therapy with levofloxacin was initiated for a presumptive diagnosis of a urinary tract infection. The next day, 2 sets of blood cultures returned positive for Providencia stuartii, resistant to levofloxacin. The urine culture revealed no growth. The patient's antibiotics were changed to piperacillin/tazobactam and gentamicin and a work-up was initiated to determine the source of the bacteremia. Additional testing included an ultrasound of the abdomen/pelvis and a transthoracic ECHO that were both unremarkable. A CT scan of the abdomen/pelvis revealed mild sigmoid diverticulosis, but no other abnormalities. An indium-labeled WBC scan was then performed that showed increased activity in the right lower quadrant of the abdomen. Based on this result, her prior abdominal CT was re-evaluated and, in fact, changes consistent with cecal diverticulitis were found. A 14-day course of IV antibiotics was completed and the patient's symptoms resolved. Of note, throughout the entire illness, the patient remained asymptomatic from a GI standpoint and she never demonstrated any abdominal tenderness on exam.
DISCUSSION: Most cases of Providencia stuartii bacteremia occur in patients who develop catheter-related urinary tract infections. Although Providencia stuartii can be found as a component of the normal bowel flora, it is not a common organism associated with bacteremia in the setting of gastrointestinal disease. In fact, a MEDLINE search revealed no published cases of Providencia stuartii bacteremia related to diverticulitis. Although our patient had a Foley catheter, the absence of bacteriuria compelled a search for an alternative source of her bacteremia. This patient lacked the more common manifestations of diverticulitis (i.e., fever, abdominal pain and tenderness, leukocytosis), but a diagnosis was able to be made based on the results of diagnostic imaging studies. This case serves to illustrate how diverticulitis can present in an unusual manner in an older adult and it emphasizes the importance of re-evaluating prior diagnostic tests when necessary, even if the initial reports are unremarkable.

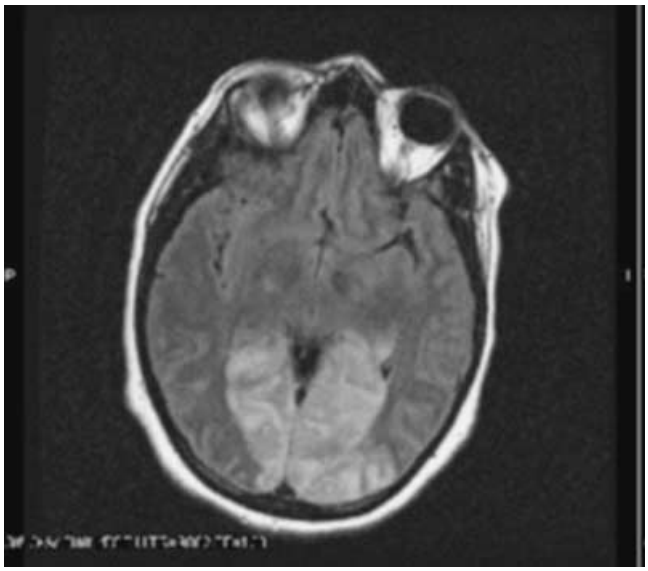
BE SENSITIVE TO SENSITIVITY: ASPIRIN-INDUCED ASTHMA. C.L. Spagnoletti[1]; M.A. McNeil[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115007)*

LEARNING OBJECTIVES: 1) Recognize the clinical presentation of aspirin-induced asthma (AIA) 2) Understand the pathophysiology of AIA 3) Discuss the treatment of AIA.
CASE: Mr. A is a 68 year old male who was hospitalized with back pain secondary to a compression fracture. His past medical history was significant for asthma, nasal polyps, and osteoporosis. His medications included fluticasone plus salmeterol inhaler and alendronate. He reported an allergy to aspirin, but was unable to provide further details. He denied alcohol or tobacco use. On exam, he was afebrile with stable vital signs. His oxygen saturation was 98% on room air. His pulmonary exam revealed no wheezes or rhonchi and good air movement. He was given intravenous etodolac for pain relief. One hour later, he developed severe shortness of breath and nasal congestion, with a drop in his oxygen saturation to 80% on room air. His repeat pulmonary exam revealed decreased air movement and diffuse inspiratory and expiratory wheezes. The CXR was clear. He was felt to have developed bronchospasm secondary to etodolac and was treated with albuterol/atrovent nebulizers, oxygen, and intravenous steroids. His symptoms resolved within 12 hours.
DISCUSSION: Five to fifteen percent of asthmatics are intolerant to aspirin, and aspirin intolerance (AI) is a risk factor for the development of asthma. AI is more common in asthmatics with nasal polyps and sinusitis. Most asthmatics who are sensitive to aspirin are also sensitive to non-steroidal anti-inflammatory medications (NSAIDs). AIA usually presents in the third or fouth decade in individuals who were

not previously sensitive to aspirin or NSAIDs. Patients with AI tend to have more severe asthma than those without. Wheezing, congestion, rhinorrhea, tearing, facial flushing, or angioedema occur one-half to two hours after ingestion. The pathogenesis relates to the metabolism of arachnidonic acid. Patients with AIA react to compounds that inhibit cyclooxygenase (COX) I, which catalyzes the formation of prostaglandins and thromboxanes from cell membrane arachnidonic acid. These inhibitors include aspirin and most NSAIDs. When COX I is inhibited, arachidonic acid metabolism is shunted to the 5-lipoxygenase pathway, the byproducts of which are leukotrienes. They are potent inflammatory mediators which can induce bronchconstriction, mucus secretion, nasal mucosal swelling, airway edema, and attract eosinophils into the airways in predisposed people. AIA patients have increased amounts of 5-lipoxygenase pathway enzymes. Non-AIA asthmatics do not overproduce leukotrienes in response to COX I blockade. Treatment of AIA is according to usual asthma guidelines. Leukotriene modifying drugs are pivotal in long term management. Aspirin and NSAIDs should be avoided. Desensitization can be done if either is absolutely necessary. COX 2 inhibitors are safe for use.

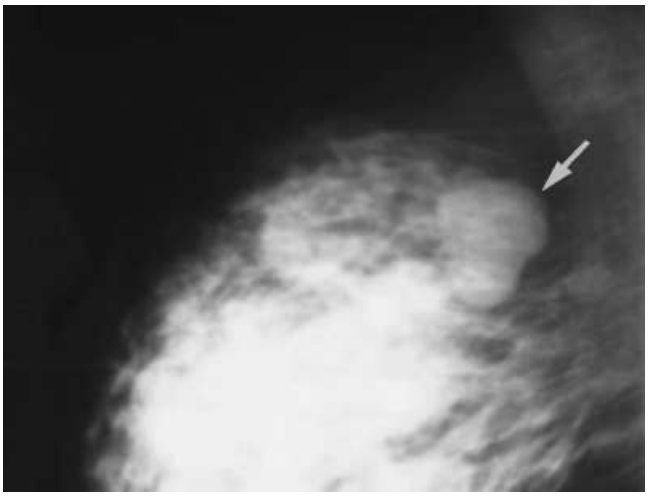
BILATERAL CORTICAL BLINDNESS AS PRESENTING SYMPTOM OF INFECTIVE ENDOCARDITIS (IE). P. Cunningham[1]; P. Radhakrishnan[2]. [1]St. Joseph Hospital, Phoenix, AZ; [2]St Joseph Hospital, Phoenix, AZ. *(Tracking ID #116483)*

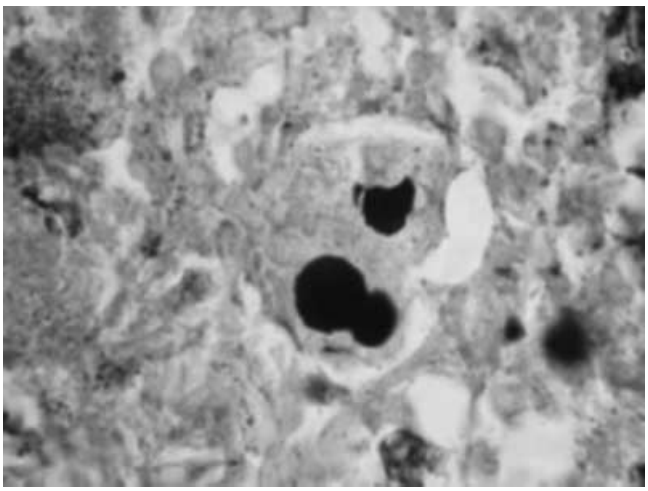
LEARNING OBJECTIVES: LEARNING OBJECTIVES: 1. Diagnose cortical blindness. 2. Recognize the rare association of IE and occipital infarction.
CASE: A 41 year old female with a history of untreated hypertension and IV drug use presented with history of sudden onset of blurring of vision, stating that she was unable to distinguish any objects. She also complained of weakness on her left side and mild shortness of breath. PHYSICAL EXAM: The patient was obese . There was mild confusion. Vital signs were normal except for a temperature of 39.0 C. Eye exam revealed normal fundi, PERL, no light perception. There were track marks on the arms, bilateral splinter hemorrhages, and Janeway lesions. There were mild sensory and motor deficits in the upper extremities. LABS: MRI brain: bilateral occipital and subcortical infarcts c/w septic emboli. CT Chest: multiple airspace densities bilaterally c/w septic emboli. WBC 11.6 with normal differential, ESR 39, Drug screen +cocaine. HOSPITAL COURSE: Patient was treated with antibiotics for presumptive endocarditis with significant sequelae of CVA w/residual left-sided partial paralysis, blindness and pulmonary emboli. Transesophageal echocardiogram (TEE) showed a large tricuspid vegetation, moderate mitral vegetation, and a patent foramen ovale (PFO) by bubble study. Blood and sputum cultures: Oxacillin Sensitive Staphylococcus aureus. There was no evidence of aneurysm per CT angiogram. The patient experienced a slight improvement in vision prior to hospital discharge with return of light perception.
DISCUSSION: IV drug use accounts for half of IE cases in developed countries. The tricuspid valve is involved in 30–70% of IVDU-related IE, Staphylococcus aureus accounting for 50% of IVDU IE. PFOs are estimated to be present in 30% of the normal population. While embolization is a common complication of IE, the incidence of neurologic complications being 20–40%, cortical blindness is exceedingly rare. Cortical blindness is defined as bilateral visual defects with normal ocular and pupillary exam, most often caused by lesions of the vertebral-basilar arteries, often due to atherosclerosis, malformations. Review of literature has revealed a handful of case reports of infective endocarditis causing cortical blindness. The causes have ranged from rupture of a mycotic aneurysm, infarction to TIA due to septic emboli. Our case has several interesting aspects. Cortical blindness due to embolic stroke caused by infective endocarditis. The presence of Patent Foramen Ovale in this patient was possibly responsible for the widespread dissemination of the emboli. To summarize, consider infective endocarditis in the differential diagnosis of cortical blindness, in a young patient.



BREAST MASS AS AN ATYPICAL PRESENTATION OF BLASTOMYCOSIS. B.A. Kisiel[1]; A. Marhatta[1]; K. Rajkotia[1]; H. Friedman[1]. [1]St. Francis Hospital, Evanston, IL. *(Tracking ID #116244)*

LEARNING OBJECTIVES: Distinguish breast involvement of Blastomycosis from breast malignancy.
CASE: A 48-year-old woman presented with dry cough, generalized weakness and a right breast mass for one month. She denied fever, chest pain or hemoptysis. She was not a smoker and denied alcohol use. Physical exam: afebrile; BP: 135/80 mmHg; pulse: 70/min; RR: 14/min. Breast exam: 3 by 2 cm nontender, erythematous nodule within the outer quadrant of the right breast. Lungs: Diminished breath sounds at the right base. Remaining exam was unremarkable. Laboratory data: WBC 28.000 (83% neutrophils). AFB sputum and HIV test were negative. CT chest revealed right middle and lower lobes consolidation with pretracheal lymphadenopathy and the right breast mass was identified. Mammogram confirmed the mass in the right breast and showed a smaller mass within the left breast. The patient underwent bronchoscopy and breast biopsy. Histopathological analysis of transbronchial biopsy and breast tissue revealed broad-based budding yeast accompanied by chronic granulomatous inflammation. A diagnosis of blastomycosis was made which was further confirmed by positive fungal cultures. The patient was started on Itraconazole with significant clinical improvement.
DISCUSSION: Blastomycosis is a systemic pyogranulomatous infection caused by the dimorphic fungus Blastomyces Dermatitidis. Initial infection results from inhalation of the conidia into the lungs. The clinical spectrum is varied, including asymptomatic infection, acute or chronic pnemonia, and disseminated disease involving the skin, bones and CNS. Alveolar infiltrates, mass lesions, and fibronodular infiltrates are the most common radiographic findings. Disseminated disease in immunocompetent hosts is uncommon. Blastomycosis of the breast is reported infrequently





and clinically mimics carcinoma. Treatment of choice for mild to moderate disease is Itraconazole for 6–12 months. Amphotericin B is used for severe disease and CNS involvement. In patients presenting with breast and pulmonary masses blastomycosis in addition to cancer should be considered. (attached illustrations are the mamogram and the silver methenamine staining of the breast tissue)

BRONCHIECTASIS IN A PREGNANT PATIENT. B. Springgate[1]; M. Landry[1]. [1]Tulane Health Sciences Center, New Orleans, LA. *(Tracking ID #117516)*

LEARNING OBJECTIVES: 1. Recognize major diagnoses associated with bronchiectasis. 2. Identify occult cystic fibrosis in the adult patient. 3. Demonstrate the need for optimization of health status and genetic counseling for cystic fibrosis patients considering pregnancy.
CASE: A 32 year-old woman was transferred to the intensive care unit (ICU) with purulent respiratory secretions following delivery of twins at 32 weeks gestational age. Her follicle-stimulation-assisted pregnancy was complicated by mild cough, transient pruritus, and moderate elevations of liver transaminases, alkaline phosphatase, and amylase at 27 weeks gestation. In the ICU, the chest x-ray demonstrated diffuse patchy infiltrates. Sputum culture revealed pan-sensitive Staphylococcus aureus. The patient rapidly improved on intravenous antibiotics. An outpatient CT of the chest revealed diffuse bronchiectasis, and a CT of the abdomen failed to demonstrate a gall bladder. Sweat chloride levels were 102.5 and 91.0 meq/L, and pulmonary function testing revealed FEV1of 31% of the predicted value.
DISCUSSION: Bronchiectasis is associated with allergic bronchopulmonary aspergillosis, hypogammaglobulinemia, immotile cilia syndrome, and cystic fibrosis (CF). Cystic fibrosis is uncommonly diagnosed during pregnancy. Clues to diagnosis may include evidence of infertility, mild sinus or pulmonary disease, cholestasis, pancreatitis, and absent gallbladder. Genetic counseling and family planning assume paramount importance in patients with CF, as prognosis for mother and infant can be adversely affected in the setting of advanced lung or pancreatic disease.

CAN CHEMOTHERAPY INDUCE RADIATION-LIKE EFFECT? RADIATION RECALL MYOSITIS INDUCED BY GEMCITABINE. A.P. Amin[1]. [1]John H. Stroger Jr. Hospital of Cook County, Chicago, IL. *(Tracking ID #116671)*

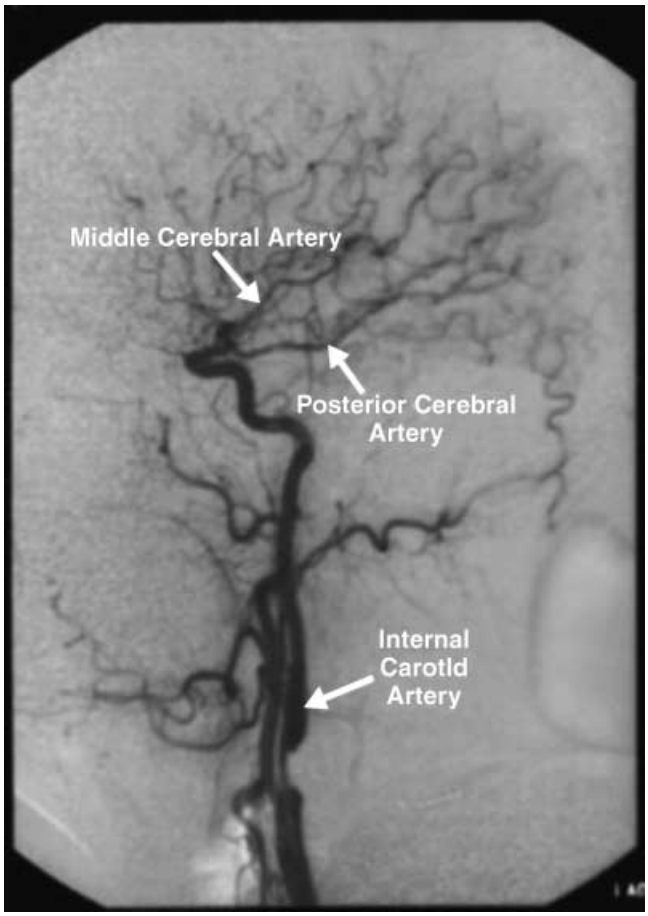
LEARNING OBJECTIVES: 1. To recognize a rare cause of leg swelling in a cancer patient. 2. Beware of the radiation recall phenomenon. 3. To emphasize the association of 'radiation recall phenomenon' with gemcitabine.
CASE: A 47-year-old male with pancreatic cancer, metastasized to the right hip and femur bone, received a ten-day course of radiation (300 cGy daily) to the right hip and thigh. On completion of radiotherapy, there were no skin changes or swelling of the right thigh. One month later the patient was started on weekly gemcitabine infusions (1000 mg/m^2) as palliative chemotherapy — which he received for six weeks. On presentation for the 7th week of chemotherapy, he complained of right thigh pain, swelling and inability to walk. On examination, he was afebrile. The right and left thighs measured 32 cm and 18 cm respectively. The swelling was strictly confined to the area of previous irradiation. A CT scan revealed diffuse, massive enlargement of all muscles in the right thigh. There was no localized abscess or pus collection. The creatinine kinase (CK) was elevated (624 U/L) and the total leukocyte count was normal (3,400/mm^3). A duplex scan for deep vein thrombosis was negative. A diagnosis of radiation recall myositis was made on clinical grounds, and chemotherapy was stopped.
DISCUSSION: Radiation recall phenomenon is an acute inflammatory reaction that develops exclusively at a previously irradiated site, in response to an anti-neoplastic agent. The anti-neoplastic agent triggers the `recall' of the effect of radiation given earlier, and the quiescent tissue becomes inflamed as if freshly irradiated. Recall reactions have been described by various agents (doxorubicin, paclitaxel, etoposide, gemcitabine, bleomycin, vinblastine) and at various sites (skin, muscle, lung, oral mucosa, vagina). Of all recall reactions, dermatitis is the most common while myositis is quite rare. Only three cases of radiation recall myositis have been previously reported, all induced by gemcitabine. The exact mechanism of radiation recall reactions remains unclear. Possible hypotheses include radio-sensitization by the precipitating agent, a drug hypersensitivity-like mechanism, a Koebner phenomenon like reaction and radiation-induced up-regulation of thymidine phosphorylase. No treatment guidelines currently exist for this condition. Generally the triggering agent is discontinued, and there are anecdotal beneficial results with steroids. Clinicians should be aware of this unusual complication of cancer treatment.

CARDIAC TAMPONADE: A RARE COMPLICATION OF ADULT ONSET STILL'S DISEASE. L. Crawford[1]; M. Panda[1]; R. Enzenauer[1]. [1]University of Tennessee, Chattanooga, chattanooga, TN. *(Tracking ID #115170)*

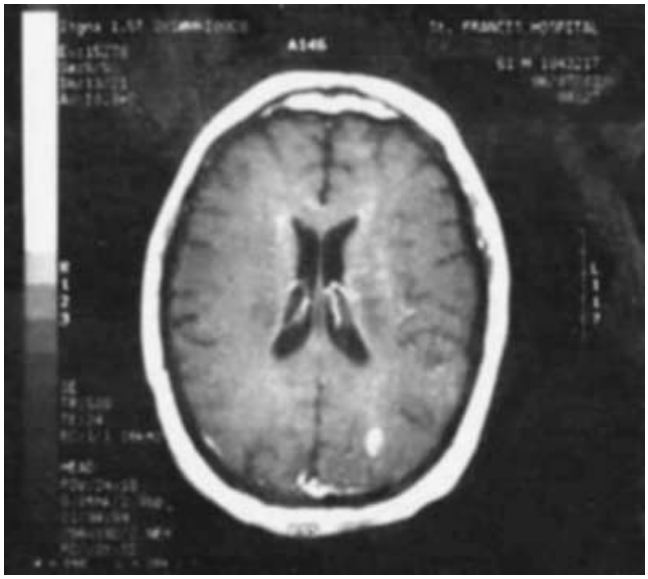
LEARNING OBJECTIVES: To recognize the clinical features of Adult Onset Still's Disease (AOSD) and the potentially fatal complication of cardiac tamponade.
CASE: A 19 year old white female with a past history of Hodgkin's lymphoma currently in remission and recently diagnosed AOSD presented with the complaints of chest pain and shortness of breath. The chest pain was sharp, 8/10 in severity, exacerbated by deep inspiration and coughing and it radiated posteriorly. This was associated with severe dyspnea on exertion, paroxysmal nocturnal dyspnea and orthopnea. Leaning forward relieved both symptoms. She described recent subjective fevers, diaphoresis, diffuse arthralgias specifically in her right shoulder and knees, and a sore throat. On physical exam she was hypotensive (systolic BP 90 mmHg) tachycardic (pulse 130/min) and tachypneic (respiratory rate 40/min). She additionally had jugular venous distension of approximately 13 cm and a pulsus paradoxsus of 12 mmHg. Cardiopulmonary examination revealed clear breath sounds and a very prominent pericardial friction rub. Posterior pharynx was erthyematous with out exudates. Musculoskeletal exam revealed decreased range of motion in her right shoulder and tenderness to palpation without evidence of effusion. Laboratory values: white blood cell count of 51,800, neutrophil count of 97%, sedimentation rate of 114 mm/hr, c-reactive protein >9, and a ferritin level greater than 100,000. Emergent echocardiogram was obtained which revealed a large circumferential pericardial effusion with early diastolic collapse of the ventricles. The patient was taken to the operating room for an emergent pericardial window placement. A pericardial catheter was placed and drained 330 ml of serosanguinous fluid which was exudative in nature. Immediately after the procedure the patients tachycardia resolved, her blood pressure increased and her dyspnea dramatically improved. All cultures obtained returned without growth and the patient's antibiotics were discontinued. The patient was placed on high dose steroids and methotrexate. She reports doing well to date with no further complications.
DISCUSSION: Still's Disease is an infrequent rheumatological disease that until recently was poorly described in medical literature. It is a systemic inflammatory disorder of unknown etiology that typically affects young adults. The vast majority of cases present with a constellation of symptoms reminiscent of a viral syndrome including quotidian fevers, salmon colored macular rash, sore throat, myalgias, arthralgias, lymphadenopathy, and serositis. Pleuritis and Pericarditis occur in approximately 25% of patients. Pleural effusions are usually bilateral and asymptomatic, and thoracentesis often reveals bloody exudative effusions. Pericarditis is the most alarming, as it may herald of impending acute cardiac tamponade. Though pericarditis is common, there have been very few actual reports of cardiac tamponade reported in relation to Still's disease. This case report allows us the opportunity to discuss the salient features of AOSD and it's diagnostic criteria. This report also allows us to describe the rare and potentially fatal complication of cardiac tamponade. This report should enable clinicians to improve their diagnostic awareness of a complicating illness that presents itself in many ways.

CAROTID ARTERY STENOSIS AND OCCIPITAL. INFARCTION. T. Thenappan[1]; S. Parikh[1]; P. Kapoor[1]; D. O'Brien[1]. [1]St. Francis Hospital, Evanston, IL. *(Tracking ID #117447)*

LEARNING OBJECTIVES: 1. Recognize the anomalous origin of the posterior cerebral artery from the internal carotid artery. 2. Magnetic resonance imaging (MRI) is superior to computerized tomography (CT scan) in evaluating cerebrovascular



events. 3. Investigate cerebrovascular disease with both carotid duplex ultrasound and magnetic resonance angiography (MRA) irrespective of intracranial localization.
CASE: We report a case of a 64-year-old male, with a history of hypertension and diabetes, who noted sudden onset of a vaguely characterized visual disturbance. The patient denied similar episodes in the past. The neurological examination was notable only for a right homonymous hemianopia. Duplex ultrasound of the carotid arteries was suggestive of high grade occlusion of the left internal carotid artery. The non-enhanced CT scan of the brain was normal, but MRI revealed an acute infarct of the left occipital lobe, consistent with examination. The magnetic resonance angiogram showed an anomalous left posterior cerebral artery originating directly from the left internal carotid artery (instead of the basilar artery), a hypoplastic A1 segment of the left anterior cerebral artery, with significant eccentric narrowing of the left internal carotid artery suggestive of plaque formation. These findings were confirmed by conventional angiography. The patient subsequently underwent a left carotid endarterectomy.
DISCUSSION: The Circle of Willis, as classically described, is present in only 40% of the population. The emerging vascular imaging technologies have enhanced our ability to recognize anatomical variants in the acute clinical setting, and the rational application of these modalities helps direct appropriate intervention.This case highlights three major points: First, although an infarct in the posterior fossa due to ipsilateral carotid artery disease has rarely been reported, the possibility of an anomalous posterior cerebral artery origin from the carotid artery should be kept in mind. This underscores the necessity of a complete cerebrovascular evaluation, always including both carotid studies and magnetic resonance angiography, irrespective of specific intracranial localization. Second, this case emphasizes the superiority of MRI over CT scan in the evaluation of cerebrovascular disease. Finally, this report reinforces the importance of a thorough vascular evaluation in the management of cerebrovascular disease, so that these anomalies are recognized and, if necessary, factored into medical and surgical interventional planning.



CAROTID SINUS HYPERSENSITIVITY. M.M. Vasudevan[1]; J.T. Bates[1]; A.A. Taylor[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #116888)*

LEARNING OBJECTIVES: 1. Review the clinical presentation and diagnosis of carotid sinus hypersensitivity. 2. Recognize the usefulness of carotid sinus massage (CSM). 3. Understand how to differentiate the cardio-inhibitory, vasodepressor, and mixed subtypes of carotid sinus hypersensitivity (CSH).
CASE: A 72 year-old African American man with a history of hypertension and bipolar disorder was admitted for his second syncopal episode, which occurred while he was seated, and it was not associated with a prodrome or seizure activity. Pertinent physical findings included a supine blood pressure of 197/90 and heart rate of 56, without orthostasis. Carotid exam was normal. Electrocardiogram and telemetry demonstrated sinus bradycardia and first-degree heart block without arrhythmias. Bedside carotid sinus massage produced asystole that lasted at least ten seconds. Formal cardiovascular testing on a tilt table demonstrated a drop in blood pressure from 187/76 (supine) to 120/70 (with an 80-degree tilt), and there was no associated change in heart rate. Right-sided CSM produced the same 70 mmHg drop in systolic BP with a concurrent eight second period of asystole. Left-sided CSM was unremarkable. Exam findings were therefore suggestive of the mixed subtype of carotid sinus hypersensitivity (CSH). Treatment was initiated with the placement of a dual chamber cardiac pacemaker.
DISCUSSION: The geriatric population has a high rate of syncope, accounting for up to 3% of emergency room visits. The differential diagnosis of syncope should include CSH, which is often overlooked or misdiagnosed. CSM is essential for appropriate identification and differentiation of the three subtypes of CSH, and it can be performed safely with minimal cardiac or neurological complications. Appropriate therapy depends on the specific subtype of CSH. In patients with the cardio-inhibitory subtype, CSM produces at least three seconds of asystole; pacemaker implantation should abolish this cardio-inhibitory type. In patients with the vasodepressor subtype, CSM produces a fall in systolic blood pressure of at least 50 mmHg. The third subtype is a combination of both cardio-inhibitory and vasodepressor components. CSM during cardiac pacing can differentiate between pure vasodepressor and mixed types. Therapeutic options for patients with either the vasodepressor or mixed subtypes include surgical interruption of the afferent or efferent components of the baroreflex or stripping the vascular adventitia in the area of the carotid sinus. In summary, a thorough investigation of syncope includes consideration of CSH, which can safely and effectively be diagnosed with the CSM.

CARPE DIEM. S. Dravid[1]; M. Guidry[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117417)*

LEARNING OBJECTIVES: 1. To stress the importance of a complete differential diagnosis and systematically to rule out potential causes of mental status changes. 2. Recognize non-convulsive status epilepticus as a possible cause for mental status changes.
CASE: A 29 year-old man recently started on HAART for HIV presented with four weeks of fever and confusion. He described one month of night sweats and weight loss. Within three days of admission, he became completely unresponsive to verbal and physical stimuli. His vital signs were normal and he had small, but reactive pupils. His reflexes were normal, and he had no posturing. His electrolytes, liver function tests, CBC, d-dimer, fibrinogen, coagulation studies, and serum and urine toxicology screens were normal. A CT of the head showed mild cerebral atrophy with no masses, lesions, or midline shift. An LP was negative for meningitis. Blood and urine cultures were negative. He was empirically started on ceftriaxone and vancomycin; his HAART therapy was held. After no significant improvement, an EEG was obtained that revealed alpha waves consistent with non-convulsive status epilepticus. A loading dose of phenytoin was administered; his mental status returned to normal within 24 hours.
DISCUSSION: Altered mental status is a frequently encountered admitting problem. Easily diagnosed problems such as infection, electrolyte abnormalities, or metabolic encephalopathy are usually the etiology and should be excluded first. When these are excluded, less common diagnoses should be investigated. Non-convulsive status epilipticus is an important cause of altered mental status that is frequently missed because of its lack of symptoms. Unlike other varieties of seizure disorders, it is frequently not preceeded by an antecedent seizure history. Once the diagnosis is established by EEG, subsequent studies should be performed to discover the underlying cause.

CAVITATING LUNG LESION: IT'S NOT ALL TUBERCULOSIS. J.S. Nguyen[1]; J. Cofrancesco[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #115854)*

LEARNING OBJECTIVES: (1) To recognize the causes of cavitating lung lesion in HIV negative patients, and (2) to recognize HTLV-1 as a cause of immunosupression.
CASE: A 43 year old gentleman from St Croix without significant past medical history presents with 4 months of progressively increasing fatigue, weakness, lower extremity swelling, and shortness of breath; as well as a 30 pound weight loss, low grade fevers and night sweats. On physical exam, patient was afebrile, had normal vital signs with an oxygen saturation of 96% on room air, and had a pulmonary exam notable for decreased bibasilar lung sounds with crackles appreciated in the right mid and upper lung fields. Preliminary laboratory results were remarkable for WBC = 30,000 with a lymphocyte predominance, platelets = 114,000, serum calcium = 13.9, LDH = 1375, blood cultures which were sterile and an HIV antibody which was negative by ELISA. A chest radiograph revealed an ill defined right upper and middle lobe alveolar infiltrate as well as bilateral pleural effusions. A chest CT scan revealed a 3.1 × 3.1 cm cavitary mass in the right upper lobe as well as infiltrates in the right upper lobe, right middle lobe and left upper lobe. PPD was negative. Bronchoscopy was performed and the bronchoalveolar lavage was positive for Pneumocystis jiroveci by direct immunofluorescence. The transbronchial biopsy revealed a focal atypical lymphocytic infiltrate as well as Cytomegalovirus infection by immunostaining. Upon further testing, the patient was found to be Human T-cell Lymphotrophic Virus, type 1 (HTLV-1) antibody positive and peripheral blood flow cytometry revealed a predominantly abnormal T cell population. The combination of these findings was diagnostic for Adult T-Cell Lymphoma Leukemia and secondary opportunistic infection with PCP and CMV.
DISCUSSION: Tuberculosis is often considered in a patient with a cavitary lung lesion. However, a broad differential diagnosis exists and will be discussed including: (1) pulmonary infections (tuberculosis, atypical mycobacterium, aspergillosis, pneumocystis jeroveci, lung abscesses, septic emboli), (2) pulmonary infarction, (3) malignancies (lymphoma, metastatic disease, or primary lung cancer) or (4) vasculitis (Wegener's granulomatosis, micropathic polyangitis), rheumatoid nodules or sarcoidosis. Given the high calcium and unusual findings of both pneumocystis jeroveci and CMV pneumonia in a previously healthy gentleman on no prior medications, immunocompromise was considered. Adult T-Cell Lymphoma Leukemia (ATLL) will be discussed. ATLL is a peripheral T-cell neoplasm associated with Human T-cell Lymphotrophic Virus, type 1 (HTLV-1), infection that is endemic to the Caribbean islands, Japan and Africa. Typical presentation includes lymphocytosis with an abnormal T-cell population, hypercalcemia, hepatosplenomegaly, and interstitial pulmonary infiltrates. Patients with ATLL have a functional T-cell

immunodeficiency which predisposes them to opportunistic infections, as this case has illustrated. Overall prognosis for patients with ATLL is poor with a median survival of 4 months.

CELLULITIS GONE WILD. B. Weinberg[1]; R. Cader[2]. [1]University of California, Los Angeles, Sylmar, CA; [2]Sepulveda VA Ambulatory Care Center, North Hills, CA. *(Tracking ID #116311)*

LEARNING OBJECTIVES: 1. Recognize an unusual presentation of necrotizing fascititis. 2. Recognize the importance of an early surgical consult when you suspect necrotizing fasciitis.
CASE: A 42 yo white female with a history of intravenous drug use, Hepatitis C, and skin popping presented to an outside hospital with complaints of abdominal wall cellulitis and fevers. During her hospitalization there she was afebrile with normal vital signs, and was described as having a cellulitis on her right abdominal wall. The patient's cellulitis worsened despite ampicillin/sulbactam and the addition of levofloxacin. On hospital day 3 the patient was transferred to our facility with a "refractory cellulitis." Upon arrival in the late evening the patient was afebrile with stable vital signs and appeared to be in significant pain related to the local site of infection. On exam she had an extensive area of erythema, firmness, and induration encompassing her entire right flank, extending to her hip and into her groin. This area was exquisitely tender but without creptitance or areas of fluctuance. Antibiotics were continued, a CT scan was ordered to evaluate for an underlying abscess, and an ID consult was to be obtained in the AM. The following morning the patient became hypothermic and hypotensive. Her wound was more erythematous and had spread further down her flank and groin. She was transferred to the ICU, evaluated by surgery and taken to the operating room for debridement of necrotizing fasciitis. A 40×30 cm area was debrided to muscle over her right flank. After surgery the patient was continued on broad spectrum antibiotics and discharged on day 10 with follow-up by Plastic Surgery for a future skin graft.
DISCUSSION: Necrotizing infections of the skin include necrotizing forms of cellulitis and fasciitis. Necrotizing fasciitis is a deep infection of the subcutaneous tissue that leads to progressive destruction of fascia and fat. Causative organisms include Group A Streptococcus, mixed anaerobic/aerobic bacteria and C. Perfrigens. Early recognition of necrotizing fasciitis is paramount since it can rapidly progress over hours, causing extensive destruction, toxicity, loss of limb or death. Unexplained pain which increases rapidly may be the first sign of this process. If untreated this progresses to localized swelling, edema and tenderness. Later the skin typically becomes dark red with bluish bullae. These patients may exhibit signs of sepsis and hemodynamic instability seemingly out of proportion to the lesion. Creptitus on exam and subcutaneous air demonstrated radiographically are extremely suggestive of necrotizing fasciitis or gas gangrene. Any suspicion of necrotizing fasciitis requires immediate surgical consultation with potential surgical exploration and debridement, as well as the initiation of broad spectrum antibiotics.

CEREBROVASCULAR ACCIDENT IN AN ELDERLY PATIENT—IMPORTANCE OF ECHOCARDIOGRAM. S. Dodla[1]; T. Townley[1]; H. Hashish[1]; Z. Gatalica[1]. [1]Creighton University, Omaha, NE. *(Tracking ID #115697)*

LEARNING OBJECTIVES: 1) To report a case of Papillary fibroelastoma, a rare cardiac tumor. 2) Recognize the importance of surgical resection of tumor in symptomatic patients. 3) Emphasize the importance of echocardiogram in patients with symptoms of CVA.
CASE: Patient is a 73-year-old female who presented with symptoms of numbness of the tongue, decreased sensation of the mouth and the lips along with difficulty swallowing, chewing and talking. Her other significant past medical history included Coronary artery disease, Hypertension and Hyperlipidemia. She was found to have Paroxysmal atrial fibrillation during the stay in the hospital. MRI and MRA of head showed a focal acute infarct in the right posterior frontal lobe with an old ischemic infarct in the left lenticular nucleus. Trans Thoracic Echocardiography showed no evidence of mass or thrombus. Trans Esophageal Echocardiography (TEE) revealed a 1.3×1.1 cm mobile, broad based echo density on the ventricular surface of the right coronary cusp of the aortic valve with trace central aortic regurgitation. The mass was surgically excised and the diagnosis of PF was histologically confirmed. Follow up TEE revealed no residual tumor and no aortic regurgitation. The patient did not have any embolic episodes for a follow up period of twelve months.
DISCUSSION: PF is a rare, benign, slowly growing cardiac tumor. These tumors have been reported sporadically in live patients since the introduction of echocardiography especially TEE, during evaluation of patients with transient ischemic attack, cerebrovascular accident and myocardial infarction. Although this patient had paroxysmal atrial fibrillation it was deemed necessary to surgically remove the aortic valve mass to prevent recurrent strokes, as the possibility of the latter being the source of embolus was high. Although PF may possess some characteristic echocardiographic features, histopathologic evaluation is essential to differentiate them from other intra-cardiac benign and malignant tumors.

CHEST PAIN IN A YOUNG MAN: SPONTANEOUS PNEUMOMEDIASTINUM. T. Sai[1]. [1]John H. Stroger Hospital of Cook County/Rush University Medical Center, Chicago, IL. *(Tracking ID #115900)*

LEARNING OBJECTIVES: 1. Recognize spontaneous pneumomediastinum as a cause of chest pain in young individuals. 2. Review the clinical features, diagnosis and treatment of spontaneous pneumomediastinum.
CASE: A 17 year-old man presented to the emergency department with the acute onset of substernal chest pain . The patient was well until the afternoon of admission when he developed the sudden onset of sore throat one hour after eating lunch. He then developed sharp substernal chest pain followed by anterior neck stiffness. There was no history of trauma, dyspnea, cough, dysphagia or ingestion of sharp objects. On examination, his vital signs were normal. There was subcutaneous crepitation of the neck, supraclavicular fossae and anterior chest wall. Cardiac examination was normal as well as the remainder of the physical examination. Chest and neck x-ray revealed subcutaneous linear lucencies without evidence of free mediastinal air. CT scans of the neck and chest showed free mediastinal air with dissection into the posterior pharynx. All mediastinal structures were normal. Fiberoptic laryngoscopic evaluation and contrast esophagram were normal. A diagnosis of spontaneous pneumomediastinum was made. The patient was treated with ibuprofen for analgesia and bed rest. The patient's symptoms resolved after 48 hours. A repeat chest CT scan showed reduction in mediastinal air. To date, the patient has had no recurrence of symptoms.
DISCUSSION: Spontaneous pneumomediastinum is the non-traumatic presence of free air in the mediastinum. Although it is second only to spontaneous pneumothorax as the admitting diagnosis for healthy young people with the sudden onset of chest pain or dyspnea, it occurs in only 1 in 13,000 young persons presenting with chest pain. It results when alveoli rupture in the absence of trauma, causing escaped air to dissect along the interstitial bronchovascular sheath into the mediastinum. The Valsalva maneuver and illicit drug use are predisposing factors. Patients most commonly experience chest pain; other complaints include dyspnea, dysphagia and throat discomfort. Findings on physical examination include subcutaneous emphysema and Hamman's sign, a cardiac systolic crunch best heard at the apex. Chest x-ray may reveal the presence of free air in the mediastinum as well as subcutaneous emphysema. CT imaging confirms the diagnosis and helps evaluate mediastinal structures. Esophageal imaging to rule out rupture is sometimes warranted. Management includes symptom control and observation. Most patients have resolution of symptoms within 2 to 7 days and seldom require further intervention. Although uncommon, recurrences have been reported. Awareness of this rare, benign entity may help avoid unnecessary invasive tests and procedures.

CHRONIC ALCOHOLISM PRESENTING AS SEVERE ACUTE AXONAL NEUROPATHY. G.G. Tapia[1]; L.D. Stagner[1]; L.M. Tapia[1]. [1]Henry Ford Hospital Detroit, Detroit, MI. *(Tracking ID #115809)*

LEARNING OBJECTIVES: Recognize acute cases of alcohol-related polyneuropathy and distinguish clinical features between guillain-barre syndrome and alcohol-related acute axonal polyneuropathy
CASE: A 33 year-old female with a four-year history of alcohol abuse was admitted to the hospital with generalized ascending weakness and numbness for three weeks. The patient denied flu-like or gastrointestinal symptoms. A physical exam revealed diminished power 3/5 of the extremities, decreased sensation to pinprick, pain, and temperature distally, areflexia, flaccid muscle tone, dysphagia and a vital capacity (VC) of 900cc. RBC folate, thiamine, and urine methylmalonic acid levels were normal. The CSF revealed normal protein without pleocytosis, a negative VDRL, and the absence of CMV DNA, Lyme antibodies, cryptococcal antigen, and oligoclonal bands. TSH, ANA, anti SS-A, anti SS-B and RF were all normal. HIV was non-reactive. Additional studies including anti-Hu antibodies, VZV IgM, EBV capsid IgM, HTLV-1and 2, and a viral hepatitis screen were all unremarkable. Urine and stool porphyrins were unremarkable. A 24-hour urine showed normal lead, thallium, aluminum, and mercury levels. A serum ganglioside antibody panel was negative and ceruloplasmin level normal. An EMG revealed an axonal sensorimotor polyneuropathy with signs of acute denervation and reinnervation. The patient did not require 20. Following abstinence from alcohol, her motor strength, deep tendon reflexes, and VC improved.
DISCUSSION: Approximately 9% of patients with chronic alcohol abuse suffer from insidious peripheral neuropathy. The few reported cases of acute alcoholic neuropathy (AAN) describe onset of symptoms to be from few days to several weeks. This entity must be distinguished from acute polyneuropathies such as Guillain-Barre syndrome (GBS). Severe sensory loss is uncommon in classic GBS but frequent in axonal GBS. Unlike any GBS patient with severe tetraparesis, cranial nerve abnormalities and respiratory insufficiency were less severe in our patient. Less than 5% of GBS cases in North america are primary axonal forms. Although autoimmunity in GBS is debatible, antibodies to gangliosides (GM1, GM1b, GD1a) correlate with the presence of axonal GBS. All patients with AAN may regain their ability to walk within months of alcohol abstinence as opposed to 15% of GBS patients who are unable to walk after one year of diagnosis. The pathophysiology of AAN is still uncertain. Vitamin levels and nutritional state poorly correlate with polyneuropathy; however, preliminary data describe the direct toxic effect of alcohol in peripheral nerves. Alcohol abstinence is the treatment of AAN while immunotheraphy is probably unnecessary compared to cases with GBS.

COLA-COLORED URINE IN VIRAL SYNDROME: RHABDOMYOLYSIS WITH A CPK OF OVER ONE MILLION UNITS WITHOUT ACUTE RENAL FAILURE. G.T. Arbour[1]; L. Mitchell[1]; R. Palmer[1]; D. Strain[1]; J. Huang[1]. [1]Louisiana State University Medical Center at Shreveport, Shreveport, LA. *(Tracking ID #115650)*

LEARNING OBJECTIVES: 1. Recognize that viral illness and flu-like syndromes can cause severe rhabdomyolysis. 2. Recognize that renal failure can be prevented in rhabdomyolysis if diagnosed and intervened early.

CASE: A 20-year old previously healthy black male presented with the complaint of "cola-colored urine" for one day. 7 days prior to presentation, he developed fever, headache, dry cough, rhinorrhea, sore throat and general malaise. 5 days later, he developed severe myalgias and muscle weakness, especially in his thighs, shoulders and back, followed by reddish-brown colored urine. The patient denied alcohol or cocaine use, recent strenuous activity, or trauma. Physical exam was unremarkable except for diffuse tenderness of most muscle groups. Motor strength of all extremities was also decreased at 4/5. UA on admission demonstrated large blood on dipstick with 0–2 RBCs on microscopy. Serum creatine phosphokinase (CPK) revealed a value of 395,800 U/L which peaked 3 days later to a maximum of 1,213,650 U/L. Elevated AST and ALT paralleled CPK in kinetics; however, alkaline phosphatase remained normal. Urine myoglobin peaked at 162 ng/mL. A UDS was negative for cocaine. Electrolytes were normal and a viral hepatitis panel and ANA were negative. Nasal aspirate was negative for influenza by ELISA. Upon diagnosis, IV fluid with bicarbonate was promptly initiated in the ED. After 3 days, the CPK, transaminases, and myoglobin began to trend down until they normalized. The serum creatinine remained normal. The patient's symptoms resolved and he was discharged home a week later.
DISCUSSION: Rhabdomyolysis is commonly caused by drugs, alcohol, seizures, and trauma. It has also been reported in viral and bacterial infections. Influenza is the most common viral etiology. The pathophysiology underlying virus-induced muscle damage is unclear. Two mechanisms have been postulated: direct viral invasion and myotoxins mediated by cytokines. Viral syndrome seems to be responsible for this case based on the patient's symptoms and exclusion of other etiologies. Influenza is likely, although not confirmed, given the epidemic season and several confirmed local cases. The highest CPK in influenza was reported at over 500,000 U/L and nearly half of the patients developed acute renal failure (ARF). Although CPK remains the most reliable indicator of muscle damage, it does not always correlate with the development of ARF. This case demonstrates that even a CPK value of over 1.2 million U/L does not necessarily lead to ARF. With a high index of suspicion during flu season, diagnosis of rhabdomyolysis can be made by history, physical exam, and simple lab tests. Early intervention with aggressive hydration is the key to the prevention of ARF.

COLCHICINE OVERDOSE — NOT JUST DIARRHEA. B.P. Sankarapandian[1]; S.K. Thambidorai[1]; M. Bandara[1]; S. Dodla[1]; L. Morrow[1]. [1]Creighton University, Omaha, NE. *(Tracking ID #115553)*

LEARNING OBJECTIVES: 1. Demonstrate the classic pattern of the clinical course after colchicine overdose. 2. Recognize the current modalities in managing colchicine overdose. 3. Recognize the fatal potential of a common drug.
CASE: 23-year-old male with history of depression was admitted to the intensive care unit after ingesting 60 mg of colchicine. He initially presented to a rural hospital where he underwent gastric lavage followed by activated charcoal administration. The patient's initial symptoms upon presentation to our hospital included weakness, lethargy and nausea. During the course of the hospitalization the patient developed an upper gastrointestinal bleed (GI) with subsequent hypotension and anuria. The patient's condition worsened when he became progressively more dyspneic eventually leading to acute respiratory distress syndrome (ARDS). Hepatic failure ensued with the following enzymes values: alk phos 929 IU/L, AST 1466 IU/L, ALT 366 IU/L, and T bili 2.6 mg/dL. He later developed rhabdomyolysis with a serum myoglobin of 480 ng/mL, urine myoglobin 5100 mg/L, CPK 16260 IU/L, BUN 38 mg/dL, and serum creatinine of 3.6 mg/dL. His white blood cell count was initially high, however he later developed signs of agranulocytosis. The serum colchicine level was noted to be 12 ng/mL on admission. The patient underwent continuous renal replacement therapy to try and correct his metabolic abnormalities, but despite the supportive management the patient died 5 days after the suspected time of ingestion. The patient's death was secondary to multi-organ failure.
DISCUSSION: Colchicine overdose is a rare occurrence. Fatalities have been reported after ingestion of just 7 to 12 mg. The morbidity and mortality are directly related to the dose ingested. Toxic manifestations appear after a delay of 2 to 12 hours following ingestion. Symptoms progress in 3 stages. Stage I (Days 1–3) includes a GI phase (Nausea, vomiting, abdominal cramps, diarrhea) and a circulatory phase (hypovolemia, hypotension and cardiogenic shock). This is followed by hypoventilation and acute respiratory distress syndrome. Stage II (Days 3–10) includes bone marrow aplasia, coagulation disorders, polyneuritis, myopathy, and acute renal failure. Stage III: (10 + days) is the recovery phase. There is no specific antidote for colchicine and the only treatment available is supportive management. There are case reports of patients treated with an antibody made from goat serum. This antidote is not readily available and is no longer produced.

CONJUNCTIVITIS, COUGH AND FEVER IN A NEPALI MOUNTAIN PORTER. H.K. Liss[1]. [1]University of Washington, Seattle, WA. *(Tracking ID #116042)*

LEARNING OBJECTIVES: 1) Recognize the clinical features of measles, particularly prior to the development of exanthem. 2) Assess and manage the public health issues posed by a measles outbreak in a population with low levels of passive and active immunity. 3) Identify and treat measles and the associated complications.
CASE: An 18 year old male Nepali mountain porter presented to a new healthcare post in the Everest region of Nepal with a chief complaint of red eyes, malaise, coryza, anorexia and cough of 3 days duration. Physical exam revealed fever of 39.8°C, tachycardia of 110 bpm, significantly injected conjunctiva bilaterally, and several 1–3 mm white spots on the posterior buccal mucosa bilaterally. The rest of the exam was significant only for bibasilar crackles and the absence of rash. Concern for prodrome of measles prompted immediate isolation of the patient in a room in the trekking lodge where the clinic was situated. Initial management also included oral hydration, anti-pyretics, and antibiotics for possible measles pneumonia with bacterial super-infection. By the following morning, a blanching erythematous macular-papular rash erupted over the patient's entire body, sparing his palms and soles. Generally such a patient would be evacuated on foot, by porter or yak to the permanent hospital 5–7 hours away for further management. However, a scheduled immunization day at the hospital precluded such an evacuation, which would possibly expose many unimmunized children and adults to measles. Thus, a porter walked to the hospital, notified the staff of the patient's illness, and requested doses of measles vaccine for contacts. When the porter returned with 10 doses of measles immunization, those Nepalis assessed to be at highest risk of contracting measles were administered vaccine. On the following day, the patient was escorted to the hospital and kept in respiratory isolation for a total of 5 days after the initial appearance of the rash. The patient recovered, returning to work as a porter the next week. In the following month, approximately 10 additional suspected cases of measles were seen at the hospital; however, none of these cases had known contact with this patient.
DISCUSSION: This case underscores the importance of early diagnosis of highly communicable diseases in populations with low levels of immunity. In the case of measles, making the diagnosis and isolating the patient prior to development of rash may help stem epidemics. In addition, the case highlights geographically specific issues to the Himalayas, as conjunctivitis and cough are very common complaints, posing diagnostic confusion with the presentation of prodromal measles. The challenge of managing both patient and population during an outbreak of measles in remote regions which are resource-poor, difficult to access, and fraught with crowded living conditions emphasizes the need for improved primary prevention through immunization.

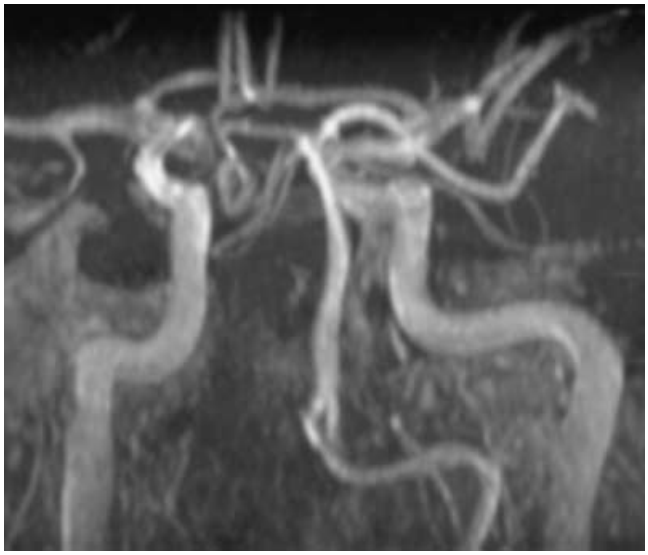
CONSERVATIVE MANAGEMENT OF CHRONIC MESENTERIC ISCHEMIA. D.N. Goldson-Prophete[1]. [1]University of Medicine and Dentistry of New Jersey, Newark, NJ. *(Tracking ID #102070)*

LEARNING OBJECTIVES: 1. Recognize the signs/symptoms of chronic mesenteric ischemia. 2. Recognize treatment options for mesenteric ischemia.
CASE: Mr. S is a 61-year-old man who complained of sharp "stabbing" mid-epigastric abdominal pain radiating towards his umbilicus for approximately one year. He further complained of decreased appetite with avoidance of meals and a 30lb. weight loss. He denied any correlation between the onset of pain and his position or activity. His past medical history is significant for diabetes, hypertension, hyperlipidemia, atrial fibrillation (AF), coronary artery disease, and congestive heart failure (CHF) with an ejection fraction of ~15%. His current medications include Esomeprazole, Glyburide/Metformin, Metoprolol , Pravastatin, Losartan, Furosemide, Warfarin and enteric-coated Aspirin. No significant family history. He denies tobacco, alcohol. On physical examination, Mr. S was an obese male. Bowel sounds were normoactive and abdomen was soft with mid-epigastric tenderness. No rebound or guarding. No abdominal bruit. Rectal examination was normal and he was guiaic negative. CT scan of the abdomen and pelvis was notable for focal narrowing of the superior mesenteric artery and mural calcification. Subsequent angiography revealed mild to moderate stenosis of 50–60% in the proximal portion of main superior mesenteric artery (SMA). However, it was not flow limiting and there was no pressure gradient across the stenosis. The patient subsequently underwent dilatation and stenting of his SMA with reduction of the stenosis to 10–20%, after which he reported complete relief of his symptoms.
DISCUSSION: Mesenteric ischemia due to chronic arteriosclerotic occlusive disease usually results in the gradual development of postprandial pain associated with avoidance of meals and resultant weight loss. Diagnosis is based on clinical symptoms and arteriographic demonstration of an occlusive process of the splanchnic vessels. Endarterectomy or bypass procedures of the celiac and/or SMA have shown the greatest success in treating this condition. However, percutaneous ballon angioplasty with/without stenting, becomes the procedure of choice for high-risk patients in whom a more conservative approach is warranted, such as Mr. S. The literature has generally concentrated on the management of those patients with a "severe" stenosis of one or more of the splanchnic vessels. This case demonstrates that even a "moderate" stenosis of the SMA can be clinically significant and may warrant an attempt at revascularization. A prospective trial of endarterectomy vs. percutaneous angioplasty in these patients (as opposed to those with severe stenoses) has not been done.

CRACKING THE NECK CAN CAUSE A STROKE. F.K. Salahuddin[1]; M. Gaddamanugu[2]; S.G. Nace[3]. [1]University of Illinois College of Medicine at Peoria, Peoria, IL; [2]University of Illinois College of Medicine Peoria,SFMC, Peoria, IL; [3]University of Illinois College of Medicine, Peoria,SFMC, IL, IL. *(Tracking ID #117189)*

LEARNING OBJECTIVES: 1. Sudden repeated neck movements can cause a vertebrobasilar artery dissection. 2. Thorough history taking is the key towards an accurate diagnosis. 3. Isolated episodes of vertigo may be the only manifestation of vertebrobasilar ischemia.
CASE: This was a 51 year old white male who presented to the ED with sudden onset of vertigo,lightheadedness and severe right sided headache following sudden neck movement. He closed his eyes in an attempt to stop the vertigo with out much relief, he then described his gait as preferential tilting to his right side. Patient required assistance in getting out of the car because of his leg weakness. Symptoms

occurred as the patient "popped" his neck as he was in the habit of doing it daily, and especially that day he repeatedly "popped" his neck many times in an attempt to "pop" into place. Past medical history was significant for neck pain for which patient had consulted chiropractor; his last visit being was a few months ago. Upon arrival his neurological exam was unremarkable. Initial non contrast CT of the head and lumbar puncture were normal. MRI/MRA demonstrated right vertebral artery dissection at C1 vertebral level with infarction in the distribution of the PICA. These finding were consistent with dissection and frank occlusion of right vertebral artery. Patient was successfully treated with clopidogrel due to his allergy to aspirin. He had complete recovery. He was however advised to avoid rapid neck movements as well as manipulations.
DISCUSSION: Concerns about vertebrobasilar artery dissection after chiropractic as well as self manipulation are common. Anatomical variations of the vertebral arteries and their branches are not infrequent and may constitute a predisposing factor to complications after neck manipulation. Vertebrobasilar artery dissection is a reported complication of sudden neck movements. There are reported cases in the literature as a result of chiropractic manipulation, blunt trauma to the neck, and in sports requiring sudden and rapid movements. Neurological symptoms may improve depending upon the severity of the injury. Long-term anticoagulation is the recommended. A careful history in the proper setting is essential to a diagnosis and can prompt the clinicians to do appropriate diagnostic study.



CULTURAL ISSUES IN PRIMARY CARE MANAGEMENT OF RUSSIAN IMMIGRANTS. B.H. Warren[1]; I. Pines[2]. [1]Denver Health and Hospital Authority, Denver, CO; [2]University of Colorado Health Sciences Center, Denver, CO. *(Tracking ID #116362)*

LEARNING OBJECTIVES: 1. Become familiar with the cultural conditions of Russian immigrants that may interfere with succesful management of chronic disease for these individuals. 2. Apply knowledge of cultural barriess to solving clinical problems among Russians with chronic disease.
CASE: 68 YO Russian speaking engineer who immigrated to the US in 1999. He has CAD, diabetes and uncontrolled hypertension. His BP is 195/100, HgA1C is 11.8, LDL cholesteral is 155 and he is chronicall depressed. He has no concept of the physiology and pathogenesis of hyperlipidemia and takes previously prescribed blood pressure medicines "PRN" for not feeling well. Dietery instructions given him earlier in English were not understood. (On or two other vignettes will be offered to illustrate the issues addressed)
DISCUSSION: BACKGROUND Federal mandates and National Quality Guidelines and Policies require that practitioners address cultural competence for special populations in the care of our patients. Healthy People 2010 sets goals for reducing cultural disparities in preventive management of diseases. Cultural issues have a significant impact on the successful management of chronic diseases according to guidelines and expectations when measuring the clinical performance of general internists. Addressing these goals requires explicit knowledge of the cultural issues, barriers and opportunities that are relevant for each of the diverse old and new populations seeking health care services in the United States. Newer immigrants are more vulnerable as they bring foreign experience and expectations of medical health care with which American providers may be unfamiliar. One such population about whom little has been published is that of recent Russian immigrants. DISCUSSION Examples of Russian cultural barriers and opportunities addressed in this presentation include attitudes towards American medicine, skepticism about preventive health care, reluctance to use medications regularly, and fear of chronic disease and hospitalization. High expectations for absolute cure of chronic illness, religious interventions (in some populations), and free access to medical care add to complicating variables. Underlying high prevalence of chronic depression, previous adverse experiences with chronic disease and poor availability of medications also require special consideration.

CUSHING'S SYNDROME DUE TO A PULMONARY CARCINOID. E.H. Orth[1]; T. Dorsch[1]; L. Cation[1]. [1]University of Illinois at Peoria, Peoria, IL. *(Tracking ID #116346)*

LEARNING OBJECTIVES: Recognize the clinical features of Cushing's Syndrome. Recognize the classic features of a pulmonary carcinoid tumor.
CASE: A 40 year-old man with a 3-year history of congestive heart failure due to a presumed viral cardiomyopathy presented with hypokalemia despite vigorous oral potassium replacement. He also noted increasing proximal muscle weakness. On physical exam, plethora, striae, bruising, muscle wasting, and central obesity were present. Analysis revealed the potassium on admission was 2.0 mmol/L. A 24-hour urine free cortisol was 350 mcg/24 hours (normal <50). There was no suppression of urinary free cortisol with dexamethasone 2 mg po every 6 hours for 48 hours. CRF testing showed baseline serum cortisol was 31 mcg/dl and peak cortisol was 34 mcg/dl; baseline plasma ACTH was 52 pg/ml and peak was 64 pg/ml. A chest film showed healing rib fractures. Further imaging with CT scan of the chest showed a small infiltrate in the left upper lobe thought to represent inflammatory changes. Petrosal sinus sampling for ACTH did not demonstrate a gradient. An octreotide scan showed uptake in the left lung, corresponding to the infiltrate on CT scan. A carcinoid tumor was resected from the left lung. Immunoperoxidase staining of the tumor was markedly positive for ACTH.
DISCUSSION: Bronchial carcinoid tumors comprise approximately 2% of all ectopic ACTH secreting neoplams, and 3.5% of all carcinoid tumors. Patients with bronchial carcinoid are less likely to have flushing or diarrhea than carcinoid tumors from the embryonic midgut or hindgut. Ectopic ACTH secrection and right-sided heart disease can be features of carcinoid syndrome. Typically these tumors pursue an indolent course, with onset of symptoms preceding diagnosis by a mean of 4.5 years. In summary, our case represents a patient with a history of heart disease and Cushing's Syndrome due to a pulmonary carcinoid tumor.

CYCLIC FEVER IN A PREGNANT WOMAN. T.T. Tran[1]; L.B. Lu[2]. [1]Baylor College of Medicine, Houston, TX; [2]Baylor College of Medicine, Friendswood, TX. *(Tracking ID #117249)*

LEARNING OBJECTIVES: 1) Construct a differential diagnosis for cyclic fever in pregnant women. 2) Recognize malaria as the cause of cyclic fever in a patient from an endemic area. 3) Review relapse, perinatal outcome, and treatment of Plasmodium vivax infection during pregnancy.
CASE: A 19-year-old G2P1 woman, 21 weeks pregnant, presented to the emergency room with 10 day history of cyclic fever and chills. She was in her usual state of health until 10 days prior to presentation when she developed intermittent shaking chills and fever up to 104 F. Each episode would last an hour, usually in early morning and late afternoon. The patient denied cough, abdominal pain, diarrhea, dysuria, and weight loss. She was from El Salvador and immigrated to the United States 6 months ago. On arrival, her vital signs were with temperature of 101.4, blood pressure of 90/40 with no orthostatic hypotension, heart rate of 105, and respiration rate of 18. She had pale conjunctiva, supple neck, clear lungs, normal heart sounds, gravid abdomen with no tenderness, no costovertebral angle tenderness, and no palpable lymphadenopathy. Blood work revealed WBC 7.7 with 68% neutrophils and 21% lymphocytes, Hgb 11.1, Hct 31.3, platelets 146, normal chemistries, and normal liver function tests. LDH was 329. Urine and blood cultures were negative. A peripheral blood smear revealed multiple red blood cells with rings consistent with malaria. Pathology confirmed that the morphology was consistent with Plasmodium vivax in different stages of development. The patient was treated with oral chloroquine with resolution of her fever. After her delivery, primaquine was started to eradicate the liver stages of Plasmodium vivax.
DISCUSSION: In a pregnant woman, cyclic fever has a limited differential diagnosis which includes cyclic neutropenia, lymphoma, and malaria. Malaria should be considered in a patient with cyclic fever from an endemic area. The initial infection with P. vivax can present with mild or no symptoms. However, P. vivax produces dormant liver stages that may cause late relapse 6 to 11 months after the initial infection. Pregnancy predisposes to relapse due to depressed cell-mediated immunity and sequestration of parasites in the placenta. P. vivax infection during pregnancy is associated with maternal anemia and decreased fetal birthweight. The preferred drug during pregnancy is chloroquine. For chloroquine-resistant malaria, quinine combined with clindamycin is the treatment of choice. Primaquine is used after delivery to eradicate latent liver stages of P. vivax. In conclusion, malaria should always be in the differential in all synchronized cyclic fever.

DEEP VENOUS THROMBOSIS SECONDARY TO DEEP VENOUS THROMBOSIS PROPHYLAXIS. K. Paranada[1]; M. Lim[1]. [1]University of Connecticut, Farmington, CT. *(Tracking ID #116572)*

LEARNING OBJECTIVES: Diagnose and manage deep venous thrombosis (DVT) secondary to heparin-induced thrombocytopenia as a complication of heparin for DVT prophylaxis.
CASE: A 72 year old female with a history of hypertension, type 2 diabetes mellitus and obesity, underwent bilateral knee replacement for osteoarthritis. She was given enoxaparin for DVT prophylaxis and was discharged stable on her fourth postoperative day. She returned 6 days later complaining of left leg pain localized below the knee. Examination showed the leg to be markedly swollen, cold, pale, with weak pulses. The patient was immediately taken for fasciotomy of the involved leg where

there was note of muscle edema but no hematoma or myonecrosis. Pedal pulses improved. Laboratory data showed: platelet of 13,000/ml3 (normal on discharge), PT of 17.7, INR of 2.42 and PTT of 30. However, a few hours post-fasciotomy, the left leg was noted to be progressively more mottled, cyanotic and edematous. The patient was started on IV lepirudin. Venous angiogram showed massive DVT involving the left common femoral vein down to the popliteal vein. Thrombolytic therapy using urokinase for limb salvage was started. An IVC filter was also placed. INR was kept between 2 to 3 with lepirudin.
DISCUSSION: Heparin has long been considered the standard in DVT prophylaxis. However, complications arising from heparin therapy, such as that seen in this patient, can occasionally be life or limb threatening. Type II heparin-induced thrombocytopenia occurs in 3% of patients receiving heparin for 5 or more days. The major target antigen is a multimolecular complex of platelet factor 4 and heparin. Immune complexes interact with the platelet Fc gamma II receptor, which leads to platelet activation, formation of prothrombotic microparticles, and generation of thrombin. The key in diagnosis of HIT is a high index of suspicion as assays with high sensitivity and specificity may not be readily available. The appearance of otherwise unexplained thrombocytopenia, thrombosis associated with thrombocytopenia, or even a normal platelet count which has fallen 50 percent or more from a prior value should raise the possibility of HIT in any patient begun on heparin therapy within the preceding five to ten days. Once HIT is clinically suspected, therapeutic management consists of removal of the immune stimulus, by discontinuing heparin therapy and inhibition of thrombin, either directly (lepirudin and argatroban) or by blocking the generation of new thrombin (danaparoid). In the face of thrombosis, thrombolytic therapy may also be considered. Thus, the decision to put patients on heparin comes with the responsibility and vigilance of screening for this important complication.

DEMENTIA WITHOUT MEMORY LOSS?. P Koneru[1]; G. Prakash[1]; R.D. Hobbs[1]. [1]Oakwood Healthcare System, Dearborn, MI. *(Tracking ID #117109)*

LEARNING OBJECTIVES: To recognize the existence of atypical dementias that are language based and without significant memory loss.
CASE: A 71-year-old man accompanied by his wife presented for the evaluation of dementia. His history was significant for hypertension and hyperlipidemia for which he took benazepril and lovastatin. He was healthy until five years previously when he noted word-finding difficulties. He could now only express himself in monosyllables. There were no focal neurological deficits. His behavior, mood, ability to recall recent events and recognize people were intact. He had mild difficulty dressing. Social graces, facial expressions, coordination and gait were normal. He followed commands. He accurately drew a clock and wrote a sentence without spelling errors. His MMSE was measured at 10/30. CBC, metabolic panel, Vitamin B-12, Folate, TSH, Ceruloplasmin levels, and HIV and Syphilis serologies were normal. CT and MRI only showed generalized cerebral atrophy. Neuropsychological testing revealed Primary Progressive Aphasia (PPA).
DISCUSSION: Unlike most common dementias where memory problems are common and an integral part of the diagnosis, PPA is an atypical dementia characterized by a relentless dissolution of language with relative preservation of memory. Patients usually present with word-finding difficulties, spelling errors or abnormal speech patterns. Unlike Alzheimer's disease, these patients can recall and evaluate recent events despite an inability to express their knowledge verbally. Folstein's MMSE because of its reliance on verbal expression overestimates the degree of the patient's cognitive dysfunction in PPA and may lead to inappropriate labeling and ineffective treatment. Neuropsychological testing is the diagnostic modality of choice. There is no effective pharmacological treatment for PPA although speech therapy is useful in exploring alternative communication strategies. Explaining the nature of the condition is one of the greatest benefits in terms of coping with the impairment and recognizing the primary problem to be expressive rather than cognitive.

DEPRESSION AS A RISK FACTOR FOR HYPOGLYCEMIA IN A WELL-CONTROLLED DIABETIC. M.A. Mendiola[1]; E. Coffey[1]. [1]Hennepin County Medical Center, Minneapolis, MN. *(Tracking ID #117183)*

LEARNING OBJECTIVES: 1) Recognize that diabetics have a higher incidence of depression than non-diabetics. 2) Recognize that depression is associated with poor glycemic control. 3) Recognize that anorexia associated with depression may put a diabetic a risk for hypoglycemia.
CASE: A 71 year old female with a history of type 2 diabetes presented to her primary physician for routine follow up. She had been maintained on a regimen of NPH and regular insulin with a recent glycohemoglobin of 6.3%. She had previously experienced few hypoglycemic reactions, but the episodes had become more frequent over the previous two months. At this visit, she also described symptoms consistent with depression, including anorexia and poor motivation for meal preparation. Venlafaxine was initiated, and her insulin regimen was switched to Glargine and Lispro, to allow more flexibility. She was specifically instructed not to take her short acting insulin if she was not eating. However, she continued to have frequent serious hypoglycemic events requiring emergent medical care. Her insulin regimen was significantly liberalized until her depression could be brought under better control.
DISCUSSION: It has been shown in a meta-analysis by Anderson et al. in Diabetes Care, 2001, that diabetics are twice as likely as non-diabetics to suffer from depression (14–26% in diabetics vs. 5–9% in non-diabetics, with an overall odds ratio of 1.9). Depression is also associated with poor glycemic control, increased microvascular and macrovascular complications, as well as increased healthcare expenditures. Total healthcare expenditures for people with depression and diabetes were 4.5 times as high as for those with diabetes without depression, in a 2002 study by Egede et al. in Diabetes Care. This case demonstrates the need for close follow up in diabetics diagnosed with depression. Moreover, it may be necessary to tolerate hyperglycemia in the short run to reduce the risk of life-threatening hypoglycemia until the depression can be controlled. Further research is necessary to investigate the risk of hypoglycemia in diabetics with depression.

DIABETES INSIPIDUS COMPLICATING GASTRIC BYPASS SURGERY. D.L. Mercado[1]; P Liew[2]. [1]Baystate Medical Center, Wilbraham, MA; [2]Baystate Medical Center, springfield, MA. *(Tracking ID #116467)*

LEARNING OBJECTIVES: To appropriately screen preoperative gastric bypass surgery patients for Diabetes Insipidus
CASE: A 26 year old woman with morbid obesity was admitted for gastric bypass surgery. Her past history was notable only for polycystic ovarian syndrome and depression. On postoperative day 1, she had a high urine output, but had clinical signs of volume depletion. She complained of thirst but was unable to take adequate oral fluids due to intake limits from the postoperative gastric bypass diet. Her initial serum sodium was 151, but her urine specific gravity was 1.006; renal function was normal. IV fluid resuscitation was initiated resulting in urine output of 7 liters in 24 hours. She was suspected of having Diabetes Insipidus. History from the patient's mother revealed chronic polydipsia and polyuria, which the patient had failed to mention. Further labs showed serum Na 149, urine sodium 140, and serum osms 302. A trial of vasopressin decreased her urine output dramatically from 300 cc/hr to 50 cc/hr with a > 100% increase in urine osms. Work up revealed no specific cause and the condition was deemed idiopathic central DI. With daily vasopressin nasal spray she was able to maintain adequate hydration while adhering to her post-surgical fluid limits, and her polyuria and polydipsia resolved.
DISCUSSION: Central DI is a rare neurohypophyseal disease defined as polyuria of 2–10 L/day with dilute urine (SpGr 1.000–1.005) in conjunction with high serum osmolarity and high serum sodium. The most common causes are trauma or neurosurgery, but 30–50% are idiopathic. Our patient had daily symptoms consistent with DI which she did not think to mention preoperatively because of their chronicity. Postoperatively undiagnosed DI can result in severe volume depletion because of limited access to free water. This is particularly true of gastric stapling and gastric bypass patients, who have limited oral intake allowances, especially during their first few days postoperatively. Preoperative screening for DI is critical in these patients since they would not be able to maintain hydration without IV fluids due to their limited oral intake postoperatively. In fact, the presence of nephrogenic DI, which is poorly responsive to vasopressin, is an absolute contraindication to this type of surgery. Preoperative patients should be questioned about polyuria and polydipsia. If symptoms are present and not due to hyperglycemia, urine and serum osms, and urine and serum sodium should be checked. If the clinical findings and history are suspicious, water deprivation testing can be considered to confirm the diagnosis.

DIAGNOSIS AND MANAGEMENT OF A PREGNANT FEMALE WITH BRUISES AND SPONTANEOUS ABORTIONS: A CATCH 22. J. Cunningham[1]; M. Panda[1]; W.P. Caine[1]. [1]University of Tennessee, Chattanooga, Chattanooga, TN. *(Tracking ID #115585)*

LEARNING OBJECTIVES: 1. Recognize the effect of pregnancy on platelet aggregation disorders 2. Discuss the diagnosis, categorization, and treatment of thrombophilic disorders 3. Recognize the dilemma in the evaluation and treatment of combined hypercoagulable and hypocoaguable disease.
CASE: A 19 year old black female G4P0030, at 9 weeks of gestation presented with spontaneous bruising. She was diagnosed with von Willebrand factor deficiency 3 months ago. She has a history of menorrhagia but denies history of bleeding from other sites. No family history of bleeding disorders. She has had two spontaneous first trimester abortions. No history of alcohol, tobacco, or illicit drug use. Meds include ASA (started during this pregnancy by PCP) and prenatal vitamins. Physical exam revealed new bilateral pretibial bruises and multiple bruises in different stages of healing on legs and arms. Labs revealed a normal CMP, CBC, PT 13 (INR 0.96), aPTT 34, negative ASO &nANA titer, monospot, RPR, HIV, hepatitis panel. Fibrinogen was elevated at 509, D-dimer 0.6. Ristocetin cofactor, Factor VIII, beta-2-glycoprotein and hexagonal antibodies were normal. All vWF multimers were present and normal. Mixing study and dilute Russell Venom Viper Test (dRVVT) were abnormal confirming the presence of a lupus anticoagulant.
DISCUSSION: Thrombophilic disorders can be hereditary, acquired, or both. The antiphospholipid antibody syndrome (APAS) is an acquired disorder associated with arterial and venous thrombosis, recurrent miscarriages and thrombocytopenia due to the presence of anticardiolipin antibodies, lupus anticoagulant, or subgroup of other antibodies. Types of thromboses associated with the APAS are categorized into syndromes with specific treatment. Mixing study and the dRVVT are specific tests to evaluate presence of a lupus anticoagulant. As commonly seen, our patient's platelet aggregation disorder (vWF def) corrected during pregnancy. Her history of spontaneous abortions prompted an APAS workup.The presence of lupus anticoagulant confirmed our patient had the Fetal Wastage variant of the APAS. Treatment for this is aspirin immediately before conception and heparin immediately after continued till 6 weeks postpartum. In our patient Aspirin exacerbated her vWF def causing bruising. We anticipate that the vWF def will resurface in the postpartum period which together with treatment will increase bleeding. In an attempt to prevent another abortion Aspirin was continued and heparin was

added after discussion of the risk and benefits of receiving anticoagulation and antiplatelet therapy with the patient. A team approach by a high risk obstetrician, internist and hematologist for close monitoring during and after pregnancy will be utilized.

DIARRHEA GIVES ME A HEADACHE: SAGITTAL VENOUS THROMBOSIS AS A COMPLICATION OF AN EXACERBATION OF INFLAMMATORY BOWEL DISEASE. S. Homsi[1]; J. Hefner[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116222)*

LEARNING OBJECTIVES: 1.) Recognize an uncommon extraintestinal manifestation of Inflammatory Bowel Disease (IBD); 2.) Diagnose and treat a sagittal vein thrombosis; 3.) Recognize IBD as a hypercoagulable state.
CASE: A 39-year-old woman, recently diagnosed with IBD, was admitted with severe watery, bloody diarrhea associated with crampy abdominal pain, weight loss, and night sweats. The patient was diagnosed six months prior to admission and never had a complete remission of her symptoms. She was treated on this admission with solu-medrol (methylprednisolone), pentasa (5-ASA) and rowasa (5-ASA) enema. On the fourth hospitalization day, the patient developed a frontal headache, described as pressure-like radiating to the back of her neck. The severity of the headache was initially 5/10, and increased significantly over the next 24 hours to become 10/10. The headache worsened in the supine position and improved mildly with sitting. There was associated nausea, vomiting and severe photophobia without any focal neurological symptoms. She was initially treated with NSAID's without any improvement. A non-contrasted head CT was negative for SAH or a hemorrhagic CVA. Her GI symptoms continued despite IV steroids. 6MP was added without improvement and then started on Infliximab. Physical examination revealed no nucal rigidity and no focal neurologic deficits. Fundoscopic exam revealed no papillary edema. Brain MRI revealed a thrombus involving the superior sagittal sinus extending into the left transverse sinus. A hypercoagulable work up revealed decreased levels of Protein S. The patient was started on a heparin drip and the headache improved dramatically over the next 48 hours. She was discharged on warfarin.
DISCUSSION: The incidence of extraintestinal manifestations of inflammatory bowel disease is reported to be between 25 and 35%. Neurological complications are rare and are usually the result of thromboembolic events. The pathophysiology is not fully understood but there may be an increased frequency of thrombophilic mutations such as factor V Leiden, prothrombin, or methylene tetrahydrofolate reductase. The coagulation abnormalities that have been reported to be associated with Crohn's disease include accelerated thromboplastin generation, increased concentration of factor V, factor VIII, and fibrinogen. Low antithrombin III concentrations, thrombocytosis, decreased platelet survival, and spontaneous platelet aggregation causing coagulation abnormalities have also been reported. The most common presentation of intracranial venous thrombosis is headache associated with symptoms of increased intracranial pressure. MRI is the gold standard for diagnosis and treatment consists of anticoagulation.

DIC AND TTP: TWO, THREE LETTER WORDS. M. Hamblin[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117472)*

LEARNING OBJECTIVES: 1. Appreciate the overlapping clinical and laboratory findings in DIC and TTP. 2. Recall the pathogenesis behind these two disorders.
CASE: A 45-year-old man with HIV presented with ten days of headaches. His examination was normal with no signs of meningismus. Cerebrospinal fluid was positive for cryptococcal antigen, and he was treated with intravenous amphotericin. On the third day he developed an acute change in his mental status thought to be due to sepsis. His altered mental status persisted over the ensuing seven days despite antibiotics. He developed a fever and his creatinine increased from 1.5 to 3.0; his platelet count decreased from 164 to 20. His fibrinogen and PTT remained in the normal range, but the D-dimer was positive. His PT was 16.7, and his LDH was 1,124. A blood smear revealed schistocytes indicating microangiopathic hemolytic anemia.
DISCUSSION: Thrombotic thrombocytopenic purpura (TTP) and disseminated intravascular coagulation (DIC) have overlapping lab features that can make a definitive diagnosis difficult. TTP is due to an acquired antibody-mediated deficiency of von Willebrand factor (vWF)-cleaving protease. It is thought that antigenic mimicry from an antecedent infection stimulates the development of this antibody. In HIV patients a link between CMV infection and the development of TTP has been established. The decreased levels of vWF-cleaving protease lead to intravascular fibrils that induce the thrombocytopenia and microangiopathic hemolytic anemia with a markedly elevated LDH. The clinical symptoms of fever, neurologic changes, and renal insufficiency result from obstructed small-vessel blood flow. The neurological findings are often the first clinical indication of disease, and may range from headache and confusion to aphasia, lethargy, and coma. In DIC the depletion of inhibitors of coagulation activate thrombin. The coagulation cascade becomes unregulated resulting in the hallmark lab findings of DIC: thrombocytopenia, hypofibrinogenemia, increased fibrin degradation products, and a prolonged prothrombin time (PT). In twenty-five percent of cases, microangiopathic hemolytic anemia may be present. Distinguishing between these two diseases is important as they warrant different treatments. In DIC, treating the underlying disease process is essential. Supportive measures, such as transfusions with platelets and cryoprecipitate maintain coagulation factors necessary to prevent bleeding until the underlying disease is eradicated. Low-dose heparin may prevent errant thrombosis. In the case of TTP, treatment is aimed at removing the antibody to von-Willebrand factor cleaving protease using large volume plasmapheresis.

DIFFUSE ALVEOLAR HEMORRHAGE, PULMONARY CAPILLARITIS AND RENAL FAILURE: A CASE OF CATASTROPHIC ANTIPHOSPHOLIPID SYNDROME. B.C. Clark[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116421)*

LEARNING OBJECTIVES: 1) Recognize the major clinical manifestations of catastrophic antiphospholipid syndrome. 2) Review treatment strategies for catastrophic APLS.
CASE: A 42 year old woman with a remote history of infective endocarditis and mitral valve replacement was transferred from an outside hospital for work-up of hemoptysis and pulmonary hypertension. She reported 8 months of daily expectorated blood clots and blood streaked sputum as well as marked progressive dyspnea on exertion. Review of old records revealed long-standing mild thrombocytopenia, elevated PTT, false positive RPR and strongly positive anticardiolipin (aCL) IgG antibody. On exam, lungs were clear. Laboratory data revealed a platelet count of 114,000, PTT of 62, and creatinine of 2.0 mg/dL. Urinalysis was bland. Anticardiolipin IgG was markedly elevated at 122 GPL, and Russell viper venom test was elevated to 112. ANA was borderline positive at 1:40 but DS DNA and anti-Smith were both negative, and complement levels were normal. ANCA and glomerular basement membrane anti-bodies were also negative. A chest radiograph showed interstitial infiltrates and a high-resolution CT scan showed diffuse ground glass opacities. Broncho-alveolar lavage revealed hemosiderin laden macrophages with no evidence of infection. A mini-thoracotomy with lung biopsy revealed evidence of hemorrhage with capillaritis. Shortly after the procedure the patient's clinical condition worsened further, with development of acute renal failure despite aggressive hydration. Creatinine rose to 3.8 mg/dL and pulmonary function deteriorated. The patient was treated with high dose solumedrol and underwent plasmapheresis three times. Her clinical condition rapidly improved, pulmonary hemorrhage cleared, creatinine fell to 2.3 mg/dL and aCL antibody declined to 35. Shortly after she underwent renal biopsy which revealed microthrombi of the arterioles consistent with renal involvement in antiphospholipid syndrome.
DISCUSSION: The antiphospholipid syndrome is defined by venous or arterial thromboses, recurrent fetal loss and the presence of elevated levels of antiphospholipid antibodies. A subset of patients with APLS develop a "catastrophic" clinical picture characterized by vaso-occlusive events, typically microthromboses, affecting multiple organs over a period of days to weeks. Diverse organs, including the heart, lungs, kidneys, liver, spleen, CNS and extremities can be involved. In the largest case series of 80 patients, renal involvement occurred in 72% and pulmonary involvement in 64% of cases. Lung manifestations can include pulmonary emboli, pulmonary hypertension, ARDS, and intra-alveolar hemorrhage and capillaritis as in this patient. Thrombotic microangiopathy is the most common renal manifestation. Laboratory findings include elevated titers of aCL (98%), lupus anticoagulant (68%), and thrombocytopenia (60%). Treatment modalities include anticoagulation, high-dose steroids, plasmapheresis, IV gamma globulin, and immunosuppression with cyclosporine or azathioprine. In a 1998 case series of 50 patients, treatment with a combination of anticoagulation, steroids and plasmapheresis or IV GG resulted in a 70% survival rate. The mainstay of therapy, anticoagulation, was delayed in this patient until she was safely past the immediate post-operative period and pulmonary hemorrhage had subsided.

DIFFUSE LYMPHADENOPATHY IN A PATIENT WITH LONG-STANDING HIV. K. Ozer[1]; J. Madrazo[1]; L. Lu[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #116772)*

LEARNING OBJECTIVES: 1. Construct the differential diagnosis of diffuse lymphadenopathy. 2. Review the clinical presentation and histopathologic features of Castleman's Disease. 3. Recognize intra-abdominal lymphadenopathy as a cause of biliary obstruction
CASE: A 34 year-old man with an eleven-year history of HIV presented with a 3-week history of right upper quadrant pain, fever, and 10 lb weight loss. The pain was described as a constant, stabbing pain with radiation to the back and was not associated with food intake. Physical examination revealed a temperature of 98.7°, mild scleral icterus; bilateral rubbery, mobile, non-tender submandibular, cervical and axillary lymphadenopathy; tender right upper quadrant, with no rebound tenderness or guarding. Hepatosplenomegaly was not present. Labs revealed CD4 count of 105, viral load greater than 750,000, WBC: 3.4, Hb: 9.4, Hct: 27.4, MCV: 86.9, PLT: 158, Total bilirubin: 3.1, AST: 90, ALT: 122, alkaline phosphatase: 666. CT of the abdomen showed extensive retroperitoneal lymphadenopathy, including a node on the gastrohepatic ligament compressing the biliary tree. Work up for Bartonella, mycobacterial, fungal, CMV and EBV infections were negative. The patient had an excisional biopsy of a cervical lymph node, which was consistent with the plasma cell variant of Castleman's Disease (CD). The patient was treated with CHOP (cyclophosphamide, doxorubicin, vincristine, prednisone) and responded well with rapid improvement of the biliary obstructive symptoms.
DISCUSSION: Diffuse lymphadenopathy is associated with a wide range of conditions including infections, immunologic diseases, malignancies, and other diseases of lymphoid tissues such as histiocytic necrotizing lymphadenitis, lymphomatoid granulomatosis, dermatopathic lymphadenitis and Castleman's Disease. Castleman's Disease is a rare entity and its prevalence has not been well documented. It can present in two forms, localized form (unicentric) and diffuse form (multicentric). Unicentric CD is found in non-HIV patients. Multicentric CD is often associated with HIV infection, especially with co-infection of Human Herpesvirus 8 (HHV8). CD is prevalent in young males who typically present with vague constitutional symptoms of weight loss, fever, malaise, and diffuse lymphadenopathy. Lymph node biopsy is required for definitive diagnosis. Treatment options include combination chemotherapy with several regimens, the most commonly used being CHOP. Unicentric CD is curable with surgical resection. Multicentric CD has poor prognosis with overall mortality of 70–85% and a mean median survival of 8 to 14 months.

In conclusion, multicentric CD should be on the differential diagnosis in HIV patients presenting with diffuse lymphadenopathy.

DISSEMINATED COCCIDIOIDOMYCOSIS. P. Hu[1]; M. Pillai[1]; N.C. Le[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #116476)*

LEARNING OBJECTIVES: 1) Recognize the presentation and diagnosis of disseminated coccidioidomycosis 2) Treatment for coccidioidomycosis
CASE: A 49-year-old African American man with a past medical history of hepatitis C, cirrhosis, and frequent travel to Arizona, presented with a two-week history of fever, chills, and cough. Significant findings on admission were temperature 101.3, RR 28 and decreased breath sounds on the left base. Lab results showed WBC 15K, with 85% neutrophils and 2% bands. Chest x-ray showed a left pleural effusion. Various antibiotics were started without improvement. On day #9, sputum culture grew a fungal pathogen, which was later identified as ***Coccidioides immitis***. On day #10, patient developed several subcutaneous nodules in his forearms. Biopsy of the nodules showed ***C. immitis***. He is currently on fluconazole 400 mg daily with resolution of symptoms.
DISCUSSION: ***C. immitis*** is a soil saprophyte endemic to California, Arizona, and Western Texas. Primary pulmonary disease usually goes unnoticed. Patients can present with a range of symptoms from cough to severe pneumonia. The disease is usually self-limited, but two important sequelae can occur: 1) hypersensitivity reactions and 2) dissemination. In hypersensitivity, the patient can develop conditions such as erythema nodosum, erythema multiforme. Dissemination occurs primarily with hematogeneous spread and is more likely in African Americans, pregnant women, and immunosuppressed patients. Diagnosing coccidioidomycosis involves recovery of ***C. immitis*** from clinical specimens or detection of anti-coccidioidal antibodies in serum or other body fluids. Recovery of C. immitis from respiratory secretions, tissue and other specimens establishes the diagnosis since it is not a normal flora. Anti-coccidioidal antibodies are highly specific (80–90% sensitivity in disseminated disease), but these antibodies may lag behind the onset of illness from weeks to even months. Thus, the absence of the antibodies does not exclude the diagnosis of coccidioidomycosis. Treatment depends on the severity of the disease. Primary pulmonary disease usually resolves without treatment. For disseminated disease, oral azole antifungal agents are the drugs of choice. Amphotericin B is used in patients with severe disease (eg. spread to the spine) and during pregnancy. Treatment with antifungal should be continued for years. Prognosis for complete cure remains uncertain.

DOC, I COUGHED UP A WORM!. M. Traina[1]; R.R. Cader[2]. [1]University of California, Los Angeles—San Fernando Valley Program, Sylmar, CA; [2]University of California, Los Angeles, North Hills, CA. *(Tracking ID #117536)*

LEARNING OBJECTIVES: 1) To learn the clinical presentation of anisakis infection. 2) To learn management of anisakis infection.
CASE: A 56 year old male presented to urgent care complaining of coughing up a worm. The patient killed the worm and kept it in a wrapper. He denied fevers, chills, diarrhea or abdominal discomfort. Upon further review, he noted that he had been consuming raw beef for the past few months. One week prior to presentation, he had started eating raw fish including salmon and mackerel purchased at the Santa Monica Fish Market. Physical examination was normal with no evidence of abdominal distention or tenderness. The worm was taken for analysis and identified to be Anisakis simplex.
DISCUSSION: Anisakiasis is caused by infection with the nematode Anisakis simplex. A. Simplex is found in whales, dolphins, seals and sea lions. Eggs are ingested by tiny crustaceans which are then ingested by fish, where Anisakis matures into larvae. Humans are accidental hosts upon ingestion of raw parasitized fish and crustaceans. In the US, infection occurs most commonly with ingestion of salmon, mackerel, herring and cod. Patients usually present with an itchy sensation in the back of the throat after ingestion, followed by coughing up the worm as was seen with our patient. If the parasite is swallowed, Anisakis can be invasive causing a severe eosinophilic granulomatous response usually 1–2 weeks after ingestion. Patients can present with abdominal distention or obstruction and present with symptoms that mimic appendicits or crohn's disease. Spontaneous regurgitation or endoscopic removal of worm cures infection. Occasionally, surgical debridement may be needed for invasive disease. Diagnosis is made by removal of larvae with subsequent microscopic analysis. There is no known antiparasitic therapy for anisakiasis. Infection can be prevented by cooking to >60°C or freezing to lower than –20°C for at least 48 hours. It is important to educate patients as to the risks of eating improperly prepared foods. Our patient was advised to discontinue eating raw meats and fish.

DON'T EAT AT JOES. M. Cordone[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117407)*

LEARNING OBJECTIVES: 1. Recognize the presenting features of Hepatitis A. 2. Diagnose and manage patients with Hepatitis A 3. Repeat labs if there remains a strong clinical suggestion of a common etiology.
CASE: A 29 year-old woman presented with two weeks of nausea, fever and vomiting. She reported having a hamburger at a Cajan barbecue less than two weeks ago. She worked in a veterinary hospital where she incurred numerous animal scratches and bites. She was tachycardic, hypotensive, and had tenderness of the right upper quadrant. She had 23% bands, but a normal WBC. Her amylase was 152; she had a negative pregnancy test, and an AST and ALT of 158 and148. Her alkaline phosphatase and total bilirubin were normal. Her TSH was 0.24. Fearing thyroid storm, the emergency physician administered PTU and propranolol. Her transaminases rose to AST 3,281 and ALT of 3,265 over the next day. A CT scan revealed peri-portal edema secondary to hepatitis. A viral hepatitis panel was normal. Her toxicology screen, including aspirin and acetominophen were normal. ANA, CMV, and a Monospot test were negative; the ferritin was 6,018. Owing to a high clinical suspicion, a second hepatitis panel was ordered. The second hepatitis panel was reactive to IgM Hep A antigen.
DISCUSSION: The incubation period of hepatitis A is four weeks. It is transmitted via a fecal-oral route. Clinical symptoms include nausea, anorexia, vomiting, fatigue, malaise, headache, fever, pharyngitis, cough, and myalgias. Aminotransferases have a variable rise from 400 to 4,000, but do not correlate with liver damage. Neutropenia and lymphocytopenia are also present with some atypical lymphocytes, making it difficult to distinguish from infectious mononucleosis. The high clinical suspicion in this case prompted repeating a study that made sense in the first place, thereby obviating more invasive surgical and biopsy procedures. Physicians should be aware of the incubation period of Hepatitis A. This case illustrates an important second lesson: when a clinical case is confusing, it is always better to repeat tests that made sense in the first place then to embark on invasive and fantastical work-ups.

EFFUSION CONFUSION. K. Casey[1]; J. Newman[1]; J.M. Huddleston[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #117052)*

LEARNING OBJECTIVES: To recognize pulmonary amyloid as a cause for persistent non-cardiac pleural effusions.
CASE: An 84-year-old male presented with persistent pleural effusions. The patient was evaluated three months prior for shortness of breath. His only history was hypertension and a bypass surgery six years prior. Chest x-ray revealed a left-sided pleural effusion. The patient was treated for presumptive congestive heart failure and discharged on furosemide and an ACE-I with moderate improvement. His dyspnea persisted for three months and he was readmitted with a diagnosis of pneumonia. After a course of levofloxacin, the patient was discharged from the hospital. He returned one week later with worsening dyspnea, cough and hemoptysis. Chest x-ray revealed a slightly worse pleural effusion. A 2D-echo showed normal left ventricular function. Ultrasound-guided thoracentesis yielded one liter of slightly hemorrhagic fluid. The fluid was negative for organisms, acid fast bacilli, and malignancy. CT scan and bronchoscopy were also not diagnostic. Subsequently, the patient underwent wedge resection of the left upper lobe for definitive diagnosis. A chest tube drained sero-sanguinous fluid. He was transferred to the Mayo Clinic for further treatment of the effusion. Pathology review of the lung biopsy at the Mayo Clinic revealed alveolar septal amyloidosis.
DISCUSSION: Amyloidosis refers to a group of conditions characterized by the deposition of abnormal protein material in extracellular tissue. Major sites of clinically significant amyloid deposition are in the kidneys, heart and liver. Primary amyloid (AL) is due to deposition of protein derived from immunoglobulin light chain fragments. Though pulmonary involvement with primary systemic amyloidosis has been shown in various post-mortem autopsy reports, cases presenting with pulmonary amyloid have been reported infrequently. Because cardiac involvement in systemic amyloid is common, it is often difficult to discern the origin of pleural effusions. Our patient was noted to have hemorrhagic effusions and no evidence of heart failure by echo. This suggests that the etiology of the effusions was pulmonary rather than cardiac. In our patient, fat biopsy confirmed the diagnosis of systemic amyloid and bone marrow biopsy revealed 5% monoclonal lambda plasma cells. The effusions subsequently improved and the chest tube was removed. The patient was discharged in stable condition and shortly after was started on melphalan and prednisone for the treatment of systemic amyloid. He is presently doing well.

ELEVEN ISN'T ENOUGH: FACTOR XI DEFICIENCY AND CORONARY ARTERY DISEASE. F. Yafai[1]; B. Taqui[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116261)*

LEARNING OBJECTIVES: 1. Recognize the clinical manifestations of factor XI deficiency. 2. Recognize that factor XI deficiency does not protect against myocardial infarction (MI). 3. Recognize the importance of risk benefit analysis in starting aspirin in patients with factor XI deficiency and coronary disease (CAD).
CASE: An 85 year old Caucasian male physician was seen following 3-vessel coronary bypass after a myocardial infarction. Twenty years prior, the patient was diagnosed with factor XI deficiency after an incidental finding of an elevated PTT. He denied history of epistaxis, melena, hematochezia, but endorsed easy bruising and occasional bleeding with teeth-brushing. He denied history of spontaneous bleeding, but reported increased bleeding after an inguinal hernia repair, dermatologic procedure and an attempted steroid injection. He had an uncomplicated cholecystectomy, dental extractions and colonoscopies. During the bypass, he received fresh frozen plasma. On exam, there were several ecchymoses along his upper extremities but no signs of active bleeding. His hospital course was uneventful, without excess bleeding. Admission labs revealed PTT 66.1, (baseline 60–80). Post-operative (post fresh frozen plasma) labs revealed PTT 32.4, PT 12.2 INR 1.1, Hgb 9.6 and platelets 131. The surgeons requested consultant input on aspirin administration to prevent graft restenosis. After lengthy discussions between hematology, cardiology and cardiothoracic surgery, it was decided that the patient should be discharged on a low dose aspirin. The decision was based on a review of the literature and a review of the patient's history.
DISCUSSION: Factor XI deficiency, previously known as hemophilia C, is diagnosed by an isolated elevation in PTT. It tends to present with milder bleeding episodes

than other coagulopathies. In addition, it has not been shown to be protective against myocardial infarction. Studies of patients with hemophilia A and B have demonstrated 80% reduced risk of myocardial infarction. There is 25% reduced risk among female carriers of hemophilia. In contrast, a recent study of 96 Israelis with factor XI deficiency found that the incidence of acute myocardial infarction was similar to that of the general Israeli population. Furthermore, anecdotal reports of patients with factor XI deficiency and coronary disease have demonstrated that aspirin is well tolerated. However, more research is required. Until then, risk/benefit ratios should be defined for each individual. Our patient had significant coronary disease, recent bypass and no serious bleeding episodes. Based on risk benefit analysis and physician-patient discussion, it was decided to initiate therapy with low dose aspirin.

EPHEDRINE STRIKES AGAIN? A CASE REPORT AND LITERATURE REVIEW. E. Mcdonald[1]; J.I. Lane[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #116553)*

LEARNING OBJECTIVES: Recognize uncommon causes for stroke in young adults.
CASE: A 36-year-old woman presented to the Emergency Department (ED) with headache, dizziness, nausea, vomiting, and abdominal discomfort. She had already been seen at an outside ED and was given a course of ciprofloxacin and prochlorperazine, which she had completed. A migraine headache was diagnosed and she was sent out with promethazine. She returned to the ED three days later, still complaining of headache. She was referred to an outpatient resident's clinic without ED evaluation. The resident noted hypokalemia in the second ED evaluation and admitted the patient to the hospital for rehydration. On admission, her family stated that she had been extremely lethargic the past few days, only getting out of bed to go to the bathroom, with assistance. A non-contrast CT of the head showed an hemispheric ischemic infarct in two-thirds of the right cerebellum with associated mass effect. A diffusion weighted MRI and MRA of the head the next morning showed a subacute infarct in the right posterior inferior cerebellar artery (PICA) with compression of the fourth ventricle and dilation of the third and lateral ventricles. A cerebral angiogram showed occlusion of the right PICA and evidence for bilateral vertebral artery dissections with no evidence of fibromuscular dysplasia (images, including 3D, presented in poster). An extensive thrombophilia work-up did not reveal any coagulation disorder. The patient had no risk factors for or family history of stroke. She was started on anticoagulation and showed no further signs of cerebral edema. A urine drug screen was done shortly after admission, which confirmed the presence of phenylpropanolamine (PPA) and ephedrine. After questioning, the patient's husband brought in a bottle of "diet" pills that had ephedrine listed as one of the ingredients. It was unclear whether the patient had taken these pills recently and/or an over-the-counter cough and cold medicine.
DISCUSSION: PPA used to be commonly found in appetite suppressants and in some cough and cold medicines. It was slated to be taken off the market after an FDA advisory in November of 2000. It is associated with hypertension (Cantu, et al., 2003) and is an independent hemorrhagic stroke risk factor in women (Kernan, et al., 2000). Dietary supplements with ephedra alkaloids (ma huang) are also associated with cardiovascular and central nervous system adverse events (Haller and Benowitz, 2000). The FDA announced plans to ban the sale of ephedrine on December 30th, 2003. Scientific evidence for this action is reviewed in the poster. PPA and ephedrine ingestion with resulting hypertension and subsequent vertebral artery dissection may be the mechanism of massive stroke in this otherwise healthy young woman.

EXTRA ADRENAL PARAGANGLINOMA: SYMPTOMS IT MAY CAUSE. T.M. Feinstein[1]; T. Bui[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115446)*

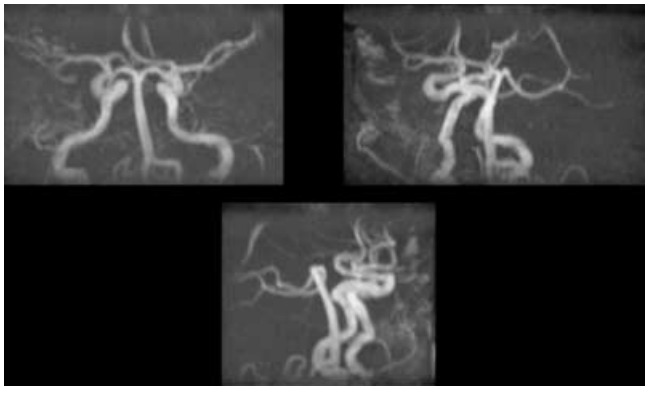
LEARNING OBJECTIVES: 1. Recognize pheochromocytoma as a cause of glucose intolerance and ischemic bowel. 2. Diagnose pheochromocytoma using clinical, biochemical and radiological indicators.
CASE: 71 year old Caucasian female with a history of COPD, bronchiectasis, myelodysplastic syndrome, recently diagnosed diabetes and worsening anxiety presented with left lower quadrant abdominal pain, headache, excessive perspiration, orthostatic hypotension and elevated WBC. Abdominal CT and ultrasound revealed a sigmoid mass (6×5 cm) with central necrosis, separated from the uterus and ovaries, with vascularity within the sigmoid mesocolon. Colonoscopy showed ischemic colitis. Her blood pressure became labile and fluctuated from 200/100 to 80/50 in minutes. She experienced momentary mental status changes, nausea and constipation. EKG and cardiac enzymes show no evidence of a myocardial infarction. 24 hour urine catecholamines and serum catecholamines were significantly elevated. I-131 metaiodobenzylguanidine (MIBG) scintigraphy showed increased uptake in her left pelvic mass, without other foci. Phenoxybenzamine and clonidine controlled blood pressure. Nitroprusside was used during the open, uncomplicated laporatomy. Pathology revealed a 70.7 gram extra adrenal paraganglioma. Urine catecholamines normalized. The patient's symptoms improved and her blood pressure was controlled with a low dose of metoprolol.
DISCUSSION: Pheochromocytoma is a catecholamine-secreting tumor. Common manifestations are headache, excessive perspiration and palpitations. Altered mental status, focal neurological signs, seizures, or stroke may be observed during a paroxysm. Unusual presentations include diabetes mellitus and gastrointestinal complications. Glucose intolerance is present in one-third of patients. Decreased insulin sensitivity and secretion cause carbohydrate intolerance. Pheochromocytoma has an atypical relationship with type 2 diabetes. Diabetic symptoms worsen as the patient's body mass index decreases from catecholamine-induced lipolysis. Glucose intolerance associated with normal body weight and hypertension is a clue in the diagnosis. Gastrointestinal ischemic complications are rare but are more frequent with larger tumors (>70 grams). Biochemical markers are usually elevated 3 times normal. Urine normetanephrine is 97% sensitive. Norepinephrine and epinephrine or normetanephrine and metanephrine are 100% sensitivity when combined. Hydroxymethoxymandelic acid has a sensitivity of 70% with the 95% confidence level (48 mg/g). Plasma catecholamines are more useful when urine values are equivocal. The MIBG scan reveals uptakes by the pheochromocytoma, and it can localize tumors with a sensitivity of 85% and a specificity of 99%.

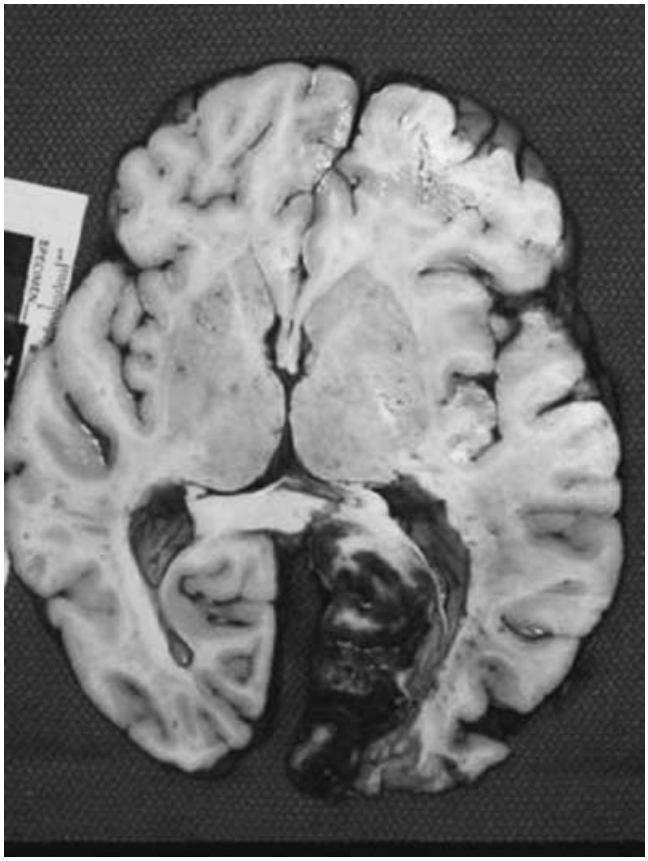
FALANGA: AN UNEXPECTED CAUSE OF PERIPHERAL NEUROPATHY. E.J. Rourke[1]; S.S. Crosby[1]; M. Paasche-Orlow[1]; M.A. Grodin[1]. [1]Boston University, Boston, MA. *(Tracking ID #116708)*

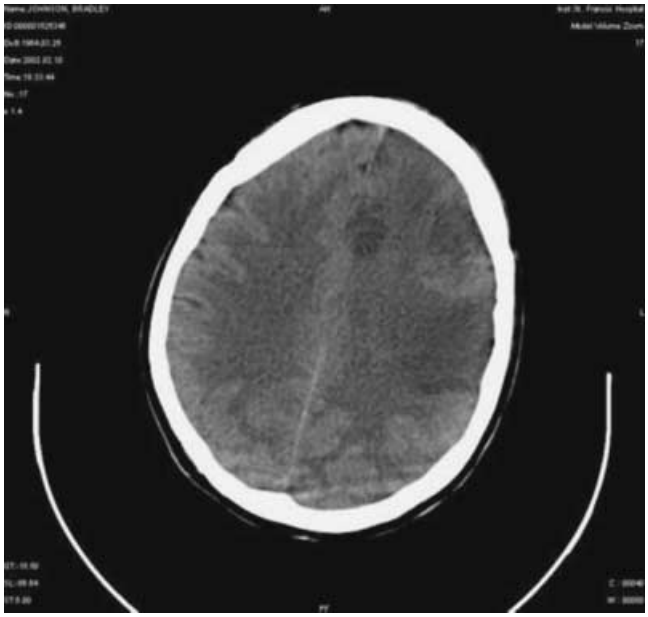
LEARNING OBJECTIVES: 1. Diagnose history of falanga as a cause of peripheral neuropathy 2. Recognize the possibility of torture as an etiology for otherwise unexplained symptoms in patients from high-risk areas.
CASE: A 38-year-old male from Mauritania with a history of chronic hepatitis B, latent TB infection treated with isoniazid for nine months, depression being treated with mirtazapine, and post traumatic stress disorder presented to Primary Care complaining of longstanding bilateral foot pain. The pain was described as severe burning, associated with numbness, which radiated into the midcalf. The patient described the sensation as "stones in the bottom of his feet," and stated that the pain was most noticeable at night, preventing him from sleeping. Physical exam revealed decreased sensation below the mid-shin to vibration, light touch, and cold, with minimal pain to palpation on the soles of the feet bilaterally, no visible deformity, and normal deep tendon reflexes. The rest of his exam was normal. CBC, chemistries, liver function tests, hemoglobin A1C, TSH, B12, folate, RPR, cryoglobulins, SPEP, UPEP, and ANA were all normal. HIV 1 and 2, hepatitis C, and hepatitis Be serologies were negative, although hepatitis B antigen was positive. EMG testing revealed moderate to severe peripheral neuropathy, primarily demyelinating in nature, and the patient was diagnosed with sensory distal polyneuropathy, possibly related to chronic hepatitis B infection. At this time, the patient revealed a history of falanga while detained in Mauritania in 1989. The patient stated that he had been suspended by his wrists and ankles from a horizontal pole, and beaten on the soles of his feet repeatedly with a baton, causing severe swelling and pain that prevented him from walking for three weeks. MRI of the feet revealed increased signal within the plantar interosseous and lumbrical muscles bilaterally, consistent with muscle injury or inflammation. The patient was treated with amitriptyline and a lidocaine patch, producing partial relief of his symptoms, and also continued therapy for depression and post traumatic stress disorder.
DISCUSSION: Amnesty International documents the practice of torture in more than 150 different countries, including 30 countries in which falanga is practiced. There may be over 500,000 survivors of torture residing in the United States. Torture survivors seek attention in primary care settings for medical and psychological consequences of torture, and may have difficulty disclosing or describing their experiences due to traumatization. Physicians should be aware of the possibility of a torture history in patients from high-risk areas. Comprehensive information about the diagnosis and treatment of torture survivors is available in the Istanbul Protocol. [www.phrusa.org/research/istanbul_protocol/]

FATAL MIGRAINOUS STROKE IN YOUNG MALE. S. Habis[1]; L. Cation[1]. [1]University of Illinois at Peoria, Peoria, IL. *(Tracking ID #115846)*

LEARNING OBJECTIVES: To recognize the typical and atypical features and presentations of stroke as complication of migraine.
CASE: A 37 year old male with a history of migraine with aura (IHS criteria) was found unresponsive in bed. He was on no medication, and there was no history of smoking, Alcohol or illicit drug abuse. Upon arrival to ER, he was intubated. Vital signs were stable and neurological exam showed Glasgow coma scale 6, PERRL, positive gag and corneal reflexes, dense right hemiplegia, spontaneous left side movement, symmetric DTR's with downgoing toes. The rest of the exam was normal. The initial evaluation showed normal CBC, chemistries, coagulation profile and negative toxicology screen. A head CT scan (Figure 1) showed acute ischemic infarct







in the ACA and MCA territories. Further evaluation including echocardiogram, CXR, ESR, and hypercoagulable state profile were normal. Brain MRI showed acute ischemic infarct in the MCA and distal ACA territories. MRA was normal (Figure 2). The patient was stable on the second day, but Glasgow coma scale was 3 on the third and fourth day and he died on the fifth day. The brain autopsy (Figure 3) showed cerebral ischemia (ACA and MCA) and edema with evidence of subfalcial and uncal herniation on the left —despite maximal medical management—, and new hemorrhagic infarct in the left PCA territory due to compression of the PCA by hippocampal and parahippocampal notching. There was no evidence of atherosclerosis, vasculopathy or embolic event. The final diagnosis was migrainous stroke.

DISCUSSION: Migrainous stroke reportedly causes 1.4% of all strokes in young adults with female gender predominance (statistical differences were noticed in the few studies found in the literature). The posterior circulation especially the PCA territory is the more frequently involved area in migrainous stroke and the size of the infarct is generally small. Fatality in acute stroke, regardless of etiology, range between 1.5–7.3%. Review of literature regarding migraine and stroke between 1977 and 1997 showed that only 44 of 500 patient reported presented with ischemic stroke occurred during acute migraine and that more cases occurred with migraine without aura than with aura. This case is particularly unusual because it affected a male, in anterior circulation territory, and had fatal outcome. We were unable to find a case of fatal migrainous stroke in a young male previously reported in the literature. In summary, we report a case of migraine associated fatal stroke.

FEVER AND CERVICAL LYMPHADENOPATHY. N.S. Shah[1]; P. Bhat[1]. [1]Columbia University, New York, NY. *(Tracking ID #115419)*

LEARNING OBJECTIVES: 1) Discuss the differential diagnosis of cervical lymphadenopathy and fever in a young, healthy patient, and 2) Identify Kikuchi-Fujimoto disease as a rare, benign cause of cervical lympadenopathy.
CASE: A 24 year-old healthy female presented with 1 month of fevers and unilateral cervical lymphadenopathy. Two-weeks prior to admission she completed a course of broad-spectrum antibiotics without clinical improvement. The patient immigrated from Trinidad 6 years prior and had no history of recent travel, trauma, or contact with animals. She is married, and does not smoke or drink alcohol. She was PPD-negative within the past year. Review of systems was notable for absence of weight loss, dysphagia, or rash. Exam revealed right cervical fullness with multiple soft, mobile, tender lymph nodes, and no erythema or fluctuance. Initial leukocyte count was 5800/L with 81% neutrophils; basic chemistries, liver enzymes, and rheumatologic screen were within normal limits. Sedimentation rate was markedly elevated at 131 mm/hr. Blood and urine cultures were negative. PPD was again negative during the admission. Neck CT revealed multiple, large 1.5–2.0 cm, right upper neck nodes with heterogeneous enhancement, and extensive subcutaneous edema. Fine needle aspiration (FNA) and core biopsy were non-diagnostic, so excisional biopsy was pursued. Histopathology showed near-total effacement of lymph node architecture and replacement by histiocytes, apoptotic cells and nuclear debris consistent with Kikuchi-Fujimoto disease. Special stains for fungi, bacteria, acid-fast bacilli, Epstein-Barr virus, and spirochetes were negative. No atypical cells consistent with malignancy were found. At evaluation two months after hospital discharge the patient reported complete resolution of symptoms.
DISCUSSION: The differential diagnosis of cervical lymphadenopathy with fever is extensive, and includes a variety of infectious causes such as cat scratch disease, mononucleosis, mycobacterial infections, bacterial adenitis; head and neck cancers such as Hodgkin's and non-Hodgkin's lymphoma; and other causes such as Kikuchi-Fujimoto disease. Careful history provides important diagnostic clues, so patients should be probed for exposures, travel, high-risk behaviors, and constitutional symptoms. Definitive diagnosis is made by culture and histology. FNA may be useful in cases of infection, however excisional biopsy provides greater detail about lymph node architecture for diagnosis of malignancy. Kikuchi-Fujimoto disease (histiocytic necrotizing lymphadenitis) is a rare, benign condition of unknown etiology characterized by cervical lymphadenopathy and fevers seen predominantly in young women. Initially described in Asians, the disease is now reported in persons of all races. No effective treatment has been established, but the majority of cases are self-limited within 2–3 months.

FEVER OF UNKNOWN ORIGIN ASSOCIATED WITH LABILE HYPERTENSION. Y.Y. Li[1]; J. Hefner[1]; R. Granieri[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115952)*

LEARNING OBJECTIVES: (1) Recognize the differential diagnosis of fever of unknown origin (FUO) (2) Recognize the unusual presentations of pheochromocytoma (3) Manage hypertension in patients with pheochromocytoma.
CASE: An 83 year-old female with history of valvular heart disease was admitted to the hospital with a 2 month history of fever, sweats and labile hypertension resistant to therapy with levofloxacin and amoxicillin/clavulanate. She complained of headache, dizziness and dyspnea on exertion. She denied cough, chest pain, nausea, vomiting, abdominal pain, or dysuria. On admission the patient developed rapid atrial fibrillation. Physical examination was remarkable for a temperature of 38.4 degree Celsius, BP 160/100 mmHg, an irregularly irregular heart rhythm, a III/VI pansystolic murmur at the apex, and lower extremity edema. Chest x-ray did not show infiltrate. She was started on ampicillin and gentamicin for subacute bacterial endocarditis although multiple blood cultures were negative and TEE failed to demonstrate definitive vegetations. When fevers persisted, the antibiotics were changed to vancomycin and ceftazidime, again without benefit. Antibiotics were discontinued. CT scans of the chest and abdomen showed congestive failure with a left pleural effusion and a 5×5 cm left adrenal mass which was confirmed to be pheochromocytoma by measurement of catecholamines and histopathology. She continued to have fevers, tachyarrhythmias and labile hypertension despite therapy with alpha and beta blockers. She was not thought to be a surgical candidate. The family elected hospice care according to the patient's advance directives.
DISCUSSION: A precise diagnosis of FUO in the elderly can be made 87–95% of the time. Often FUO in the elderly is the result of an atypical presentation of common diseases. Infection is the etiology in 25–35%, connective tissue disease in 25–31%, and malignancy in 12–23% of the cases. After thorough history and physical,

focusing on symptoms and signs of intra-abdominal diseases, cardiac and musculoskeletal disorders, tuberculosis and cancers, CXR and basic laboratory studies including ESR, imaging of the abdomen, blood cultures and TEE should be done. All non-essential drugs should be discontinued. Gallium-67 or indium-111 labeled leukocyte scanning may identify infection or malignancy. The presentation of fever, labile hypertension and tachyarrhythmia in this patient can be explained by the pheochromocytoma. Pheochromocytoma may present with fever by producing the internal pyogen interleukin-6. The definitive treatment is removal of the tumor after blood pressure is controlled with both alpha and beta blockers. Beta blockers alone are contraindicated due to resultant unopposed alpha stimulation.

FOR PULMONARY EMBOLISM IS D-DIMER REALLY A SNOUT?. J. Kamali[1]; M. Elnicki[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116489)*

LEARNING OBJECTIVES: 1) To recognize the importance of pre-test probability of disease in the interpretation of diagnostic test results, 2) To recognize limitations in the use of the D-Dimer test to rule out pulmonary embolism (PE).
CASE: A 46 year-old woman with a history of hypertension, type 2 diabetes mellitus and obesity presented with a sudden onset of right-sided pleuritic chest pain of 10 hours duration. The pain began at rest and was sharp, 8/10 in severity and nonradiating. There were no alleviating factors. The patient denied any trauma, recent operations, fever or chills but had a sedentary life style. She was nonsmoker and denied alcohol or illicit drug use. No family history of coagulopathy. Vital signs were normal except respiration rate of 22/minute. Pulse oximetry was 99% on room air. Heart, lung and extremities were unremarkable, but there was moderate right chest wall tenderness on palpation. Laboratory data were notable for normal electrolytes, cardiac enzymes and electrocardiogram. D-Dimer test was negative and a V/Q Scan was read as low probability for PE. Lower extremity dopplers were negative for deep venous thrombosis (DVT). Due to the continued high clinical suspicion of a PE, a pulmonary angiogram was performed which demonstrated filling defects in 3 segmental branches of the right lower lobe pulmonary artery consistent with PE. Subsequent evaluation revealed the presence of the Factor V Leiden mutation.
DISCUSSION: Tests with high sensitivity rule out (Snout) and high specifity rule in (Spin) diseases. These, however, are strongly influenced by the prevalence of the disease in the studied population. Using published clinical prediction rules, this patient has a high pre-test probability of a PE (> 70%). The sensitivity of the D-Dimer ranges from 85%–99% and the specifity from 45%–68%. Based on these, the negative likelihood ratio (LR-) would range from 0.33–0.15 and the post test probability from 35%–1.5%. Given the potential risk of mortality from a PE (26% if untreated), applying an invasive gold standard test (pulmonary angiography) is appropriate. The case illustrates the limitations of the D-Dimer assay in this particular diagnostic strategy. D-Dimer is the primary product of the enzymatic degradation of cross-linked fibrin by plasmin and is elevated in the presence of thrombosis. However elevated D-Dimer levels are not limited to PE or DVT, and the absence of elevated D-Dimer levels does not always rule out PE. While the D-Dimer assay has a high sensitivity, its negative predictive value depends upon the pre-test probability of disease, and must be evaluated within the clinical context.

FORMULARY CONVERSION PROGRAMS POSE A SIGNIFICANT RISK TO PATIENT SAFETY. S. Singh[1]; R. Shrivastava[1]; V. Das[1]. [1]Unity Health System, Rochester, NY. *(Tracking ID #116917)*

LEARNING OBJECTIVES: Recognise that potential for adverse outcomes exist when formulary conversion programs are implemented without adequate post-conversion pharmaco-vigilance; and understand the differences in the pharmocokinetic properties of statins which affect their potential for interaction with other drugs.
CASE: A 74-year-old white female was admitted for Pleural effusion. Her medical history included orthotopic cardiac transplantation for ischemic cardiomyopathy, hypertension, hypercholesterolemia, peripheral vascular disease, diabetes mellitus and renal insufficiency. She was on a stable dose of cyclosporine, azathioprine and atorvastatin.Atorvastatin 20 mg was switched to simvastatin 40 mg on admission because of formulary restrictions. On the 12th day the patient complained of generalised weakness. She gradually developed increasing weakness of her limbs requiring ICU monitoring. Her renal function deteriorated further requiring dialysis. A peak CK level of over 10,000 mg/dl was noted by Day-29. Cyclosporine levels which were normal earlier peaked at 681 ng/ml on Day-29. Statin induced rhabdomyolysis was diagnosed. She died a few days later.
DISCUSSION: CYP3A4 is responsible for more than half of clinically significant drug interactions seen in clinical practice. Lovastatin, simvastatin and atorvastatin are metabolized by CYP3A4 while pravastatin and fluvastatin are not. Cyclosporine is a potent inhibitor of CYP3A4 increasing the risk of myopathy induced by statins using CYP3A4 pathways. In this case automatic substitution from a stable dose of atorvastatin to a higher dose of simvastatin contributed to the outcome as statin related myopathy is known to be dose dependant. Additional risk factors for myopathy included age, female sex, and renal disease. Health Care organizations' use of formulary conversion programs, such as an automatic drug substitution policy to maximize resources raise several concerns regarding patient safety. This case demonstrates the need to screen for drug-drug interactions, contraindications, and appropriate dosage conversion to minimize risks of Adverse Drug Reactions while implementing a formulary conversion program. On-going provider education, provisions allowing physicians to use their judgment in using a particular drug overriding the substitution policy, and better institutional pharmaco-vigilance should be integral parts of any safe drug substitution policy.

FUSOBACTERIUM PERICARDIAL EFFUSION CAUSING TAMPONADE—A RARE ENTITY. S.A. Dharashivkar[1]; R. Goodman[1]; A. Waissbluth[1]; S. Nix[1]; S. Goldberg[1]. [1]The Jewish Hospital, Cincinnati, OH. *(Tracking ID #115812)*

LEARNING OBJECTIVES: 1. Recognize anaerobic pericarditis as an uncommon but potentially fatal condition. 2. Know the management of anaerobic pericardial effusion.
CASE: A 50 year old lady on chronic steroids (5 mg/day) for lupus presented with complaints of severe chest pain which started four hours prior to presentation. The pain was worse on deep inspiration, lying down and on activity and improved on sitting. Initial physical exam revealed a blood pressure of 115/87 mmHg, pulse of 85/min, oxygen saturation 99% and a normal cardiovascular exam. During the ER stay, her pain worsened, blood pressure dropped to 64/48 mmHg and oxygen saturation dropped to 85% on room air. An emergent CT scan for suspected pulmonary embolism showed the presence of a large pericardial effusion. Echocardiogram confirmed findings of pericardial tamponade, and pericardiocentesis yielded 600 cc of opaque, thick, yellowish brown fluid. Pericardial fluid results showed 158,000 WBCs (neutrophils 97%), 10,000 RBCs, Glucose <2 mg/dL, LDH 1,850. Gram stain showed gram-negative rods. The patient was empirically started on piperacillin-tazobactam and vancomycin. Anaerobic cultures showed a growth of Fusobacterium susceptible to Ertapenem. The patient was discharged home on intravenous antibiotics and was stable after two weeks.
DISCUSSION: Anaerobic pericarditis is uncommon and associated with significant morbidity and mortality. The source of origin is usually either a contiguous source of infection, endocardial spread, hematogenous seeding or direct inoculation. The high mortality associated with anaerobic organisms makes it imperative to identify the organism quickly to initiate the right antibiotics. A search for the source of infection should be done. In our patient no obvious source of infection was identified. An oral panoramic scan which was planned after discharge could not be done as the patient did not follow-up. Her immunocompromised status due to chronic steroids predisposed her to this unusual condition most likely caused by oral anaerobes. Appropriate treatment with pericardiocentesis and antimicrobials had a good outcome in this potentially fatal condition. To the best of our knowledge, of the six reported cases of Fusobacterium pericarditis including this one, this is the second case where the patient survived.

GENES! ANSWER TO AN ELUSIVE CASE OF RECURRENT ABDOMINAL PAIN. S. Daya[1]; F.V. Caplan[1]; D.T. Francois[1]. [1]York Hospital, York, PA. *(Tracking ID #116792)*

LEARNING OBJECTIVES: 1) Recognize familial mediterranean fever as a etiology of recurrent abdominal pain. 2) Recognize the right testing to make the diagnosis following clinical suspicion. 3) Recognize the significant reduction in morbidity and prevention of a life-threatening complication with institution of therapy.
CASE: A 36 year old male physician of Ashkenazi Jewish descent presented to the office with more than 20yr history of recurrent self-limited episodes of abdominal pain. Pain was characterized by insidious onset of incapacitating central abdominal pain along with right sided pleuritic chest pain. There was associated "sensation" of fever with no documented raise in temperature. The episodes apparently had started as a teenager. Ibuprofen was the only medication thought to relieve pain. He was diagnosed to have irritable bowel syndrome after extensive workup of his symptoms upto this stage. The patients brother was being investigated for similar symptoms at a university center. During his last episode, abdominal exam by his physician spouse was remarkable for diffuse rigidity and decreased bowel sounds. Laboratory investigation was significant for a microcytic anemia with low iron indices and a raised CRP and sedimentation rate. Endoscopic evaluation for anemia was unremarkable. After careful review of the patients history and progress, a syndrome of hereditary periodic fever was entertained. He was referred to National Institutes of Health for genetic testing of familial Mediterranean fever. A homozygous familial mediterranean fever (FMF) mutation V726A was revealed confirming the diagnosis. Following the institution of therapy with colchicine the frequency of episodes of abdominal pain diminished significantly.
DISCUSSION: Familial mediterranean fever is a genetic disorder inherited as an autosomal recessive trait, prevalent in individuals of jewish descent. The gene named MEFV(MEditerranean FeVer) is located on short arm of chromosome 16 and encodes a protein called pyrin or marenostrin. The expression of the protien is considered to be most likely restricted to mature neutrophils and appears to act as an intranuclear regulator of transcription of peptides involved in inflammation. The clinical presentation is characterized by sporadic, acute self-limited attacks of fever often accompanied by inflammation of serosal surfaces like peritoneum or pleura and erythematous skin lesions. Diagnosis is made in individuals of appropriate ethnic background, history and confirmation by genetic analysis. Treatment is effected by colchicine, which significantly reduces the number of acute attacks and prevents AA amyloidosis which dictates life expectancy and prognosis. Genetic testing is a relatively new modality used for diagnosis of FMF. Early diagnosis and institution of colchicine can prevent significant morbidity and a life threatening complication.

GUAIFENESIN AND EPHEDRINE NEPHROLITHIASIS. R.S. De Jesus[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #116979)*

LEARNING OBJECTIVES: 1. Identify features of guaifenesin and ephedrine stones. 2. Recognize data from history that give rise to this entity. 3. Alert clinicians to yet another sequelae of ephedrine/guaifenesin abuse.
CASE: A 37 year old Caucasian female presented with approximately 5–6 hour duration of right flank pain that radiated to her right groin and nausea. There was no

vomiting, fever, chills, dysuria or urinary urgency. Her medical history was significant for recurrent uric acid stones, renal tubular acidosis and prior lithotripsy. She had smoked one pack per day for 20 years but had only minimal alcohol use. She had a remote history of substance abuse. Vital signs on admission were T: 36.7, PR: 85/min., RR 18/min, BP: 130/68. There was right CVA tenderness and right inguinal discomfort on palpation. Laboratory tests showed no leukocytosis, normal creatinine and uric acid levels. Urinalysis showed 51–100 rbc/hpf and 4–10 wbc/hpf. A CT of the abdomen and pelvis showed a focal area of high attenuation in the distal right ureter proximal to UV junction, which measured 5 mm; there was perinephric stranding, right hydroureteronephrosis and the presence of several bilateral renal stones. She was dismissed to outpatient follow-up with scheduled cystoscopy and right ureteroscopy. She returned to the clinic three days later bringing with her several stones, which she had passed out at home. Analysis revealed guaifenesin metabolites as well as traces of ephedrine. She subsequently admitted to taking "cold medications".
DISCUSSION: Guaifenesin and ephedrine induced renal calculi have only been recently described in the literature as a novel form of drug-induced renal stones in patients who consume large amounts of over-the-counter preparations containing these two substances for use mainly as stimulants. The stones are light tan in color and have radiographic properties similar to those of uric acid, which may lead to diagnostic confusion. They are radiolucent on standard X-ray imaging but can be demonstrated on unenhanced CT. Stone analysis using high performance liquid chromatography would show 70% beta-2-methoxyphenoxy-lactic acid (a guaifenesin metabolite) and only 5% ephedrine. The exact mechanism of stone generation has yet to be elucidated but hypocitraturia is thought to play a role. The initial management is similar to that of individuals with other types of calculi. An opportunity is given to pass ureteral sones spontaneously before resorting to minimally invasive techniques such as ureteroscopic extraction or shock-wave lithotripsy. Substance abuse counseling is strongly recommended after stone passage or removal to prevent future recurrence.

HEMODIALYSIS FOR VALPROIC ACID OVERDOSE. T. Siddiqi, MD[1]. [1]The University of Connecticut, Farmington, CT. *(Tracking ID #116033)*

LEARNING OBJECTIVES: To illustrate the effectiveness of hemodialysis (HD) in clinically severe overdose of valproic acid (VPA).
CASE: A 43 year old woman, with a history of bipolar disorder, opioid anelgesic drug addiction and alcohol abuse, was admitted with obtundation following a suicide attempt with VPA ingestion (up to 60g). On admission she was comatose (GCS 6), hypotensive, and had fixed dilated pupils. Her initial VPA level was >1500 mg/l. She was hypocalcemic with prolonged QTc in her EKG. Her CBC, chem 7, NH3 level and LFTs were within normal limits. Imaging of the head and brain was unremarkable. She was intubated for airway protection and respiratory depression. 2 doses of charcoal were administered for gastrointestinal decontamination. HD was started within a few hours of presentation. 3 hours into dialysis, her VPA level was found to be 1107 mg/l and dropped further to 591, 261, and 182 mg/l with continuing HD (T1/2=2.6 hrs). The following day, it was 148 mg/l, and finally 70 mg/l. Further HD was not required. On awakening and extubation a few days later, the patient underwent a psychiatric evaluation and was subsequently transferred to a psychiatric facility.
DISCUSSION: VPA is an anti-epileptic agent that is widely used for prophylaxis of bipolar disorders and migraines. Its toxicity is being reported to poison control centers with increasing frequency in recent years. Severe symptoms include coma, respiratory depression, hemodynamic instability, multi-organ failure, and death. VPA's low molecular weight (144 daltons) and low volume of distribution suggest a potential benefit of HD. Although there is a high degree of protein binding, in severe toxicity proteins are saturated and most of the drug is found in its free form in the body. Thus, efficacy of HD increases in this situation. However, there is limited data guiding the use of HD for extracorporeal removal of VPA in severe overdose cases. Among the handful of reported cases of HD use (with or without hemoperfusion) for VPA toxicity, there has been a >60% success rate. Elimination half-life was markedly reduced in these cases. A similar effect was noted in our patient. Controlled trials are required to assess whether removal of VPA by HD significantly improves outcome among overdose patients.

JUST STUNG BY A BEE ... WHAT WENT WRONG. T. Thenappan[1]; S. Parikh[1]; P. Kapoor[1]; K. Shankar[1]; H. Friedman[1]. [1]St. Francis Hospital, Evanston, IL. *(Tracking ID #115559)*

LEARNING OBJECTIVES: 1.Diagnose Henoch Schonlein Purpura (HSP) as a late complication of bee sting. 2.Recognize HSP in an adult patient presenting with purpuric rash, abdominal pain and arthralgia.
CASE: A 41-year-old Caucasian male, with no significant past medical history, presented with a non pruritic rash of both the legs for three weeks. The rash started one week after a bee sting. Subsequently, he developed diffuse, crampy abdominal pain accompanied with swelling of the knee and ankle joints. The physical examination was notable for epigastric tenderness and a palpable purpuric rash in both the lower extremities. His stool was positive for occult blood. Laboratory investigations revealed leukocytosis (20,000 cells/cumm), elevated ESR, microscopic hematuria and proteinuria. The CT scan of the abdomen showed marked thickening of the third and fourth parts of the duodenum and the proximal ileum. Subsequent upper endoscopy visualized multiple linear deep serpiginous ulcerations in the duodenum. The skin biopsy of the purpuric rash demonstrated leukocytoclastic vasculitis associated with fibrinod deposits. His serological work up for hepatitis B and C were negative as were the HIV, EBV, CMV and Mycoplasma titers. ANA, ANCA and cryoglobulins were within normal limits. The diagnosis of HSP was established based on the skin lesions and joint, renal and gastrointestinal involvement. The patient responded remarkably to intravenous corticosteroids.
DISCUSSION: HSP, also referred to as anaphylactoid purpura, is a diffuse systemic, small vessel hypersensitivity vasculitis occurring predominantly in children. It is characterized by non-thrombocytopenic purpuric rash of the lower extremities, arthralgia, abdominal pain and renal involvement. The presumptive pathogenic mechanism is IgA dominant immune complex deposition in venules, capillaries and arterioles. The common inciting antigen is an upper respiratory infection. However, various drugs, food, immunization and insect bite have also been suggested. In our patient, in the absence of other triggers, the most probable precipitating factor is the bee sting. A small percentage of patients with HSP progress to renal failure. Therefore, diagnosing HSP as a late complication of bee sting is important. Close follow up with repeated urinalysis is warranted. HSP, a disease once thought to be confined to children is increasingly being diagnosed in adults. This case underscores the need to consider classic syndromes even in patients who, because of age or other demographic factors, are at relatively low risk.

HEPATIC SARCOIDOSIS. J.A. Kasher[1]. [1]UCLA San Fernando Valley Program, Sylmar, CA. *(Tracking ID #116588)*

LEARNING OBJECTIVES: 1) Recognize clinical presentation of hepatic sarcoidosis. 2) Recognize hepatic sarcoidosis as an unusual cause of end-stage liver disease.
CASE: 45-year-old female presented with acute upper gastrointestinal bleeding as well as complaints of progressive jaundice, fatigue, pruritis, and unintentional weight loss over a one year period. Endoscopic evaluation revealed esophageal variceal bleeding which was treated with banding. Examination revealed jaundice as well as several stigmata of chronic liver disease including hepatosplenomegaly, mild ascites, prominent superficial abdominal veins, hemorrhoids, malar telangiectasias, and palmar erythema. Also present were numerous skin excoriations and lichenification due to scratching. The remainder of the physical exam, including assessment of neurologic status, was unremarkable. Her liver tests showed total bilirubin 2.9, alkaline phosphatase 544, AST 52, and ALT 62. Other routine chemistries, blood count, and chest x-ray were normal. Liver biopsy showed cirrhosis, non-caseating granulomas, bile duct obstruction, and small bile duct loss. Fungal and acid fast bacillus cultures showed no growth. Mitochondrial antibody titers were negative, and angiotensin converting enzyme (ACE) level was elevated at 92 (normal 9–67). The diagnosis of hepatic sarcoidosis was made. Subsequently, the patient's hepatic dysfunction progressed over the next few months and she developed encephalopathy. The patient consequently underwent liver transplantation and clinically improved. Six months postoperatively, her course was complicated by CMV infection of the liver, but no recurrence of granulomatous disease was present on repeat liver biopsy.
DISCUSSION: Sarcoidosis is a disease of unclear etiology characterized pathologically by the presence of non-caseating granulomas. Pulmonary involvement is present in 95% of cases, but many other organ systems can be affected. About 11% of patients have hepatic involvement. Most cases are subclinical, and symptomatic liver involvement is reported in less than one percent of patients with sarcoidosis. Patients with symptomatic hepatic sarcoidosis usually present with fever, malaise, weight loss, jaundice, and pruritis. Chest x-ray may not necessarily show evidence of pulmonary involvement. Hepatosplenomegaly is common, and elevation of alkaline phosphatase is commonly seen. A Kveim-Siltzback skin test may be positive, and mitochondrial antibody test is negative. ACE level is elevated in about 75% of cases. These findings help differentiate sarcoidosis from other causes of granulomatous hepatitis including mycobacterial, fungal, and toxoplasma infections, drug reactions, Crohn's disease, primary biliary cirrhosis and Hodgkin's disease. Hepatic sarcoidosis may spontaneously improve or may show a relentless progression as occurred in this patient. Prednisone may be of benefit in the treatment of hepatic sarcoisosis, and liver transplantation remains an option in cases of end-stage liver disease.

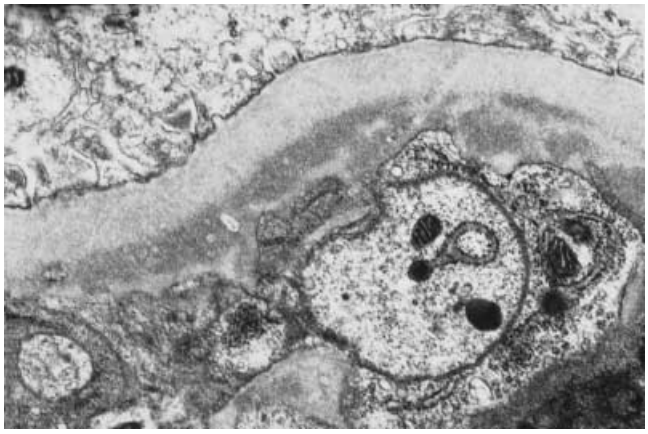
HEPATIC SINUSOIDAL DILATATION WITH ISOLATED ELEVATED ALKALINE PHOSPHATASE AS PARANEOPLASTIC SYNDROME IN HODGKIN'S DISEASE. S. Habis[1]; L. Cation[1]. [1]University of Illinois at Peoria, Peoria, IL. *(Tracking ID #116257)*

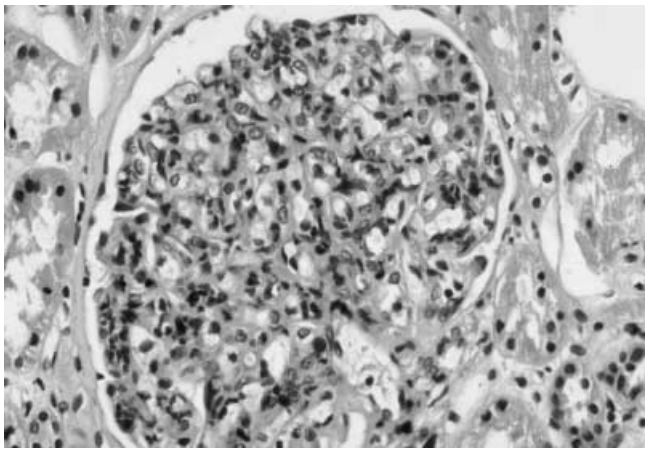
LEARNING OBJECTIVES: To recognize the clinical presentation of Hodgkin's disease despite the absence of lymphadenopathy. To recognize the hepatomegaly and elevated alkaline phosphatase as paraneoplastic effect of Hodgkin's disease.
CASE: 21 years old male presented with weight loss, severe fatigue, and night sweats of several months duration. No past medical history. Physical examination was remarkable for hepatomegaly and no lymphadenopathy. Laboratory evaluation revealed hemoglobin 9.5 g/dL, MCV 71.6 FL, normal WBC and differential, albumin 2.6 g/dL, ANA 1:640 speckled, ESR 131 mm/hr, and alkaline phosphatase 330 U/L. Chest X-ray was normal. CT scan of the abdomen revealed hepatomegaly without distinct mass, no lymphadenopathy. Iron saturation was 6.5%. The following subsequent tests were normal or negative: urinalysis, PT/INR, PTT, HIV Ab, TSH, CMV PCR, anti-DNA Ab, SSA, SSB, SCL-70, RNP, anti-mitochondrial Ab, anti-smooth muscle Ab, anti-gliadin Ab, anti-endomysial Ab, anti-phospholipid Ab screen, bone scan, small bowel follow-through X-ray. Upper and lower GI endoscopy revealed mild gastritis, small pre-pyloric ulcer with upper and lower GI biopsies negative for malignancy. The patient was started on Omeprazole and iron therapy. Over the next 3 months he felt progressively worse. Repeat labs were unchanged. A bone marrow biopsy revealed no malignancy. A liver biopsy revealed prominent sinusoidal dilatation and no malignancy. A repeat chest X-ray was

interpreted as having mediastinal widening and a chest CT revealed a mediastinal mass. Biopsy of a lymph node revealed Hodgkin's disease. The patient was started on chemotherapy and his hepatomegaly and alkaline phosphatase elevation resolved at the completion of therapy.
DISCUSSION: Lymphoma was high on the differential diagnosis list for this patient at presentation as patients with lymphoma commonly present with fatigue, night sweats, and weight loss. The initial normal chest X-ray, hepatomegaly, and elevated alkaline phosphatase prompted an exhaustive, expensive, and time-consuming search for a hepatic or GI etiology to his complaints. An earlier chest CT scan may have revealed the diagnosis closer to his presentation. The paraneoplastic effects of Hodgkin's disease are less common but can involve many organs including the liver. The finding of an elevated alkaline phosphatase and liver sinusoidal dilatation have been described in the setting of Hodgkin's disease. An unexplained elevated alkaline phosphatase should prompt the primary care physician to consider Hodgkin's disease in the differential. Our case illustrates an uncommon presentation of a common malignancy and the pearls and pitfalls in the evaluation of a suspected lymphoma case.

HIV & GLOMERULUS—IS RENAL BIOPSY NEEDED? S. Parikh[1]; P. Kapoor[1]; T. Thenappan[1]; H. Friedman[1]. [1]St. Francis Hospital, Evanston, IL. *(Tracking ID #102039)*

LEARNING OBJECTIVES: 1. Identify HIV associated immune complex diseases (HIVICDs) with its relatively good prognosis as distinct from the classic HIV associated nephropathy (HIVAN). 2. Type I membranoproliferative glomerulonephritis (MPGN) can occur in patients infected with HIV without hepatitis C virus (HCV) co-infection.
CASE: A 28-year-old African American male presented with progressively increasing shortness of breath and generalized swelling of one week duration. His blood pressure was 174/100 mmHg. The physical examination revealed anasarca and bilateral crackles on auscultation of the lungs. The serum creatinine was 1.6 mg/dl and serum albumin was 2.1 mg/dl. The urine dipstick revealed 4+ protein and 11 RBCs/ hpf but no casts. A 24 hour urine collection demonstrated 6.25 gm of protein and a creatinine clearance of 55 ml/min. The renal sonogram showed normal sized kidneys. C3 and C4 levels were normal. Serum cryoglobulins, HCV and Hepatitis B antibodies were undetectable. HIV status, confirmed by western blot was positive. His CD4 count was 1154/µl and HIV RNA viral load was 26,000 copies/ml. The kidney biopsy revealed subendothelial and mesangial deposits on electron microscopy that were positive for IgG and C3 on immunofluoresence staining, consistent with the diagnosis of Type I MPGN.





DISCUSSION: A wide spectrum of glomerulopathies is associated with HIV infection. HIVAN accounts for about 90% of such lesions. The classic clinical picture of HIVAN is azotemia, proteinuria and enlarged echogenic kidneys on sonogram. Hypertension and edema are conspicuously absent. Histologic features are consistent with focal segmental glomerulosclerosis. It seems to be related to a direct effect of HIV on the renal epithelium. On the other hand, HIVICDs account for only about 10% of renal lesions in HIV infected patients. These include MPGN and IgA nephropathy, which occur secondary to the deposition of circulating immune complexes against an HIV related antigen in the renal tissue. Type I MPGN usually occurs in the subset of HIV patients co-infected with HCV. However, it can occur independent of HCV co-infection, as illustrated by our case. The relatively less aggressive course of renal disease and good prognosis in HIVICDs contrasts the rapid course and poor prognosis associated with HIVAN. These features emphasize the importance of differentiating the two subsets accurately with a renal biopsy. Our patient was started on an ACE inhibitor, his symptoms gradually improved and proteinuria decreased to 300 mg/day four weeks later.

HIV INFECTION REVEALED BY RAMSAY HUNT SYNDROME. C. Rathnakumar[1]; K. Subramanian[1]; T. Vallur[1]; J. Patel[1]; R. Mills[1]; A. Grigoriu[1]. [1]Jersey City Medical Center, Jersey City, NJ. *(Tracking ID #117239)*

LEARNING OBJECTIVES: Ramsay Hunt Syndrome, caused by Herpes Zoster of the geniculate ganglion, consists of Ipsilateral facial palsy associated with zoster oticus (herpetic eruptions of the pinna and some times of the palate & of the occipital region) frequently with deafness. Herpes Zostercan present as Ramsay Hunt Syndrome in the background of immunodeficiency.
CASE: A 48-year old male with no significant past medical problems, presented with dizziness, unsteady gait, tinnitus and decreased hearing in the left ear. Symptoms started two weeks earlier, with tingling sensation and sharp pain in his left ear, followed by serosanguinous discharge, for which he was treated with an oral antibiotic for one week, with no benefit. Thereafter, he started to have vertigo, tinnitus & deceased hearing in his left ear and then asymmetry of his face. On physical exam, the patient was found to have left peripheral facial palsy, dry dark crusts & wet excoriations with surrounding erythema of the left external auditory canal, shinny intact tympanic membrane and left sensorineural deafness. Based on the characteristic clinical presentation, the diagnosis of Ramsay Hunt Syndrome was made. Patient was treated with a course of acyclovir and prednisone, in addition to tarsorrhaphy. As a part of work up, HIV test was done (both ELISA and Western Blot) and the patient was diagnosed to have HIV positive. The absolute CD4 count (1,349) and CD4/CD8 ratio (1.34) were within the normal range. Patient was discharged and physical therapy was implemented for gait training.
DISCUSSION: Ramsay Hunt Syndrome can be the sole manifestation of HIV infection in an otherwise healthy young adult, as presented in our patient. Physicians should recognize that it is essential to test for HIV in any person presenting with Herpes Zoster infection, including Ramsay Hunt Syndrome.

HUMAN IMMUNODEFICIENCY VIRUS ASSOICATED NEPHROPATHY. S. Moparty[1]; J. Aliota[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117539)*

LEARNING OBJECTIVES: 1. HIV infection is associated with multiple types of renal disease 2. The most common type of HIV associated nephropathy is focal glomerulosclerosis (FGS)
CASE: A 38 year-old man presented with three-months of progressively worsening headaches. On admission, the cachectic patient was noted to be hypertensive and azotemic with a blood pressure of 185/98 mmHg and a serum creatinine of 33 mg/dl. The patient was emergently dialyzed. A renal biopsy was performed revealing collapsing glomerulosclerosis consistent with human immunodeficiency virus (HIV) associated nephropathy. Upon further questioning the patient revealed a remote history of intravenous drug use, and admitted to rare but unprotected sexual relations. The patient tested positive for both hepatitis C and HIV, with a HIV viral load of 62,000, and a CD4 count of 290.
DISCUSSION: HIV infection is associated with many renal diseases, the most common of which is focal segmental glomerulosclerosis (FSGS) affecting two to ten percent of all patients with HIV, is a often accompanied by severe tubulointerstitial damage. This type of injury can be seen in asymptomatic or primary HIV infection as well as in advanced disease. The mechanism of HIV-mediated renal cell injury is unknown though it is thought that the interaction between mesangial cells and HIV-infected CD4 cells may lead to mesangial hypertrophy and sclerosis. It is postulated that preexisting hypertension or diabetes accelerates HIV nephropathy, perhaps by further stimulating mesangial cell hypertropthy. Treatment of this disease centers on HAART therapy and ACE inhibition (in patients with serum creatinine <2.0 mg/dl), although both of these modalities lack a well-controlled clinical trial. General internists should be aware of the potential for aggressive renal disease in HIV-infected patients, and should be particularly vigilant in caring for HIV-infected patients that also have hypertension or diabetes.

HYPERCALCEMIA AND IMMBOLITY: NEED WE KNOW MORE? P. Chahal[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #115158)*

LEARNING OBJECTIVES: 1. Recognize the consequences of prolonged immobilization in hospitalized population 2. Recognize immobilization as one of the etiologies of hypercalcemia

CASE: 63 year old male with multiple medical problems was admitted with the history of ankylosing spondylitis, disseminated coccidiomycosis involving lumbar spine leading to multiple surgeries of his lumbar spine and prolonged hospitalization for almost three months was found to have serum calcium of 11.9 mg/dl. His physical examination was unrevealing. His past medical history was significant for colonoscopic removal of malignant polyp fourteen months ago. His medications were also noncontributory. Consequently, his workup of hypercalcemia revealed normal alkaline phosphatase, phosphorous, creatinine, 25 hydroxy vitamin D, serum protein electrophoresis, TSH, Angiotensin converting enzyme level, parathyroid hormone related peptide, mildly suppressed PTH at 0.4 pmol/L (range 1.0–5.2 pmol/L), normal bone scan. He also underwent extensive workup to exclude malignancy as etiology with CT scan of chest, abdomen and pelvis, MRI of abdomen revealed two lesions in liver, which were biopsied revealing benign reactive tissue. He also underwent repeat colonoscopy, which was also normal. He was started on scheduled physical therapy sessions and short course of Calcitonin and single dose of Pamidronate with subsequent normalization of his serum calcium level at one and half month follow-up.
DISCUSSION: Hypercalcemia is frequently encountered metabolic abnormality. The most common etiology in the hospitalized population is the malignancy. Hence, this fact leads to battery of laboratory and radiologic tests in pursuit of finding occult or overt malignancy in the hospitalized population. Evident etiologies like prolonged immobilization leading to high bone turnover escape physician's attention. It is important to consider prolonged immobility as one of the etiologies of hypercalcemia. This could avoid unnecessary, expensive and potentially harmful investigations.

Laboratory features of common causes of Hypercalcemia

Laboratory	Malignancy	Hyperparathyroidism	Immobilization
PTH	low	high	low to low-normal
PTHrp	High	Normal	Normal
Vitamin D	Low	Normal	Low or normal
Phosphorous	Loq	Low	normal

HYPERCALCEMIA AND NORMAL CALCIUM ON ADMISSION? N. Gupta[1]; S. Wali[2]. [1]Olive View- UCLA Medical Center/UCLA-San Fernando Valley Program, Sylmar, CA; [2]Olive View-UCLA Medical Center/UCLA-San Fernando Valley Program, Sylmar, CA. *(Tracking ID #117408)*

LEARNING OBJECTIVES: 1) Recognizing hyperparathyroidism as an unusual cause of acute severe hypercalcemia in an inpatient setting. 2) Review the main causes of hypercalcemia and their typical clinical presentations/treatment.
CASE: A 70 y.o. Hispanic female was admitted to the surgical service for elective adrenalectomy for a 6 cm mass found on CT, suspicious for tumor. Past medical history includes hypertension, Hepatitis C, and liver cirrhosis. The surgery was complicated by severe blood loss. Replacement blood products, IV fluids, and FFP were given with secondary development of iatrogenic pulmonary edema, requiring ICU transfer for intubation and diuresis. ICU course was further complicated by Pseudomonas pneumonia, and Stenotrophomonas and Enterococcus sepsis. After 2 weeks in the ICU, the patient was extubated and transferred to the general medicine team in stable condition, with subsequent development of altered mental status, nausea, vomiting, and rapidly rising calcium from baseline levels (8.8 on admission, 9.5 on transfer from ICU, peaking to 12.2 over 4 days). Significant lab values include: Na+ = 151; Cr = 1.3; glucose = 154, Mg = 2.2, phosphorus = 2.3; albumin = 3.0; ionized calcium = 6.2 at peak (normal: 4.4–5.2); PT= 20; INR = 1.8; intact PTH = 132 (normal: 10–65); 24 hour urine calcium = 418 mg/24 hour (normal: 100–200). A head CT without contrast was negative for any acute CVA/intracranial hemorrhage/mass. The patient also received a CT chest/abdomen/pelvis, which showed a cirrhotic liver and a large right subcapsular renal hematoma, but no other evidence of any masses suggestive of malignancy. EKG was normal. The patient was treated with IV pamidronate with subsequent resolution of hypercalcemia over 2 days. Furosemide and IV fluid treatment for hypercalcemia were held secondary to mild hypernatremia. The patient was diagnosed with hypercalcemia secondary to hyperparathyroidism despite normal calcium levels on hospital admission.
DISCUSSION: IMPLICATION/DISCUSSION: Hypercalcemia is a relatively common clinical problem. Although the differential for hypercalcemia is extensive, hyperparathyroidism and malignancy account for approximately 90% of all cases. Hyperparathyroidism is the most common cause in an ambulatory setting, accounting for greater than 90% of cases. In hospitalized patients, cancer is the most common cause, accounting for approximately 65% of cases, with hyperparathyroidism accounting for approximately 25% of inpatient cases. In primary hyperparathyroidism, calcium levels are usually only slightly elevated, usually less than 11 mg/dL and rarely exceed 12.5 mg/dL. Calcium levels greater than the aforementioned values, are usually attributable to a malignancy. Clinical manifestations include lethargy, weakness, constipation, pancreatitis, nephrolithiasis, shortened QT interval, psychiatric disturbances. Treatment includes heavy hydration, lasix for calciuresis, calcitonin, biphosphonates, and steroids depending on the degree of hypercalcemia.

HYPERTENSION IN PATIENTS WITH UNILATERAL ATROPHIC KIDNEY: AN UNCOMMON ETIOLOGY OF A VERY COMMON MEDICAL DIAGNOSIS. Y.Y. Li[1]; R. Granieri[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115244)*

LEARNING OBJECTIVES: 1) Recognize the relationship between hypertension and unilateral atrophic kidney 2) Recognize multiple causes of unilateral atrophic kidney 3) Recognize the difference in the management of hypertension in patients with unilateral atrophic kidney or essential hypertension.
CASE: A 37 year-old male presented with a 3 week history of mild right flank pain. He denied dysuria, hematuria, fever, chills, nausea or vomiting. He was not on any medications. Physical examination was unremarkable except blood pressure was 130/85 mmHg. An abdominal ultrasound revealed an atrophic right kidney, a compensated left kidney with no hydronephrosis. The flank pain subsided without further therapy. About 2 years later, the patient developed hypertension with blood pressure of 150/100 mmHg. MRA showed minimal blood flow through the right renal artery and a widely patent left renal artery. Additional studies showed 24 hour urine protein 90 mg, creatinine clearance 93 ml/min, plasma renin activity 21U/ml (normal 5–13 U/ml; >13 suggests renovascular hypertension), normal VMA, metanephrine, catecholamines, and aldosterone. Therapy with ramipril was started, 2.5 mg daily, for 2 weeks, then 5 mg daily, which lowered blood pressure to below 120/80 mmHg.
DISCUSSION: Unilateral small kidney may result from a variety of causes, including chronic pyelonephritis, obstructive renal atrophy, renal artery stenosis with ischemia, congenital hypolastic kidney, tuberculosis, radiation therapy and partial nephrectomy. Hypertension in patients with unilateral small kidney may be essential or secondary hypertension. The small kidney in renal artery stenosis is usually associated with difficult to control hypertension. In animal models of renovascular hypertension (2K1C Goldblatt), the elevated blood pressure is associated with renin hypersecretion from the underperfused kidney and overactivation of the renin-angiotensin-aldosterone system. However, elevated plasma renin activity is found in only 50–85% of patients with renovascular hypertension, and may be seen in 16% of patients with essential hypertension. Medical therapy should be the primary management except in uncomplicated fibromuscular dysplasia, which is usually amenable to angioplasty. One should be cautious in using high dose ACE inhibitors in patients with high renin state because of tendency of causing profound hypotension, and in patients with possible bilateral renal artery stenosis because of the risk of reversible acute renal failure. The present patient developed hypertension several years after the unilateral small kidney was incidentally found. The hypertension may be caused by the small kidney because the plasma renin activity was significantly elevated, which may also account for the hypersensitivity to ACE inhibitor therapy.

HYPERTHERMIC EMERGENCY: A CASE OF POST-CARDIAC ARREST HYPERPYREXIA. J. Silberman[1]; B. Taqui[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116239)*

LEARNING OBJECTIVES: 1. Review differential for hyperthermic emergencies. 2. Recognize post-cardiac arrest hyperthermia as a rare, but established clinical entity. 3. Review treatment options for hyperthermic emergencies.
CASE: A 60 year old Hispanic male with ischemic, dilated cardiomyopathy (EF 20%) complained of chest pain and was subsequently found unconscious. He presented in a ventricular fibrillation cardiac arrest. His initial ABG revealed pH 6.24, pCO2 73, pO2 282, HCO3 15.3, saturation of 98% on AC with an FiO2 of 1.0. After an hour long resuscitation, he converted to sinus tachycardia with 6mm ST segment depressions in the inferolateral leads. His troponin I peaked at 220. At this time, he had rectal temperature of 108F. No inhaled anesthetics had been used during resuscitation. His family denied history of malignant hyperthermia or use of psychiatric medications or illicit drugs. Urine drug screen was negative. He was packed in ice and administered intravenous dantrolene with a resultant decrease in his temperature to 103F. He remained hypotensive despite multiple inotropes and was too unstable to be transported for head CT. He subsequently developed multiorgan failure. Because of the grave prognosis, his family withdrew care and the patient expired.
DISCUSSION: The most important causes of severe hyperthermia (temperature greater than 104F) are heat stroke, neuroleptic malignant syndrome, and post-anesthetic malignant hyperthermia. Although not well recognized, there is also an established relationship between cardiac arrest and post-resuscitation hyperthermia. Central nervous system insult is believed to be the cause of this type of hyperthermia. Two recent studies cited 194 patients with post-cardiac arrest hyperthermia. In these patients, the hyperthermia was a poor prognostic indicator, often resulting in brain death. Treatment options for post-resuscitation hyperthermia are not well established. Our approach was to use methods indicated for other hyperthermia syndromes. The approach favors discontinuation of culprit medications and symptomatic relief with ice, fans, cooling blankets, and infusion of cool saline. Refractory cases may require gastric or peritoneal lavage with cold saline or cardiopulmonary bypass with external cooling of blood. Pharmacologic therapy with dantrolene may also be indicated, depending upon the cause. Our case illustrates the importance of prevention and early treatment of hyperthermic emergencies. It also defines post-cardiac arrest hyperthermia as an entity that requires further study.

HYPERTHYROIDISM WITHOUT A THYROID GLAND? C. Burgdorf[1]; J. Wiese[1]. [1]Tulane Health Sciences Center, New Orleans, LA. *(Tracking ID #117388)*

LEARNING OBJECTIVES: 1. Recognized that retained thyroid tissue following thyroidectomy can result in recurrent hyperthyroidism. 2. Distinguish recurrent primary hyperthyroidism from factitious or exogenous hyperthyroidism.
CASE: A 42 year-old woman presented with insomnia, anxiety, and weight loss. She had been diagnosed with Graves disease one year prior. She was treated with a subtotal thyroidectomy because of a large, compressive goiter. Per the operative

report, the subtotal thyroidectomy included the isthmus and the right and left lobes. She was taking no medications and had been asymptomatic until one week prior to presentation. At presentation, her pulse was 86 beats/min; the blood pressure was 158/76 mmHg. She had no palpable thyroid tissue and no tenderness to palpation. She had an evident tremor and was anxious. Despite the history of the thyroidectomy, repeat thyroid function tests were ordered. Her TSH was 0.01 and the free T4 was 2.8. The patient was determined to be clinically and biochemically hyperthyroid.
DISCUSSION: Obtaining an accurate past medical history is instrumental to refining the differential diagnosis. This patient's case is a reminder, however, that a past history of thyroidectomy does not exclude the possibility of recurrent hyperthyroidism. Recurrent hyperthyroidism occurs in two percent of patients with a history of thyroidectomy, usually from small remnants of the thyroid gland located posterior to the plane of dissection. In these patients, it is important to evaluate for ectopic thyroid tissue. This tissue can arise in locations such as the neck, mediastinum and ovary. These sources can be diagnosed by radioactive iodine total body scan. Physicians must also consider exogenous thyroid hormone intake and overtreatment of surgically-induced hypothyroidism with levothyroxine as causes for recurrent hyperthyroidism. Physicians can diagnose surreptitious thyroid hormone intake by a low thyroglobulin and normal radioactive iodine uptake scan; subclinical hyperthyroidism can be diagnosed by a low TSH and elevated T3 or free T4 levels. Aside from diabetes, thyroid disease is the most common of endocrine diseases presenting to the general internists. Knowledge of these complications is important to the proper management of the hyperthyroid patient.

HYPOTHYROID HEART FAILURE. J.A. Kasher[1]; J. Wheat[1]; P.J. De Silva[1]; P.P. Balingit[1]. [1]UCLA San Fernando Valley Program, Sylmar, CA. *(Tracking ID #116171)*

LEARNING OBJECTIVES: 1) Recognize hypothyroidism as an etiology of heart failure. 2) Identify hypothyroid-induced cardiomyopathy as an easily treatable and reversible condition.
CASE: A 56-year-old Hispanic male presented with a two-month history of progressive substernal chest pain, dyspnea, and decreased exercise tolerance. His chest pain occurred both at rest and with exertion. Past medical history was significant for hypertension, hypothyroidism, and atrial fibrillation. Patient denied palpitations. There was no previous or current use of alcohol or other illicit substances. The patient admitted to non-compliance with his medications for about six months. Vital signs were notable for heart rate 97 and blood pressure 147/81. Jugular venous pressure was normal. Chest auscultation revealed bibasilar rales, irregularly irregular heart rate, and an S3 gallop. Routine chemistries, blood count, and cardiac enzymes were normal. EKG showed atrial fibrillation without evidence of ishcemia. Thyroid stimulating hormone level was 55.3, and free T4 and T3 were within normal limits. Echocardiography demonstrated global hypokinesis and ejection fraction (EF) 15%, while cardiac catheterization revealed clean coronary arteries with EF 35%. A regimen of L-thyroxine 0.125 mg, benazepril 20 mg, and metoprolol 25 mg was started. Initial improvement of his CHF followed, and on return visit 3 months later, TSH had normalized. He remained free of any signs or symptoms of heart failure after normalization of his thyroid tests.
DISCUSSION: Thyroid hormone affects many aspects of cardiovascular function including systemic vascular resistance, heart rate, ejection fraction, cardiac output, isovolumic relaxation time and blood volume. It also acts directly on the cardiac muscle and is a regulator of cardiac gene expression. Hyperthyroidism is a well documented cause of heart failure. However, hypothyroidism is much less common and rarely mentioned in the literature as a cause for cardiac dysfunction. The exact incidence of hypothyroid-induced heart failure has not been determined since it does not typically occur in the absence of other cardiac diseases. Hypothyroid cardiomyopthy is rare, and is often associated with mxyedema coma. In this case, the patient developed heart failure only when he became hypothyroid. His blood pressure and heart rate were still relatively controlled and it is unlikely that they induced a cardiomyopathy. Hypothyroidism and idiopathic cardiomyopathy were the other possibilities. However, idiopathic cardiomyopathy is not as reversible as that due to hypothyroidism. This patient responded rapidly to thyroid replacement and appropriate CHF management. Unlike most causes of cardiac dysfunction, hypothyroidism represents a reversible etiology and therefore it is important to exclude hypothyroidism as a potential cause in patients with cardiac failure.

"I CAN'T MOVE". C. Chen[1]; S. Wali[1]; P.P. Balingit[1]. [1]UCLA San Fernando Valley Program, Sylmar, CA. *(Tracking ID #117488)*

LEARNING OBJECTIVES: 1. Recognize hypokalemic periodic paralysis (HPP). 2. Recognize the association of HPP with hyperthyroidism.
CASE: 23-year-old male with presented with sudden onset of weakness of his extremities. The patient was watching TV after eating pizza for dinner, and at 4am he noticed that he was unable to rise up from a sitting position. By the time he arrived at the ER, he was unable to walk. He complained of mild anxiety, and denied recent upper respiratory tract infection symptoms. Prior to the onset of symptoms, the patient denied any unusual ingestions and did not perform strenuous exercise. The patient denied any drug, alcohol, or tobacco use. Family history was noncontributory. On physical examination, the patient was afebrile, normotensive, breathing comfortably, with a heart rate of 68. There was no goiter present. Neuromuscular examination revealed good muscle mass in the extremities, normal cranial nerve function and intact sensation. However, proximal muscle strength was 3/5 though symmetric. Laboratory results included K 3.0 and TSH 1.2. EKG showed normal sinus rhythm with U waves present. 60 mEq potassium replacement was given with resolution of his deficits. Endocrinology consultation was obtained for management of newly-diagnosed hyperthyroidism.
DISCUSSION: HPP is a syndrome in which a patient experiences episodes of flaccid weakness or paralysis, which may be potentially fatal if respiratory muscles are affected. Acute attacks are often precipitated by exercise, stress, or a large carbohydrate meal and can last for several days. During acute attacks, sudden potassium shifts toward the intracellular space may lower serum levels to as low as 1.5 to 2.5. However, potassium levels are usually normal between attacks. This syndrome may be familial, with an autosomal dominant inheritance pattern with variable penetrance, but may also be associated with hyperthyroidism. Asian/Native American males seem to be particularly susceptible to this association, with an estimated incidence of about 15% to 20% of thyrotoxic patients. The syndrome can occur with few thyrotoxic symptoms. The mechanism by which hyperthyroidism causes HPP is not well understood. It is hypothesized that thyroid hormone may increase Na-K-ATPase activity (which drives potassium into cells), thus precipitating hypokalemia when increased levels of epinephrine and insulin are present (e.g. from stress, exercise, large meals). Another hypothesis suggests that susceptible patients have a mutated calcium channel, its function being diminished during thyrotoxic states. In the familial syndrome, most cases are due to a defect in the calcium channel of skeletal muscle. The treatment of thyrotoxic-associated HPP is the same as in euthyroid patients, namely replacement of potassium. Resolution of symptoms often occurs after 15–20 minutes. Maintaining a euthyroid state often prevents further attacks. Beta blockers may be helpful in reducing the severity of attacks.

I THOUGHT IT WAS ACUTE CHOLECYSTITIS! FOOLED BY A LIVER ABSCESS. M. Kanbour[1]; R. Granieri[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115750)*

LEARNING OBJECTIVES: 1.) Identify the clinical features of pyogenic liver abscesses; 2.) Recognize the treatment of pyogenic liver abscesses 3.) Identify potential underlying causes of pyogenic liver abscesses.
CASE: CASE INFORMATION: A 73-year-old male presented with 4 days of unremitting, dull right upper quadrant (RUQ) pain, fever (39.4°C), chills, and anorexia without nausea, vomiting, or change in bowel habits. He had a history of myocaridal infarction and prostate cancer. Medications were simvastatin and aspirin. His exam was unremarkable except for RUQ tenderness, positive Murphy's sign, and rebound. His Hb was 11.9, WBC 22.1, (85 PMN, 6 bands), albumin 2.5, ALT 133, AST 132, ALK PHOS 177, total billirubin 1.1, INR 1.2. His right hemidiaphragm was elevated on CXR. CT abdomen/pelvis showed gallstones without cholecystitis or biliary ductal dilatation, diverticular disease without diverticulitis, and a 10 cm right lobe liver abscess. He was started on IV ampicillin/sulbactam. An 8 French pigtail catheter was placed under CT guidance and 250 cc of foul smelling, blood tinged fluid were drained. 5 days later, the fluid culture grew Peptostreptococcus. Blood cultures remained negative. Clinically, the patient improved dramatically. A CT on day 5 showed a 2nd communicating abscess, located superiorly. A 10 French drainage catheter was advanced. The patient did well and was discharged on oral amoxicillin/clavulinic acid. After 4 weeks of therapy, CT showed persisting abscess despite a well placed catheter. He was referred for open surgical drainage and cholecystectomy.
DISCUSSION: IMPLICATION/DISCUSSION: Pyogenic liver abscesses present as RUQ pain, tenderness, fevers, anorexia, and weight loss and can mimic the presentation of acute cholecysitis. Ultrasonography is cost effective for diagnosis and can be used to guide aspiration. Empiric antibiotics should be started as soon as an abscess is diagnosed and continued for 2–4 weeks. The antibiotics should cover E. coli, K. pneumoniae, bacteroides, enterococcus, and anaerobic streptococci. Drainage is not required in small abscesses that respond to antibiotics. A percutaneous needle aspiration is required if an abscess <6 cm. If an abscess >6 cm, however, a percutaneous catheter should be placed for drainage. If drainage fails, if there are large multilocular abscesses, or if there is an associated intra-abdominal infection requiring surgery, referral for open surgery is recommended. Antibiotics alone are effective in only a few patients; most will require aspiration or drainage. In 85% of cases, an underlying etiology is identified. Most commonly, gallstones, diverticulitis, and appendicitis are implicated. Less common causes include biliary infection, stricture, cholangiocarcinoma, gallbladder empyema, Crohn's, perforated ulcer, trauma, liver biopsy, dental infection, or cryptogenic. In all cases the underlying cause should be sought and treated.

I'M DIZZY. COULD THIS BE CANCER? A. Nadimpalli[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117491)*

LEARNING OBJECTIVES: 1. Recognize the clinical presentation of CML 2. Understand the indications and methods of treatment of CML
CASE: A 37 year-old man presented with one episode of dizziness minutes after urinating. He did not lose consciousness, had no vertigo symptoms, and had intact bowel and bladder function. He had a headache the prior day for which he took aspirin and acetominophen. He also recounted large melanotic stools over the past five days. He denied hematochezia or hematemesis. His blood pressure was 120/70; heart rate 120, and he was orthostatic. His abdomen was soft without hepatosplenomegaly. He had no lymphadenopathy. His rectal exam was normal; his stool was hemoccult positive. His hematocrit was 19 mg/dl; WBC 170,000; platelets 800,000. The bleeding time was significantly elevated, prompting platelet aggregation studies. The response to ristocetin was normal; his platelets did not aggregate in response to ADP. After he was transfused, an EGD revealed a

non-bleeding ulcer in his duodenum. A peripheral smear and bone marrow biopsy were consistent with CML. He was started on Imatinib mesylate (Gleevec) and evaluated for a bone marrow transplant.
DISCUSSION: The initial presentation of CML is variable. Fifty percent are asymptomatic until the end stage of the disease; a small percentage present with a bleeding episode even in the face of an elevated platelet count. In these patients, the dysfunctional platelets are due to abnormal von Willibrand factor and Ristocetin co-factor levels or platelet receptors, as confirmed by a decreased response to procoagulant factors, including ADP, epinephrine and collagen. Both the bleeding times and the platelet aggregation qualities may be adversely affected in patients with CML Although hydroxyurea and busulfan have been used for treatment of CML, neither are curative. Interferon alpha 2A induces complete cytogenic remission (i.e. Philadelphia chromosome negative) in a minority of patients. Bone marrow transplant, while having an initially increased mortality in the first 18 months, has a better long-term prognosis than chemotherapy. Imatinab mesylate, an oral pill that inhibits the tyrosine kinase molecule produced by the aberrant Bcr/Abl translocation, has also been shown to have better hematologic and cytogenic response than chemotherapy alone. Recognizing CML is important to the general internist as it is a common malignancy that with the advent of Imatinib mesylate can be curable.

IBUPROFEN INDUCED LEUKOPENIA. R. Nica[1]; E. Warm[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #115633)*

LEARNING OBJECTIVES: 1. Recognize the neutropenia as one of the ibuprofen side effects. 2. Manage the ibuprofen induced neutropenia.
CASE: Ibuprofen is well known to cause gastrointestinal side effects but many other types of adverse reactions can occur. We report a case of ibuprofen-induced leukopenia that began shortly after introduction of the medication and resolved completely with discontinuation. A 78-year-old African American male with no prior significant past medical history presented for his annual physical exam. He noted only mild pain in his right knee, presumed to be from osteoarthritis. He was prescribed ibuprofen 600 mg twice a day for the pain. A CBC drawn at the time of the office visit as a part of a routine battery of labs was normal. Three weeks later the patient presented to the emergency department for a minor trauma. On this occasion he was noted to have an abnormal CBC. His hematocrit, hemoglobin, and platelet levels were normal, but his white blood cell count was approximately 0.3 mm3. In order to avoid any lab error the CBC was redrawn and a blood smear was analyzed by the pathologist The patient did not have any complaints, the physical exam was unremarkable, and no other lab abnormalities were noted. He was advised to stop the ibuprofen. One month later, with no interventions and no complications noted, the patient's white blood cell count was normal.
DISCUSSION: Ibuprofen is a nonsteroidal anti-inflammatory agent that is widely used for treatment of pain and fever. Although ibuprofen has a favorable therapeutic risk-benefit ratio, a number of potentially serious adverse reactions have been associated with its use. Leukopenia, especially with neutropenia or agranulocytosis, is a rare side effect occurring at a reported rate of less than 1%. The mechanism of this side effect is not known. One proposed mechanism is the presence of an antibody that inhibits the growth of myeloid progenitors in the presence of ibuprofen. As seen in our case, the leukopenia is completely reversible if the drug is stopped. It is also thought that the frequency of this side effect is underestimated because of this property. It is, however, important to recognize the leukopenia before expensive and invasive studies are undertaken to determine the cause. To our knowledge there have been no reported cases of ibuprofen specific induced neutropenic complications. As with other drug related neutropenia, we assume that the risk of complications is increased with the degree and duration of the neutropenia. Because the mechanism of ibuprofen and NSAID induced neutropenia is unknown, we decided not to prescribe any NSAIDs for our patient in the future.

INFLAMMATORY BREAST CANCER OR UNRESOLVED MASTITIS-THE SIGNIFICANCE OF "HIGH INDEX OF SUSPICION". K. Ghosh[1]; A.C. Degnim[1]; D.L. Adamczyk[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #116695)*

LEARNING OBJECTIVES: 1) Recognize clinical features of inflammatory breast cancer. 2) Manage a patient with persistent signs/ symptoms of mastitis.
CASE: A 58 year-old lady presented with a history of redness, warmth and fullness in the left upper breast for three weeks. She had completed a 10-day course of Clindamycin few days earlier prescribed by her primary physician for suspected mastitis. Her breast symptoms improved slightly on the antibiotics but recurred soon after the medication was discontinued. She also reported that she had noticed a lump in her left axilla about 7 months earlier that had been evaluated with a fine-needle aspiration biopsy revealing benign findings. She denied fever, but reported fatigue and night sweats. Clinical examination revealed an asymmetrically enlarged left breast with an area of erythema, warmth and fullness extending for about 4 × 8cm in the upper left breast. Palpation of the breast revealed an ill-defined thickening deep to the area of inflammation measuring about 4 cm, and a 2 cm lymph node was palpable in the right axilla. Diagnostic mammogram was negative for abnormality. Ultrasound evaluation revealed skin thickening with vague areas of shadowing in the deeper tissues, but no definite mass; the axillary lymph node had benign features. Skin biopsies taken from two areas of inflammation were negative for malignancy. An ultrasound-guided biopsy of the ill-defined hypoechoic area demonstrated an infiltrating ductal carcinoma. The patient underwent sentinel lymph node biopsy that was positive for metastasis, and is currently undergoing neo-adjuvant chemotherapy.
DISCUSSION: Inflammatory breast cancer is the most aggressive form of primary breast cancer. Clinical features include breast swelling with erythema, edema, tenderness, induration, and rapid spread to axillary lymph nodes. Since the early presentation is similar to mastitis, any non-lactational mastitis should be viewed with suspicion and followed until resolution. Diagnostic imaging (mammogram, ultrasound, or even breast MRI in select cases) is indicated if the mastitis does not resolve completely with antibiotics. Since skin biopsy may be negative in inflammatory breast cancer, image-guided biopsy, or even open surgical biopsy of deeper tissue must be pursued in suspicious cases, even in the absence of a well-defined mass lesion.

INTRAPULMONARY PERCUSSIVE VENTILATION (IPV)—A NEWER MODALITY IN THE MANAGEMENT OF BRONCHIAL ASTHMA AND ATELECTASIS—A PRELIMINARY STUDY. A. Devarajan[1]; R. Blejeru[1]; N. Maddukuri[1]; P. Venkataswamy[1]; R. Dharmaji[1]; D. Flores[2]. [1]Jersey City Medical Center, Jersey City, NJ; [2]Jersey City Medcial Center, Jersey City, NJ. *(Tracking ID #116500)*

LEARNING OBJECTIVES: To determine the effectiveness of Intra Pulmonary Percussive Ventilation in cases of respiratoratory failure requiring mechanical ventilation.
CASE: Case 1. Ms. MM is a 58 year old white female with a history of severe asthma and COPD admitted in ICU for hypercapnic respiratory failure. After being treated with inhaled bronchodilators, antibiotics and IV steroids, she improved initially and has later developed severe respiratory failure with unresponsiveness and low oxygen saturation (O2 saturation—60–70% on 100% Fi02). Since the patient refused mechanical ventilation, continuous Albuterol and Ipratropium along with 100% oxygen and IPV treatment were administered. After 10 minutes of treatment, patient expectorated a large amount of thick yellow sputum, and soon thereafter her O2 saturation rose to 88–92%. The patient regained consciousness. The was discharged home in her usual condition several days after. Case 2. 59 year old AAM with history of hypertension developed intracerebral hemorrhage and was managed in ICU with intubation and control of hypertension and Intra cranial pressure. During the 2nd week of ICU stay, the patient developed marked atelectasis of right lower lobe as was evident in chest X-Ray. The atelectasis did not respond to usual chest percussions, frequent turnings of the patient, and nebulized bronchodilator treatment. Intra Pulmonary ventilation treatment was added to the regular nebulized bronchodilator treatment for 3 days. This resulted in marked improvement in symptoms and signs, including drastic improvement in X-Ray findings.
DISCUSSION: Essentially, IPV is a form of mechanical ventilation, assists the respiration of patients with diseases which limit their normal respiration by helping to clear retained secretions from the lungs and then providing deep breathing to increase oxygen delivery to the alveoli as well as flushing carbon dioxide from the pulmonary airways. This form of mechanical ventilation delivers rapid, high flow, mini-bursts (percussions) of Air or Oxygen into the lungs while simultaneously delivering therapeutic aerosols. IPVloosens and helps propel deep retained airway secretions upward from the lungs where they can be more easily expectorated. The two cases of respiratory failure are presented here to stress the effectiveness of Intra Pulmonary Percussive Ventilation in the management of bronchoconstriction from Asthma and airway blockage from atelectasis.

IS IT A CASE OF ACUTE CORONARY SYNDROME OR AORTIC DISSECTION? B. Xie[1]; A. Sohnen[1]. [1]University of Pittsburgh Medical Center, Pittsburgh, PA. *(Tracking ID #115517)*

LEARNING OBJECTIVES: Learning Objectives: 1) Recognize the signs and symptoms that distinguish acute coronary syndrome from acute aortic dissection 2) Diagnose acute aortic dissection
CASE: A 59-year-old female with hypertension, diabetes, hypercholesteremia, s/p colon cancer resection 3 months previously, presented with sudden, severe, dull, substernal chest pain. The pain radiated to left arm and jaw, and was associated with nausea, diaphoresis and shortness of breath. Vitals on admission: temperature 36.4 C, heart rate 62 and regular, respiration rate 20, blood pressure 157/72 right arm and 154/68 left arm. Remaining physical examination was unremarkable. Labs were significant for H&H 11.5/35.6, CPK 30, CK-MB 0.3, Troponin I 0.1. EKG showed sinus rhythm with rate 62 and no ST-T changes in comparison with a previous EKG. Chest X-ray was normal. Patients was initially diagnosed as having an acute coronary syndrome and started on intravenous nitroglycerin, morphine and heparin. Four hours after onset (and 3 hours after treatment), the pain persisted. At that time, patient mentioned that the pain radiated to lower back and left hip. Repeat EKG, CPK, CK-MB and Troponin I showed no change. Intravenous heparin was discontinued immediately, and a spiral CT scan of chest was ordered. It showed a dissection involved both ascending and descending aorta. The patient was immediately transferred to the operation room for dissection repair. The surgery was a success and the patient was discharged to home 10 days later.
DISCUSSION: Distinguishing the chest pain of aortic dissection from acute coronary syndrome is very important. Although both illnesses are catastrophic, the treatments are quite different. The onset of myocardial ischemic pain is often gradual with an increasing intensity over time, while in aortic dissection the onset is typically abrupt with greatest intensity at the beginning. The pain of ischemia commonly radiates to the neck, upper extremity or shoulder but rarely to lower back or hip. Migratory chest pain occurs in most patients with aortic dissection. Ischemic pain usually lasts more than 2 but less than 20 minutes, unless a myocardial infarction is occurring. Persistent chest pain without EKG changes should raise concern that the pain is not due to an acute myocardial infarction. A normal chest X-ray and symmetric upper extremity blood pressures do not exclude the diagnosis of aortic dissection. As in this patient, the suspicion of the diagnosis of acute aortic dissection is raised when 1) pain is severe, sudden in onset, with radiation initially

to arm and jaw then to back and hip (migratory); 2) pain persists for 3-4 hours without EKG change. Definitive diagnosis of aortic dissection is made with aortography (standard but uncommonly used) or noninvasive techniques (commonly used) including CT scanning, MRI and trans-esophageal echocardiography.

IS SINUS NODE DYSFUNCTION AN ADVERSE EFFECT OF INFLIXIMAB? S. Dodla[1]; T. Townley[1]. [1]Creighton University, Omaha, NE. *(Tracking ID #115699)*

LEARNING OBJECTIVES: 1. To identify sick sinus syndrome as a possible adverse effect of Infliximab. 2. To realize the importance of being aware of the potential side effects of Infliximab considering its wide spread use in the recent years.
CASE: The patient is a 41-year-old male with three-year history of Rheumatoid arthritis who was treated with Steroids and Methotrexate without symptomatic improval. He was later started on Infliximab infusions along with Methotrexate with good relief in symptoms. Three months after starting the infusion he developed edema of the feet with pleural effusions and was given the new diagnosis of CHF. One month after that he was admitted to hospital again because of three syncopal episodes with complains of "passing out" while asleep and while awake. He was noted to have six-second sinus pauses with no escape rhythm on electrocardiographic monitoring associated with the symptoms. Other medications that he was on included Methotrexate, Naprelan, Imitrex, Remeron, Celebrex, Neurontin, Glipizide, Bumetanide, Lipitor, Roxicet and Insulin 70/30. Infliximab was discontinued and Dual chamber pacemaker was placed. On one year follow up, he had no more syncopal episodes, symptoms of Congestive Heart Failure had resolved and pacer interrogation revealed little to no pacer dependence and no significant bradyarrythmias. Other PMH include DM and Hyperlipidemia.
DISCUSSION: Infliximab is a human murine chimeric anti TNF-a monoclonal antibody, which has been widely used for the treatment of Rheumatoid arthritis and crohn's disease. Studies are underway regarding the cardiovascular effects of this drug especially after the recent clinical trial of 7 deaths out of 101 patients with moderate to severe CHF and another case of sudden death in a patient without CHF after Infliximab infusion. Bradycardia is a rare adverse effect of Infliximab. Although Diabetes and Rheumatoid arthritis have been associated with sick sinus syndrome, patient had these before and after the episodes of sinus pauses. The presence of no syncopal episodes, no pacer dependence after discontinuing Infliximab supports that the sinus node dysfunction could be related to Infliximab. The pathogenesis behind it, the absence of escape rhythm and confirmation of the correlation between both will need to be further assessed by future clinical trials

ISOLATED PULMONARY MAC IN HIV PATIENTS: A CASE OF IMMUNE RECONSTITUTION SYNDROME. P. Huang[1]; B. Taqui[1]; M. Keith[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116211)*

LEARNING OBJECTIVES: 1. Recognize immune reconstitution inflammatory syndrome as a consequence of initiation of antiretroviral therapy in HIV patients. 2. Recognize clinical features of reconstitution syndrome.
CASE: A 40 year old male presented with one week of cough productive of clear, white sputum associated with dyspnea, fevers and night sweats. Two months prior, he had been diagnosed with HIV (CD4 7). He had been started on antiretroviral therapy (lamividine, zidovidudine, and tenofovir) which subsequently improved his CD4 count to 149. On physical exam, he was afebrile. He had oral thrush, submandibular lymphadenopathy, and crackles in left upper lung field. Lab data revealed Hgb 6.6, LDH 253. Chest xray revealed diffuse alveolar and interstitial opacities in bilateral upper lobes, left greater than right. CT abdomen/pelvis revealed marked prominence of the pancreatic head and scattered nodular densities at the lung bases, but no retroperitoneal or mesenteric lymphadenopathy. Bronchoscopy revealed many acid fast bacilli by staining, but no pneumocystis carinii (PCP) or fungi. Routine cultures were negative. He was started on isoniazid, rifabutin, ethambutol, pyrazinamide and clarithromycin for mycobacterial infection. After culture confirmation of Mycobacteria avium complex (MAC), his regimen was simplified to ethambutol and clarithromycin. At this time, the patient was also diagnosed with immune reconstitution inflammatory syndrome. He continues to do well.
DISCUSSION: Immune reconstitution inflammatory syndrome is a relatively new entity described in HIV patients who have been started on highly active antiretroviral therapy (HAART). It represents a recovery in the immune response leading to an excessive response to previously latent infections. There are no well defined predisposing factors for reconstitutuion syndrome. However, it tends to occur in antiretroviral naive patients with low CD4 counts (<50–100). It occurs 4–24 weeks after initiation of HAART. The syndrome typically is associated with ophthamologic and dermatologic manifestations. It has also been linked to herpes, MAC, tuberculosis, cytomegalovirus, hepatitis B and C, cryptococcus and PCP. It causes atypical presentations of opportunistic infections. Our patient presented with isolated pulmonary MAC infection, seen more often in chronic lung disease than in HIV. There are only 24 reported cases of isolated pulmonary MAC in HIV patients. Patients with reconstitution syndrome recover nicely with treatment of the underlying infection and continued HAART therapy.

IT'S NOT OVER UNTIL IT'S OVER. K. Jones[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117475)*

LEARNING OBJECTIVES: 1. To recognize that a normal Physical exam, normal serial EKGs and normal echocardiogram do not rule out Myocardial infarction 2. To review the timing, specificities, and sensitivities of cardiac enzymes
CASE: A 38 year-old man with a history of gastritis, panic attacks, and hyperlipidemia presented with one day of intermittent retrosternal chest pain that occurred after an evening of cigarette smoking and binge-drinking. The pain was relieved with ranitidine, but returned within an hour and persisted until presentation. He had no family history of coronary disease. His physical exam and EKG were normal. He was given pantropazol that relieved the pain. A troponin I was drawn, but he was discharged prior to its return. The next morning, the patient's troponin was found to be elevated at 4.74 (normal <1.0). The patient was called and asked to return to the emergency department, where he stated that he was without pain and felt entirely well. His examination was normal. A second troponin, 36 hours post-chest pain, was 24.5. His EKG remained normal. Despite his lack of current symptoms, the patient underwent a left heart catheterization that showed a complete blockage of his left circumflex coronary artery.
DISCUSSION: By GUSTO criteria, myocardial infarction is defined as two of three criteria: enzyme elevation, EKG changes, and clinical story. This patient's presentation was suggestive of myocardial infarction, but the response to a proton-pump antagonist falsely masked the diagnosis. Pain from myocardial infarction is intermittent, and an intervention such as a PPI can coincide with the natural resolution of the anginal pain, fooling the physician into believing the diagnosis is due to gastric reflux. This patient's past medical history of alcohol abuse and anxiety attacks induced cynicism on the part of the physician that further clouded judgment. No test on its own has a sufficiently strong likelihood ratio to confirm or exclude the diagnosis of myocardial infarction. For this reason, serial EKG's should be used to detect ischemic changes, as this improves the likelihood ratios of the test (+LR 14; –LR 0.3). Troponin I levels are sensitive indicators of cardiac damage especially after 36 hours, but may remain normal for the first twelve hours after cardiac injury (+LR 14; –LR 0.05). This case illustrates that if there is sufficient pre-test probability to exclude myocardial infarction, serial EKG's and troponin assays should be obtained. Physicians should be aware of the coincident cause-effect heuristic that may prevent accurate diagnosis of ischemic coronary disease, and the effect of moral judgment (i.e., a history of alcohol and drug use) on their clinical decision-making.

ITCH WITHOUT RASH. T. Tanabe[1]. [1]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #117370)*

LEARNING OBJECTIVES: 1) Recognize the presenting symptoms of bullous pemphigoid. 2) Assess the differential diagnosis of pruritis.
CASE: A 74-year-old man with a history of hypertension presented with intensive pruritis for two weeks. The patient complained of itches on anterior shoulder, axillae, upper chest, abdomen and lower legs. He could not recall the initial site of an itch but denied rashes. His medication included amlodipine only, which he had taken for years. He denied any changes in home environment, recent sun exposure, intake of herbal medicine and history of herpes simplex. Review of system was negative for weight loss, diarrhea, and visual changes except for insomnia due to intensive pruritis. Physical exam revealed multiple scratches on his upper arms, chest, abdomen and lower legs, especially close to ankles. No bullae, papules, vesicles, erythema or scales were seen. There was no involvement of mucous membranes. Direct microscopic exam of the skin with potassium hydroxide preparation was negative for fungus or yeast. Laboratory values revealed normal white cell counts with normal distribution, normal renal function and normal electrolytes. The patient was referred to the dermatology clinic. Bullous pemphigoid was diagnosed by skin biopsy and the patient was treated with systemic corticosteroid successfully.
DISCUSSION: This is a fairly common presentation of bullous pemphigoid. Initially patients complain of moderate to severe pruritis without skin lesion and subsequently develop an eruption. Erythematous, popular lesions may precede bullae formation by weeks to months. Patients are often misdiagnosed as generalized eczema, scabies, allergic contact dermatitis or drug reaction. Histopathology and immunology permit a differentiation from scabies, dermatitis herpetiformis and the distribution of rash allows one to differentiate from contact dermatitis or atopic dermatitis. It is crucial for internists to obtain a detailed history including medications, diet, and the presence of similar symptoms in a patient's family. It is also imperative to examine mucous membranes carefully.

JUGGLING A DIAGNOSIS WITH TWO FEET AND ONE LEFT HAND. J.S. Dubow[1]; M. Rotblatt[2]. [1]UCLA Medical Center, Los Angeles, CA; [2]UCLA SFVP-Olive View Medical Center Department of Internal Medicine, Sylmar, CA. *(Tracking ID #116172)*

LEARNING OBJECTIVES: 1. Recognize how to diagnosis and treat pneumocystis carinii pneumonia (PCP) 2. Recognize the significance of the "two foot and one hand" syndrome.
CASE: A 32-year-old hispanic man was admitted to the hospital complaining of shortness of breath, fevers and dsypnea on exertion. He also reported recent night sweats, a 15-20 pound weight loss over 6 weeks and a yellowing of his toenails on both feet and fingernails on one hand. The patient had moved to the United States from Mexico ten years previously and he admitted to having sexual intercourse with a prostitue 2 years ago. On exam, the patient was tachypneic and tachycardiac; he had coarse breath sounds and onychomycosis on all ten of his toe nails and all five of the finger nails on his left hand. The rest of the exam was only significant for a large tatoo on his torso. The CXR showed diffuse hazy interstitial infiltrates. His labs were significant for pO2 of 65, a LDH of 1087 and a normal CBC. Although we did not know the patient's HIV status, based on our high clinical suspicion for PCP, the patient was started on high-dose trimethoprim-sulfamethoxazole IV and oral prednisone. An HIV test was later positive with a CD4 count of 33, and the sputum PCP DFA was positive.

DISCUSSION: Based on this patients' symptoms, chest X-ray, LDH and fungal nail infection, it was suspected that this patient had PCP and HIV. Fungal infections of all toenails and fingernails on only one hand (two foot and one hand syndrome) have been shown to be a nonspecific finding in patients with immune deficiency states and a marker for AIDS. The reason why it only affects one hand is unknown, but this clinical finding suggests an underlying immunodeficiency. It usually affects the proximal portion of the nail and extends distally. This increased our suspicion for PCP and the diagnosis of HIV in our patient, who had a fairly classic presentation of PCP. The clinical manifestations of PCP most commonly include fever, cough and progressive dyspnea. The most common findings on physical exam are fever and tachypnea, with possible crackles or rhonchi. The most common radiographic abnormalities are diffuse, bilateral interstitial or alveolar infiltrates. The two most common abnormal laboratory values associated with PCP are a CD4 count below 200 cells/mm3 and an elevated LDH level. However, specific diagnosis of PCP requires documentation of the organism in respiratory specimens by sputum induction or BAL. First line treatment for PCP is trimethoprim-sulfamethoxazole or pentamidine for 21 days. For moderate to severe cases of PCP (defined as arterial oxygen tension of 70 mmHg or less and/or alveolar-arterial oxygen gradient of 35 or greater on room air) it is recommended to use adjunctive corticosteroids. Our patient defervesced well and was discharged with follow up in the infectious disease clinic.

LANGERHANS CELL HISTIOCYTOSIS. A. Ramakrishnan[1]; L. Lu[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #117428)*

LEARNING OBJECTIVES: 1) Recognize the symptoms and clinical presentation of Langerhans Cell Histiocytosis. 2) Learn the treatment options for Langerhans Cell Histiocytosis.
CASE: A 35 year-old female with no significant past medical history presented with a one week history of worsening mental status. She was well until one week prior to presentation when her family noted that the change in her mental status along with a decreased in her fluid intake. Physical examination revealed normal vital signs and a disoriented female with diffuse erythematous maculopapular rash on her scalp and multiple ulcerated lesions on her vagina. The rest of neurological exam was unremarkable. Laboratory results revealed serum sodium of 157 and a low urine osmolality, which was consistent with diabetes insipidus. She was treated with hypotonic fluid and vasopressin with improvement of her sodium and mental status. The patient subsequently underwent biopsies of her scalp and vaginal lesions. Pathology showed dendritic cells with abundant vacuolated cytoplasm and vesicular oval nuclei surrounded by eosinophils, neurtophils and lymphocytes, and these findings were diagnostic of Langerhans Cell Histiocytosis (LCH). With her new onset of central diabetes insipidus, a MRI of the brain was obtained revealing a pituitary lesion, consistent with intracranial LCH. She was treated with a combination of chemotherapy and radiation and had good clinical response.
DISCUSSION: LCH is a group of disorders that represent abnormal proliferation of the Langerhans' cell. These disorders present more commonly in children, but can occur at any age. Their clinical presentation can be very variable but these disorders can be divided into three major clinical entities: unifocal LCH, multifocal LCH, and acute disseminated LCH. Unifocal LCH is characterized by solitary or multiple osteolytic bone lesions and prognosis is good. Multifocal LCH can involve numerous organs including the skin and reticuloendothelial system. In about 20–50% of cases, there is involvement of the pituitary gland leading to diabetes insipidus. Acute disseminated LCH is a severe form of multifocal LCH, which usually presents in infancy, is characterized by a diffuse cutaneous rash, hepatosplenomegaly, lymphadenopathy, pulmonary lesions and osteolytic bony destruction. Therapy is based on the extent of disease and prognosis for limited disease is generally very good. Single lesions can be monitored or surgically excised. Local radiotherapy has also been effective for skin and bony lesions. For more aggressive disease various chemotherapeutic agents such as vinca alkaloids, etoposide, methotrexate, prednisone and 2-chlorodeoxyadenosine have been used with varying rates of success. For patients with refractory disease, allogenic bone marrow transplantation is also an option.

LEARNING TO BREATHE CORRECTLY: WHAT YOUR MOTHER NEVER TAUGHT YOU. C.J. Amin[1]; E.F. Yee[1]; B.L. Horowitz[1]; G.H. Murata[1]. [1]New Mexico VA Health Care System/ University of New Mexico, Albuquerque, NM. *(Tracking ID #116853)*

LEARNING OBJECTIVES: 1. Recognize the clinical presentation and differential diagnoses of laryngospasms 2. Discuss the work-up and management of laryngospasms 3. Recognize functional disorder as a cause of laryngospasms
CASE: A 52 year-old male presented with 2 weeks of subclinical fevers, and 4 days of cough, hoarseness, stridor and dyspnea. When he talked, coughing ensued immediately, resulting in stridor and inability to breathe for a few seconds. His past medical history was remarkable for gastroesophageal reflux disease (GERD) treated with ranitidine. The physical exam was unremarkable except for stridor. A diagnosis of laryngospasms due to GERD and upper respiratory infection (URI) was made upon admission, and treatment begun with humidified air, anti-tussives, prednisone, and lansoprazole. Pertussis antibody and culture were sent, and azithromycin started empirically. In spite of significant antitussive and nebulizer treatments given for several days, his laryngospasms increased to hourly episodes. He was transferred to the MICU where bo-tox paralysis of one vocal cord, and tracheotomy/intubation were considered. Nebulized morphine, racemic epinephrine, IV ativan and IV lidocaine all failed to prevent episodes. CT and x-rays of the head and neck were unremarkable. Laryngoscopy revealed mobile vocal cords with paroxysmal motion, but no obstruction or lesions. With these findings, a learned functional voice disorder was diagnosed. Speech therapy taught the patient to manage spasms by breathing slowly, pursing his lips, and whispering words during attacks. Symptoms, frequency, severity, and distress of his attacks subsequently all improved. The patient was discharged on anti-tussive medications, lansoprazole, and paxil, with speech therapy follow up.
DISCUSSION: Episodes of laryngitis causing laryngospasms are frequently brought on by URIs or GERD (including subclinical GERD). Bordetella pertussis, anatomical defects, Zencker's diverticulum, hyperparathyroidism, and cricopharyngeal spasm can also cause symptoms. Anatomical lesions must be excluded when laryngospasms do not resolve. Work up can include laryngoscopy, radiological imaging studies, swallowing studies, and EGD with a pH probe. Treatment depends on the etiology. This patient had a functional laryngeal dysfunction from voluntary, non-conscious learned behavior (in response to initial irritation from a URI or GERD). It is important to recognize this disorder as symptoms are very distressing to the patient and caregivers, and treatment lies in exercises, behavioral therapy, and speech therapy. Intubation and bo-tox are never used for a functional disorder. Long acting anxiolytics and SSRI's may help to manage associated anxiety or panic attacks.

LEFT SIDED HEPATIC HYDROTHORAX IN THE ABSENCE OF ASCITES—3RD KNOWN CASE. M.J. Ashraf[1]; S. Ryzewicz[1]; K.T. Hinchey[2]. [1]Baystate Medical Center/ Tufts University, Springfield, MA, Springfield, MA; [2]Baystate Medical Center, Springfield, MA. *(Tracking ID #117323)*

LEARNING OBJECTIVES: Background: Hepatic hydrothorax is a known complication in patients with cirrhosis and ascites. However, hepatic hydrothorax in the absence of ascites (HHAA) is extremely rare. We describe a case of "left sided" hepatic hydrothorax in the absence of ascites and review the literature.
CASE: A 52 year old woman with a ten year history of Primary Biliary Cirrhosis was admitted with symptomatic, recurrent, left sided pleural effusion. Biochemistry analysis revealed transudative pleural fluid on both occasions. There were no clinical signs of ascites and ultrasound of abdomen was also negative for ascitic fluid. There was no evidence of congestive heart failure, nephrotic syndrome or marked hypoalbuminemia and the TSH was also normal. A CAT scan of lungs post thorancentesis did not reveal any primary pulmonary pathology as a cause of recurrent effusion. The patient was managed with thoracentesis for acute symptomatic relief of respiratory distress. Subsequently, the patient underwent transjugular intrahepatic portosystemic shunt (TIPS) and 4 months post procedure the patient remained asymptomatic without recurrence of hydrothorax.
DISCUSSION: The pathophysiology of HHAA remains unclear. The proposed mechanism involves transfer of ascitic fluid into pleural space through small congenital diaphragmatic defects because of cyclical negative intrathoracic pressure. The diagnosis can be established by a radioisotope scan which reveals one-way transdiaphragmatic flow of fluid from the peritoneal to pleural cavity. Liver transplant is the treatment of choice, however, TIPS is an effective temporary alternative. The literature search revealed 29 reported cases of HHAA. The majority of them are right sided. Only two other cases of "left sided" HHAA have been reported so far.

LEFT UPPER QUADRANT ABDOMINAL PAIN IN A PATIENT WITH ULCERATIVE COLITIS: THE UNUSUAL SUSPECT. D.S. Kazi[1]; L. Lu[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #117083)*

LEARNING OBJECTIVES: 1. Recognize an atypical presentation of pulmonary embolism. 2. Recognize the increased incidence of thromboembolic complications in patients with inflammatory bowel disease (IBD).
CASE: A 34 year-old Latino male with a two-year history of ulcerative colitis (UC) presented with left upper quadrant pain for seven days. He was on prednisone (60 mg) and mesalamine, but continued to have 12–15 watery bowel movements a day. Seven days prior to admission, he began to experience sharp, intermittent left upper quadrant pain that was aggravated by deep inspiration. He denied chest pain, shortness of breath, cough, hemoptysis, melena and hematochezia. On examination, he was afebrile, tachycardic and breathing comfortably with an oxygen saturation of 100% on room air. The chest was clear to auscultation but mild tenderness was noted over the left lower ribs in the mid-axillary line. There was minimal, diffuse abdominal tenderness without guarding or rebound. Stool guaiac was negative. Labs were unremarkable and plain films showed a small pleural effusion at the left base and a few dilated small bowel loops. Our initial diagnosis was an ulcerative colitis exacerbation; thus his dose of prednisone was increased. Over the next few hours, the patient reported increasing left upper quadrant pain with radiation to the left lower chest and aggravated by deep inspiration. Because of the pleuritic nature of the pain and the increased risk for thromboembolic events during acute UC flare-ups, a ventilation-perfusion scan was obtained, which showed an intermediate probability for pulmonary embolism. A helical CT scan revealed multiple, bilateral pulmonary emboli with one large segmental embolus involving the left base. The workup for hypercoagulable states (Factor V Leiden mutation, anticardiolipin antibody, lupus anticoagulant, Prothrombin 20210 mutation, hyperhomocysteinemia, and deficiencies of proteins C and S and Antithrombin III) was negative. Venous dopplers of bilateral lower extremities showed no evidence of deep venous thrombosis. Anticoagulation was initiated and the patient had an uneventful recovery.
DISCUSSION: Patients with IBD have a 1.3–6.4% lifetime risk of thromboembolic events, with the risk being highest during exacerbations. The pathophysiology is not clearly understood, but one hypothesis is an increased prevalence of thrombophilic gene mutations in patients with IBD. Although an uncommon extra-intestinal manifestation of IBD, thromboembolism is a cause of significant morbidity and mortality—about 25% of IBD patients who have a thromboembolic episode will die

during the acute event. Therefore, early recognition and prompt treatment are crucial. This case illustrates the importance of maintaining a high index of suspicion for thromboembolic events in patients with inflammatory bowel disease.

LEFT VENTRICULAR OUTFLOW OBSTRUCTION CONFUSED FOR. J. Aliota[1]; S. Martin-Schild[2]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. (Tracking ID #117533)

LEARNING OBJECTIVES: 1. In a hypovolemic patient, left ventricular outflow obstruction and autonomic dysfunction can be clinically similar 2. Appropriate imaging is essential in making the diagnosis of left ventricular outflow obstruction
CASE: A 65 year-old man presented with three weeks of watery diarrhea, weakness, and pre-syncope. He had a history of hypertension and old lacunar infarctions and had been hospitalized in a rehabilitation facility up until the time of admission. He was orthostatic with a supine blood pressure of 129/60 mmHg and standing blood pressure of 75/49 mmHg. He had no murmurs or carotid bruits. The physical exam was unremarkable. His hypertension while at the rehabilitation facility was uncontrolled despite the use of a dihydroperidine, oral nitrates, and clonidine. All blood pressure medications were held and despite aggressive hydration the patient's symptoms and orthostasis persisted. A trans-thoracic echo was ordered, but errantly delayed. Considering the patient's old cerebral injury, neurology presumed a diagnosis of autonomic dysfunction in the absence of a cardiac etiology. The patient was started on meclizine without improvement. Two days later, a transthoracic echo showed a significant left ventricular outflow obstruction.
DISCUSSION: The clinical presentation of hypertrophic cardiomyopathy with left ventricular outflow obstruction can appear similar to autonomic dysfunction if obvious physical exam findings are absent and appropriate imaging is not acquired. Hypertrophic cardiomyopathy may be inherited, idiopathic, or a result of long standing hypertension. While a left ventricular outflow obstruction may be symptomatic at rest, syncope, dyspnea, or weakness are common when a patient's activity increases left ventricular activity or dehydration decreases left ventricular volume. In our patient, the diarrhea contributed to a decline in left ventricular preload, thereby decreasing the left ventricular stretch that was keeping the left outflow tract patent. Treatment with beta-blockade decreases myocardial contractility and heart rate allowing an increase in diastole, thereby minimizing the outflow obstruction by increasing the left ventricular diastolic volume. These patients should be counseled to avoid strenuous activity and to maintain adequate hydration. Medications that predominately reduce preload or afterload, such as nitrates, diuretics, ace inhibitors or clonidine should be avoided.

LEG PAIN AS A PRESENTING SYMPTOM OF CARCINOMA OF THE LUNG. J.L. Wall[1]; G. Bryant[2]. [1]University of Cincinnati, Cincinnati, OH; [2]University of Cincinnati College of Medicine, Cincinnati, OH. *(Tracking ID #115860)*

LEARNING OBJECTIVES: Recognize and diagnose the skeletal manifestations of bronchogenic cancer.
CASE: Introduction: Hypertrophic pulmonary osteoarthropathy (HOA) is a skeletal paraneoplastic syndrome that is strongly associated with intrathoracic malignancies, especially bronchogenic carcinoma. We report a case of HOA that was the presenting finding in large-cell bronchogenic carcinoma. Case Presentation: A 64 year old white male with a past medical history of oxygen-dependent COPD presented with intense bilateral lower leg and ankle pain. The pain had been present for approximately 2 years and had progressively worsened. He had been previously treated by another physician with narcotics without relief and wanted a second opinion. Of note, the patient smoked 2-3 packs of cigarettes per day and had done so for approximately 50 years. On exam, the patient was cachectic and in severe respiratory distress. There was impressive clubbing of all fingers. Radiologic studies revealed hypertrophic osteoarthropathy of the tibial bones bilaterally. A chest x-ray revealed left upper-lobe infiltrate. On biopsy, this was determined to be a large-cell carcinoma.
DISCUSSION: Hypertrophic pulmonary osteoarthropathy is a paraneoplastic syndrome particularly associated with large-cell bronchogenic cancer. Manifestations of HOA include periostitis, clubbing of the fingers, and synovitis. The long bones are frequently involved and bone pain is the presenting symptom in approximately 30% of patients. HOA can be primary or secondary to pulmonary infections, cystic fibrosis, lung neoplasm, cardiac infections or cardiac malformations. When secondary, treatment is directed at the underlying etiology. Prognosis varies depending on the primary etiology, but pain remission and/or recurrence reflect activity of the primary neoplasm. Physicians should be aware of the clinical presentation of HOA as knowledge of this disease process could lead to earlier diagnosis of an underlying malignancy.

LESSONS LEARNED FROM AN UNFORTUNATE CASE OF STRONGYLOIDES HYPERINFECTION. R. Pechulis[1]; B. Taqui[1]; C. Veloski[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116207)*

LEARNING OBJECTIVES: 1. Recognize risk factors for Strongyloides infection and hyperinfection. 2. Recognize importance of excluding Strongyloides infection prior to initiation of steroid therapy.
CASE: A 43 year old previously healthy Cambodian male presented with acute worsening of chronic abdominal pain, painful swallowing and 20 lb weight loss/one month. Exam revealed cachexia, temporal wasting, oral thrush, periumbilical tenderness and heme positive brown stool. Labs revealed Na 126, K 4.8, WBC 8.2 (1.9 % eosinophils), albumin 2.2, and microcytic anemia. HIV test was negative. Gastrointestinal bleeding due to ulcer or malignancy was suspected. A random cortisol level was 1 mcg/dl and a cosyntropin-stimulation test confirmed adrenal insufficiency. Hydrocortisone 100 mg IV q8 was started. That evening, the patient became progressively tachycardic and hypotensive. Blood smear drawn that morning showed gram negative rods. The patient was transferred to the intensive care unit, where he developed septic shock, ARDS and intra-alveolar hemorrhage. Multiple sets of blood cultures grew Enterococcus faecalis, Klebsiella pneumoniae and Bacteroides thetaiotaomicron. Gastric aspirate and stool samples grew Strongyloides stercoralis larvae and Ivermectin was initiated. The patient developed DIC, acute renal failure and cerebral infarct. Due to his grave prognosis, the patient's family wished to withdraw care and the patient expired on hospital day 18.
DISCUSSION: Strongyloides stercoralis is an intestinal nematode endemic to Africa, West Indies, South East Asia, South America and southeastern United States. Infection should be suspected in immigrants and travelers from endemic areas, veterans, and institutionalized individuals. Chronic infection can be present up to twenty years after travel. Hyperinfection has been reported in patients with HTLV, HIV, diabetes, renal failure, alcoholism, steroid use, hematologic malignancy and organ transplantation. Disseminated Strongyloides hyperinfection presents most commonly with gastrointestinal and pulmonary symptoms. Other manifestations include nephrotic syndrome and gram-negative sepsis. Eosinophilia, usually prominent in chronic infection, may be absent in hyperinfection. Its absence is a predictor of poor prognosis. Hyperinfection mortality is as high as 50–86%. Treatment consists of ivermectin or thiabendazole and supportive therapy. In retrospect, unexplained gram negative bacteremia in a malnourished patient from an endemic area should prompt a search for Strongyloides as the cause. In endemic areas, Strongyloides is always excluded prior to steroid initiation. Our patient's hyperinfection and subsequent demise was probably due to malnutrition and steroids. There may have also been underlying immunosuppression as suggested by the adrenal insufficiency.

LEUKEMOID REACTION IN PATIENT WITH BEHCET DISEASE. D.S. Lababidi[1]; L. Cation[1]. [1]University of Illinois at Peoria, Peoria, IL. *(Tracking ID #116391)*

LEARNING OBJECTIVES: 1. Review the clinical manifestations of Behcet's Disease (BD). 2. Review the causes of and clinical criteria for leukemoid reaction (LR). 3. Report a possible case of LR associated with BD.
CASE: A 63 yo female with HTN, CAD, asthma, chronic anemia, and long history of BD presented with stomach perforation secondary to BD. The patient had multiple complications from her BD in the past including dermatological, ophthalmologic, GI (Lower GI bleeding), cardiovascular (atherosclerotic CV disease), and renal insufficiency. The patient had surgery for her stomach perforation and then developed sepsis (slight leukocytosis 13,000 18,000 with fever and hypotension). Thereafter, the patient improved, but had worsening of leukocytosis and anemia with persistent thrombocytosis. Her highest WBC value was 30.1 K with 62–95% neutrophils, 6–29% bands, 3–15% metamyelocytes, and 1–4% myelocytes. Her Hb dropped down from 11.7 g/dL to 8.0 g/dL and her platelets rose from 347 K to 730 K. All blood, urine, wound cultures were negative. The patient was on azathioprine and prednisone before hospitalization and during this hospitalization she did not receive azathioprine. A Hematology consult was obtained when the leukocyte alkaline phosphatase was found to be high 169 units (15–70). Myeloproliferative disorder was ruled out and hepatitis C antibody was negative. A diagnosis of LR was rendered and the patient was started on erythropoieten to improve her anemia. The LR in this patient was thought to be multifactorial: BD, steroid use, and surgery. The patient's WBC count subsequently returned to normal, and anemia was improved.
DISCUSSION: Neutrophilia is an absolute blood neutrophil count greater than $7{,}500 \times 10^6$/l in adults. The most common reason for neutrophilia is inflammatory disease due to microbial infection, ischemic, autoimmune, or traumatic (like surgery) injury, and adrenergic stimulation (demargination). When there is combination of more than one factor, very high neutrophil counts can be encountered as well as immature myeloid forms in the blood, causing what is known as LR. This is a reaction that resembles leukemia but is due to other conditions such as infection, stress, surgery, etc. As with leukemia, a person with LR has a disorganized proliferation of immature white blood cells in the blood and bone marrow. The main differential diagnosis of mature neutrophilia is CML, LR or other myeloproliferative disorder. Leukocyte alkaline phosphatase should be normal or high in a LR and low in CML. Absence of leukemic blast cells in the blood or marrow differentiates LR from AML. Behçet's syndrome is a systemic vasculitis of unknown etiology with many clinical manifestations including aphthous ulceration, arthritis, skin lesions, thrombophlebitis, and cardiac, neurological, and GI involvement. There is minimal data about the hematological manifestations of BD. Reported possible hematologic manifestations include myelodysplastic syndrome, Hairy Cell Leukemia, chronic neutropenia, and one case report of LR. Our patient had many of the clinical manifestations of BD including a possible related LR.

LIMB LOSS FROM HEPARIN-INDUCED THROMBOCYTOPENIA IN A CARDIAC TRANSPLANT PATIENT. Y. Zafar[1]; S. Wang[1]; E. Warm[1]; Y. Nikiforov[1]; J. Palascak[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #115680)*

LEARNING OBJECTIVES: 1. Diagnose heparin-induced thrombocytopenia (HIT). 2. Recognize HIT as an etiology for catastrophic thrombosis. 3. Prevent HIT-related thrombosis and limb loss.
CASE: A 58-year-old man with ischemic cardiomyopathy and a prosthetic mitral valve underwent right heart catheterization for cardiac transplant evaluation

and was maintained on a heparin infusion. His platelet counts declined but spontaneously returned to normal while on heparin. One month later the patient was readmitted for cardiac transplantation and was started on a continuous heparin infusion. His platelet counts fell over six days from an initial value of 213,000 mm^3 to 87,000 mm^3 on the day of transplant. Post-operative day (POD) 1, the patient received 6 units of platelets for a mediastinal bleed with an incremental increase of only 24,000 mm^3. Platelet counts reached a nadir of 50,000 mm^3 on POD 7, and the patient received additional platelets. By POD 7 he had developed frank ischemia of three digits on his right hand and all ten toes, and heparin exposure was discontinued. Only the third of three serial heparin-induced platelet aggregation studies was consistent with HIT, but the more sensitive platelet serotonin release assay was negative. The patient was treated with Argatroban starting on POD 8 but required amputation of both feet due to extensive arterial thromboses.

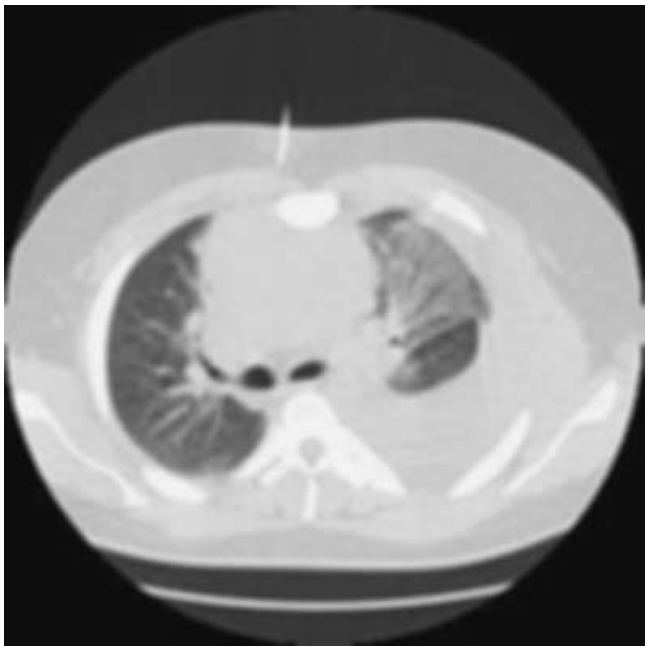
DISCUSSION: HIT type I is a self-limited, non-immune mediated, mild thrombocytopenia of approximately 10% due to the direct aggregation effect of heparin on platelets. HIT Type I is not associated with thrombosis. HIT type II, seen in 1–3% of patients treated with unfractionated heparin, is a clinical diagnosis based on a 50% reduction in the platelet count within 5–10 days of heparin exposure. Thrombocytopenia may occur within 12 hours of re-exposure to heparin. The incidence of HIT is increased in patients having undergone cardiopulmonary bypass. HIT may result in severe thrombocytopenia due to antibodies formed against the heparin/platelet factor 4 complex on the platelet membrane. Activated platelets release thrombogenic microparticles that produce a severe hypercoagulable state and consequent arterial and/or venous thrombosis. Laboratory testing is supportive. Heparin-induced platelet activation assays are less sensitive than the platelet serotonin release assay, but both may give false-negative results. Treatment involves immediate discontinuation of all sources of heparin. Direct thrombin inhibitors are indicated for anticoagulation. Platelet transfusions are relatively contraindicated as they may promote thrombosis. This case underscores the need to monitor platelet levels in patients receiving heparin.

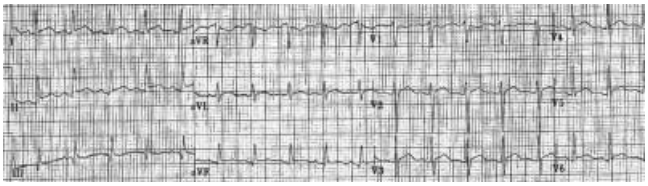
LYMPHOMA PRESENTING AS CARDIAC TAMPONADE. M.S. Patil[1]. [1]Stoger Hospital of Cook County, Chicago, Chicago, IL. *(Tracking ID #116260)*

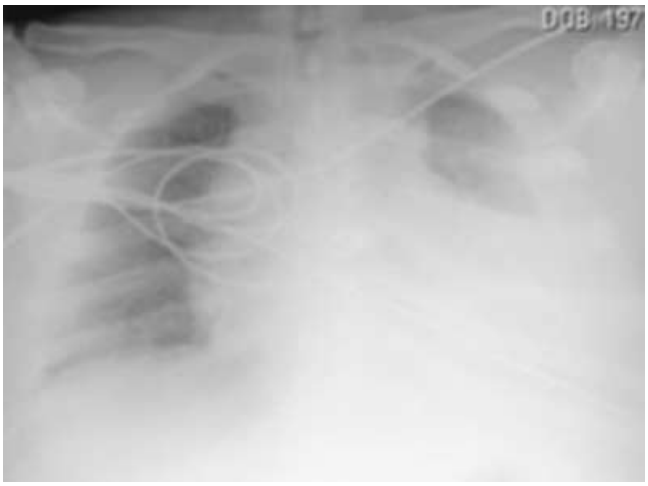
LEARNING OBJECTIVES: 1) Recognize that acute pericardial effusion may be the presenting symptom of a non-pericardial neoplasm. 2) Use imaging studies of the chest early in the course of the effusion to look for underlying malignancy.

CASE: A 26-year-old man was admitted with shortness of breath of two weeks duration. He had no significant past medical or family history and did not recall a viral prodrome. He was tachycardic with a blood pressure of 124/94 mmHg. Pulsus paradoxus was present. EKG showed sinus tachycardia, diffuse ST segment elevation, and PR segment depression in inferolateral leads. A bedside echocardiogram showed massive pericardial effusion with tamponade. He underwent emergent pericardiocentesis under fluoroscopy,and 1.5 liters of hemorrhagic exudative fluid was drained. Culture for bacteria and viruses was negative. Cytology showed no malignant cells. A workup for connective tissue disorders was unrevealing. The effusion reaccumulated over the next several days despite treatment with indomethacin. MRI showed pericardial thickening and effusion, pretracheal and mediastinal lymphadenopathy, and a large heterogenous anterior mediastinal soft tissue mass invading the pericardium. CT guided needle biopsy of this mass proved it to be Hodgkin's lymphoma-nodular sclerosis type. The patient is now receiving chemotherapy for the lymphoma.

DISCUSSION: Upto 23% of new unexplained large pericardial effusions may be malignant. The most frequent malignancies presenting in this way are lung and breast cancer, and Hodgkin's lymphoma. CT and MRI of the chest are useful not only for delineation of pericardial anatomy and loculations, but also for detection of associated neoplasms in the chest. Neoplasms should be considered and looked for with early imaging in unexplained and non-resolving effusions.







MANAGEMENT OF ESOPHAGEAL ULCERS IN PATIENTS WITH AIDS. M.J. Hamilton[1]. [1]Boston City Hospital, Boston, MA. *(Tracking ID #116887)*

LEARNING OBJECTIVES: Esophageal disease is a common complication in HIV, and it is the second most common GI disease after diarrhea. It is important to tease out the classic symprtoms of esophageal disease, most commonly odynophagia. Once the esophagus is implicated in the symptom complex, the decision must be made whether or not to treat the patient empirically before further invasive testing. Finally, if upper endoscopy is performed, a treatment plan must be initiated based on the findings and/or pathology results. This case highlights diagnosis and treatment strategies for esophageal ulceration in the patient with AIDS.

CASE: A 51 year old African-American male with AIDS (CD 4 count of 4, viral load of 106,000), not taking HAART medicines, presented to the hospital with odynophagia and weight loss of one month's duration. He denied abdominal pain, nausea, vomiting, or bleeding. His physical exam was noteable for a cachetic middle aged man, afebrile, with oral thrush and a normal abdominal exam. Initial treatment with fluconazole cleared the oral thrush, however the odynophagia persisted. Upper endoscopy was performed which revealed Savary-Miller Grade III esophagitis consistent with severe candidial infection as well as 3 discrete ulcers in the distal esophagus. One ulcer was biopsied in two locations and the patient was continued on fluconazole and sent home. Patholgy was negative for infection. The pateint returned to the hospital two weeks later with continued odynophagia and repeat endoscopy showed the persistence of the ulcers which were rebiopsied, in six locations. Pathology later revealed CMV, the patient was started on ganciclovir and had dramatic improvement in his symptoms.

DISCUSSION: Over the course of the last twenty years in studying patients with AIDS, the etiologies of esophageal ulceration have expanded. The infectious causes primarily HSV and CMV are well known, however, a noninfectious etiology "Idiopathic Esophageal Ulceration" or IEU also exists. Dr. C. Mel Wilcox at Emory University in the early 1990's wrote several articles designed to study the prevalence of each in a cohort of AIDS patients with esophageal symptoms. Of the 100 patients who underwent endoscopy, 41 had IEU's, and 50 had CMV. The remainder had HSV or a combination. Wilcox's study highlighted the importance of obtaining multiple biopsies from an ulcer as the physical appearance of the ulcers on endoscopy are not sufficient to make a diagnosis. In this case, a man with severe enough disease to cause a 15 pound weight loss from lack of eating, was not correctly diagnosed on first endoscopy, and IEU was not considered. Repeat endoscopy with multiple biopsies allowed for a diagnosis and treatment plan which in the end reversed his symptoms. A third follow up endoscopy revealed complete resolution of his ulcerative disease.

MANAGEMENT OF FLUCONAZOLE RESISTANT CANDIDAL ESOPHAGITIS IN AN HIV-INFECTED PATIENT. K. Luce[1]; M. Panda[1]. [1]University of Tennessee, Chattanooga, Chattanooga, TN. *(Tracking ID #115219)*

LEARNING OBJECTIVES: 1. Recognize the increasing prevalence of resistant Candida albicans infections in HIV-infected patients 2. Discuss the role of intravenous (IV) Caspofungin as an alternative to IV Amphotericin B 3. Recognize the role of highly active anti-retroviral therapy (HAART) in the treatment of candidal esophagitis.
CASE: Our patient was a 36 year old female who had been on fluconazole treatment for several months with continued severe odynophagia and dysphagia of solid foods. Her CD4 count was 23, with a viral load of >750,000. Patient was non-compliant with HAART. Exam revealed extensive whitish plaques in the oropharynx. Upper endoscopy revealed severe, disfiguring esophagitis. Pathology showed only candidal yeast forms. Culture revealed Candida albicans species only. Treatment was initiated with amphotericin B. Initially patient tolerated this well with minimal improvement in symptoms. Despite prehydration efforts patient showed evidence of nephrotoxicity which resolved after stopping amphotericin B. At this time a trial of caspofungin was initiated to avoid any renal complication and the recurrent prolonged nature of her infection. In conjunction frequent nystatin swish and swallow, amphotericin B mouthwash and HAART was intiated. Within a week, patient reported significantly less odynophagia and dysphagia. We thus elected to stop intravenous therapy and follow patient's esophagitis on nystatin swish and swallow and alone. At one month after discharge, patient reported resolution of symptoms and repeat endoscopy revealed a normal appearing esophagus with negative biopsies. Her CD4 count also increased to 132.
DISCUSSION: The current treatment of candidal esophagitis in HIV-infected persons is frequently oral fluconazole followed by amphotericin B as second line treatment. Nonetheless, recent literature reports increasing frequency of fluconazole and amphotericin B -resistant Candida species in this patient population. In such cases, there are few options available to the treating physician. We report response with IV caspofungin in an HIV-infected patient with fluconazole-resistant Candida albicans esophagitis unable to tolerate amphotericin B. At least two randomized, double-blind trials have hailed the effectiveness and tolerability of IV caspofungin. Further, recent data suggests that institution of HAART with improvement of a patient's immunity has led to improvement and even resolution of Candida infection. This case supports the use of caspofungin as an effective agent against candidal esophagitis.Moreover, the striking resolution of our patient's esophagitis on HAART and nystatin swish and swallow alone supports the premise that improvement of patient's immune response can be a successful approach to treating HIV-associated candidal esophagitis.

MAY-THURNER SYNDROME AND DEEP VENOUS THROMBOSIS: AN UNUSUAL RISK FACTOR FOR A COMMON DISORDER. M. Daly[1]; T. Beckman[1]; D. McNaughton[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #103847)*

LEARNING OBJECTIVES: 1. Recognize May-Thurner syndrome as an unusual but important risk factor for Deep Venous Thrombosis (DVT) 2. Appreciate the potential variety of risk factors for DVT in a single patient.
CASE: A 51 year-old female presented with two days of increasing left lower extremity swelling and pain. Her past medical history was remarkable for recent surgeries, recent prolonged car and airplane travel, and chronic smoking. She denied a family history of thrombosis. She denied a personal history of thrombosis, cancer, or estrogen use. Her examination was remarkable for an edematous, mildly erythematous, and tender left lower extremity. Laboratory studies revealed a mild leukocytosis with absolute neutrophilia, normal baseline coagulation studies, and D-dimer elevated above the upper detectable limit. A chest x-ray was negative. Lower extremity dopplers showed an obstructive thrombus extending from the left common iliac to the left common femoral vein. Importantly, the patient's left iliac vein was observed to course between the right iliac artery and her lumbar spine. Hence, May-Thurner syndrome was diagnosed. The patient then underwent successful mechanical thrombolysis and iliac stent placement. Finally, she was initiated on unfractionated heparin as bridging therapy to warfarin anticoagulation.
DISCUSSION: May-Thurner syndrome is a little known risk factor for DVT. This was first recognized in 1851 by Virchow, who observed compression of the left iliac vein by the overlying right iliac artery. May and Thurner subsequently described the mechanism by which this anatomic relationship leads to thrombosis. May-Thurner syndrome should be considered in all patients with DVTs involving the left common iliac vein. Diagnosing this disorder is essential, since endovascular management has proven safe and effective in decreasing morbidity. Notably, this case highlights the challenge of recognizing May-Thurner syndrome in patients with multiple risk factors for DVT. Moreover, this case underscores the importance of diagnosing May-Thurner syndrome, since it leads to an unconventional treatment for DVT.

MENTAL STATUS CHANGES IN A MAN WITH HIV: A CASE OF MYCOSIS PSYCHOSIS. T. Wassenaar[1]; J.M. Sosman[1]. [1]University of Wisconsin Medical School, Madison, WI. *(Tracking ID #116768)*

LEARNING OBJECTIVES: 1). To identify the epidemiology of histoplasmosis. 2). To recognize the common and uncommon presentation of disseminated histoplasmosis in an immunocompromised patient. 3). To identify new therapeutic approaches and prognostic outcomes.
CASE: A 32 y/o male with a history of HIV/AIDS diagnosed in 2000 (CD4#80/ul, viral load >500,000cps/ml) only one-week prior was started on antiretroviral therapy and Bactrim prophylaxis, was admitted with a fever (39.3 C) and a two-week history of mental status changes, including word finding difficulty and visual/auditory hallucinations. His initial workup included a head MRI that was unremarkable and a LP that showed 3 nucleated cells—all lymphocytes, protein 52 mg/dl, glucose 46 mg/dl, cryptococcal Ag negative, VDRL negative. He was started on broad-spectrum antibiotics pending the LP results. His admission labs revealed pancytopenia (Wbc 3.7 K, Hgb 10.3 gm/dl, Plt 31K) and hepatic insufficiency (AST 740, ALT 218, alkaline phosphatase 306, total bilirubin 4.2), all new from labs drawn two weeks prior. Despite negative cultures he continued to spike fevers, developed worsening hepatic insufficiency (AST 1070, ALT 315, alkaline phosphatase 739, and total bilirubin 41.0), and was found to be in DIC (haptoglobin <6, D-Dimer 2–4, fibrinogin 85). A bone marrow biopsy was performed for his persistent pancytopenia, which revealed granulomas with budding yeast cells and a positive culture for Histoplasma capsulatum.
DISCUSSION: Histoplasma capsulatum is a fungal spore that grows naturally in soil and is often picked up by birds and bats and passed on in their feces. Primary infections from dust inhalation have been reported. Over fifty million people in North America have reportedly been infected with this fungus, which is endemic in the Ohio and Mississippi River valleys. The vast majority of these infections go unrecognized. Our patient had many of the classic presenting symptoms of disseminated histoplasmosis such as fever, hepatic insufficiency, and anorexia as well as some rare manifestations including mental status changes, DIC, and severe pancytopenia. The mortality rate of untreated disseminated histoplasmosis is >80%; but can be decreased to <25% with treatment. The standard of care for outpatients is treatment with an azole antifungal. However, IV amphotericin B is usually preferred in patients requiring hospitalization, as is often the case with disseminated histoplasmosis. Our patient received IV then PO azole therapy and made a complete recovery.

MIDWEST REGIONAL RESIDENT AWARD WINNER: DIFFUSE ALVEOLAR HEMORRHAGE RESULTING FROM MARIJUANA. N. Cummins[1]; V.T. Martin[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #115625)*

LEARNING OBJECTIVES: 1. Recognize diffuse alveolar hemorrhage as a potential complication from inhalational illicit drug use.
CASE: A 31 year old black male presented with a six hour history of bright red hemoptysis and dyspnea, which began 30 minutes after smoking marijuana. The patient denied chest pain, fever, chills, leg swelling, trauma or other ingestions. He had no significant past medical history and consumed no medications. Physical exam revealed normal vital signs and diffuse rhonchi in the lung fields bilaterally. A chest x-ray revealed diffuse bilateral alveolar infiltrates. Initial laboratory exam revealed a Pa02 of 66 mmHg and hemoglobin of 15.4 g/dl, which subsequently dropped to 12.9 g/dL over the ensuing twelve hours. Bronchoscopy revealed a diffuse alveolar hemorrhage in all lung lobes. Autoimmune disease, vasculitis and infection were ruled out as causes for the alveolar hemorrhage. A urine toxicology screen was positive for tetrahydrocannibinol and cocaine. Upon further questioning, the patient stated the marijuana may have been laced with cocaine. The patient was monitored with supportive care only and was discharged two days later in good condition.
DISCUSSION: Diffuse Alveolar hemorrhage (DAH) can be caused by various autoimmune diseases, vasculitis, infection and certain medicines. This represents the ninth case report linking DAH with the inhalation of free base cocaine. Inhalation of cocaine may induce vasoconstriction of the pulmonary vascular bed or lead to direct alveolar damage resulting in DAH. To our knowledge there have been no case reports linking marijuana use with DAH and therefore it remains speculative as to whether this drug could have played a role in the development of DAH. In conclusion, DAH is a potentially life threatening complication that should be in the differential diagnosis of dyspnea after inhalation of illicit drugs.

MITRAL VALVE HEMANGIOMA WITH SUPERIMPOSED INFECTIVE ENDOCARDITIS. U. Ahmed[1]; S.G. Khurshid[2]. [1]Saint Francis Hospital, Evanston, IL, Evanston, IL; [2]Saint Francis Hospital, Evanstion IL, Evanston, IL. *(Tracking ID #116481)*

LEARNING OBJECTIVES: To recognize an unusual presentation of cardiac tumors.
CASE: A twenty-four old previously healthy woman presented with sudden onset of facial asymmetry and left arm weakness. She had been having fatigue, generalized weakness and fever for four weeks for which she was being treated with oral antibiotics. Physical examination revealed a cachectic woman with left lower motor neuron facial paralysis, flaccid paralysis of left upper extremity and an apical ejection systolic murmur. CT scan of brain revealed acute ischemic infarction involving right basal ganglia and internal capsule. Transthoracic echocardiogram demonstrated vegetations on atrial and ventricular sides of the mitral valve. The patient was treated empirically for suspected infective endocarditis. Blood cultures revealed no growth. She remained febrile with spiking fever up to 102. CT scan of abdomen demonstrated multiple infarcts in kidneys and spleen. Transesophageal echocardiogram showed a pedunculated mass on the anterior mitral leaflet. The patient was taken to surgery for excision of the mass. Histopathology showed aggregates of small blood vessels suggestive of mitral valve hemangioma with a dense neutrophillic infiltrate. Gram stain from the tissue did not show any organism and bacterial, viral and fungal cultures were negative. The post operative course was unremarkable.
DISCUSSION: Primary cardiac tumors are rare and their incidence ranges from 0.002% to 0.3% at autopsy. Benign tumors account for 75% of the primary tumors; among which myxoma accounts for 50% whereas hemangioma represents only 2.8%. Cardiac tumors can cause obstruction, valve dysfunction, arrhythmias, pericardial effusions or systemic embolization and constitutional symptoms. These cardiac lesions can induce endocardial trauma via high-pressure jets of blood creating a platelet-fibrin nidus that may become infected. Most cardiac hemangiomas are asymptomatic and are discovered incidentally by echocardiography, CT, MRI or

autopsy. Review of literature shows only two reported cases of mitral valve hemangioma: first incidentally found on autopsy, and second presented with chest tightness and palpitations. This patient presented with signs of infective endocarditis and was incidentally found to have mitral valve hemangioma. The main reason for negative blood cultures was thought to be prior administration of antibiotics. No similar case has been reported in literature.

MORE THAN A PAIN IN THE NECK: LEMIERRE'S SYNDROME. S. Jain[1]; S.R. Ranji[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117395)*

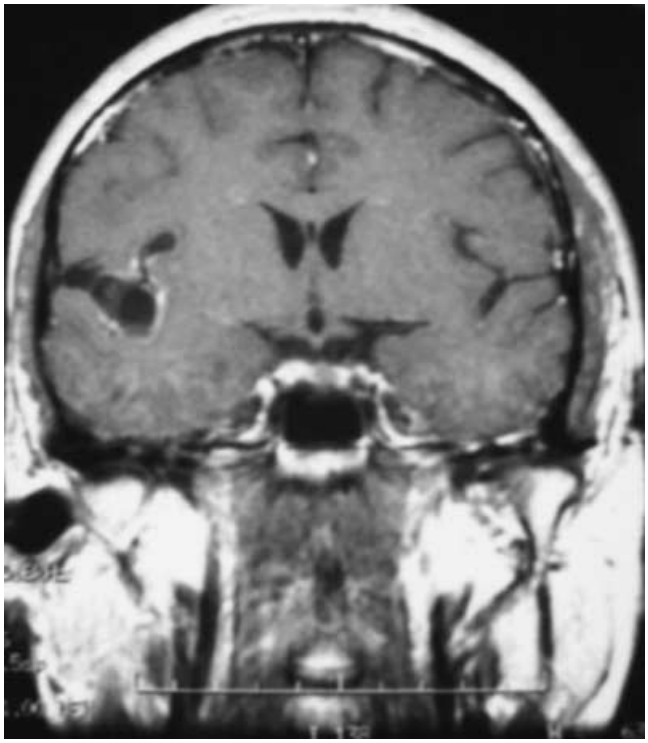
LEARNING OBJECTIVES: 1. Recognize the clinical features of Lemierre's Syndrome. 2. Institute the appropriate diagnostic workup in Lemierre's Syndrome. 3. Understand the rationale for aggressive, lengthy antibiotic therapy.
CASE: LR is a 63 year old female who presented with neck pain. The patient had been homebound for the past 30 years due to severe agoraphobia and a schizoid personality disorder, and was only visited by Meals on Wheels and a physician making house calls. She reported left sided neck pain with movement and subjective fevers for 2–3 days, and denied chest pain or shortness of breath. On exam, she was febrile, tachycardic, and hypoxic. She had poor dentition without any obvious abscesses. She was able to move her neck with pain, but had no frank meningismus. She had shotty anterior cervical lymphadenopathy, but no cord could be palpated. Neurologic exam was grossly normal. Labs showed a white blood cell count of 16.3, and lumbar puncture was negative for meningitis. A CT scan was then performed, which revealed thrombosis of left internal jugular vein with extension into the left sigmoid sinus and soft tissue swelling in the parapharyngeal space. This confirmed the diagnosis of Lemierre's syndrome. Subsequently, blood cultures grew out Staphylococcus aureus sensitive to methicillin. Chest CT did not reveal septic pulmonary emboli. The patient was treated with intravenous vancomycin and clindamycin for four weeks and recovered completely.
DISCUSSION: Lemierre's syndrome (also known as postanginal sepsis or necrobacillosis) is septic thrombophlebitis of the internal jugular vein, most commonly caused by anaerobic organisms such as Fusobacterium necrophorum. It is rare and affects mostly young adults. The precipitant is usually a primary dental infection or pharyngitis, followed by invasion though the parapharyngeal space to the IJV causing thrombophlebitis. Metastatic infections complications include septic pulmonary emboli (present in up to 85% of cases), septic arthritis, splenic or hepatic abscesses, and glomerulonephritis. Patients can present with local neck findings (in 52% of cases), but fever (occurring in 83% of cases) and pharyngitis (83%) are more common. CT scan with contrast is the recommended diagnostic test. Treatment with synergistic antibiotics for 3–6 weeks is recommended to prevent spread of infection. Anticoagulation remains controversial but is not routinely recommended. If a patient fails antibiotics, surgical ligation or excision of the internal jugular vein may be necessary. In the antibiotic era, prevalence and mortality has markedly decreased, but mortality remains high at 6.4%. Our case is unusual in that the inciting organism was Staphylococcus aureus rather than the more common anaerobes, and in that the patient had no evidence of septic embolization.

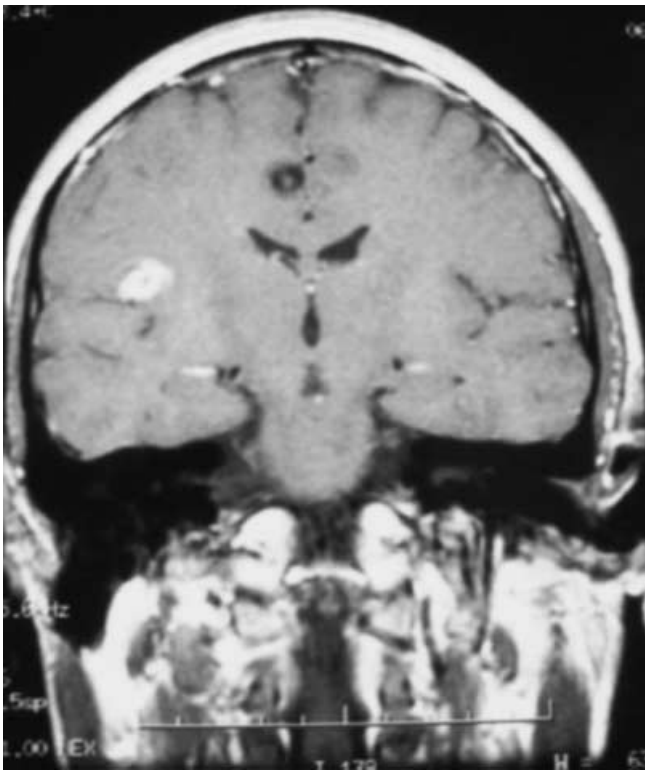
MORE THAN SKIN DEEP: HYPERCALCEMIA ASSOCIATED WITH MALIGNANT MELANOMA. E. Lee[1]; H. Jasti[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115959)*

LEARNING OBJECTIVES: 1. To recognize the role of parathyroid-related protein (PTH-rP) in hypercalcemia of malignancy 2. To identify an uncommon association between malignant melanoma and PTH-rP induced hypercalcemia.
CASE: A 32 year old female with a PMH significant for recurring metastatic melanoma to the left thigh with resection × 2 presented with several days of nausea and vomiting. She denied fever, chills, cough, diarrhea or other complaints. Physical exam revealed a thin Caucasian female in mild distress with a 5 cm ulcerated mass on her left thigh. Initial laboratory results were significant for a calcium of 17.6 mg/dL. Whole body CT/PET scan revealed a large mass in the posterolateral left thigh and enlarged lymph nodes in the external iliac and inguinal regions, which on biopsy were negative for malignancy. Serum PTH-rP levels came back elevated at 17.8 pmol/L. The patient was treated with intravenous fluids and pamidronate with resolution of her symptoms. At time of discharge, the calcium level was within normal limits and the PTH-rP level was nearly undetectable. Several weeks later, the patient returned with similar complaints and was again treated for hypercalcemia with fluids and pamidronate. Since that time, she has undergone successful surgical excision of the left thigh mass and has had no recurrence of hypercalcemia.
DISCUSSION: PTH-rP mediated hypercalcemia, also known as humoral hypercalcemia of malignancy, is commonly associated with renal, squamous, and bladder cell carcinomas. It is rarely associated with malignant melanoma. As a structural analog to parathyroid hormone (PTH), PTH-rP binds to the same receptors. This results in an increase in calcitriol-mediated bone resorption, an increase in calcium absorption in the distal tubules, and an inhibition of phosphate transport in the proximal tubules. Diagnosis can be made in a patient with hypercalcemia and an elevated PTH-rP level. Treatment consists of intravenous hydration and bisphosphonates. Clinically, PTH-rP levels can have significance, with higher levels predictive of a shorter median survival time that is independent of calcium levels. In addition, levels above 12 pmol/L are associated with a decreased response to bisphosphonate therapy and a greater incidence of recurrence after treatment. This patient had recurrent hypercalcemia with no evidence of metastatic disease. PTH-rP induced hypercalcemia should be suspected, and considered a poor prognostic indicator, in any patient with a solid tumor in the absence of bony metastases.

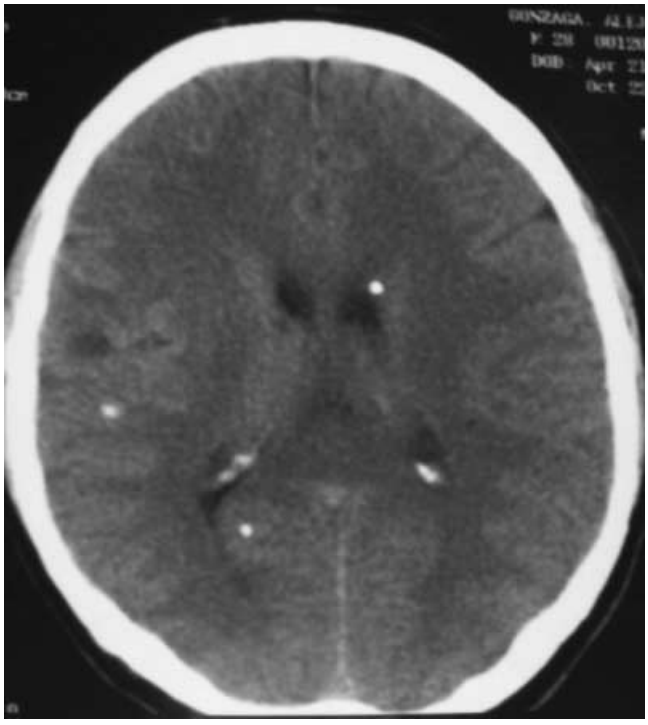
MOUNTAIN WEST REGIONAL RESIDENT AWARD WINNER: 'TENSION HEADACHE' WITH A SURPRISING ETIOLOGY—A CASE OF NEUROCYSTICERCOSIS. M.C. Kruer[1]; P. Radhakrishnan[2]. [1]University of Arizona, Tucson, AZ; [2]St Joseph Hospital, Phoenix, AZ. *(Tracking ID #116970)*

LEARNING OBJECTIVES: 1. Recognize the distinctive clinical and neuroradiologic features of neurocysticercosis (NC). 2. Recognize that eosinophilic meningitis may be caused by NC.





CASE: A 28 year old previously healthy Hispanic male presented with a history of gradual onset bitemporal headache. It was pulsating, waxing and waning in character. During initial assessment, he had a normal physical exam. He was instructed to take analgesics. The patient subsequently returned with worsening left-sided fronto-temporal headache, nausea, vomiting, fever, photophobia, back pain. His wife reported recent irritability and emotional lability. There was no history of any recent illness, sick contacts or trauma. The patient had immigrated to the U.S. five years ago. He was born in Mexico. On examination, the patient appeared uncomfortable. The rest of his examination, including fundal and neurological examinations were normal. Laboratory studies—CBC and electrolytes were normal. CSF Protein 76 mg/dl, Glucose 40 mg/dl, WBC 267 cells/mm^3, predominantly lymphocytes, eosinophils and foamy macrophages. CT scan showed numerous, bilateral calcified lesions in the brain parenchyma (figure 1). A subsequent MRI showed multiple cysts in various stages of evolution, including a racemose cyst within the right Sylvian fissure, and several active and involuting cysts, notably in the frontal temperocortex. (figures 2&3). He was treated with Prednisolone and Albendazole.
DISCUSSION: This case is interesting as it follows the evolutionary stages of cysticercosis of the brain. The clinical presentation of neurocysticercosis varies with the number, location, and status of the cysticerci. Intact cysts tend to be asymptomatic, but all cysts tend to degenerate over time. Symptoms are commonly due to the associated immune response that occurs. In addition, completely degenerate, calcified cysts can serve as epileptic foci. In our patient, the fronto-temporal headache was the primary clinical manifestation, and may have resulted from involuting cysts in that region. The eosinophilia seen in the CSF strongly supports our theory that it was the immunologic response to the involuting cysts present on the surface of the brain that caused the meningoencephalitis and sudden deterioration in the patient's condition. To summarize, in patients originating from areas endemic for T. solium infection presenting with worsening headache and eosinophilic meningitis, neurocysticercosis should be strongly considered.



MUSIC TO THE EARS? NOT! Y. Ng[1]; R.C. Brooks[2]. [1]University of Pittsburgh, Pittsburgh, PA; [2]Pittsburgh VA Healthcare System, Pittsburgh, PA. *(Tracking ID #115803)*

LEARNING OBJECTIVES: 1) To identify the different categories of tinnitus and their clinical significance. 2) To determine the appropriate work up for a patient with new onset tinnitus. 3) To recognize calcium channel blockers as a cause of drug-induced tinnitus.
CASE: Mr. L is a 60 year old man with a history of hypertension, neurofibromatosis and TIA, who presented with new onset tinnitus of 4 weeks duration. It was a constant ringing in both ears, but had minimally effected his life. He did not recall any recent trauma, although he did admit to a noisy work environment. There were no other new or associated symptoms, including no change in hearing acuity. Physical exam was only notable for many cutaneous neurofibromas and axillary freckling. Otologic and neurologic exams were normal. An audiologic evaluation revealed mild, bilateral high frequency hearing loss with normal (100%) speech discrimination. MRI of the brain was normal. Nifedipine, which was the only new medication initiated prior to the onset of his symptom, was discontinued. During his follow up visit a month later, the patient reported that his tinnitus had subsided after stopping the calcium channel blocker.
DISCUSSION: Tinnitus is a common complaint in ambulatory medicine. A careful, focused history and physical examination will dictate further workup. When taking a history, tinnitus should be categorized as pulsatile or non-pulsatile. Pulsatile tinnitus points to an underlying vascular malformation, which may be potentially life-threatening. It is frequently audible to the third party during examination and hence exam should be focused on 1) auscultation for bruits over the neck, periauricular, temple and orbital region, 2) otoscopic exam to look for vascular lesions. CT scan is the first step in the investigation of pulsatile tinnitus; if negative, angiography will be the gold standard. 95% of patients however, will have non-pulsatile tinnitus. Non-pulsatile tinnitus is usually subjective and originates in the auditory system. Associated symptoms, like hearing loss and vertigo, and precipitating factors, including medications, should be sought. A thorough neurologic exam is important in this category. Audiometric testing to assess for hearing loss is the best initial study. Unilateral hearing loss coupled with poor speech discrimination is highly suggestive of a tumor; if present, MRI is the imaging of choice, with nearly 100% sensitivity and specificity. Only 5% of hearing tests will be normal in patients with acoustic neuroma, so initial audiometric testing can reduce unnecessary use of MRIs. Most patients with non-pulsatile tinnitus will have a negative work-up for a tumor. However, a large number of commonly used medications can cause or exacerbate the symptom and discontinuation often provides significant relief, even if the symptom does not completely resolve.

MYCOPLASMA PNEUMONIAE AND SEPSIS SYNDROME. N.D. Hare[1]; K. Kieffer[1]. [1]Dartmouth Hitchcock Medical Center, lebanon, NH. *(Tracking ID #117449)*

LEARNING OBJECTIVES: Recognize the diverse presentations of Mycoplasma pneumoniae infections. Diagnose and treat Mycoplasma pneumoniae infections.
CASE: A 23 year-old white male presented with three days of malaise, fever, chills, headache, odynophagia, lymphadenopathy, non-productive cough, myalgias, watery stools, and rash. He was previously healthy, took no medications and had no allergies. Family history was non-contributory. He was single, heterosexual, smoked 1 ppd cigarettes, rarely drank alcohol, and used IV drugs 8 years previously. Vital signs on admission were: T 38.0°C, BP 80/40, HR 120, RR 20, and oxygen saturation 94% on 2 L/min. Physical exam revealed an erythematous pharynx, tender cervical adenopathy, clear lungs, and a total-body macular rash. Laboratory results included: WBC 19,200 (39% bands); platelets 108,000; creatinine 1.5; CPK 453, and troponin T 0.29 (normal <0.03). A rapid streptococcal screen and a Monospot test were negative. Chest X-ray showed a widened mediastinum. Neck and chest CT scan showed cervical and mediastinal adenopathy. EKG showed sinus tachycardia without ischemic changes. An echocardiogram revealed ejection fraction 20%, global biventricular hypokinesis, and no valvular vegetations. He was treated with clindamycin and moxifloxacin, intravenous fluids and pressors. He continued to have fevers to 40.7°C, but cultures of blood, sputum, urine, and CSF, as well as serum and CSF viral studies, failed to reveal a source. An HIV test was negative. On hospital day #14, serology for Mycoplasma pneumoniae IgM returned positive. Moxifloxacin had been stopped on hospital day 7, but was resumed for a total course of 12 days. The patient defervesced, and a repeat echocardiogram on hospital day #23 showed normalization of ventricular function, with ejection fraction of 60%. Despite several complications, he recovered fully and was discharged to home.
DISCUSSION: Mycoplasma pneumoniae infections are usually mild and self-limiting. The most common target is the respiratory tract. However, M. pneumoniae can rarely cause severe infections, affecting multiple organ systems. Besides the lungs, the skin and heart are most commonly involved. M. pneumoniae has been documented to cause exanthems, arrhythmias, myocarditis, neurologic problems (e.g. Guillain-Barré), and Stevens-Johnson syndrome. M. pneumoniae lacks a cell wall, so it is not seen on Gram staining. It is not easily cultured. Confirmation of infection is by enzyme-linked immunoassay for IgM and IgG directed against M. pneumoniae. Due to the lack of a cell wall, Mycoplasmas are resistant to penicillins, cephalosporins, and vancomycin. Treatment with a macrolide, a fluoroquinolone, or doxycycline is recommended This patient presented with sepsis syndrome, which was ultimately attributed to Mycoplasma pneumoniae and resolved with appropriate antimicrobial therapy.

MYELITIS FROM MOSQUITOS. D. King[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117480)*

LEARNING OBJECTIVES: 1. Recognize the association of West Nile Virus (WNV) with acute febrile progressive paralysis. 2. Consider viral encephalitis in the differential for immunocompromised patients who present with neurological dysfunction.
CASE: A 43-year-old man with HIV (CD4 130) presented with five days of back pain, diarrhea and bilateral calf cramping. He was an obese, febrile man with symmetrical 3/5 muscle strength in upper and lower extremities. His cranial nerves and mental status were normal. Within 48 hours his weakness progressed to 0/5 proximal muscle strength, 1/5 distal muscle strength, and 2/5 hand grip and plantar-flexion. He developed areflexia, bilateral hearing loss and respiratory failure. A lumbar puncture was attempted but was unsuccessful. The patient's obesity prevented an MRI. A CT scan of the head showed only sinusitis. He was empirically treated for bacterial meningitis versus Guillian-Barre syndrome (GBS). Encephalitis panels and serological screening for CNS infections were drawn. The patient was discovered to have West Nile IgM; all other serological tests were negative. EMG was performed and showed a mixed neuropathic/myopathic picture, that, when taken into account with his hearing loss, effectively excluded GBS.

DISCUSSION: West Nile virus (WNV) is a flavivirus transmitted by mosquitos. The most common presentation is a febrile illness and meningoencephalitis. Less common, though still prevalent, is a syndrome of acute progressive febrile paralysis similar to poliomyelitis. Proximal muscle weakness predominates over distal, and cranial nerve involvement is expected. Although bacterial and fungal meningitides are the most commonly considered causes of acute-onset neurological changes in immunocompromised individuals, viral encephalitides should also be considered, especially in areas where mosquitos and other insect vectors are prevalent. Physicians should recognize the poliomyelitis-like syndrome associated with the West Nile Virus, especially in the immunocomprised.

MYOCARDIAL INFARCTION IN A YOUNG ADULT WITH ELEVATED APTT. A. Kalyanasundaram[1]; A. Quiery[1]; K. Gavlick[1]. [1]Geisinger Medical Center, Danville, PA. *(Tracking ID #116911)*

LEARNING OBJECTIVES: 1) Recognize antiphospholipid syndrome as a rare cause of myocardial infarction in the young adult 2) Reinforce that antiphospholipid syndrome is a procoagulant disorder despite the elevated APTT 3) Management of a myocardial infarction in the setting of antiphospholipid syndrome.
CASE: 42-year-old woman presented at an outside hospital with shortness of breath and stuttering chest pain for one week. She was admitted in the same hospital less than a month earlier for dysfunctional uterine bleeding when she was diagnosed with lupus anticoagulant. Her history is otherwise unremarkable. She was transferred to our hospital with the diagnosis of an acute MI based on EKG changes and enzyme elevation. She was tachycardic, hypotensive and hypoxic. Chest exam revealed rales at both bases. Her PTT was elevated at 75. Medical management was optimized and she was started on heparin after an emergent hematology consult. An echocardiogram revealed evidence of a large inferior, inferolateral and anterolateral myocardial infarction with left ventricular ejection fraction of 30–35%. Cardiac enzymes and Troponin-T were positive. Her dilute Russell Viper Venom Time (dRVV) was positive (150 seconds). Her anticardiolipin antibody IgG was strongly positive (94.7 GPL U/ml) and IgM (56.2 GPL U/ml) was medium positive. The elevated aPTT failed to correct after mixing studies. Her heparin was titrated with serial thromboelastograms. Cardiac catheterization revealed critical ostial left main coronary artery disease that lead to CABG. Coumadin therapy was initiated and she was discharged in a satisfactory condition. Repeat anticardiolipin antibodies at 6 weeks remained elevated.
DISCUSSION: Primary antiphospholipid syndrome, also known as Hughes syndrome, is a thrombotic disorder characterized by antiphospholipid antibodies—anticardiolipin (aCL) antibodies and lupus anticoagulant. This syndrome presenting as coronary artery disease has rarely been reported in the literature. Antiphospholipid syndrome resulting in a myocardial infarction with critical ostial left main artery disease necessitating CABG has never been reported to the best of our knowledge. ACL antibodies are strongly associated with venous and arterial thrombosis, both in patients with systemic lupus erythematosus and in the primary antiphospholipid syndrome. Antiphospholipid syndrome should be considered in the differential diagnosis of myocardial infarction in the young adult. It is important to be cognizant of the fact that despite the elevated aPTT, antiphospholipid syndrome is a hypercoagulable state requiring anticoagulation when appropriate. Also, thromboelastogram, a global test of coagulation, has a possible role in the management of patients on intravenous heparin.

NEISSERIA SICCA: SO CLOSE TO MY HEART. C. Burgdorf[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117400)*

LEARNING OBJECTIVES: 1. Recognize N. Sicca as a cause of endocarditis in HIV-positive patients 2. Recognize the clinical risk factors for developing N. Sicca endocarditis.
CASE: A 43 year-old man presented with a three-day history of fever and myalgias. He noted the absence of headache, nausea, vomiting, weight loss, cough, or diarrhea. His past medical history was notable for hepatitis C and HIV. He routinely used intravenous drugs, but did not smoke or drink. He had no history of opportunistic infections; his CD4 count was 344 cells/mm^3 three months prior. His temperature was 38.4 °C; his pulse was 109 beats/min. He had a 2/6 systolic murmur at the apex that increased with hand grip. The remainder of his exam was normal. A diagnosis of endocarditis was entertained despite prior medical records that noted a 1/6 murmur, Blood cultures were positive for Neiserria sicca. Although considered a contaminant, a transesophageal echocardiogram was performed to exclude the diagnosis. This revealed vegetations on the tricuspid valve consistent with endocarditis. He was treated with ceftriaxone for six weeks.
DISCUSSION: Although Neisseria meningitidis and Neisseria gonorrhoeae are well-known pathogens, most of the genus Neisseria species are considered commensal in as much as they colonize but do not cause disease. Neisseria sicca is a commensal organism that is typically found in the throat and rarely causes disease. In the setting of immunosuppression, however, organisms that are normally commensal in nature can initiate disease. The modified Duke criteria includes a history of intravenous drug use as a minor criteria for the disease. The impurities in intravenous drug injection have been shown to disrupt the endothelial lining of normal valves, predisposing the patient to endocarditis by allowing a site of attachment for the organism. This patient's HIV and intravenous drug use history predisposed to infection, even to a normally commensal organism. It is important for physicians to remember that there is a higher incidence of commensal organisms causing pathologic disease in those that are immunocompromised.

NEUROSARCOIDOSIS INITIALLY DIAGNOSED AS MULTIPLE SCLEROSIS. M. Quate-Operacz[1]; E. Warm[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #115637)*

LEARNING OBJECTIVES: 1. Recognize the multiple presentations of neurosarcoidosis. 2. Differentiate neurosardoidosis from multiple sclerosis.
CASE: Differentiating between the neurologic manifestations of sarcoidosis and multiple sclerosis (MS) can be exceedingly difficult, especially when other signs of sarcoidosis are missing. To do so is important as the therapies and prognoses of these two diseases are vastly different. We present a case of a patient initially diagnosed with MS who developed classic sarcoidosis 2 years later. A 38 year old male with a purported history of MS complained of dyspnea on exertion, cough with yellow-white sputum production and chest pain worsening over 4 months. Three skin lesions on the upper extremities and abdomen had appeared one month prior to presentation. Two years prior to this he had complaints of paresthesias from the umbilicus to the toes, increasing weakness of both lower extremities, and occasional weakness and paresthesias of the right upper extremity. A chest x-ray was normal at this time. An MRI revealed signal abnormalities consistent with a demyelinating process at C4–C5 and T8–T9 levels. An LP demonstrated elevated protein and oligoclonal bands. The patient was diagnosed with MS and started on interferon-beta therapy with resolution of symptoms. On the current presentation the patient's chest x-ray revealed diffuse nodular infiltrates. Biopsy of the skin lesions was consistent with sarcoidosis. In retrospect, it was concluded that the initial presentation with paresthesias and weakness was most likely attributable to neurosarcoidosis.
DISCUSSION: Neurosarcoidosis is an uncommon manifestation of systemic sarcoidosis. In clinical studies, it was present in 5–16% of sarcoid cases. Neurologic complaints are the presenting symptom of neurosarcoidosis in 50% of cases. The majority will also have disease in other organ systems. The diagnostic criteria include a compatible clinical picture, typical radiologic findings, and histologic evidence of sarcoid from any tissue. MRI findings vary but white matter lesions can be present and mimic MS. Up to 80% will have CSF abnormalities that include mononuclear pleocytosis, increased CSF pressure, and some cases there has been evidence of oligoclonal bands making it very difficult to distinguish from MS. Before treatment is instituted 35–50% of cases will improve spontaneously. One third can relapse again simulating MS. This remission and relapse are likely what occurred in our patient as studies have that shown sarcoid and other autoimmune diseases can actually be exacerbated during interferon therapy.

NEUROSYPHILIS PRESENTING AS BILATERAL VOCAL CORD PARALYSIS AND GASTROINTESTINAL AUTONOMIC DYSFUNCTION. D. Blenner[1]; C. Woods[1]; R. Levy[1]; J.C. Byrd[1]. [1]East Carolina University, Greenville, NC. *(Tracking ID #117338)*

LEARNING OBJECTIVES: To emphasize the importance of including neurosyphilis in the differential diagnosis of unusual or unexplained neurological findings in patients who are immunocompromised.
CASE: A 34 year old male presented to our service after sustaining head trauma from a MVC causing a subarachnoid hemorrhage (SAH) and subsequent short-term memory deficits and generalized weakness. On day 16 after his injury he developed stridor. Laryngoscopy revealed bilateral vocal cord paralysis (BVCP). A head CT scan showed no acute processes. A tracheostomy was performed to protect his airway. A percutaneous gastostomy tube was placed to provide adequate nutrition but he had persistent residuals with his feedings. On day 29, the patient developed a left-sided T6 dermatomal herpes zoster rash. A thorough sexual history revealed that the patient had engaged in unprotected sexual activities with men. STD serologies were ordered with the patient's consent. The RPR and HIV were positive. A lumbar puncture was performed which revealed 43 white blood cells that were predominantly lymphocytes and a positive VDRL. Treatment for neurosyphillis was initiated with 24 million units of Penicillin G per day. After four days of treatment, the patient's voice began to return and his feeding residuals resolved. He was discharged one week into therapy with normal phonation. Subsequent laryngoscopy showed near complete recovery of his vocal cords. Literature review revealed that syphilis can be rare cause of vocal cord paralysis.
DISCUSSION: With the increasing rates of syphilis in the past 2 years and its frequent association with HIV, it is important to recognize that neurosyphilis is not uncommon and may present in a cryptic fashion.

NO DRUG IS BENIGN: NEUROLEPTIC MALIGNANT SYNDROME CAUSED BY AN ATYPICAL ANTI-PSYCHOTIC. V. Chan[1]; B. Taqui[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116214)*

LEARNING OBJECTIVES: 1. Recognize clinical features of Neuroleptic Malignant Syndrome (NMS). 2. Recognize that newer, atypical agents can still cause NMS. 3. Recognize managment options for NMS.
CASE: A 65 year old Caucasian male with schizophrenia presented with a two days of progressive change in mental status. According to his care givers, he was no longer performing usual activities of daily living including eating, dressing, and bathing. He had been found with bowel and bladder incontinence and was no longer speaking or following commands. His medications included olanzapine 10 mg po qd and temazopam 30 mg po qhs. On exam, he was alert, but with a masked facies. Orientation and cranial nerve function could not be assessed. He could move all extremities spontaneously, but had diffusely increased tone and a 3 second upper extremity resting tremor. Non-contrast head CT, EEG and blood and urine studies were negative. He was diagnosed with neuroleptic induced extrapyramidal symptoms. Fluids were started and olanzepine was discontinued. On hospital day #3, he developed a fever to 100.6 F and was acutely confused. He had pulse 128, blood

pressure 120–160 systolic. He had lead pipe muscular rigidity, increased tone compared to admission, and diffusely brisk deep tendon reflexes. Lab data revealed CPK = 2,890 U/L, Na = 154. CBC, chemistries, blood/urine cultures and CXR were negative. Brain MRI showed chronic small vessel ischemic changes, but no acute pathology. The patient was diagnosed with olanzapine induced neuroleptic malignant syndrome. He responded nicely to treatment with dantrolene, bromocriptene, and intravenous fluids.
DISCUSSION: Neuroleptic Malignant Syndrome (NMS), an idiosyncratic reaction to antipsychotic agents, is assumed to be due to reduced dopaminergic activity. It is characterized by severe rigidity, tremor, altered mental status, fever, and autonomic dysfunction. Complications include rhabdomyolyis, acute renal failure, and thromboembolism. It is traditionally associated with older antipsychotics (haloperidol, risperidone), but there have been some case reports with newer agents such as olanzepine. Risk factors include dehydration, poorly controlled neuroleptic induced extrapyramidal symptoms (EPS), treatment resistant EPS, and rapid rate of neuroleptic loading. Treatment involves discontinuation of neuroleptics and supportive care with antipyretics, fluids, and electrolytes. Refractory cases require initiation of dopamine agonists and muscle relaxants, such as bromocriptine and dantrolene. Severe NMS has 20–30% mortality. Our case underscores the importance for generalists to recognize the side effect profile of medications prescribed by other specialties. It also demonstrates that newer agents can still cause NMS.

NONTUBERCULOUS MYCOBACTERIUM AS A CAUSE OF BURSITIS. H.E. Woo[1]; C.H. Fung[2]. [1]University of California, Los Angeles, Los Angeles, CA; [2]VA Greater Los Angeles Healthcare System, Los Angeles, CA. *(Tracking ID #116278)*

LEARNING OBJECTIVES: 1. Recognize nontuberculous mycobacterium as a cause of bursitis. 2. Manage Mycobacterium chelonae infection with consultation from infectious diseases and surgery.
CASE: A 63-year old retired probation officer and former alcoholic presented with a chief complaint of one month of right elbow pain and swelling. He had been performing physical therapy floor exercises, which included weight-bearing stances on both elbows, for chronic back pain. His favorite location to practice the exercises was at the local beach in southern California. Physical exam revealed a well-developed, well-nourished male in no acute distress. He was afebrile and had a 5×5 cm fluctuant, warm, tender, erythematous swelling over the right olecranon without open wound or overlying rash. Fine needle aspiration was performed during the initial clinic visit. Culture of the aspirated bursa fluid grew Mycobacterium chelonae, sensitive only to clarithromycin and aminoglycosides. He started oral clarithromycin and had such a dramatic response that the patient refused recommended treatment with intravenous (IV) amikacin and bursectomy. He agreed to discontinue physical therapy exercises involving elbow weight-bearing stances. Seventeen months later he presented with pain and swelling involving the opposite (left) olecranon bursa; the right olecranon was normal on examination. Aspiration again showed Mycobacterium chelonae sensitive only to clarithromycin and aminoglycosides. With consultation from infectious diseases and orthopedics, he had a successful left bursectomy while receiving a six-week course of oral clarithromycin and two-week outpatient course of IV amikacin via percutaneous intravenous central catheter (PICC line).
DISCUSSION: M. chelonae is a nontuberculous mycobacterium with worldwide distribution that can be found in natural and processed water sources such as tap water and sewage. Nosocomial infections can occur as a result of instruments contaminated with colonized tap water. Presentation varies according to the site, but superficial infections typically are nonhealing, nonspreading wounds. Diagnosis requires smear for acid-fast bacilli and culture. Unlike tuberculosis, M. chelonae infections do not need to be reported to local health departments. Management with a surgeon is indicated, because without surgical debridement recurrence is likely. Consultation with infectious disease specialists is appropriate for therapeutic guidance. M. chelonae is resistant to typical antituberculous medications such as rifampin and isoniazid. However, it is usually sensitive to clarithromycin and amikacin. Resistance to single-drug therapy occurs, so dual antibiotic therapy is typically recommended. The optimal duration of antibiotic therapy is unknown, but ranges from weeks to months.

NOT JUST ANOTHER HEART FAILURE (HF) EXACERBATION: SIGNIFICANT VOLUME OVERLOAD FROM A THIAZOLIDINEDIONE (TZD). R.M. Malone[1]; M.P. Pignone[1]; A.B. Weil[1]; B. Bryant[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #115896)*

LEARNING OBJECTIVES: 1) Recognize the potential of TZDs to potentiate or exacerbate symptoms of HF; 2) Discuss proper use of TZDs in light of the potential adverse effects; 3) Identify patient education and counseling as a way to avoid complications from volume overload when TZDs are used.
CASE: JN is a 59 year old woman with type 2 diabetes, chronic renal insufficiency, and HF from viral myocarditis in 1991. An echocardiogram from February 2000 revealed a LVEF of 32%. She presented to clinic July 2001 with increased fatigue, decreased exercise tolerance for 3 months, DOE, and edema. She denied SOB at rest, PND, or orthopnea. Functional status had worsened from NYHA class II to III. Medications included: Pioglitazone 45 mg qd (Added 4/2001), Digoxin 0.0625 mg qd, Furosemide 80 mg qam 40 mg qpm, Lisinopril 20 mg qd, Metoprolol XL 50 mg qd, Warfarin 5 mg qd, Simvastatin 20 mg qd, Spironolactone 25 mg bid, NPH insulin 20u am and 10u pm, REG insulin 10u bid. Vitals: 271 lbs (15 lb increase over the preceding 2 months), BP 90/70, P 88. Physical Exam: 15 cm of JVD, displaced PMI, distant S1 and S2, 2–3+ bilateral lower extremity peripheral edema. Recent labs: SCr 1.6, BUN 59, ALT 27, and A1c 7% (previous A1c 11.1%). Furosemide was increased to 80 mg bid and genotyping for cardiac transplantation was ordered. Over the following 3 months, JN had 6 cardiology and medicine clinic visits and continued to complain of symptoms of DOE, edema, and an eventual weight gain of 30 lbs. She was hospitalized October 2001 for intravenous diuresis. After discharge, the General Medicine Diabetes Program decreased Pioglitazone to 30 mg over the telephone. This resulted in improved symptoms and a 28 lb weight loss over the following month. The Diabetes Program discontinued the TZD December 2001, her weight returned to baseline and functional status improved to NYHA class II.
DISCUSSION: Pioglitazone and Rosiglitazone are TZD antidiabetic agents that activate PPAR-gamma thus reducing insulin resistance. When used as monotherapy, TZDs can decrease A1c approximately 1.5%. TZD package inserts list HF, dose related edema, and weight gain as potential adverse effects. Average weight gain ranges from 0.8 to 5.4 kg and edema occurs in 4.8 to 15% of patients. In a recent cohort study, the incidence of HF symptoms and hospitalization for HF was 8.8% and 2.5%, respectively. Volume related adverse events occur frequently, are often misdiagnosed, and may lead to significant patient morbidity. Providers should recognize these potential adverse effects and avoid TZDs in patients with or at risk for HF. Careful monitoring for weight gain, edema, and HF symptoms is crucial with TZD use.

NOT JUST ANOTHER RASH. A. Harzstark[1]; P.P. Balingit[2]. [1]University of California, Los Angeles, Los Angeles, CA; [2]UCLA San Fernando Valley Program, Sylmar, CA. *(Tracking ID #117547)*

LEARNING OBJECTIVES: 1. Recognize epidermodysplasia verruciformis (EV) as a predisposing factor for cutaneous squamous cell malignancies. 2. Describe the etiology and presentation of EV.
CASE: A 21 year old Honduran female with no significant past medical history presented to an urgent care clinic with a painless, nonpruritic, scaly lesion with associated eschar in the right forehead area. The lesion bled intermittently from the margins and slowly increased in size during the three years prior to presentation. The patient also reported the eruption of generalized, erythematous plaques over her back, trunk, and extremities starting at the age of eight. These skin lesions were also present in three paternal cousins. Physical examination was notable for a well-defined two by two centimeter eschar on the patient's right forehead with slight bleeding from the lateral margin. Lesions were present, most notable on her neck, upper chest, and axillae, and also involved her abdomen, back, arms, and legs. The rash consisted of flattened, erythematous and hyperpigmented papules with a scaly surface and irregular borders. Areas of confluent plaques were present as well. Biopsy of the forehead lesion showed squamous cell carcinoma in-situ with adjacent actinic keratosis. Punch biopsy of a lesion on the back revealed slight hyperkeratosis and irregular mild acanthosis with scattered areas of atypical keratinocytes in the upper half of the epidermis, consistent with EV. Plastic surgery consultation was obtained for excision of the lesion located on the patient's forehead. Additionally, routine primary care follow-up was recommended for periodic examination of the patient's skin to identify possible developing malignancies.
DISCUSSION: EV is an autosomal recessive disorder of the skin associated with chronic human papillomavirus (HPV) infection. Rare cases of autosomal dominant and X-linked transmission have also occurred. EV is associated with impaired cellular immunity to HPV, making patients susceptible to widespread viral infection. Resulting skin lesions transform to skin cancers, particularly in sun-exposed areas, in one-third of patients and usually after the age of thirty. EV typically presents during childhood but can also appear during infancy and adolescence. On histologic examination, more than 90% of EV skin lesions contain evidence of infection with HPV subtypes 5, 8, and 47. Excision is required for EV lesions which have transformed into malignant skin cancers. Topical retinoid and intralesional interferon treatments for growing EV lesions have been found to be of possible benefit in slowing the progression to skin cancer. By providing periodic examination of the skin and surveillance of lesions, the primary care physician plays a vital role in the management of EV. Biopsy of enlarging lesions is necessary to exclude malignant transformation.

ONE FLU OVER THE CUCKOO'S NEST. H.T. Ly[1]; M. Rotblatt[2]. [1]University of California, Los Angeles, Sylmar, CA; [2]UCLA SFVP-Olive View Medical Center Department of Internal Medicine, Sylmar, CA. *(Tracking ID #115582)*

LEARNING OBJECTIVES: 1. To recognize the severity of complications and the impact of influenza illness 2. To ultimately realize the importance of the flu vaccine.
CASE: A 50 year old saxophone player presented to the ED with a week of "chest cold," cough productive of yellowish sputum, intermittent fevers as high as 102 F, and nightsweats. He was a smoker but had no significant PMH. He had no recent travel or risk factors for tuberculosis, although he had been visiting his ill wife in the hospital in recent weeks. She was a surgical patient whose hospital course was complicated by pneumonia. His vital signs were critical: T 38.3 C, BP 71/52, P 150, R 28, Pulse Ox 84% on 2L nasal cannula. There were diffuse crackles and tachycardia on exam. His WBC was 7.0 (N 79.6, L 9.9, M 10.4), and his BUN/Cr were 36/2.2. His CXR showed large bibasilar infiltrates. He was admitted to the ICU with a diagnosis of severe community acquired pneumonia and sepsis. He was intubated and received piperacillin/tazobactam, azithromycin, and aggressive fluid hydration. Sputum and blood cultures were sent, and the patient was stabilized but remained febrile. On day 2, both sputum and blood cultures were overwhelmingly positive for methicillin resistant Staphylococcus aureus (MRSA). Vancomycin was started, and he defervesced within 2 days. His PPD, sputum PCP DFA, AFB

smears, and fungal cultures were negative. However, his pulmonary status remained poor, prompting a chest CT that showed extensive bilateral bronchiectasis and cavitation that was attributed to the Staph infection. His hospital course was long, eventually requiring transfer to a ventilation weaning facility. Interestingly, he was initially tested and found positive for influenza A. He had not received the flu vaccine that season.
DISCUSSION: Our patient likely had influenza initially, which predisposed his lungs to a secondary bacterial infection. Pneumonia, especially with Staph, is a classic complication of influenza. Acquiring an MRSA infection, however, was a curiosity and eventually was attributed to his recent visits to the hospital to visit his ill wife. This case highlights a serious course that followed a seemingly commonplace flu. Given the severity of complications and dramatic rise in influenza cases this season, it becomes paramount to realize the impact of the flu and the potential protection offered by the vaccine to the general public.

PARALYSIS IN A YOUNG ADULT: AN UNUSUAL DIAGNOSIS. D. Fotino[1]; M. Landry[1]. [1]Tulane Health Sciences Center, New Orleans, LA. *(Tracking ID #117459)*

LEARNING OBJECTIVES: 1) Recognition of causes of macrocytic anemia 2) Identify diagnosis and treatment of pernicious anemia 3) Develop a diagnosis in ascending progressive neurologic deficits.
CASE: A 39 year-old woman with diabetes mellitus presented with inability to walk. Her symptoms began eight months prior with gradual progression leading to inability to ambulate. She noted decreased bilateral lower extremity proprioception with progressive ascending sensorimotor loss. She reported decreased appetite, weight loss, dysphagia, incontinence and worsening back pain. Physical examination revealed thyromegaly, sacral decubiti and lower extremity edema. The neurologic examination was remarkable for short-term memory loss. Her lower extremity examination revealed sensory deficits to light touch and pin-prick, absent reflexes and motor paralysis. Rectal tone was poor. Diagnostic studies included a hemoglobin of 8.8 g/dl with an MCV 112 Ym£, B12 level <100, iron saturation 6% and normal thyroid studies. Electromyogram revealed diffuse axonal and demyelinating loss in her lower extremities. Her esophagogastroduodenoscopy demonstrated atrophic gastritis and her anti-intrinsic factor antibody was positive. She underwent B12 replacement with normalization of her MCV, but her neurologic deficiencies worsened. A repeat EMG was consistent with Amyotrophic Lateral Sclerosis (ALS).
DISCUSSION: Common causes of macrocytic anemia include folate and B12 deficiency, and liver and thyroid disease. Initial evaluations include folate, B12, liver and thyroid studies. Pernicious anemia causes B12 deficiency with antibodies against intrinsic factor and parietal cells. Neurologic sequelae of B12 deficiency may be reversed with B12 replacement and normalization of the MCV. Further evaluation may be necessary for progressive neurologic symptoms. ALS is a severe form of progressive degenerative neurologic disease and must be considered in the differential of worsening neurologic deficits. Patients with ALS often become sufficiently malnourished to lead to concomitant vitamin deficiencies. The failure to respond to parenteral B12 was an important clue in investigating ALS as an etiology for her neurologic deficits.

PARATHYROID CARCINOMA: TWO CASES DIAGNOSED PRE OPERATIVELY. K. Pachipala[1]; S. Naidu[1]; D. Bucaloiu[1]; R. Pierce[1]; R. Monsaert[1]. [1]Geisinger Medical Center, Danville, PA. *(Tracking ID #109732)*

LEARNING OBJECTIVES: Recognize that parathyroid carcinoma can be clinically suspected preoperatively.
CASE: Case 1 A 66-year-old man presented with a 5-month history of pain in his right heel. Serum calcium and iPTH were elevated at 12.6 and 1800 respectively. Skull x-ray showed a salt and pepper appearance and a large "brown tumor". A bone scan showed increased uptake in the heel and skull. Because of significant bone involvement and a markedly elevated PTH, parathyroid carcinoma was suspected. A large left inferior parathyroid gland was found and resected. Microscopic examination confirmed parathyroid carcinoma. The patient developed the "hungry bone syndrome" following surgery, and responded to calcium and vitamin D. Case 2 A 55-year-old woman with a history of symptoms typical of hypercalcemia came to attention when a biopsy of bone from a pathologic fracture of her patella revealed a "brown tumor". Serum calcium and iPTH were 18.4 and 1120 respectively. Because of severe hypercalcemia, bone involvement and a markedly elevated PTH, parathyroid carcinoma was suspected. A totally intrathyroidal parathyroid carcinoma was resected. She also developed the "hungry bone syndrome".
DISCUSSION: Hyperparathyroidism-dependent hypercalcemia is commonly due to parathyroid hyperplasia or an adenoma. Parathyroid carcinoma is an uncommon cause with 390 cases reported so far in the literature. Parathyroid carcinoma is an indolent tumor and the clinical features are predominantly due to the effects of excess PTH secretion. It is important to suspect parathyroid carcinoma preoperatively, as a complete resection of the tumor at the time of initial operation is required for an optimal outcome. Often, unfortunately the diagnosis is made when hypercalcemia recurs after surgical treatment of primary hyperparathyroidism. Parathyroid carcinoma may be suspected clinically by the presence of severe and symptomatic hypercalcemia, markedly elevated PTH levels (3–10 times), palpable neck mass and a high prevalence of renal and skeletal involvement. Our high suspicion for parathyroid carcinoma alerted the surgeon to do a more aggressive and potentially curative, surgical procedure. Significant hypocalcemia from hungry bone syndrome is common postoperatively and is regarded as a sign that the surgery is successful.

PARATHYROID STORM. E.H. Orth[1]; S. Mangers[1]; L. Cation[1]. [1]University of Illinois at Peoria, Peoria, IL. *(Tracking ID #116240)*

LEARNING OBJECTIVES: Recognize the clinical features of severe hypercalcemia. Recognize benign primary hyperparathyroidism can not be excluded in the differential of severe hypercalcemia.
CASE: A 48 year old female presented with a 5 day history of progressive weakness. She complained of anorexia, vomiting, abdominal pain, as well as constipation and polyuria. Further history included headache, difficulty thinking, cough, and dysphagia. On physical exam, she was alert but displayed slow and labored conversation. The exam was remarkable for dehydration, tachypnea, and fullness of the right neck without discernible lesion. The abdomen had decreased bowel sounds and was soft with moderately diffuse tenderness. There was no guarding or rebound. The remainder of the exam was unremarkable. Laboratory analysis revealed serum calcium 23.6 mg/dl, phosphate 2.2 mg/dl, intact parathyroid hormone (iPTH) 1435 pg/ml, and serum electrophoresis with polyclonal increase in gamma globulin. The chest radiograph was unremarkable. A limited parathyroid scan had increased activity throughout an elongated right thyroid lobe. The patient was rehydrated, then given furosemide and pamidronate. Serum calcium fell to 11.3 mg/dl. Parathyroid surgery with neck exploration was performed and an 18.21gram mass was removed from the right inferior parathyroid gland. Pathologic examination revealed a parathyroid adenoma with mild nuclear atypia, low mitotic activity, and no malignancy. One day post surgery, serum calcium was 9.6 mg/dl. The patient had clinical resolution of her signs and symptoms.
DISCUSSION: Most patients with primary hyperparathyroidism are asymptomatic with only mild elevation of serum calcium. Extreme calcium level elevations are more typical of parathyroid malignancy. Upon literature review, the highest reported serum calcium in benign PHPTH was 26.3 mg/dl in 1987. We report a case of a symptomatic patient with serum calcium 23.6 mg/dl and iPTH 1435 pg/ml resulting from a benign parathyroid adenoma. Benign primary hyperparathyroidism can not be excluded in the differential of severe hypercalcemia.

PARTIAL SPINAL CORD SYNDROME IN A PATIENT WITH NASOPHARYNGEAL CARCINOMA. R. Bomprezzi[1]; P. Radhakrishnan[2]. [1]St. Joseph Hospital, Phoenix, AZ; [2]Catholic Healthcare West, Phoenix, AZ. *(Tracking ID #116023)*

LEARNING OBJECTIVES: 1. Recognize the rare neurological manifestations of invasive neck tumors and the treatment. 2. Diagnose partial spinal cord syndromes. 3. Recognize that autonomic dysfunction should be considered in the differential diagnosis of patients with bradycardia and hypotension.
CASE: A 77 year-old male patient presented with a history of syncope. He was found unresponsive for an unknown duration. His past medical history included nasopharyngeal carcinoma diagnosed four years before, for which he underwent extensive surgery to the right side of his neck, including laminectomy at the level of C3–C4 and subsequent radiation therapy. He also had Rheumatic Heart Disease with moderate mitral and aortic regurgitation and hypertrophic cardiomyopathy . Physical Exam—He was alert and oriented. BP 85/50 mmHg, HR 40/min. Pupils were equal and reactive bilaterally. Neck exam. revealed a left submandibular mass. There was swelling of the left base of the tongue with mild dysarthria. CVS-apical systolic murmur with no radiation. Neurological exam-decreased sensation in the left half of the face. Sensation to temperature was decreased on the left side of the body, more pronounced on the lower extremity; proprioceptive and tactile sensations were preserved. Motor examination revealed moderate impairment to fine movements of right hand and decreased strength (grade 3/5) of the right leg. The rest of the exam was normal.
DISCUSSION: This case highlights the neurologic sequele of invasive neck tumors. The Brown-Sequard syndrome is due to hemisection of the spinal cord, usually due to trauma or spinal cord tumors. There is ipsilateral motor weakness, proprioceptive and vibratory loss, and contralateral loss of pain and temperature sensation. The neurological findings described in this case are consistent with partial (incomplete) Brown-Sequard syndrome. Injury to the descending fibers of the corticospinal tract leads to the ipsilateral motor impairment. Damage to the ascending decussated fibers of the spinothalamic tract accounts for the loss thermal sensation in the contralateral body. The left facial hypoesthesia and dysarthria was due to local invasion of the recurrent tumor. The bradycardia and hypotension in this patient could be due to either autonomic dysfunction secondary to the neck mass or the patient's underlying cardiac disease. To summarize, it is important for physicians to familiarize themselves with the different clinical manifestations of neck masses and surgery.

PATIENCE IS A VIRTUE: A SEVERE LAB ABNORMALITY WITH CAUTIOUS MANAGEMENT. E. Lee[1]; L. Thomas[1]; H. Jasti[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115958)*

LEARNING OBJECTIVES: 1. To identify the multi-factorial etiologies of hyponatremia 2. To recognize the importance of history and clinical presentation in hyponatremia.
CASE: A 71 year old woman with a PMH significant for hypothyroidism, atrial fibrillation, and mild mental retardation presented with generalized weakness, bilateral lower extremity swelling, and "aphasia" for several weeks. On presentation, she was able follow all commands and communicate non-verbally but with an extremely blunted affect. Physical exam revealed mild jugular venous distension, an irregularly irregular heart beat, moderate rales in the lung bases, and 2+ pitting edema of the legs bilaterally. MRI/MRA of the head was normal. Chest radiograph showed pulmonary edema, a right-sided solitary pulmonary nodule, and a small pleural effusion on the same side. Laboratory results were significant for an elevated beta-natriuretic peptide (BNP) of 241 pg/ml, normal TSH and cortisol levels, and a

sodium of 103 mEq/L. Diagnostic thoracentesis revealed a transudative fluid, negative for infection or malignancy. Additional history later obtained from the family revealed that the patient had a decreased appetite over the last 2–3 weeks, but had continued to ingest large quantities of water. At baseline, she had a blunted affect and recently had been started on paroxetine for depression. The drug was discontinued and the patient was placed on water restriction. The sodium levels gradually normalized over the next five days with resolution of her symptoms.
DISCUSSION: Hyponatremia is a common lab abnormality that reflects an underlying problem with free water balance in the body. This balance can be upset in states of excess free water, either through impaired excretion or excess intake. In this patient, multiple factors potentially affected her free water balance: 1) excess free water intake, also known as primary polydipsia; 2) CHF with volume overload; 3) inadequate dietary solute intake, or the "tea and toast diet;" 4) the syndrome of inappropriate anti-diuretic hormone (SIADH) associated with pulmonary processes, such as malignancy; and 5) SIADH that has been associated with paroxetine, a selective serotonin reuptake inhibitor (SSRI). This case illustrates the importance of taking a thorough history and assessing the clinical presentation. The etiology of the patient's hyponatremia was not clear, as she had numerous predisposing factors. It was more important to realize the gradual nature of her impairment. Rapid correction of her sodium levels was not necessary, and in fact may have been more harmful. A conservative approach was taken and her hyponatremia resolved slowly over time.

PATIENT STILL HAS FEVER OF UNKNOWN ORIGIN. F. Aslam[1]; A. Mirza[2]. [1]Geisinger Medical Center Danville PA, Danville, PA; [2]Geisinger Medical Center, Danville, PA. *(Tracking ID #115629)*

LEARNING OBJECTIVES: 1. To identify role of adult Still's Disease (ASD) in the differential diagnosis of Fever of Unknown origin (FUO). 2. To appreciate the difficulty in diagnosing ASD due to lack of availability of specific diagnostic test. 3. Recognize importance of marked hyperferritinemia in association with other diagnostic criterion in diagnosing ASD.
CASE: A 40 year white male was transferred to our tertiary care medical center for evaluation of FUO. He was extensively investigated and evaluated by many subspecialists during 4-week stay at another hospital. On admission to our hospital his symptoms were persistent muscle pain, lethargy and non-specific joint pain. Physical examination revealed temperature 39°C and pulse 90/minute, however no localizing signs were present. Laboratory studies revealed White Cell Count of 25.3 K/uL (normal range 4–10.8), Erythrocyte Sedimentation Rate (ESR) 98 mm/hr (0–15) and Alkaline Phosphates 162 U/L (25–125). He continued to be febrile with peak temperature of up to 40°C. An extensive workup including chest X-ray, duplex scan of lower extremities, Bone Marrow biopsy and CT scan of chest abdomen and pelvis was unrevealing. Tests were negative for HIV-1, heterophil antibodies, Hepatitis A, B, C viruses, IgM and IgG antibodies against Cytomegalovirus, Epstein Barr virus, Borrelia Burgdorferi and Brucella Abortus. Serology for dsDNA, Antinuclear antibodies and Rheumatoid factor (RF) was negative. Blood and Urine cultures were sterile. Suspicion of ASD was raised by markedly elevated serum ferretin level to 10,154 ng/mL (30–400) and diagnosis of ASD was made on the basis of Yamaguchi and Kahn's criterion. Patient was treated with systemic corticosteroids with resolution of fever and symptoms within 24 hours. At 2 weeks follow-up visit patient was symptom free, leukocytosis had resolved and serum ferritin level had decreased to 1,068 ng/mL.
DISCUSSION: FUO is due to infection in 30 to 50 percent of cases, to cancer in 25 to 30 percent, and to autoimmune disease in 15 to 25 percent. Among autoimmune diseases ASD is one of the commonest cause of FUO. In ASD fever, elevated ESR and negative RF are present in 100% patients. Other features include arthralgias (90%), Leukocytosis (100%), rash (85%) and arthritis (65%). Since no specific test is available diagnosis is based on exclusion of other diseases and applying diagnostic criterion. For this reason average delay for the diagnosis is 3 to 8 weeks. Acute phase reactants are characteristically elevated. One of the features although nonspecific is extreme elevation in serum ferritin levels. Depending on the severity of disease nonsteroidal anti-inflammatory drug, corticosteroids, and immunomodulating drugs can be used for treatment. Neutralization of serum ferritin level is reliable index of success of therapy.

PERNICIOUS ANEMIA WITH SPLENOMEGALY IN A YOUNG MAN. M. Pillai[1]; P. Hu[1]; N. Le[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #116881)*

LEARNING OBJECTIVES: 1) Review the clinical manifestations of severe B12 deficiency. 2) Review the diagnosis and treatment of Pernicious Anemia.
CASE: A 37-year-old white man with no significant past medical history presented to our clinic complaining of progressive fatigue. One year ago he was able to run 3 miles daily. Upon presentation he had shortness of breath and fatigue with minimal activity. In the past six months, he lost 40 lbs and had symptoms of abdominal pain and early satiety. He had gone to several doctors who just prescribed him pantoprazole which minimally alleviated his symptoms. Physical exam was significant for a smooth red tongue, III/VI systolic flow murmur, and splenomegaly of 15 cm. There were no neurological deficits. Laboratory results showed WBC 2.1, Hg 6.0, Hct 17.7, MCV 102.5 and Platelets 75. A peripheral blood smear displayed macroovalocytes and multilobulated neutrophils. His B12 level was 48 pg/ml, and serum was positive for intrinsic factor antibody. The patient was diagnosed with pernicious anemia, (PA), and treated with cyanocobalamin injections with marked improvement.
DISCUSSION: PA typically presents later in life. Only about 10% of cases involve patients <40 years old. Typically, elderly patients present with macrocytosis with or without anemia and multilobulated neutrophils. However, severe cases of cobalamin deficiency can present with pancytopenia, neurological deficits involving the dorsal and lateral spinal columns, and even splenomegaly. Prior to early detection and treatment the reported incidence of splenomegaly in PA varied from 3% to 45%. With advances in medicine resulting in earlier detection, it is now rare to see splenomegaly in PA. A peripheral blood smear showing macrocytic anemia and multilobulated neutrophils is highly specific for B12 deficiency. The diagnosis is clinched with low serum B12 levels. Today, the use of the Schilling test has been supplanted by serologic testing for intrinsic factor antibodies. The presence of anti-intrinsic factor antibodies is highly specific and confirmatory for the diagnosis of PA, with a sensitivity varying from 50 to 84%, depending upon the population tested. Treatment with parenteral or oral cobalamin is highly effective. B12 supplementation normalizes hemoglobin levels within months and can reverse neurological deficits as well as splenomegaly.

PICK THE DEMENTIA. A.M. Wilson[1]; P. Koneru[1]; G. Prakash[1]; R.D. Hobbs[1]. [1]Oakwood Healthcare System, Dearborn, MI. *(Tracking ID #117213)*

LEARNING OBJECTIVES: To recognize the clinical significance of language impairment in the diagnosis of dementia.
CASE: A 71 year-old independently living woman with a two-year history of cognitive dysfunction presented two weeks following a car accident. She was alert, socially active and regularly played tennis. The MMSE was 9/31. Her spelling ability had decreased (diner is reddy), her speech was fluid and well enunciated but complicated by word substitution errors such as describing blowing leaves as "flies." The remainder of the exam and the laboratory tests were normal. An MRI showed nonspecific cortical atrophy with nondiagnostic white matter changes. She was diagnosed with Pick's Disease.
DISCUSSION: Arnold Pick first described Pick's disease in 1892 while reporting a series of unusual dementias. In 1911 Alois Alzheimer described the ballooning degeneration of neurons and the eosinophilic intraneuronal inclusions that are now known as "Pick bodies." Unlike Alzheimer's disease with which it is frequently confused, Pick's disease is characterized by early expressive aphasia, personality changes and prominent problems with language such as substitution and syntactical errors. These language problems may complicate the diagnosis since most screening tests are language based and may lead to falsely lowered scores. Memory loss is not an early finding as it is in Alzheimer's disease. This distinction is significant since the problem—memory or language, occurs at different times and may affect families and caregiver expectations. It also underscores the fact that memory loss is not necessary to make a diagnosis of dementia.

POLYMICROBIAL ENDOCARDITIS IN AN INTRAVENOUS DRUG ABUSER. R.P Warrier[1]; J.A. Chang[1]; J. Jarrett[1]; A.C. Maio[1]. [1]Creighton University Medical Center, Omaha, NE. *(Tracking ID #116419)*

LEARNING OBJECTIVES: 1. Recognize that polymicrobial endocarditis occurs in about 4–6% of all endocarditis. 2. Identify risk factors for polymicrobial endocarditis. 3. Manage infective endocarditis with surgical intervention in cases of persistent bacteremia despite maximal antimicrobial therapy.
CASE: Patient is a 39-year-old African-American male with history of current IVDA who presented with cough, fever, chills, and increasing dyspnea of 10 days duration. His past medical history included Hepatitis C, hypertension, and COPD. He had been treated for Staphylococcal bacteremia with four weeks of Nafcillin about three months ago. At that time TEE was negative for vegetations. Blood cultures were negative at the time of discharge. On physical examination, his temperature was 102.7 F. Vital signs were stable. He had no peripheral stigmata of endocarditis. A soft holosystolic murmur was heard along the left sternal border. There was no clinical evidence of heart failure. Multiple needle tracks were visible in his skin. Initial labs revealed leukocytosis (WBC 28.4), with 13% bands. Chest X-ray and EKG were normal at the time of admission. Blood cultures persistently grew ***Staphylococcus aureus*** and ***Bacillus species***. TEE was positive for 2.6 × 1.5 cm vegetation on the tricuspid valve with severe tricuspid regurgitation. Patient was started on Vancomycin and Rifampin based on sensitivities. Chest CT scan showed evidence of septic pulmonary emboli on the 7th day of hospitalization. Blood cultures remained positive after two weeks of adequate therapy. He then underwent partial tricuspid valve replacement with mitral valve homograft and valve annuloplasty. Vegetation was positive for the same organisms. Following surgery, patient was treated with intravenous antibiotics for four weeks and was discharged in stable condition.
DISCUSSION: Polymicrobial endocarditis is rare, about 4–6% of all cases of IE. Risk factors include IVDA, cardiac abnormalities, and presence of a central venous catheter or prosthetic valves. Right side of the heart is more commonly involved than the left. 42% of polymicrobial IE affect the tricuspid valve alone. Emboli are the most common complication presenting as septic pulmonary focci. ***Bacillus*** species have been implicated as the most common contaminant in drug paraphernalia, placing patients with history of IVDA at risk of ***Bacillus*** infections. When appropriate antibiotic therapy fails to clear bacteremia, surgical intervention to remove the nidus of infection should be pursued.

POST-CRANIOTOMY RASH AND JAUNDICE. K.M. Coyle[1]; K.J. Smith[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115569)*

LEARNING OBJECTIVES: 1. To recognize the presentation of Anticonvulsant Hypersensitivity Syndrome (AHS). 2. To identify causes, complications and medical management of AHS.

CASE: AS is a 47 year old male with PMH of hypertension who was transferred to our institution on post-operative day (POD) #32 status-post meningioma resection. He was placed postoperatively on phenytoin for seizure prophylaxis. On POD #20 AS developed a confluent, whole body, non-pruritic macular erythematous rash. Phenytoin was discontinued and neurontin prescribed. Three days later his prescription was changed to phenobarbital. The rash initially resolved following phenytoin discontinuation but worsened POD #28. On POD #30 he developed oral ulcerations, generalized edema, yellow sclerae and fever. On presentation to an outside hospital emergency department he was febrile with painful cervical lymphadenopathy, generalized macular rash and icteric sclerae. Serum ALT = 1648, AST = 2091, total bili = 27, NH3 = 53, INR = 1.4 and % eosinophils = 28. He was transferred to our institution and liver biopsy revealed eosinophilic infiltration consistent with hypersensitivity reaction. AHS was diagnosed; oral prednisone 40 mg/day was initiated. AS received supportive intravenous fluid hydration, daily liver function test monitoring and lactulose to minimize ammonia levels. He was discharged 20 days following admission with normalized liver function tests, resolved rash, oral lesions and eosinophilia.
DISCUSSION: AHS is an acute, life-threatening, idiosyncratic, non-dose-related drug reaction occurring 1 to 8 weeks after anticonvulsant exposure. The incidence of AHS is 1 in 1,000–10,000 exposures. It is characterized by multisystemic involvement, fever, lymphadenopathy, mucocutaneous rash, hypertransaminasemia and peripheral eosinophilia. Internal organ involvement most often involves the liver, but the renal, pulmonary and central nervous systems may also be affected. Although reported in patients taking lamotigrine, AHS is associated with the aromatic antileptic drugs phenytoin, carbamazepine, phenobarbital and primidone. It is thought to be related to inadequate detoxification of arene oxide metabolites of these drugs by a structural or functional defect in the enzyme epoxide hydroxylase; the metabolites subsequently cause cell necrosis or a secondary immunologic response. Cross-reactivity between drugs is 70–80%; there is a familial occurrence of AHS with an autosomal pattern of inheritance. Management consists of withdrawl of the offending agent and supportive care. Systemic corticosteroids are successful in the presence of internal organ involvement. Slow steroid taper is recommended following resolution of AHS as relapses are reported. Transient hypothyroidism can occur 1–3 months after the initial reaction.

POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME: WHEN A STROKE IS NOT A STROKE. A.B. Benson[1]; S. Desai[1]. [1]Oregon Health & Science University, Portland, OR. *(Tracking ID #116016)*

LEARNING OBJECTIVES: 1. Clinically recognize and diagnose posterior reversible encephalopathy syndrome (PRES). 2. Recognize patients who develop acute renal failure often have rapid elevations in blood pressure increasing the risk for the development of PRES. 3. Differentiate PRES from a bilateral posterior cerebral stroke to ensure appropriate acute management.
CASE: A 19 y/o female was admitted to the ICU with fulminant hepatic and acute renal failure following a suicide attempt with alcohol and acetaminophen. She received N-acetylcysteine and had rapid improvement in her liver function. From day 2–9 her renal failure, secondary to acute tubular necrosis, necessitated hemodialysis and caused progressive blood pressure elevation with episodic mean arterial pressures between 111–117 mmHg. On day 7, the patient complained of headache, nausea, increasing confusion and blurry vision rapidly progressing to complete blindness. Her BP was noted to be 150/105. She then experienced a generalized tonic-clonic seizure and was given lorazepam and phenytoin. An initial head CT was read as "multiple bilateral cerebellar, occipital and parietal infarcts." A subsequent head MRI demonstrated extensive bilateral gray and white matter edema in the cerebellar, occipital, posterior parietal and temporal lobes. After neurology consultation, the patient was diagnosed with PRES based on her initial symptom complex and MRI findings. By discharge, her liver and kidney function had returned to normal and she remained seizure free without visual or mental deficit.
DISCUSSION: PRES is defined by headache, nausea, vomiting, mental status changes, visual changes and seizures associated with the characteristic head MRI findings of extensive bilateral subcortical edema most commonly in the posterior cerebral hemispheres. The two most common predisposing factors to the development of PRES are acute episodic and sustained elevations in blood pressure, common in acute renal failure, and/or the use of cyclosporine and other immunosuppressants. Treatment is to rapidly lower BP to baseline levels, and if the situation warrants, withdraw or decrease the immunosuppressant dosage and initiate seizure prophylaxis. This aggressive approach can induce cerebral ischemia in the setting of an ischemic stroke, but irreversible cases of leukomalacia and progression to infarction have been described making acute recognition, differentiation and management of PRES essential. An appropriate clinical scenario coupled with an MRI read by an experienced neuroradiologist differentiates PRES from a stroke and potentiates appropriate treatment. Symptoms usually resolve without sequelae in days to weeks.

POSTPARTUM CARDIOMYOPATHY. H. Shishodia[1]; J. Miller[1]; M. Bohning[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116444)*

LEARNING OBJECTIVES: 1. Recognize the clinical manifestation of congestive heart failure (CHF). 2. Recognize postpartum cardiomyopathy as an infrequent but known cause of CHF that can present up to 6 months after delivery. 3. Discuss the implications of medical management of postpartum cardiomyopathy.
CASE: A 22 year old G1P1 woman presented to outpatient clinic 6 weeks postpartum with progressive dyspnea on exertion, and now short of breath at rest. She reported a non-productive cough, orthopnea, paroxysmal nocturnal dyspnea and lower extremity edema. Her medical history is significant only for a pregnancy complicated by preeclampsia and peripartum hemorrhage requiring transfusion. On exam her was BP 112/90 P 118, RR 24, Pulse Ox 99% on room air. She had gained 5 lbs. since her last clinic visit a month prior. She was able to speak in full sentences at rest. Her lungs were clear, she had 11 cm JVP. She had a laterally displaced hyperdynamic PMI, right ventricular heave, III/VI blowing systolic murmur radiating to the axilla, an S3 and bilateral 2+ pitting edema above the ankles. EKG showed sinus tachycardia. The patient was hospitalized and a bedside echocardiograph showed 4 chamber dilatation, depressed left ventricular systolic function of 10–15%, severe mitral and tricuspid regurgitation, mild aortic regurgitation and moderate pulmonic regurgitation. Hgb 11.5, Hct 35.5, TSH 4.49. She was given diuretics, an ACE-inhibitor and digoxin and her symptoms improved dramatically.
DISCUSSION: Postpartum cardiomyopathy is a dilated cardiomyopathy which results in signs and symptoms of heart failure. It is an uncommon cardiomyopathy with an incidence of 1/3000–1/4000 births. Symptoms typically begin during the last trimester of gestation and the diagnosis is usually made in the early peripartum period, but can develop upto 6 months after delivery. Common signs and symptoms include shortness of breath, fatigue, chest pain, palpitations, peripheral edema. Physical exam usually demonstrates an enlarged heart, S3, murmurs of mitral and tricuspid regurgitation. Echocardiography usually shows enlargement of all four chambers, with severe reduction in left ventricular systolic function. Multiparous women, women with preeclampsia and twin pregnancies are at a higher risk for peripartum cardiomyopathy. Acute management involves oxygen, diuretics, digitalis and vasodilators. Other modalities such as dopamine, dobutamine, milrinone have been used in pregnant women in a few cases. There is a high risk of mortality in patients with severe heart failure who do not recover and these women are referred for cardiac transplant. Risk of mortality ranges from 0–2% when the left ventricular function has normalized, while the risk of mortality is 8–17% in women with depressed systolic function prior to subsequent pregnancy. It is for these reasons that subsequent pregnancies are deemed high risk and therefore discouraged.

POST-PARTUM MASTITIS AND CONSEQUENCE OF DELAYED INTERVENTION. K. Ghosh[1]; A.C. Degnim[1]; K.R. Brandt[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #116645)*

LEARNING OBJECTIVES: 1) Emphasize the significance of imaging tests in the assessment of postpartum mastitis. 2) Address the role of antibiotics in the treatment of postpartum mastitis. 3) Emphasize supportive care for women with evidence of postpartum mastitis.
CASE: A 24 year-old primiparous woman presented with recurrent postpartum mastitis, and persistent pain and redness of the breast. The patient first noticed a lump in the inner left breast about nine weeks after childbirth that was associated with redness and warmth. Symptoms improved spontaneously but recurred soon after and she was evaluated by her primary physician and advised to start Cephalexin with some improvement. After three weeks on Cephalexin, she noticed drainage from the midst of the area of erythema, and was switched to Amoxicillin/Clavulanate and sent to the Breast Clinic for further treatment. Examination revealed an asymmetrically enlarged, tender, engorged, left breast with a 5 cm area of redness and warmth in the infero-medial quadrant. Ultrasound evaluation revealed a fluid collection measuring over 10 cm in the left breast with features suggestive of an infected galactocele/breast abscess. She underwent incision and drainage of the abscess with removal of approximately 160 cc of pus, and debridement of the abscess wall. The cavity measured 15 × 10 cm. Post-operatively, the abscess cavity was packed frequently enabling complete wound healing in four weeks. The patient is now contemplating plastic surgery to improve cosmesis.
DISCUSSION: Postpartum mastitis can present a clinical spectrum from mild focal breast inflammation to breast abscess formation and sepsis, occurring in 2 to 33% of breast-feeding women. Management of postpartum mastitis includes supportive measures such as hot compresses, analgesics and the expression of breast milk either by breast feeding, manual expression or use of a breast pump. In mild mastitis, these measures often suffice to resolve symptoms. However, breast abscess and septicemia are known complications of post-partum mastitis, and therefore, the role of antibiotic therapy has been an area of controversy. Ultrasound evaluation of the area of mastitis is recommended to rule out an underlying abscess, or infected galactocele. The presence of an infected fluid collection requires treatment with drainage as well as antibiotic therapy to prevent the spread of infection and enlargement of the abscess cavity.

PRESCRIBING SELECTIVE SEROTONIN REUPTAKE INHIBITORS IN THE ELDERLY: WATCH OUT FOR MENTAL STATUS CHANGES. A.L. Puswella[1]; K. Barnard[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116219)*

LEARNING OBJECTIVES: 1) To recognize the Syndrome of Inappropriate ADH Secretion (SIADH) as a common side effect of selective serotonin reuptake inhibitor (SSRI) therapy. 2) To recognize the importance of early detection of SIADH in elderly patients starting SSRI therapy. 3) To recognize the risk factors that predispose patients to developing SSRI-induced SIADH.
CASE: An 88 y/o female was brought to the emergency department by her neighbor for increasing confusion, weakness, and altered mental status for two days. Past medical history is significant for depression, hypertension, hyperlipidemia, osteoporosis and urinary incontinence. Her medications included Losartan, Propanolol, Alendronate, Tolterodine. She had been started on Escitalopram 10mg two days prior to the onset of symptoms. In the emergency department, her serum sodium was 118 mEq/L and she was judged to be euvolemic. Her baseline serum

sodium, taken two days earlier was 134 mE/L. Urine electrolytes showed Na^+ = 96 mEq/L, Cl = 114 mEq/L and osmolarity = 447 mOsmol/kg. A diagnosis of SSRI-induced hyponatremia due to SIADH was made. The patient was admitted, placed on fluid restriction, and the Escitalopram discontinued. Her mental status gradually improved, returning to baseline over the next five days.
DISCUSSION: The development of SIADH secondary to SSRI use in the elderly appears to be a more common occurence than previously thought. Some series show an incidence as high as 28%, with severe symptomatic hyponatremia occuring in 12% of these cases. Most episodes occur within 13 days (range 3–120 days) from the onset of treatment. Our patient demonstrates that severe symptomatic hyponatremia can occur in as little as two days, and can result in expensive hospitalization. Elderly women on multiple medications are at especially high risk of developing SIADH. The reasons for this are the higher rates of depression and SSRI use, decreased kidney function, and polypharmacy, especially the concomitant use of thiazide diuretics and neuroleptics. This case demonstrates the need for close monitoring of mental status and serum sodium when initiating SSRI drugs in the elderly. Females and those taking thiazide diuretics or neuroleptic medications appear to be at higher risk.

PRIMARY CHORIOCARCINOMA OF THE STOMACH WITH LIVER METASTASES—A CASE REPORT. A. Devarajan[1]; K. Subramanian[1]; C. Rathnakumar[1]; A. Regaila[1]; E. Christina[2]; U. Hitendra[1]; R. Jeyachandran[1]. [1]Jersey City Medical Center, Jersey City, NJ; [2]JerseyCity Medical Center, Jersey City, NJ. *(Tracking ID #117440)*

LEARNING OBJECTIVES: Choriocarcinoma is a malignant proliferation of the Langerhans cells and of syncytial cells of trophoblastic origin that is normally situated in the female genital tract after a gestational event such as molar pregnancy, term pregnancy, abortion or ectopic pregnancy. Rarely it occurs in either sex as a midline lesion in the retroperitoneum, mediastinum and the region of the pineal gland. Less frequently it is found in the bladder, liver, stomach and colon, where it is seen in combination with adenocarcinoma. Primary choriocarcinoma of the stomach is an extremely rare and highly malignant tumor.
CASE: We report a case of choriocarcinoma of the stomach associated with adenocarcinoma in a 51 year old female, who presented with epigastric pain and vomiting for one month with manifestations of liver failure and elevated Ò-HCG (38748 MIU/ml). No evidence of gestational malignancy was found on endometrial biopsy. Upper GI endoscopy revealed a single acute friable ulcer in the antrum. CT scan of the abdomen showed multiple liver metasteses. Histopathologic examination of gastric antral and liver biopsy specimens demonstrated ulcerated, infiltrating choriocarcinoma with poorly differentiated adenocarcinoma. The diagnosis was further confirmed by immunohistochemical staining, which showed strong positivity for Ò-HCG, CEA and CAM 5.2, and focal positivity for AFP, CK and EMA. The patient was treated with one cycle of methotrexate based chemotherapy, as patient refused dactinomycin and VP-16 based chemotherapy. The level of serum Ò-HCG was reduced (7311 MIU/ml) with no parallel clinical improvement. Patient continued to deteriorate and expired within one month of diagnosis.
DISCUSSION: Primary choriocarcinoma of the stomach presents with a picture similar to adenocarcinoma with an average age of onset of 50 to 60 years with greater preponderance among males. It spreads by hematogenous route with an average survival of only a few months from the time of diagnosis. Although chemotherapy is successful in treating gestational choriocarcinoma, its effectiveness had not been shown in gastric choriocarcinoma. Standardized treatment protocols are lacking due largely to the paucity of cases presented at any one institute. This calls for an organized multicenter or multinational double blind, case-control randomized study in order to establish a treatment protocol for this life threatening malignancy.

PULMONARY CRYPTOSPORIDIOSIS. L. Subramanyam[1]; S. Parikh[1]; M. Eapen[1]; H. Friedman[1]. [1]St. Francis Hospital, Evanston, IL. *(Tracking ID #116549)*

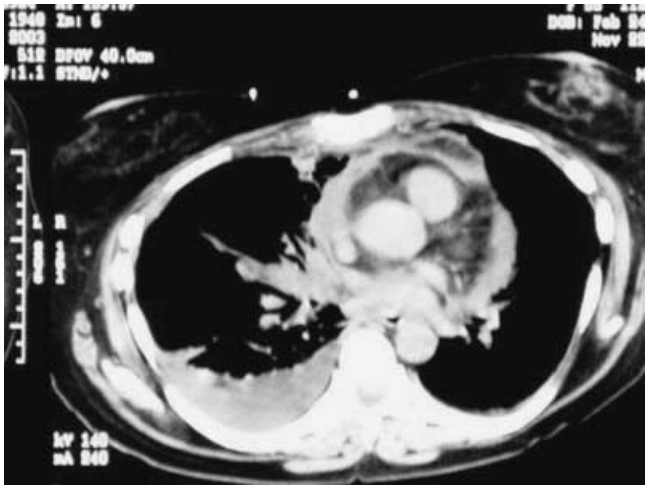
LEARNING OBJECTIVES: 1. Recognize the importance of Cryptosporidium species not only as a cause of intractable diarrhea and malabsorption in immunocompromised patients but also as an agent that leads to respiratory failure and death. 2. Realize that early immune reconstitution with Highly Active Anti-Retroviral Therapy (HAART) and better nutrition improves the final outcome in patients with cryptosporidiosis and Acquired Immune Deficiency Syndrome (AIDS); prognosis without immune restoration is generally poor.
CASE: The patient is a 34-year-old African-American man who presented with a 4 week history of progressively worsening shortness of breath, cough associated with mucoid sputum, moderate epigastric pain, loose watery diarrhea and a weight loss of 30 lbs during this period. He appeared emaciated with obvious clinical signs of dehydration and moderate respiratory distress, saturating 88% on room air. Cardiac and lung exam was essentially benign. The abdomen was diffusely tender to palpation without any evidence of peritoneal signs. He tested positive for HIV with a viral load of 685,354 and a CD4 count of 177. Chest X-ray showed diffuse interstitial infiltrates. He was started on HAART and Trimethoprim-sulfamethoxazole empirically for Pneumocystis carinii pneumonia. Stool specimens and a subsequent duodenal biopsy demonstrated Cryptosporidial oocysts. During the course of hospital stay, his respiratory symptoms worsened. Pneumocystis was persistently negative in the induced sputum, whereas the sputum sent for AFB staining revealed Cryptosporidia in three consecutive specimens. He was treated with paramomycin, azithromycin and intravenous hyperalimentation. Despite aggressive treatment, he succumbed to the infection and died of respiratory failure.
DISCUSSION: While there is a well-documented association of Cryptosporidium with severe diarrheal disease in immunosuppressed individuals, Cryptosporidium in the respiratory tract has been rarely described. The few case reports that are available in the literature show that these patients ultimately develop fulminant respiratory failure and die. But, the causal association could not be clearly established in these cases because of the presence of other respiratory pathogens especially, Pneumocystis. In our patient, we could not isolate any other microorganism even with multiple sputum studies. So, we consider this case as one of the rare reported cases of pulmonary cryptosporidiosis with an adverse outcome. The risk of fulminant cryptosporidiosis increases in profoundly immunocompromised patients with AIDS as measured by the low CD4 count. Immune reconstitution with HAART has shown to decrease mortality and morbidity in these individuals. Early consideration of this diagnosis and prompt institution of treatment might improve the final outcome in these patients.

PULMONARY HYPERTENSION: IS IT FIRST, OR IS IT SECOND? A. Toprani[1]; J. Hutchings[1]. [1]Tulane University, New Orleans, LA. *(Tracking ID #117519)*

LEARNING OBJECTIVES: 1. Recognize the clinical presentation of primary pulmonary hypertension. 2. Understand the criteria for diagnosis and treatment of primary pulmonary hypertension.
CASE: A 31 year-old woman presented with hemoptysis. She had no history of trauma or anticoagulation, and no recent tuberculosis exposures. She had presented to an outpatient clinic six months earlier with similar complaints and was prescribed an antibiotic. Her symptoms resolved, but the hemoptysis recurred one week prior to presentation. She had a III/VI diastolic murmur; the remaining exam including a PPD test was normal. The chest radiograph revealed cardiomegaly and clear lungs. An echocardiogram revealed a pulmonary artery pressure of 130 mmHg. Serologies for HIV, RF and ANA were negative. PFT's were normal. Bronchoscopy was negative, and a HRCT was negative for parenchymal lung disease. The V/Q scan was normal. A right heart catheterization showed a positive response to epoprostenol.
DISCUSSION: Primary pulmonary hypertension (PPH) is a pulmonary artery pressure of greater than 25 mmHg in the absence of an identifiable cause. The pathogenesis is related to an imbalance between vasodilating and vasoconstricting factors, leading to pulmonary vasoconstriction and vascular remodeling. A mutation of the bone morphogenetic protein receptor type II (BMPR2) gene has been identified in the familial form of PPH. Many of the sporadic cases of PPH are also attributable to abnormalities of BMPR2. In order to diagnose primary pulmonary hypertension secondary causes must be excluded. This is accomplished by performing pulmonary function tests, connective tissue serologies, echocardiography, cardiac catheterization and ventilation/perfusion lung scanning. Cocaine, amphetamines and the appetite suppressant fenfluramine should also be excluded. The response to epoprostenol or nitric oxide should be investigated. The 30% of patients who do respond can be treated with oral calcium channel blockers. Patients who do not qualify for oral therapy are treated with continuous intravenous infusion of epoprostenol. Chronic anticoagulation with warfarin has been shown to improve survival.

PURULENT PERICARDITIS: A RARE COMPLICATION OF STREPTOCOCCAL PNEUMONIA. H. Bhuria[1]; M. Karmegam[1]; H. Friedman[1]. [1]Saint Francis Hospital of Evanston, Evanston, IL. *(Tracking ID #116654)*

LEARNING OBJECTIVES: Recognize purulent pericarditis as a complication of pneumococcal pneumonia.
CASE: A 55 year old white female with history of alcohol abuse presented with nausea, vomiting and RUQ pain for 4 days, followed by dry cough and right sided pleuritic chest pain. She denied fever or shortness of breath. On exam temperature 97 F, pulse 122, BP 135/115, RR 28, no JVD, S1S2 audible and decreased breath sounds at bases. Abdomen showed mild RUQ tenderness but no Murphy's sign. CXR showed bibasilar effusions and infiltrates with cardiomegaly. CT abdomen was



CT chest showing bilateral pleural effusions (R > L) and pericardial effusion.

unremarkable. Blood culture subsequently grew Streptococcus pneumoniae. She was started on IV antibiotics for pneumonia. The next day she developed shortness of breath and hypotension. A chest CT scan showed bilateral pleural and pericardial fluid. Cardiac echocardiogram showed tamponade. 450 cc of purulent fluid was drained from the pericardial cavity. Analysis revealed white cell count of 56,700 with 92% neutrophils and a negative bacterial culture. Both pleural cavities were drained by tube thoracostomies aided by repeated instillation of tPA. Plerual fluid showed a white cell count of 2,600 with 89% neutrophils, ph 6.8, glucose 2, LDH 12,540 and a negative bacterial culture. She required a pericardial window for re-accumulating fluid and was eventually discharged in a stable condition.
DISCUSSION: Purulent pericarditis in the antibiotic era has become a rare entity. Prior to the widespread use of antibiotics, purulent pericarditis was usually a complication of pneumococcal pneumonia; in modern times, most cases are associated with dialysis, thoracic surgery, and chemotherapy. It is occasionally seen in patients with risk factors for invasive pneumococcal disease like alcoholism. A high index of suspicion should be maintained in patients with pneumonia and pericardial effusion as prompt diagnosis and treatment with drainage of pericardial cavity is essential for a good outcome.

PYODERMA GANGRENOSUM OF THE HANDS FOLLOWING VENIPUNCTURE INJURY. C. Nassaralla[1]; R. McCurdy[1]; S. Frost[1]. [1]Cleveland Clinic Foundation, Cleveland, OH. *(Tracking ID #115494)*

LEARNING OBJECTIVES: 1) Diagnose and treat pyoderma gangrenosum. 2) Recognize that pyoderma gangrenosum is often misdiagnosed as bacterial skin infection, potentially resulting in devastating outcomes due to delay in therapy.
CASE: A 28-year-old woman was admitted to the hospital with excruciatingly painful hand ulcers. Eighteen days prior to presentation, she had experienced multiple traumatic attempts at intravenous (IV) access on the dorsum of both hands before undergoing cholecystectomy. After surgery, small blisters appeared at the attempted IV access sites that rapidly enlarged and ulcerated. Five days prior to admission she received amoxicillin-clavulanate for the presumptive diagnosis of impetigo, yet the ulcers continued to enlarge. Physical examination revealed tender 10 cm and 6 cm circular ulcers with hemorrhagic exudate on the dorsal aspects of the left and right hands respectively. The ulcers were demarcated with an irregular, raised, and boggy border. The surrounding skin was erythematous and edematous. The ulcers did not appear infected, and blood and wound cultures were sterile. There was no fever, and laboratory evaluation was remarkable only for mild leukocytosis. Prednisone and pain medications were prescribed after pyoderma gangrenosum (PG) was diagnosed based on clinical history, and typical ulcer appearance. Extensive evaluation revealed no associated systemic illness, and the ulcers were well healed after 14 days of therapy.
DISCUSSION: PG is a rare, idiopathic inflammatory neutrophilic dermatosis akin to Sweet's syndrome. Most cases are associated with a systemic illness such as inflammatory bowel disease. However, 15% to 30% of patients have no underlying medical condition. The pathogenesis of PG is unclear, but altered immunological reactivity is likely operative. PG lesions begin as tender, red macules, papules, nodules, or bullae that evolve into pustules or vesicles surrounded by erythematous and edematous skin. Ulceration eventually occurs, which then extends in a centrifugal pattern. PG confined to the hands is rare and has been variably referred to as "neutrophilic dermatosis of the dorsal hands", "pustular vasculitis of the hands", and "variant erythema elevatum diutinum." Diagnosis of PG is based on clinical findings, including a history of minor trauma as the precipitating event, which is commonly associated with PG of the hand. Biopsy specimens generally yield nonspecific results. Systemic immunosuppressive therapy with prednisone is the cornerstone of therapy. Dapsone may be useful in decreasing inflammation and edema. Surgical procedures are contraindicated, as they may provoke a pathergic response that exacerbates tissue injury. PG is frequently misdiagnosed as bacterial skin infection, and antimicrobial therapy is ineffective. Inaccurate diagnosis and delay in appropriate treatment can result in devastating outcomes such as amputation of the affected areas.

RASH, ABDOMINAL PAIN AND WEIGHT LOSS. S. Prall[1]; G. Babameto[2]. [1]Geisinger Medical Center, Danville, PA; [2]Geisinger Mediacal Center, Danville, PA. *(Tracking ID #115169)*

LEARNING OBJECTIVES: 1. Recognize atypical presentation of adult onset diabetes. 2. Diagnose hypertriglyceridemia related to uncontrolled diabetes.
CASE: A 41 yo white male presented with complaints of abdominal pain. Over the past few months he had lost 40 pounds. One month ago he developed a nontender rash on his extremities and trunk. 24 hours ago he developed pain after eating supper, not relieved with over the counter analgesics. Denied nausea, vomiting, diarrhea, or fevers. PMH included reflux, hiatal hernia, carpal tunnel syndrome b/l. No tobacco or alcohol use. Currently disabled from carpal tunnel syndrome. Physical exam: BP 130/73, HR 87, RR 20, T 37.5. Obese. HEENT: sclera anicteric. Remarkable for tense, distended abdomen with epigatric tenderness, normal bowel sounds, no rebound. Yellow nontender papules varying in size on extremities and trunk (xanthomata). Initial laboratories: lipase 1,468, cholesterol 401, triglyceride 14,798, ast 31, alt 59, alkaline phosphatase 80, total bilirubin 0.5, WBC 12.8, Na 125, K 3.6, glucose 325, CO2 21, TSH 2.04. Pt was admitted for management of acute pancreatitis likely secondary to his hypertriglyceridemia resulting from uncontrolled diabetes. Initial HgA1C was 14.2. With insulin therapy HgA1C improved to 5.8, however, cholesterol, LDL, and TG remained elevated requiring lipid lowering medications.
DISCUSSION: Pancreatitis is an uncommon presentation for new adult onset diabetes. Frequently patient's present with hyperglycemia, obesity, ketonuria, weight loss, nonketotic acidosis. Hyperlipidemia is frequently seen in uncontrolled diabetes, specifically hypertriglyceridemia. Hyperinsulinemia plus insulin resistance in uncontrolled diabetes cause increased TG production coupled with reduced clearance of plasma TG result in hypertriglyceridemia. Hypertriglyceridemia is a rare cause of pancreatitis. Levels greater then 1,000 place an individual at increased risk for pancreatitis. The hypertriglyceridemia resulting from pancreatitis is mild to moderate and should not be confused with the markedly elevated levels seen causing pancreatitis. Significantly elevated TG levels in the uncontrolled diabetic should also raise the question of an underlying lipid disorder. In this case the patient presented with hypertrigylceridemia induced pancreatitis and was found to have diabetes, but we can not assume that the diabetes alone resulted in his clinical presentation. The presence of xanthomas indicates that he likely had a longstanding hyperlipidemia. The concomitant development of diabetes probably exacerbated the preexisting hyperlipidemia. Despite ideal glycemic control with a follow up HgA1C of 5.8, the patient's lipid profile failed to normalize and he continued to require lipid lowering agents. Think of hypertriglyceridemia induced pancreatitis in the uncontrolled diabetic who presents with abdominal pain.

RECOGNIZING MAC TO AVOID THE KNIFE. S. Kahlon[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117476)*

LEARNING OBJECTIVES: 1. Recognize a complication of a common AIDS-related opportunistic infection, disseminated mycobacterium avium-intracellulare complex (MAC).
CASE: A 32 year-old HIV-positive man (CD4 = 28) presented with four days of progressively worsening diffuse, crampy abdominal pain with fever, night sweats, vomiting, and inability to tolerate oral intake. His examination was normal with the exception of a temperature of 38.5°C. He had mild abdominal tenderness without guarding. An initial radiograph of the abdomen suggested small bowel obstruction versus adynamic ileus. As his symptoms did not resolve, he was scheduled for exploratory laparotomy. In preparation, a CT scan of the abdomen was performed that revealed diffuse retroperitoneal and mesenteric lymphadenopathy with a partial ileus. A subsequent CT-guided needle biopsy of a retroperitoneal node revealed reactive lymphadenopathy due to Mycobacterium avium. Supportive care for nausea and pain was provided, as well bowel rest and nutritional support, until he was again able to tolerate oral intake, began having bowel movements, and symptomatically improved.
DISCUSSION: Mycobacterium avium (MAC) bacteremia can occur in HIV-positive patients with CD4 counts less than 50. The syndrome includes fever, weight loss, night sweats, diarrhea, and lymphadenopathy. Organs involved include the liver, spleen, gastrointestinal tract, lymph nodes, and bone marrow. Pancytopenia, elevated lactate dehydrogenase, and elevated alkaline phosphatase are laboratory indicators for the disease. The organism has a predilection for lymph nodes and can induce a diffuse reactive lymphadenopathy that can be sufficient to cause obstruction of contiguous organs. Gastrointestinal lymphadenopathy can be symptomatic due to mass effect and inflammation of the bowel wall. Physicians should be aware of this common complication from disseminated MAC, as unlike its imitator, lymphoma, it is readily contained with ethambutol and clairthromycin.

RECURRENT ABDOMINAL PAIN: CHECK THE MEDICATION LIST. J. Kamali[1]; G.L. Arnold[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116496)*

LEARNING OBJECTIVES: 1) To recognize angiotensin-converting enzyme (ACE) inhibitors as a cause of angioedema of the small bowel. 2) To list the typical symptoms of angioedema of the small bowel.
CASE: A 49 year-old African American woman with past medical history of essential hypertension and recurrent abdominal pain for two years presented to the emergency department (ED) with progressive abdominal pain of four hours duration. The pain was periumbilical, constant, sharp and without radiation. It started at home as 2/10 severity and progressed to 6/10 in the ED. She had two similar episodes within the past two years, one requiring exploratory laparoscopy. The patient reported associated nausea, but denied vomiting, diarrhea, constipation, bloody stools, fever or chills. On further questioning she recalled previous episodes of swelling of her lips lasting several days, beginning after two months of intermittent abdominal symptoms. Her medications included Lotrel® (amlodipine + benazepril), iron sulfate and occasionally alprazolam. Physical examination was notable for normal vital signs. Her sclera were anicteric. Heart and lung examination was unremarkable. Abdomen was soft and non-distended. There was moderate periumbilical tenderness without guarding. Her laboratory studies showed WBC of 15.5, lipase 61 and amylase 89. CT of the abdomen demonstrated edematous loops of the small bowel. C1 esterase inhibitor level as well as C1 and C2 levels were normal.
DISCUSSION: Angioedema has been reported to occur in 0.2% of patients taking ACE inhibitors. It usually involves the deep layers of the skin but may also occur at the mucosal surfaces of the upper respiratory tract or gastrointestinal (GI) tract. The clinical presentation of the angioedema involving the GI tract includes abdominal pain, nausea, vomiting, diarrhea and/or ascites. There have been nine previous case reports of ACE inhibitor induced angioedema of the small bowel. CT of the abdomen demonstrating small bowel edema can suggest the diagnosis. The time between starting the medication and the onset of GI tract symptoms has been reported to range from a few hours to four months, but in most cases is less than seven days. The patient in this case was started on benazepril two months prior to the first episode of the abdominal pain. Failure to think of this diagnosis can result in delay of diagnosis and unnecessary procedures, such as exploratory

laparoscopy and even bowel resection. No prior case reports have included angiotensin inhibitor level measurements during the acute episode. Angioedema of the GI tract caused by ACE inhibitors is probably underdiagnosed and underreported. It should be considered in all patients taking ACE inhibitors who present with the typical abdominal symptoms.

RECURRENT EPISODIC CHEST PAIN IN A WOMAN WITH INFERTILITY. L.N. Dyrbye[1]; C. Rohren[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #101799)*

LEARNING OBJECTIVES: Learning objectives 1. Clinical recognition of catamenial hemothorax 2. Treatment of catamenial hemothorax
CASE: 40 year old woman presented with two days of dull, non-pleuritic right chest pain aggravated by recumbency on the right side, with associated dyspnea. She reported monthly chest pain since 1993. No fever, chills, or cough. Her period started five days ago. The patient's past medical history included infertility and right-sided hydropneumothorax in 2001 with biopsy proven pleural and peritoneal endometriosis and diaphragmatic fenestration on thoracotomy. Diaphragmatic repair and chemical pleurodesis were performed. On exam, her vital signs were normal. Lung sounds were diminished over the right upper lung. Chest x-ray showed a small, right-sided hydropneumothorax. After consultation with thoracic surgery, the patient elected to undergo hormonal treatment.
DISCUSSION: Catamenial thoracic syndromes (CTS) are rare. Clinically, women between 30–34 years of age present with chest pain and dyspnea that starts within the first two days of menstrual flow. Hemoptysis is rarely reported. Chest radiograph commonly shows right-sided pneumothorax, occasionally hemothorax, and rarely nodules. [1] [2] Long-term therapy involves suppression or removal of existing endometrial plaques and prevention of further plaque development. Hormonal suppression with oral contraceptives, progesterone, GnRH, and danazol is unsuccessful long-term. CTS recur in up to 50%. [1] Surgical treatment includes removal of endometrial plaques and mechanical or chemical pleural abrasion. Resection of endometrial implants on the pleura and diaphragm, along with repair of diaphragmatic abnormalities have had variable short-term success. [2] [3] Chemical pleurodesis is more successful than hormones in preventing recurrence. [1] Regardless of the surgical method used, cyclical chest pain, however, may remain. [1] Surgery followed by GnRH to prevent recurrence and pain maybe the best option. [4]
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RECURRENT PARAPNEUMONIC PLEURAL EFFUSIONS AND WORSENING DYSPNEA IN A YOUNG WOMEN. N. Latif[1]; G.H. Tabas[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115832)*

LEARNING OBJECTIVES: Consider non-pneumonic causes of dyspnea and pleural effusion in a patient with a history of pneumonia.
CASE: A 34-year-old Caucasian woman with a history asthma, reflex sympathetic dystrophy and obesity was referred from another institution because of recurrent bilateral pleural effusions one year after an episode of pneumonia. Her symptoms included worsening dyspnea, pleuritic chest pain and a 100-pound weight loss. Physical examination showed bilaterally decreased breath sounds and ankle edema. Her chest x-ray revealed bilateral pleural effusions and computerized tomography of the chest revealed a small pericardial effusion and no pulmonary embolism. Examination of the pleural fluid showed it was transudative and pulmonary function testing demonstrated restrictive lung disease. An echocardiogram showed a normal ejection fraction and a dilated inferior vena cava. Abdominal ultrasound revealed dilated intrahepatic ducts and hepatic congestion. Right heart catheterization showed equalization of the right ventricular diastolic pressure and the pulmonary diastolic pressure. The pulmonary capillary wedge pressure was 20 mmHg. The patient had symptomatic improvement after pericardiectomy and pathologic examination revealed fibrosis and hyalinization.
DISCUSSION: Post-pneumonic pericarditis is a rare complication of pneumonia but important to diagnose. The major categories of constrictive pericarditis are idiopathic, post-radiotherapy and post-cardiac surgery. Infectious causes account for only 6% of cases of constrictive pericarditis. Patients with constrictive pericarditis usually present with congestive heart failure but rarely with cardiac tamponade. Classic clinical sign are increased jugular venous pressure, peripheral edema, pulsatile liver, pulsus paradoxus, Kussmauls sign and pericardial knock. Diagnostic testing includes electrocardiogram showing low voltage and echocardiography showing pericardial effusion and pericardial thickening. Computerized tomography of the chest shows pericardial thickening. Right heart catheterization reveals equalization of right-sided pressures. The treatment is pericardiectomy.

RECURRENT SYNCOPE AS A RARE SYMPTOM OF MASTOCYTOSIS. A.T. Czajka-Giermasz[1]; W.N. Kapoor[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116571)*

LEARNING OBJECTIVES: 1) to recognize systemic mastocytosis (SM) as a rare cause of syncope 2) to manage patients with SM.
CASE: A 44-year old white female was transferred to the MICU after her fourth episode of syncope. Three weeks prior, she experienced sudden onset of flushing followed by severe lightheadedness and palpitations. Her husband found her unresponsive and incontinent of feces. When paramedics arrived 20 minutes later she was hypotensive, tachycardiac, confused, and could not follow commands. Initial work-up revealed normal EKG, head CT, chest CT, echocardiogram, CBC and electrolytes. One week later, while eating dinner, she felt flushed and dizzy, and slumped to the floor, losing consciousness. Cardiac catheterization, tilt-table test, electrophysiologic studies, thyroid studies, urine metanephrines, 5-HIAA, and serum serotonin levels were normal. She continued to intermittently experience flushing and headache. Her third episode of syncope, preceded by flushing, nausea, and vomiting, occurred a week later. After admission she had another severe episode of prolonged and profound hypotension with syncope, requiring transfer to the MICU. At that time the history of urticaria pigmentosa in her daughter was obtained, and the patient was found to have dermatographism on physical examination. Abdominal CT scan, brain MRI, VIP, and cortisol were normal. She had elevated serum histamine, tryptase, and urine histamine levels. Bone marrow biopsy revealed increase in mast cell numbers, with aggregates of spindle-shaped mast cells, consistent with SM. Treatment with cromolyn, H1-blocker, and H2-blocker was started. She continued to experience symptoms, and required massive doses of montelukast, H1 and H2-blockers, and cromolyn for adequate symptomatic control.
DISCUSSION: Mastocytosis is a disorder of mast cell proliferation. Intense vascular collapse is caused by spontaneous, or induced mast cell degranulation, and release of vasoactive madiators like histamine, prostaglandin D2, and leukotriens. Loss of consciousness is usually accompanied by prodromal symptoms of flushing, palpitations, and lightheadedness. Patients also can experience pruritus, gastrointestinal and neurologic symptoms. In the absence of characteristic skin lesions, diagnosis is difficult, but should be suspected in the patient with unexplained hypotensive episodes and flushing. The evaluation of the patient with suspected SM includes skin inspection, measurement of markers of mast cell activation, and bone marrow biopsy. There is no current cure for SM. Successful treatment of symptoms may require massive doses of H1 and H2-blockers, steroids, montelukast, and cromolyn.

RENAL ARTERY STENOSIS IN A PATIENT WITH UNCONTROLLED HYPERTENSION. T.T. Tran[1]; L.B. Lu[2]. [1]Baylor College of Medicine, Houston, TX; [2]Baylor College of Medicine, Friendswood, TX. *(Tracking ID #116996)*

LEARNING OBJECTIVES: 1) Recognize the importance of workup for secondary causes of hypertension. 2) Review the presentation, diagnosis, and treatment options of renal artery stenosis.
CASE: A 50-year-old man with a ten month history of hypertension and chronic renal insufficiency presented with sudden onset of severe shortness of breath and diffuse diaphoresis. He had been admitted 6 times for similar symptoms due to hypertensive urgencies despite being on multiple antihypertensive agents. On this admission, his vital signs revealed BP 248/108, HR 85, RR 16, and temperature 98.1 F. Physical examination was unremarkable. Specifically, there were no papilledema, abdominal bruits, or peripheral edema. Blood work was significant for Cr of 1.9, which was at his baseline. Due to his history of multiple admissions with hypertensive urgencies, the patient underwent a workup for secondary causes of hypertension that showed no evidence of hyperaldosteronism, thyroid disease, pheochromocytoma, or Cushing's syndrome. A renal ultrasound revealed a small left kidney of 8 cm and a normal-sized right kidney of 11 cm. Subsequent renal arteriogram showed total occlusion of the left renal artery and 90% stenosis of the right renal artery. After undergoing an angioplasty with stent placement in the right renal artery, his blood pressure came under better control.
DISCUSSION: Secondary hypertension accounts for 5–10% of hypertensive cases. Features suggesting of secondary hypertension include age at onset <30 or >55, abrupt onset, > stage 3 (160/100) hypertension, and resistance to effective medical therapy. Causes include renal insufficiency, renal artery stenosis, coarctation of the aorta, aldosteronism, Cushing's syndrome, pheochromocytoma, and thyroid disease. Renal artery stenosis accounts for 0.2 to 4% of all hypertension cases and can be due to atherosclerosis (70%) or fibromuscular dysplasia (30%). Renal arteriography is the diagnostic gold standard. The captopril test has a sensitivity of 79% and specificity of 89%. Renography after captopril has sensitivity and specificity of about 85%. Duplex ultrasonography achieves sensitivity and specificity of about 90%. Both spiral computed tomographic angiography and gadolinium-enhanced three-dimensional magnetic resonance angiography are excellent noninvasive diagnostic tests with sensitivity and specificity of about 95%. There is not a specific recommended screening non-invasive test for renal artery stenosis; the clinical index of suspicion should determine the degree of evaluation. Angioplasty or surgery has been shown to modestly improve blood pressure, but not renal functions in the presence of renal insufficiency. In summary, refractory hypertension should warrant the work up for secondary causes.

RENAL TUBERCULOSIS. C. Patel[1]; M. Taswin[1]; V. Bengualid[1]. [1]St. Barnabas Hospital, Bronx, NY. *(Tracking ID #117555)*

LEARNING OBJECTIVES: In USA and New York State, Genitourinary Tuberculosis is the fourth most common form of extrapulmonary tuberculosis. It represents 6% of all EPTB.

It is easily overlooked as it usually presents with symptoms of a bacterial pyelonephritis. Key presentation includes recurrent urinary tract infections despite treatment or sterile pyuria. Imaging studies (plain film, CT scan, IVP, or USG) can show calcification, ureteral dilation or obstruction. Diagnosis made by: AFB stain/culture from urine or biopsy (sensitivity 43,3% and specificity 100%) or PCR of MTB DNA in urine (sensitivity 53.8% and specificity 96.5%).

Renal involvement includes: tubulointerstitial nephritis, stricture/obstruction, calcification (24–50%), cavitating disease, with progression to renal failure. Calcification of the kidney can be identifiable as renal or ureteric stone in up to 19% of cases. It can mimic a neoplasm, as it can spread to outside the renal capsule and produce a mass lesion.
CASE: A 73 year old Hispanic HIV-negative male with a history of recurrent urinary tract infections and bilateral staghorn kidney stones was admitted for evaluation of weight loss, fever and abdominal pain. He was found to have a pansensitive ***Proteus mirabilis*** UTI and was started on Levofloxacin.

A CT scan of abdomen showed bilateral staghorn calculi with obstruction and left hydronephrosis. He underwent placement of left percutaneous nephrostomy tube from which pus also grew pansensitive ***Proteus mirabilis***. Renal scan then was performed, showing non-functioning left kidney. A decision to do a left nephrectomy was made. Pathology of the left kidney showed extensive necrotizing granulomatous nephritis with a few AFB and marked pyonephrosis. AFB culture of the pus was negative.

With these findings, PPD was placed (was negative), sputum and urine AFB smear and culture were negative. Chest X-ray showed bilateral apical pleural thickening and a left pleural effusion which was tapped. About 400 cc of exudative fluid with lymphocytosis was obtained. AFB culture and cytology were negative.

Started on tuberculosis treatment and the patient showed clinical improvement.
DISCUSSION: Although renal TB is an uncommon cause of progressive renal failure, it is potentially preventable and easily treatable. Diagnosis depends on the physician considering the possibility of TB and obtaining appropriate specimens for culture.

If TB is found early as the cause of obstruction, this may prevent unnecessary nephrectomy or late complication of chronic TB infection that includes metaplasia that may be a potential risk factor for squamous cell carcinoma.

RENAL TUBERCULOSIS AND CHRONIC RENAL INSUFFICIENCY: CHICKEN OR EGG FIRST?! J. Schrader[1]; J. Sheila[1]; B.L. Houghton[1]. [1]Creighton University, Omaha, NE. *(Tracking ID #116526)*

LEARNING OBJECTIVES: Learning objectives: 1. Recognize that after lymphnodal involvement, most common form of nonpulmonary tuberculosis is genitourinary disease. 2. Recognize that 26–75% of renal tuberculosis coexists with active pulmonary tuberculosis. 3. Identify renal tuberculosis as one of the rare causes of chronic renal insufficiency, and that chronic renal insufficiency can predispose to renal tuberculosis.
CASE: Patient is a 57 year old Native American male who presented with generalized swelling and progressive dyspnea of 4 months duration. He denied fever, chills, night sweats or urinary symptoms. He had chronic dry cough, fatigue and weakness. Past medical history included diabetes mellitus, hypertension, rheumatoid arthritis (on steroids) and he was a recovering alcoholic. Approximately a year ago he was treated for culture negative pyuria with antibiotics. He had history of positive PPD 10 years ago, untreated. On admission, he was afebrile, and vital signs were stable. He had palor and significant bilateral pitting edema. JVP was not elevated. Heart exam was unremarkable. Chest exam revealed small bilateral pleural effusions and bibasilar rales. There was no hepatosplenomegaly or free fluid in the abdomen. Initial labs showed hemoglobin 10.5 gm%, WBC 9.7, BUN 82 mg/dl and creatinine 3.3 mg/dl. Urinalysis was positive for protein >500 mg/dl, WBC 25–50, RBC >100 and hyaline/fine granular casts. Pulmonary edema was noted on Chest Xray. Ultrasound of the kidneys suggested intrinsic renal disease without hydronephrosis. He was admitted, treated initially with diuretics. His renal failure and dyspnea worsened requiring initiation of hemodialysis. Chest films showed worsening infiltrates. Further workup showed positive AFB in sputum, urine and stool confirmed as Mycobacterium tuberculosis. Rectal biopsy ruled out amyloidosis. He was started on antituberculous therapy. Despite maximal therapy his condition continued to decline. After detailed family discussion, it was decided to take patient home with hospice, but continue ATT.
DISCUSSION: Genitourinary tuberculosis is the most common form of extrapulmonary tuberculosis after lymphadenopathy. Renal involvement occurs through hematogenous spread from a primary focus (most common being lungs) and is usually bilateral. Predisposing conditions of renal tuberculosis include diabetes, chronic renal insufficiency, steroids and alcoholism (all four present in our patient). Renal tuberculosis can present as sterile pyuria, or as chronic interstitial nephritis (biopsy shows granuloma and caseation), amyloidosis and end stage renal disease. Given the patient's treatment for sterile pyuria in the past, it is uncertain if he had insidious onset of tuberculosis starting then or whether chronic renal insufficiency predisposed to tuberculosis.

RETINAL HEMORRHAGES AND PAPILLOEDEMA IN PSEUDOTUMOR CEREBRI PRESENTING WITH SUDDEN OF LOSS VISION. A. Devarajan[1]; P. Patel[1]; A. Varadarajan[1]; E. Floranda[1]; C. Castillo[1]; C. Rathnakumar[1]; R. Jayachandran[1]. [1]Jersey City Medical Center, Jersey City, NJ. *(Tracking ID #116491)*

LEARNING OBJECTIVES: A benign process affecting the brain which appears to be, but is not a tumor. It is characterized by increased intracranial pressure and normal brain ventricle size. There is no evidence of tumor, infection, and blocked drainage of the fluid surrounding the brain or any other cause. The major symptoms of pseudotumor are increased pressure within the skull (increased intracranial pressure—ICP). The cause for the condition itself is unknown, and the diagnosis is made when other health conditions are ruled out.
CASE: A 24 year old African American female with no toxic habits, and no known medical problems except extreme obesity (BMI 44) presented with sudden loss of vision in both the eyes, headache, nausea, and vomiting for one day. She denied dizziness, loss of consciousness, seizure, photophobia, neck pain, tingling, numbness and weakness of extremities, Review of other systems, family and social history were normal. She denies any medication including oral contraceptive pills. Physical examinations including neurological examination were normal except fundus showing bilateral papilloedema and retinal hemorrhage in both eyes. Initial working diagnosis Pseudo tumor cerebri was made in view of the sudden loss of vision in young obese female with no significant past medical history including medications like oral contraceptive pills with benign neurological examination. Initial CBCD and serum chemistry were normal. Lumbar puncture showed an opening pressure of over 550 mm of water and a closing pressure of 210 mm of water. 15 cc of CSF was removed during lumbar puncture. The CSF was clear, Glucose 80 mg, protein 20 mg, no WBC and RBC. CSF stains and culture were negative for pathogens. Patient was started on Acetazolamide. Patient relieved of her headache, nausea and vomiting and regained partial vision after 24 hrs and complete vision in 6 days. Patient continued to have residual papilloedema and hemorrhages in left eye.
DISCUSSION: Significance of clinical suspicion of Pseudotumor cerebri to be entertained in any young obese female patients presenting with sudden loss of vision, nausea, vomiting, and headache with no co-morbid conditions and no clinical evidence of any other causes. Early institution of diagnostic and therapeutic lumbar puncture to relieve intra cranial pressure and medical management with acetazolamide helps to prevent permanent visual damage. Our case demonstrated clinical evidence of Pseudotumor cerebri with papilloedema, and retinal hemorrhages and early diagnostic and therapeutic intervention restored the vision within a few days, though the retinal changes remained unchanged for some time.

RHABDOMYOLYSIS: AN UNUSUAL PRESENTATION OF HYPOTHYROIDISM. M. Derakhshani[1]; J. Huang[1]. [1]Louisiana State University Medical Center at Shreveport, Shreveport, LA. *(Tracking ID #115705)*

LEARNING OBJECTIVES: 1) Recognize rhabdomyolysis as a rare presentation of hypothyroidism. 2) Emphasize the importance of history.
CASE: A 50 year old African-American female with no past medical history initially presented to emergency room with a complaint of bilateral leg pain associated with lower back pain progressively worsening for the past 3 months. Her symptoms did not respond to a course of NSAIDS prescribed for "arthritis" by her local primary care physician. She described the pain as dull, primarily in the lower back and both legs, constant throughout the day and not related to physical activity. She reported ambulating and performing activities of daily life without difficulty. She also denied any recent history of vigorous exercise, over-ingestion of alcohol, or use of cocaine. Upon further history, she admitted to cold intolerance, easy fatigue, and 20 lb weight gain within the past 3–4 months. Her physical exam was unremarkable except for decreased deep tendon reflexes. Musculoskeletal exam revealed normal tone, strength, and bulk in all muscle groups. Laboratory data were significant for normal electrolytes, normal renal function, elevated AST of 145 U/L (14–36) and ALT of 63 U/L (9–52) with normal alkaline phosphotase of 46 U/L (38–126), decreased hematocrit of 31.4% (34–46), and elevated serum creatine phosphokinase (CPK) of 16,000 U/L (30–135). Urine analysis showed large blood on dipstick with only 10–20 RBC/HP suggesting myoglobinuria. Serum myoglobin was elevated at 549 ng/ml (19–56). Further workup included ANA, viral hepatitis panel, and urine drug screen which were all negative. Evaluation of thyroid function revealed low T3 of 0.15 ng/ml (0.45–1.37), low T4 of 1.01 microg/dl (4.5–12.0), and elevated TSH of >100 microU/ml (0.47–5.01) which confirmed the diagnosis of hypothyroidism. After the initial intravenous fluid infusion, patient was followed in outpatient clinic with thyroxin replacement. Her symptoms resolved and her CPK gradually normalized. Her renal function remained normal throughout the course.
DISCUSSION: Muscle involvement in adults with hypothyroidism is common and includes stiffness, myalgias, and mild weakness. However, overt rhabdomyolysis is quite rare with only a few reported cases. The exact mechanism of rhabdomyolysis remains unclear. This case suggests that rhabdomyolysis is a rare, but potentially serious complication in hypothyroidism. It can be one of the initial presenting manifestations in undiagnosed hypothyroidism. High index of suspicion and a thorough history, combined with readily available thyroid function test, are essential for diagnosis. Earlier diagnosis in this case might have prevented the indiscriminate use of NSAIDS that could have resulted in renal dysfunction.

RHABDOMYOLYSIS AS A DRUG INTERACTION BETWEEN SIMVASTATIN AND NEFAZADONE: INCREASING EVIDENCE. H.L. Korlakunta[1]; S. Dodla[1]; R. Kizer[1]; S. Gonzalez[1]. [1]Creighton University, Omaha, NE. *(Tracking ID #115719)*

LEARNING OBJECTIVES: To recognize rhabdomyolysis as an adverse reaction of concurrent use of simvastatin and nefazodone. We emphasize this by presenting, to our knowledge the fourth reported case of myopathy or rhabdomyolysis caused by concurrent use of these drugs.
CASE: A 59-year-old white male was admitted to the hospital for sudden-onset of severe back and lower extremity pain, weakness, and dark urine. He had no history of recent trauma or prolonged heat exposure. He had a history of hyperlipidemia and depression, and was taking simvastatin 80mg orally once daily and nefazodone 150 mg orally once daily. Three weeks prior to admission, his simvastatin dose was increased from 40 mg to 80 mg orally once daily. On admission, laboratory studies revealed elevated creatine kinase (CK) at 26,862 IU/L, elevated liver transaminases, elevation of serum creatinine to nearly twice baseline, and urine sediment consistent with acute tubular necrosis. Urine analysis demonstrated hematuria and positive urine myoglobin. Erythrocyte sedimentation rate (ESR), antinuclear antibody (ANA), CMV and EBV serologies and thyroid stimulating hormone were normal. White blood cell count was normal, and patient was afebrile. Simvastatin and

nefazodone were discontinued, and the patient was treated with IV hydration. The patient's CK, liver transaminases, and urine sediment normalized with resolution of his symptoms over the course of one week. He remained asymptomatic at 2 and 6-month follow-up examinations, and CK, liver transaminases, and serum creatinine were normal.
DISCUSSION: Although myopathies and elevated liver transaminases are recognized as common side-effects of HMG-CoA reductase inhibitors, susceptibility to rhabdomyolysis is significantly increased by interactions with offenders such as cyclosporine, itraconazole, and some macrolide antibiotics. These drugs inhibit the CYP3A4 enzyme family pathway, as does nefazodone. This pathway metabolizes simvastatin. Inhibition of the CYP3A4 pathway leads to increased levels of active statin metabolites, which increases the risk of myopathies and rhabdomyolysis. The risk for rhabdomyolysis may be dose-dependent. The increasing number of case reports of rhabdomyolysis associated with use of nefazodone and simvastatin along with known interactions between simvastatin and other CYP3A4 inhibitors suggest that the combination should be avoided if possible. Though this drug combination may be tolerated at certain doses, an increase in the simvastatin dose may lead to rhabdomyolysis, as was demonstrated in the above case.

SARCOIDOSIS OR RIGHT HEART FAILURE? OR BOTH? C. Leggett[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117483)*

LEARNING OBJECTIVES: 1. Recognize that the presenting feature of chest pain and shortness of breath in a patient with sarcoidosis may represent worsening right heart failure.
CASE: A 37 year-old woman with a past medical history of sarcoidosis presented with worsening shortness of breath and chest pain when walking only one block. She had associated nausea and dizziness without syncope or diaphoresis; all symptoms were relieved by rest. She had a right ventricular heave, but the remaining examination was normal. Her CXR showed an enlarged cardiac silhouette and patchy infiltrates. An echocardiogram revealed a pulmonary artery pressure of 70 mmHg with poor right ventricular function. Left ventricular function was preserved. A chest CT confirmed stage III sarcoidosis. She was started on prednisone. She was discharged with home oxygen and a diagnosis of cor pulmonale secondary to her pulmonary sarcoidosis.
DISCUSSION: Physicians should consider the possibility of cardiac sarcoidosis in any patient with a known history of sarcoid or in an otherwise healthy young person who develops arrhythmias, conduction disease, or heart failure. A diagnosis of cardiac sarcoidosis is difficult to diagnose without positive endomyocardial biopsy, and biopsy is only 20% sensitive as lesions are often not confluent. There are several tests that can help to define cardiac involvement. Patient's with granulomatous infiltration of the myocardium can present solely with heart failure but there is also an increased incidence of arrythmias or conduction abnormalities. An ECG or 24-hour holter monitor can detect if these abnormalities are present. In a few patients with cor pulmonale, as suspected in this patient, right ventricular hypertrophy regresses when the pulmonary disease is improved with long term corticosteroids.

SATURDAY NIGHT FEVER. E. Chuong[1]; S. Shaw[1]; N. Feldman[1]. [1]UCLA/San Fernando Valley Program, Sylmar, CA. *(Tracking ID #116965)*

LEARNING OBJECTIVES: 1. Identify fever of unknown origin (FUO) and common etiologies of FUO 2. Describe a systematic diagnostic approach to FUO 3. Recognize a rare case of intravascular lymphoma as a cause of FUO
CASE: A 47 year-old woman with hypertension and untreated latent tuberculosis (TB) presented with 2 weeks of myalgia, arthralgia, weakness, fever, and confusion. Her physical exam was significant for a temperature of 39.7°C, waxing and waning mental status, and a II/VI systolic murmur. Initial laboratory data was notable for WBC 4,000 cells/uL, hemoglobin 8 g/dL, platelets 29,000 cells/uL, unrevealing peripheral blood smear, LDH 6046 U/L, ESR 60 mm/hr, D-dimer <5 ug/mL, fibrinogen 378 mg/dL, and troponin-I 21.8 ng/mL. Her chest radiograph suggested pulmonary edema, and she was intubated for respiratory distress. CT and MRI scan of her head revealed ischemic changes; CT scan of her chest indicated mutifocal pneumonia; CT scan of her abdomen and pelvis demonstrated hepatomegaly with splenic infarct. Lumbar puncture, CSF studies, echocardiogram, and bronchoscopy failed to demonstrate underlying disease. Bone marrow biopsy revealed normocellular reactive tissue. The patient continued to be febrile throughout her two-week hospitalization despite a negative evaluation for malignancy, hematological disorder, infection, and collagen-vascular disease. Multiple studies were repeated, but all remained undiagnostic. Broad-spectrum antibiotics, fluconazole, and anti-TB medications were empirically started. The patient also received corticosteroids at stress and pulse doses for presumptive collagen-vascular disease. Her critical illness required multiple blood product transfusions and prohibited nuclear medicine scanning, further biopsies, and exploratory laparotomy. The patient was diagnosed postmortem with intravascular natural killer T-cell lymphoma.
DISCUSSION: Peterdorf and Beeson defined a fever of unknown origin in 1961 as a temperature greater than 38.3°C on several occasions, illness duration longer than 3 weeks, and uncertain diagnosis despite 1 week of inpatient investigation. Common causes of FUOs in the adult population are malignancy, infection, and collagen-vascular disease. The evaluation of an FUO begins with a detailed history and regular physical exams to identify probable sources of FUO. Basic diagnostic testing should include complete blood count with differential, serum chemistries and cultures, urinalysis and culture, applicable immune and serological studies, tuberculin skin testing, and chest radiographs. Additional serum testing, noninvasive imaging, radionucleotide studies, and invasive procedures including biopsies may be helpful in the appropriate clinical context. Five to fifteen percent of FUOs are undiagnosed despite exhaustive studies. Therapeutic trials of antimicrobials and corticosteroids do not substitute for a carefully directed investigation for the underlying cause of an FUO but may be warranted in cases of severe illness.

SAVING MY LIFE, BUT BREAKING MY HEART B. Anderson[1]; J. Wiese[2]. [1]Tulane, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117386)*

LEARNING OBJECTIVES: 1. Recognize metabolic abnormalities associated with protease inhibitors. 2. Increase awareness of the association between HIV-positivity and ischemic heart disease.
CASE: A 43 year-old man presented with one hour of left-sided chest pain that radiated to the left arm. The chest pain occurred the day of admission while walking to work. He was diagnosed with HIV fourteen years prior, and a history of untreated hyperlipidemia that developed after instituting HIV therapy. He began treatment for HIV in 1995 with a regimen including a protease inhibitor. His CD4 count and viral load two months prior to admission were 504 cells/mm3 and <50 copies/mL. He denied any family history of heart disease. His medications included efavirenz, lamivudine/zidovudine, and lopinavir/ritonavir. His vital signs and physical exam was normal. An EKG revealed ST-segment elevation in leads V2–V6. His initial serum troponin-I was 0.20 ng/ml. A percutaneous coronary intervention was immediately performed, demonstrating a 70% stenosis of the proximal left anterior descending artery. A stent was placed to the lesion with resultant TIMI 3 flow.
DISCUSSION: Metabolic abnormalities associated with protease inhibitors include hypertriglyceridemia, hypercholesterolemia, and diabetes mellitus. As patients with HIV live longer, physicians should be cognicsent of these side effects of antiretroviral therapy that can lead to accelerated atherosclerosis and increased myocardial risk. In this way, chronic HIV infection is similar to diabetes as a comorbidity that predisposes to heart disease. Because patients with HIV are increasingly living longer, coronary disease should be aggressively pursued in this patient population.

SCLERITIS AS A PRESENTING MANIFESTATION OF WEGENER'S GRANULOMATOSIS. Y. Ozawa[1]; J. Blank[1]. [1]UCLA—San Fernando Valley Program, Sylmar, CA. *(Tracking ID #116296)*

LEARNING OBJECTIVES: (1) Recognize scleritis as a manifestation of Wegener's Granulomatosis (WG). (2) Review the various ocular and oral presenting symptoms of WG.
CASE: A 64 year old Guatemalan female presented to the ER with eye pain and decreasing visual acuity for two months. One year ago she developed red, painful eyes which were treated with antibiotics and cortisone in her country. Six months later, her eye condition recurred resulting in bilateral corneal perforations. On review of systems in the ER, she reported anorexia and a 30 pound weight loss over the previous 6 months and recurrent rhinorrhea. She denied fever, cough, dyspnea, hemoptysis, joint pains or hematuria. On exam, both sclerae were erythematous and her left eye had an opacified cornea. A 3x1 cm ulcer was present on her lower anterior buccal mucosa with pronounced erythematous gingiva and gingival hyperplasia. The rest of her exam was unremarkable. Her labs were significant for a creatinine of 4.1 and urinalysis revealed microscopic hematuria. A chest X-ray showed right upper lobe and right middle lobe cavitary lesions as well as multiple left upper lobe nodules. A sinus CT demonstrated maxillary sinus mucosal thickening. A C-ANCA (proteinase-3) was found to be elevated at 13. The presence of three out of four clinical criteria (nasal/oral inflammation, abnormal chest radiograph and abnormal urinary sediment) and the positive C-ANCA was considered diagnostic for WG. Once infectious etiologies were ruled out, cyclophophamide was initiated with gradual resolution of her symptoms.
DISCUSSION: WG is a systemic vasculitis of the small arteries and veins. It typically involves the upper and lower respiratory tracts and the kidneys. The joints, eyes, mouth, skin, heart, and nervous system may also become involved. Eye involvement (52% of patients) may range from a mild conjunctivitis to proptosis, dacryocystitis, episcleritis, scleritis, and corneal ulcerations. Over 50% of patients diagnosed with scleritis are ultimately diagnosed with a connective tissue or vasculitic disease. Oral involvement (10% of patients) in WG may include mucosal ulcerations, gingivitis and gingival hyperplasia. Ulcerations are commonly found in the buccal mucosa and biopsy usually reveals necrotizing vasculitis. Gingiva may be strikingly red with white, yellow, or blue punctate lesions, clinically resembling over-ripe strawberries. Gingival biopsies reveal pseudoepitheliomatous hyperplasia, multinucleated giant cells, and inflammatory infiltrates, a constellation that is specific for WG. Most oral and ocular findings are nonspecific. However, scleritis, which is a common manifestation of systemic disease, may alert the clinician to early diagnosis and initiation of treatment.

SCLERODERMA UNMASKED: A CASE OF HYPERTENSIVE RENAL CRISIS. M. Hadian[1]; B. Taqui[1]; N. Marchetti[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116188)*

LEARNING OBJECTIVES: 1. Recognize the clinical manifestations of scleroderma and scleroderma renal crisis. 2. Recognize the importance of prompt treatment of scleroderma renal crisis. 3. Recognize treatment options for scleroderma.
CASE: A 44 year old Hispanic male with hypertension presented with one day of headache, chest pain, dyspnea and six months of progressive leg weakness, dysphagia

and post-prandial vomiting. Upon specific questioning, he also endorsed cold induced pain in his fingers. Exam revealed a thin young man with minimal facial expression. His blood pressure was 200/110. He had thickened facial skin and telangiectasia around nasolabial folds. He had papilledema with AV nicking and an S4 gallop. He had purple atrophic fingertips and thickened skin in the extremities. He had edematous lower extremities with 4–/5 proximal muscle strenth. Labs revealed BUN 42, Cr 5.7 (baseline 3.0), Hgb 9.5. His cardiac enzymes were negative. His urine showed protein >300 mg/dl, 4–10 RBC. Intravenous metoprolol, hydralazine and enalapril reduced his blood pressure to 160/85. Serologies revealed a ANA 1/1280 with nuclear pattern, normal C3 and C4, negative anti-Scl 70. Barium swallow revealed decreased motility. Sural nerve/quadriceps muscle biopsy showed sclerodermal neuropathy and myopathy. Echocardiogram showed LV hypertrophy, EF 45%, and increased pulmonary artery pressure. Subsequently, a kidney biopsy demonstrated severe arteriolosclerosis suggestive of malignant hypertension, as well as focal segmental glomerulosclerosis. The patient was diagnosed with scleroderma and discharged on enalapril, prednisone and nifedipine.
DISCUSSION: Scleroderma is a disorder characterized by fibrosis of the skin, blood vessels and visceral organs. Two major subsets are identified. The diffuse subset, characterized by the rapid development of symmetric skin thickening of proximal and distal extremities, face and trunk, is associated with visceral organ (heart, lung, kidney) involvement. The limited cutaneous subset, involving distal extremities and face, is associated with CREST syndrome (calcinosis, raynauds,esophageal dysmotility, sclerodactyly, telangiectasia). Scleroderma renal crisis is defined by acute worsening of renal function and is usually associated with abrupt onset of marked hypertension with retinopathy. Urine sediment is usually normal, or with mild proteinuria. Blood pressure control is the mainstay of therapy, with ace inhibitors as the agent of choice. Early recognition and treatment of the crisis can preserve renal function. Our patient's creatinine returned to baseline upon discharge. Renal crisis may unmask a diagnosis of scleroderma. Although there is no cure, patients with scleroderma may benefit from d-penicillamine, steroids, and calcium channel blockers.

SIMPLE HEART FAILURE OR SOMETHING MORE? S.Y. Chien[1]; J.H. Tillisch[2]. [1]UCLA San Fernando Valley Program, Sylmar, CA; [2]University of California, Los Angeles, Los Angeles, CA. *(Tracking ID #115658)*

LEARNING OBJECTIVES: 1. Recognize that the differential diagnosis of peripheral embolization and CHF symptoms includes atrial myxoma. 2. Recognize imaging modalities necessary for the diagnosis of cardiac tumors.
CASE: A 54-year-old woman was admitted with one month history of typical heart failure symptoms. Echocardiogram showed diffuse global hypokinesis and EF 20%. Because the etiology of her cardiomyopathy remained unclear, she was taken to cardiac catheterization. It showed nonsignificant coronary stenosis. She responded to initial treatment with diuretics. However, on additional questioning, she reported word-finding difficulty and that her right leg had become more painful and cooler to touch for the past four months. Eight months previously, she was found to have right renal artery occlusion on ultrasound with elevated creatinine. A current work-up for possible stroke ensued, including an MRI/MRA of the brain which demonstrated a recent ischemic infarction in the right cerebellar hemisphere and posterior MCA territory. A doppler ultrasound of the neck was negative. The stroke distribution suggested an embolic phenomenon, but TTE was negative. Thus, an MRI of the heart was performed, which showed a small round defect in the left atrium, with a bright rim. A TEE again confirmed a pedunculated mass, attached near the interatrial septum with 1-cm stalk and 1-cm irregular spherical portion, consistent with atrial myxoma. Irregular strands of swirling echoes were also consistent with thrombus formation.
DISCUSSION: Primary cardiac tumors are exceedingly rare. Three quarters of them are benign, nearly half are myxomas. Myxomas can occur in all age groups with a female predominence. Sporadic cases are more frequent, but familial cases have also been reported. These tumors usually develop in the atria, left more than right. Very rarely do they develop in the ventricles. These tumors also have an array of interesting clinical manifestations including systemic embolization involving the cerebral, retinal, renal, coronary, pulmonary, and abdominal aorta circulations. Myxomas commonly give rise to obstruction of cardiac filling. Signs of dyspnea, pulmonary edema, syncope, or sudden death may occur, mimicking mitral or tricuspid-valve stenosis. Rarely does one find predominant mitral or tricuspid insufficiency. Systolic or diastolic murmurs may be heard as well as pericardial friction rubs. The first heart sound is often loud and widely split. Laboratory findings might show anemia, thrombocytopenia, leukocytosis, and elevated ESR or CRP. EKG findings and routine chest films are often nonspecific. The introduction of echocardiography, CT, and MRI has greatly facilitated the diagnosis of cardiac tumors. Treatment of choice is surgical resection. It is usually curative. In any case, the systemic signs disappear after the tumor has been removed.

STENT PLACEMENT IN THE TREATMENT OF PULMONARY ARTERY STENOSIS SECONDARY TO FIBROSING MEDIASTINITIS. R. Satpathy[1]; C. Satpathy[2]; I.A. Khan[1]; V. Aguila[1]. [1]Creighton University, Omaha, NE; [2]SCB Medical College, Cuttack, Orissa. *(Tracking ID #115678)*

LEARNING OBJECTIVES: Fibrosing mediastinitis is a rare benign disorder caused by proliferation of acellular collagen and fibrous tissue within the mediastinum. Although many case are idiopathic, many (and perhaps the most) cases in the United States are thought to be caused by an abnormal immunologic response to Histoplasma Capsulatum infection. Affected patients are typically young and present with signs and symptoms of obstruction or compression of the superior vena cava, pulmonary veins or arteries, central airways, or esophagus. Pulmonary artery (PA) stenosis is an infrequent complication of fibrosing mediastinitis.
CASE: We report a case of 41-year-old male who presented with fever. On examination he was found to have cardiomegaly on chest x-ray and high ESR. The transthoracic echo (TTE) showed pericardial effusion, which eventually resolved on its own. At that time, it was thought to be viral in etiology. However, the patient continued to be symptomatic in terms of chest pain, increasing fatigue, dizziness and progressively increasing shortness of breadth with exercise over next 6 to 8 months. He had a repeat TTE done showing supra pulmonic stenosis. A transesophagial echo was obtained and suggested a mass compressing the pulmonary artery. The thoracic CT confirmed a 7×5 cm anterior mediastinum mass, which on biopsy was found to be granulomatous with fibrosing mediastinitis. AFB and fungal culture were negative. However, the serological test established the diagnosis of histoplasmosis. He had a cardiac catheterization done afterwards, which showed normal coronary arteries, SVC and pulmonary veins. His right heart pressures included right ventricle (RV) 37/4, main PA 37/7, right PA 13/7 and left PA 23/7. He had a large stent placed in the right pulmonary artery and post-stenting pressures were RV 33/5, main PA 31/8 and right PA 26/8. He has been asymptomatic since then.
DISCUSSION: Despite varied forms of pharmacologic treatment and surgical interventions, most previously reported patients with PA stenosis died of right heart failure as a result of severe pulmonary hypertension. Although the placement of stents has been described as successful treatment of congenital PA stenosis, there has been less description of PA stent placement for fibrosing mediastinitis. This article describes a patient who was moderately symptomatic from PA stenosis and has remained symptom-free for approximately 2 years now after treatment.

STEROID USE IN GLOMERULONEPHRITIS ASSOCIATED WITH INFECTIOUS ENDOCARDITIS. M. Lim[1]; C. Graeber[2]. [1]University of Connecticut, Farmington, CT; [2]New Britain General Hospital, New Britain, CT. *(Tracking ID #116110)*

LEARNING OBJECTIVES: Recognize corticosteroid as an option in the management of renal dysfunction secondary to glomerulonephritis associated with infectious endocarditis (IE) that does not improve with appropriate antibiotic treatment.
CASE: A 66 year old Caucasian male with history of DM II, CHF, pacer for sick sinus syndrome and atrial fibrillation presented with a 4 week history of night chills and 1 week history of raised, tender, red lesions on all extremities. PE showed temperature of 102.6oF; 1/6 systolic murmur at the tricuspid area; and tender, palpable purpura diffusely scattered over all four extremities, sparing the palms and soles. Laboratory showed creatinine of 2.3 mg/dl (1.0 mg/dl 4 months PTA), BUN of 53 mg/dl; proteinuria (1.5 g/24 h) and hematuria. Serologies were as follows: ANA, RF, ANCA, anti-GBM, cryoglobulin and HCVab were undetected. C3 and C4 were low. Blood cultures grew Streptococcus bovis. 2-D echo showed a 2×2 cm mass on the anterior leaflet of triculpid valve, sparing the pacemaker. Colonoscopy disclosed diverticulosis and non-neoplastic colonic polyps. The patient was treated with Ceftriaxone (2 g IV QD). Despite defervescence and sterile blood cultures, his renal function deteriorated with creatinine reaching 5.3 mg/dl on D22. Kidney and skin biopsy revealed focal necrotizing glomerulonephritis and perivascular inflammatory changes, respectively. Prednisone (60 mg/d) was introduced (D22) and creatinine dropped to 2.9 mg/dl on D29.
DISCUSSION: Glomerulonephritis complicates ~20% of endocarditis cases. Patients usually present with hematuria, red cell casts, variable degrees of hypertension and renal insufficiency. This condition resolves with appropriate antibiotic treatment. However, as in the case of this patient, a steady decline in renal function sometimes persists despite apparent sterility of blood cultures, leading to death or ESRD. Plasmapharesis and immunosuppressive therapy, alone and in combination have been reported in the literature as management for these cases. There have been 8 reported cases in which corticosteroids, along with antibiotics was shown to be effective in reversing azotemia, without compromising treatment of endocarditis. The rationale for steroid use is thought to be the suppression of immune reaction and immune complex formation since glomerulonephritis is believed to be secondary to the deposition of immune complexes in the glomeruli and injuries associated with this. This case report, in addition to the other reported cases in the literature, suggests potential benefit from steroid use in IE-related glomerulonephritis refractory to appropriate antibiotic treatment. The combination of rapidly progressive glomerulonephritis and palapable purpura may be particularly common in IE due to Streptococcus Bovis.

STREPTOCOCCUS AGALACTIAE PRESENTING AS A SARCOMATOUS MASS OF THE LOWER EXTREMITY. P.J. DiGiacomo[1]; G. Sokos[2]. [1]Allegheny General Hospital, Sewickley, PA; [2]Allegheny General Hospital, Pittsburgh, PA. *(Tracking ID #117390)*

LEARNING OBJECTIVES: To recognize the peripheral embolic manifestations of endocarditis. To recognize the risk factors for Group B Steptococcal infections. To recognize a rare cause of endocarditis in a healthy individual.
CASE: This is the case of a thirty-seven-year-old woman who presented with a painful mass lesion of the right lower extremity. The lesion had developed over the course of two to three weeks. On physical exam the patient had an eight centimeter by eight centimeter firm tender mass of the posterior distal right lower extremity. The remainder of the exam was normal. Computed tomography of the lesion suggested sarcoma or lymphoma as the likely diagnosis. Prior to a surgical biopsy being performed the patient presented to the emegency department with new onset seizure disorder. Evaluation of the patient at this time revealed multiple bilateral mass lesions of the brain. Given the suggestion of a more systemic process, cytology was performed on the lower extremity mass. This revealed gram positive cocci. Given the findings the patient underwent echocardiography revealing a large echogenic

lesion of the aortic valve. Six sets of blood cultures confirmed Streptococcus agalactiae as the causative organism. The periphreal embolic manifestations in this patient included abscess of the lower extrmity, multiple brain abscesses with new onset seizure, and an acute occlusion of the left superficial femoral artery. Because of persistant embolic events the patient underwent an expidited aortic valve replacement without further complication.
DISCUSSION: The common manifestations of endocarditis such as petechiae, Osler's nodes, Janeway lesions, and splinter hemorrhages were not present in this patient. The more striking large peripheral emboli created the morbidity in this patient. Streptococcus agalactiae is a causative organism of adult infections in the peripartum period. Chorioamnionitis, puerperal sepsis, endometritis, and urinary tract infection are the most frequent. Our patient had an uncomplicated NSVD four months prior to presentation. This was assumed to be the origin of her endocarditis. Risk factors for infecion at that time are failure to screen for Group B streptococcal disease, failure to initiate intrapartum prophylaxis, premature or prolonged rupture of membranes, prolonged labor, and delivery at less than thirty-seven weeks of gestation. Historically these risks did not apply to our patient. Risk factors for infection outside the genitourinary tract include immunodeficiency states and common medical conditions such as diabetes. Our patient had no such history. A history of acquired heart disease was also not present further highlighting this as an unusual case of endocarditis in an otherwise healthy patient.

STREPTOCOCCUS INTERMEDIUS CAUSING RECURRENT PNEUMONIAS. B.P Sankarapandian[1]; S.K. Thambidorai[1]; M. Bandara[1]; M. Ricardo-Dukelow[1]; S. Dhanireddy[2]; L. Preheim[1]. [1]Creighton University, Omaha, NE; [2]Creighton University Medical School, Omaha, NE. *(Tracking ID #115701)*

LEARNING OBJECTIVES: 1.Recognize Streptococcus Intermedius (Strep Int.) as a potential cause for recurrent pneumonias 2.Delineate risk factors associated with Strep Int. pulmonary infections 3.Emphasize the discordance between the clinical presentation and severity of illness.
CASE: 57-year-old male with a history of alcoholism and smoking has symptoms of cough and pleuritic chest pain. He had a history multiple pulmonary infections in the months prior to admission. These infections were treated with several courses of flouroquinalone and macrolide antibiotics. Despite the treatment the patient's condition did not improve and he was eventually diagnosed at another facility with loculated empyema. He refused inpatient therapy at that time and opted for continued outpatient therapy with oral antibiotics. He subsequently presented to our facility with progressively worsening dyspnea and pleuritic chest pain. Physical exam noted poor dentition with multiple dental caries, absent breath sounds and dullness to percussion over the right lower lung fields. Computerized tomography of the chest revealed right sided effusion with multiple fluid filled loculations. Thoracentesis drained 2000 cubic centimeters of exudative fluid. Pleural fluid cultures produced strains of Strep Int. The patient was then treated with intravenous clindamycin and his condition rapidly improved.
DISCUSSION: Strep Int. is a rare but well reported pathogen in producing a variety of abscesses in the body. There are several case reports identifying Strep Int. as a cause of pulmonary infections. This patient presented with recurrent pneumonias that were treated with standard antibiotics used for community acquired pneumonia. The patient subsequently developed empyema allowing us to identify the organism responsible for the recurrent infections. Appropriate treatment of pulmonary infections caused by Strep Int. will include the addition of antibiotics with anaerobic coverage. Physicians must be cognizant of the fact that patients with periodontal disease and alcoholism are susceptible to Strep Int. infection. Respiratory infections with Strep Int. are characterized by mild symptoms (without toxic features), the presence of predisposing factors (i.e., periodontal disease, alcoholism), thoracic empyemas and prolonged hospitalizations.

STRUMA OVARII PRESENTING WITH ASCITES AND AN ELEVATED CA-125 IN A PATIENT WITH KNOWN GOITER. N.M. Dookeran[1]. [1]Boston Medical Center, Boston, MA. *(Tracking ID #117524)*

LEARNING OBJECTIVES: 1) Recognize the variability in clinical features manifested by struma ovarii tumors. 2) Recognize that an elevated CA-125 level is not entirely specific to ovarian cancer.
CASE: This is a case of a 67-year-old woman with a history of chronic atrial fibrillation, mitral regurgitation and right heart failure who was admitted with complaints of four months of increasing abdominal girth, not responsive as in the past to her usual diuretic. She had also recently been diagnosed with hyperthyroidism secondary to a multi-nodular goiter and was being treated with methimazole. Physical exam revealed a cachectic woman with a small, palpable left thyroid nodule, no jugular venous pressure elevation, a heart exam consistent with atrial fibrillation and mitral regurgitation, and a normal lung exam. Her abdomen was distended and non-tender, with shifting dullness and a fluid wave. Her labs were significant for marked thrombocytosis, microcytic anemia and hyponatremia. TSH and liver function tests were normal except for an elevated INR due to warfarin use. Chest X-ray was normal. Abdominal CT scan revealed ascites, a 7.1×5.3 cm complex left ovarian mass and serosal thickening of the stomach, colon, omentum and gallbladder. The patient's CA-125 level was markedly elevated at 889 units/ml. However, ascites cytology was negative for tumor cells and the patient eventually underwent an exploratory laparotomy and left salpingo-oophorectomy. Pathology revealed a non-functional struma ovarii.
DISCUSSION: Struma Ovarii, a rare cystic ovarian teratoma, consists mainly of thyroid tissue and can vary widely in presentation—from being asymptomatic to having ascites and possibly pseudo-Meigs' syndrome. The current case, prior to surgery, was concerning for ovarian cancer. There have been few similar cases of struma ovarii presenting with an elevated CA-125 level. In addition, the co-existence of a multi-nodular goiter made this patient's case more unique. This, along with reports of struma ovarii occurring more often in countries where goiter is endemic, raises the question of whether there are genetic and/or environmental factors that predispose to both conditions.

SWEET'S SYNDROME. O.F. Osi-Ogbu[1]; R. Granieri[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115885)*

LEARNING OBJECTIVES: 1 To recognize the dermatologic manifestations of Sweet's syndrome 2 To recognize the potential association of Sweet's syndrome with malignancy 3 To recognize the essential role of skin biopsies in uncommon dermatosis
CASE: A 43 year old previously healthy male presented with a diffuse, vesicular, painful rash and fever of a day's duration. One month earlier, he was treated for an upper respiratory tract infection with azithromycin. Physical examination revealed a temperature of 38.2°(C), multiple erythematous 10–40 mm papulovesicular lesions, predominantly on his neck, shoulders, trunk, face and extremities. Laboratory studies revealed WBC 11.5 (85% neutrophils). The initial impression was disseminated herpes vs Sweet's syndrome. Culture was negative for herpes. A punch biopsy revealed neutrophilic infiltrates consistent with Sweet's syndrome. Chest CT showed a left lower lobe thyroid nodule. FNA was negative for malignancy.
DISCUSSION: Originally described in 1964 by Robert Sweet, Sweet's syndrome is characterized by the abrupt onset of tender, red to purple circinate plaques. The syndrome ranges from this classic presentation, occurring in young women after mild respiratory illness, to a more aggressive neutrophilic process that may be associated with inflammatory diseases or malignancy. Massive epidermal edema may produce a deceptively vesicular appearance. Ulcers and bullae are more common in malignancy associated disease. Sweet's syndrome demonstrates pathergy. Although the skin is the primary target organ, extracutaneous manifestations occur and include pulmonary infiltrates, proteinuria, hematuria and decreased GFR. The female to male ratio is 2–3:1. Several malignant and nonmalignant disease have been associated with Sweet's syndrome, including myelodysplasia, CML, AML, lymphoma, malignancy of the genital tract and upper respiratory infections. The presence of 2 major and 2 minor clinical findings are criteria for diagnosis. Major criteria include (1) abrupt onset of tender or painful erythematous plaques or nodules, occasionally with vesicles, pustules, or bullae and (2) predominant neutrophilic dermal infiltrates without leukocytoclastic vasculitis. The minor criteria are (1) antecedent respiratory or GI tract infection, vaccination or associated inflammatory disease, hemoproliferative disorders, solid malignant tumor or pregnancy (2) malaise and fever >38 (3) ESR > 20 mm, elevated C-reactive protein, segmented neutrophils and bands >70 %, leukocytosis > 8000, (4) excellent response to systemic corticosteroids. Skin biopsy is the main stay of diagnosis. Medical management includes prednisone (40–80 mg qd). Prognosis depends on the underlying cause.

SYMPTOMATIC HYPOMAGNESEMIA AND HYPOKALEMIA: A CASE OF GITELMAN'S SYNDROME COMPLICATING A THIRD TRIMESTER PREGNANCY. J. Baez-Escudero[1]; A. Samuels[1]; B. Taqui[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116184)*

LEARNING OBJECTIVES: 1. Recognize clinical manifestations of Gitelman's Syndrome. 2. Learn to differentiate Bartter's Syndrome from Gitelman's Syndrome. 3. Recognize possible complications of severe electrolyte disturbances during late pregnancy.
CASE: A 26 year old G1P0A0 Hispanic female with childhood Bartter's syndrome presented in her 32nd week of gestation with severe premature uterine contractions and threatened preterm labor. Prior to her pregnancy she was chronically hypokalemic and mildly alkalotic, but was well controlled with potassium supplementation and spironolactone. Spironolactone was discontinued during pregnancy. On admission, she had increased uterine activity and contraction frequency with mild changes in fetal heart rate. She had minimal cervical dilatation and effacement. Urinary and vaginal infections and other triggers were excluded. Her serum electrolytes were: Na 137, K 2.6, Cl 104, Ca 9.8, magnesium 0.4, phosphorus 3.2. Her serum pH was 7.45, and creatinine 0.8 mg/dL. After rapid intravenous repletion of magnesium and potassium, her contractions ceased. She contined to require electrolyte repletion and was discharged four days later. Prior to her pregnancy, she had not been severely hypomagnesemic. Two weeks later she delivered a premature 34 week old infant who had no electrolyte disturbances. The patient now requires both oral potassium and magnesium to avoid other systemic manifestations. A diagnosis of Gitelman's syndrome was clinically confirmed.
DISCUSSION: Classic Bartter's syndrome is an autosomal recessive disorder characterized by sodium wasting, hypokalemic metabolic alkalosis, hyperreninemic hyperaldosteronism with normal or reduced blood pressure, urinary concentrating defect, and hypercalciuria. It usually presents in infancy or early childhood. Gitelman's syndrome is a variant of Bartter's syndrome that is distinguished primarily by hypocalciuria and hypomagnesemia. Patients with Gitelman's syndrome usually present later in life (after age 6) and have milder symptoms. The defect is due to inactivating mutations in the distal tubule sodium-chloride cotransporter. Hypomagnesemia due to renal wasting is universally found in patients with Gitelman's syndrome. Women of childbearing age with this disorder are at risk for preterm delivery secondary to severe hypomagnesemia and hypokalemia, well known triggers for premature uterine contractions. It is unclear whether pregnancy exacerbates electrolyte wasting. Treatment includes potassium and magnesium supplementation as well as spironolactone.

TB OR NOT TB? THAT IS THE QUESTION. H. Ly[1]; M. Rotblatt[2]. [1]University of California, Los Angeles, Sylmar, CA; [2]UCLA SFVP-Olive View Medical Center Department of Internal Medicine, Sylmar, CA. *(Tracking ID #115714)*

LEARNING OBJECTIVES: 1. To recognize the presentation of Typhoid Fever. 2. To recognize the importance of this illness in undeveloped countries and returning travelers.
CASE: A 49 year old Hispanic male without significant medical history who returned from a 2 month field job in Mexico complaining of intermittent fevers and headache for 3 weeks. He also reported nightsweats for 1 week and a dry cough for 2 days. He had additionally lost 10 lbs from poor appetite over the past month. There were no GI complaints. He denied any sick contacts, TB exposure, unusual foods, smoking, or IV drug use. He did work near cattle, even witnessing the birth of a calf. His vital signs were T 38.9 C, BP 100/65, P 98, R 18, and O2 sat 98% on room air. He was diaphoretic and warm to touch on exam, but otherwise, his remaining physical examination was unremarkable. His WBC was 4.3 (N 83, L 14, M 3), Hb 12.1, Hct 35.8, and Plt 245. His chemistry panel was normal. His liver enzymes were: ALT 112, AST 97, Alk Phos 97, Tot bili 0.7. Chest X-ray was unremarkable. He was initially admitted to rule out TB and further evaluate this ill-defined illness. Considering his travel and exposure history, our differential included TB, community acquired pneumonia (CAP), malaria, hepatitis, brucellosis, and coccidiomycosis. Lymphoma was also considered. A battery of cultures and tests were sent. Meanwhile, he was isolated for TB and empirically treated with ceftriaxone for CAP. Over the next few days, he began to defervesce. Interestingly, he had a relative bradycardia for temperatures averaging over 39 C. His blood culture eventually grew Salmonella typhi, and his antibiotic was switched to levoquin. Within the next few days, he was discharged after full defervescence with marked improvement in symptoms and normalizing liver enzymes. His other tests were negative for TB, malaria, hepatitis, HIV, brucellosis, coccidiomycosis, and lymphoma.
DISCUSSION: Our case of Typhoid Fever exemplified the difficulty in a clinical diagnosis given its non-specific presentation. The symptomatology in our patient closely resembles the classic textbook description. Although our patient did not have the classic rose spot rash or hepatosplenomegaly, he did have relative bradycardia. Treatment of choice is a fluoroquinolone, but 3rd generation cephalosporins are also effective. While no longer common in developed countries, Typhoid fever is still prevalent in undeveloped countries where sanitation remains poor. Like TB, it is important to include in the differential diagnoses of unexplained fevers in travelers.

THE BLOOD CULTURE THAT ROTATED OFF SERVICE. S. Shaw[1]; M. Rotblatt[1]. [1]UCLA/San Fernando Valley Program, Sylmar, CA. *(Tracking ID #117005)*

LEARNING OBJECTIVES: 1) Recognize the prolonged diagnostic course for endocarditis due to HACEK organisms. 2) Recognize that discharging patients when all team members rotate off service can be hazardous. 3) Recognize the need for hospitals to have a back-up plan to follow-up positive blood cultures.
CASE: A 43 year old man with a history of DM presented to the ED complaining of left shoulder pain for two days after a fall. Vital signs were T 38.1, BP 102/42, RR 29, and HR 129. Physical exam was significant for rigors, right basilar rales, a 2/6 systolic murmur at the LUSB, 1+ pitting LEE, and generalized tenderness of the left shoulder. Labs were significant for WBC 18.6, Hb 6.2, Hct 17.9, Na 123, K 5.8, Cl 90, HCO3 21, Cr 1.1, glucose 503, and urinalysis with pH 5.0, 4 WBC and 5 RBC. The CXR demonstrated right hilar fullness. He was thought to have a UTI, a possible pneumonia, anemia of chronic disease based on previous workup, dehydration, possible type 4 RTA, and possible adrenal insufficiency…that is, until a TTE revealed a 2×2 cm vegetation on the right coronary cusp of the aortic valve with associated severe aortic insufficiency. Review of past laboratory results discovered a blood culture positive for Haemophilus aphrophilus taken two months earlier during hospitalization for new-onset diabetes, fever and elevated WBC. Repeat physical exam revealed embolic lesions on his toes and JVP 15 cm after hydration. Brain MRI showed evidence of septic emboli. He was diagnosed with infective endocarditis (IE) with embolic phenomena. He underwent valve replacement surgery and did well. On review of the previous admission, it was noted that the patient had been discharged at the end of June with blood cultures negative after 5 days; when the positive culture at 21 days was filed, the resident had graduated, the rotating intern had returned to his home hospital, and the attending had switched.
DISCUSSION: Prompt diagnosis of infective endocarditis (IE) is complicated by its myriad presentations. Of note, younger patients may present with heart failure with no prior cardiac disease; musculoskeletal complaints may be an early symptom in up to 40% of patients; and most patients with IE have an abnormal urinalysis. Furthermore, in 2-5% of patients with IE, no organism is isolated after three serial blood cultures. In cases with negative cultures, if there is high clinical suspicion, the HACEK organisms (H. aphrophilus, H. parainfluenzae, Actinobacillus actinomycetemcomitans, Cardiobacterium hominis, Eikenella sp., and Kingella sp.) should be suspected. However, blood cultures may need to be incubated for prolonged periods. In academic centers with multiple rotating team members, there is often no straightforward follow-up for results that become available after all members are off service. In some centers, the Infectious Disease service takes responsibility. Each hospital should have a plan in place to follow up positive cultures.

THE CASE OF THE LITTLE OLD LADY WHO WASN'T QUITE SWEET ENOUGH. J. Beversdorf[1]; J.L. Sebastian[1]; D. Torre[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #116777)*

LEARNING OBJECTIVES: 1) To recognize that insulinomas can present as a new diagnosis in elderly patients and 2) to recognize insulinoma as a cause of hypoglycemia even when sophisticated pancreatic imaging studies are normal.
CASE: An 82-year-old non-diabetic woman, a retired registered nurse, presented to the emergency room with symptoms of dizziness, cold sweats and visual changes. She was found to have a blood sugar of 42 mg/dl and administration of one amp of D50 promptly relieved her symptoms. The patient reported that she had experienced similar symptoms since 1998 and that her previous physician had prescribed treatment with prednisone to alleviate these spells. During the past year, her symptoms had increased in both frequency and severity. Upon admission to the hospital, the patient's vital signs and physical examination were essentially unremarkable. Initial laboratory studies revealed that the following tests were normal: urinalysis, blood urea nitrogen, serum creatinine and liver enzymes. Insulin and C-peptide levels were both elevated, glycated hemoglobin level was 5.5 and a sulfonylurea screen was negative. An abdominal MRI and endoscopic ultrasound to evaluate for the presence of an insulinoma did not reveal any pancreatic lesions. Early during the patient's hospital stay, she remained asymptomatic and her blood sugars ranged between 70 to 130 mg/dl. One morning, the patient suddenly experienced symptoms of sweating and palpitations. Her blood glucose dropped to 26 mg/dl and she became unresponsive. The patient promptly regained consciousness after receiving two amps of D50 and a continuous infusion of D10. Following this episode, the patient was scheduled for an exploratory laparotomy at which time a 1.6 cm lesion on the tail of the pancreas was found and removed. Histopathology revealed findings compatible with an insulin-secreting islet-cell tumor.
DISCUSSION: Severe hypoglycemia in the absence of diabetes, alcohol, exogenous administration of insulin or use of drugs which stimulate endogenous insulin secretion is thought to be quite uncommon. In the setting of spontaneous hypoglycemia, the diagnosis of insulinoma is highly suggested by the finding of elevated plasma insulin and C-peptide levels. Once an insulinoma is suspected, it is important to identify the tumor preoperatively as localization at the time of surgery may be quite difficult. Although the test characteristics of pancreatic imaging studies vary from institution to institution, the sensitivity of endoscopic ultrasound has been reported to be as high as 93%. This case emphasizes that clinical acumen and a high index of suspicion remain crucial to making an accurate diagnosis.

THE CASE OF THE STUBBORN SWOLLEN LEG. L.A. Blauwet[1]; A.K. Ghosh[1]. [1]Mayo Clinic College of Medicine, Rochester, MN. *(Tracking ID #115041)*

LEARNING OBJECTIVES: 1. Recognize May Thurner syndrome as an unusual etiology for deep venous thrombosis (DVT). 2. Discuss the approach to diagnosis and treatment of May Thurner syndrome.
CASE: A 71 year-old woman, status post repair of a left open tibiofibular fracture nine weeks previously, presented with a 2-day history of left lower extremity discoloration, pain and swelling. A duplex Doppler ultrasound revealed thrombus extending from the left external iliac vein proximally to the left femoral and popliteal veins distally. Physical examination revealed an extremely swollen and tender left leg that was dusky purple from the ankle to the groin. Pedal pulses were not palpable but were present using Doppler ultrasound. Unfractionated Heparin and Warfarin were initiated, and the patient was given narcotics for pain relief. Despite this, the patient's left leg showed no signs of improvement the following two days. Interventional radiology was then consulted. An inferior vena cavogram revealed findings suggestive of May-Thurner syndrome. Successful mechanical thrombectomy was performed and Urokinase was infused regionally. Follow-up venogram the next day revealed severe narrowing of the left common iliac vein and the left upper external iliac vein. Balloon dilation was performed and then a Wallstent was deployed in the external iliac vein. Symptoms quickly resolved. Plavix was given for one month, and then low dose aspirin was initiated. Warfarin was continued, with a target INR of 2.0–3.0. Hormone therapy was discontinued. Ongoing stent patency will be assessed by serial duplex Doppler sonography. Duration of anticoagulation treatment will be determined based upon sonographic findings.
DISCUSSION: May-Thurner syndrome (i.e., iliac compression syndrome) is the development of acute iliofemoral DVT by compression of the left common iliac vein against the spine and pelvic brim by the right common iliac artery. It occurs most commonly in 20–40 year-old women. Diagnostic ascending venography is essential to accurate diagnosis. Definitive treatment includes mechanical thrombectomy, catheter-directed thrombolytic therapy, and stent placement in the left common or external iliac vein. In our patient, additional risk factors for DVT included a 20-year history of hormone therapy and recent fracture. Poor resolution of leg swelling compelled us to look for an alternative etiology of DVT and seek thrombolytic therapy in this case.

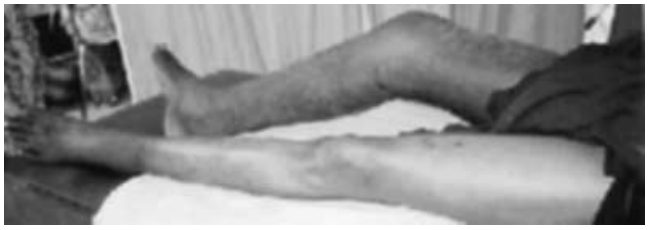
THE CRIMSON LUNG: A CASE OF WEGENER'S GRANULOMATOSIS. G. Agarwal[1]; R. Granieri[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115119)*

LEARNING OBJECTIVES: 1) Recognize the presentation of Wegener's Granulomatosis (WG) 2) Diagnose WG using clinical, laboratory, and histologic parameters 3) Recognize the treatment of WG
CASE: E.D. is a 23 y/o WM who was well until he noted diffuse myalgias and arthralgias two months prior to presentation. He subsequently developed discomfort and redness in both eyes and immeditaley prior to presentation, he noted a sore throat, rhinorrhea, and anorexia followed by dyspnea on exertion, fevers, and hemoptysis. He had no significant past medical history and was taking no medications. He was a ten pack year tobacco smoker and occasionally used cocaine and marijuana. Upon presentation, he was in respiratory distress and was intubated. His exam was notable for a temperature of 38.2(C), heart rate of 112, and respiratory rate of 22. He had diffuse coarse breath sounds but an otherwise unremarkable exam. His labs were notable for elevated creatinine, normochromic normocytic anemia, mild leukocytosis, markedly elevated sedimentation rate, and hematuria. A C-ANCA titer was

1:1280. The patient underwent a VATS procedure with biopsies revealing a granulomatous vasculitis consistent with Wegener's Granulomatosis (WG). He was begun on pulse IV steroids and cyclophosphamide, and subsequently tolerated extubation.
DISCUSSION: WG is a vasculitis of medium and small arteries that primarily involves the respiratory tracts and kidneys. Presenting symptoms include purulent/bloody nasal discharge, oral and/or nasal ulcers, polyarthralgias, and myalgias. Renal disease is common, being manifested by acute renal failure, hematuria, and proteinuria. The American College of Rheumatology proposed diagnostic criteria for WG (formulated prior to the availability of antineutrophil cytoplasmic antibody (ANCA) testing) which inlcude nasal/oral inflammation, abnormal CXR, abnormal urinary sediment, and granulomatous inflammation on biopsy of an artery. Two or more of these criteria yielded a sensitivity of 88% and a specificity of 92%. The diagnosis of WG is also suggested from circulating ANCA that are usually directed against proteinase 3 (C-ANCA). Nearly all patients with active WG have circulating ANCA. However, ANCA alone, including C-ANCA which is more specific for WG, does not appear to be sufficiently accurate to establish the diagnosis. The diagnosis is confirmed by tissue biopsy. Granulomatous inflammation and frank vasculitis are potential biopsy findings. Daily oral cyclophosphamide-corticosteroid therapy is the initial favored treatment. Once remission is induced, alternative regimens including methotrexate and azathioprine have been employed. Survival in untreated WG is poor, with up to 90% of patients dying within two years. Survival has significantly improved with the introduction of cyclophosphamide-corticosteroid therapy.

THE MAN WITH THE SWOLLEN LEG-A LESSON FROM A PRIMARY CARE HIV CLINIC IN UGANDA A.E. Torreblanca[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116547)*

LEARNING OBJECTIVES: 1) Recognize the causes of secondary lymphedema 2) Recognize Kaposi's sarcoma (KS) as a leading cause of cancer in sub-Saharan Africans 3) Recognize treatment limitations in sub-Saharan Africa.
CASE: A 42 year old male presented to the Reach Out Clinic in Kampala, Uganda complaining of swelling in his right leg. He first noted dark lesions on his feet 2 years prior to presentation. These lesions gradually spread to his groin and were associated with leg swelling. He did not know his HIV status but reported having 2 wives, one of whom died 2 years ago of tuberculosis. Examination of his right leg revealed non-pitting edema, numerous purple papules, and palpable inguinal nodes bilaterally. Serology was positive for HIV. He was sent to a public hospital where skin biopsy showed Kaposi's sarcoma. He was started on bleomycin and vincristine with minimal improvement. The clinic is currently trying to find a sponsor to pay for his antiretroviral therapy.
DISCUSSION: Non-pitting edema is generally due to lymphedema. Causes of secondary lymphedema includes lymph node trauma (surgery, radiation), malignancy (pelvic, KS), and infection (filariasis). KS is a common cause of lymphedema in sub-Saharan Africa. The four forms of KS are classic, endemic-African, organ transplant-associated and AIDS-related. In the era of AIDS there has been a 20-fold increase in the occurrence of KS in Uganda. Review of the cancer registry in Kampala from 1989–91 reported KS to be the leading cancer in males (48.6%) and the second most frequent (17.9%) in females. Treatment options for KS include local therapy (radiation, intralesional chemotherapy), and systemic chemotherapy (liposomal anthracyclines, bleomycin and vincristine). Although chemotherapy has proven effective in endemic-African KS, its effect on AIDS-related KS is limited. The widespread use of antiretrovirals (ARVs) in the western world has lead to a marked decline in new AIDS-related KS. In Uganda ARVs are only available to patients who can pay for the drugs or qualify for clinical trials. Patients with advanced KS are currently ineligible for the clinical trials underway in Uganda. The typical ARV regimen is Triommune (a generic combination of d4T/3TC/NVP). This regimen costs ~$26 per month; the typical Ugandan lives on less than $30 a month.



Lymphedema secondary to Kaposi's sarcoma.

THE MARDI GRAS HEART SYNDROME. L. Quan[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117502)*

LEARNING OBJECTIVES: 1. To recognize the clinical presentation of atrial fibrillation in the holiday heart syndrome. 2. To emphasize the treatment of atrial fibrillation. 3. To identify the indications and contraindications for anticoagulation in atrial fibrillation.
CASE: A 29 year-old man presented with palpitations. He denied chest pain, dyspnea, or any other associated symptoms. During his vacation to New Orleans, he went on a binge of over twenty cans of beer. His cardiac enzymes were negative and his TSH was normal. An EKG showed atrial fibrillation with PVC's and a heart rate of 112. The heart rate was controlled with diltiazem. He was ruled out for cardiac thrombosis with a TEE and subsequently successfully cardioverted to a normal rhythm. Because he refused coumadin, he was discharged on aspirin.
DISCUSSION: Moderate alcohol consumtion (7 to 11 drinks per week) is associated with decreased cardiovascular mortality. Consuming all eleven drinks on the same occasion, however, may lead to an alcohol hangover associated with increased adrenergic tone, myocardial work, and cardiovascular morbidity. Atrial fibrillation is the most common arrhythmia associated with the hangover period, found in up to 60% of binge drinkers with or without underlying alcoholic cardiomyopathy. Treatment consists of rate control with calcium channel blockers, beta blockers, or digoxin. Recurrent or persistent atrial fibrillation may necessitate anti-arrythmic medications or cardioversion, and long-term anticoagulation. In addition to arrhythmias, the alcohol hangover is associated with an increased c-reactive peptide and thromboxane B2, both markers of systemic inflammation. This inflammation, in concert with increased myocardial work, may explain the two-fold increased risk of myocardial infarction in patients who are frequently hungover. Physicians should advise their patients that there are unique harms associated with the alcohol hangover.

THE CASE OF THE FEVERISH FRENZY. C. Weaver[1]; J. Hefner[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116221)*

LEARNING OBJECTIVES: 1. Recognize a common presentation of Familial Mediterranean Fever (FMF) in an uncommon patient; 2. Diagnose, manage and treat FMF; 3. Recognize validation of a patient's symptoms is often of therapeutic significance.
CASE: A previously healthy 28 year-old female of Italian and Anglo-Saxon descent, presented to the outpatient setting complaining of intermittent fevers (37.8 to 39.5) and abdominal pain over 3 years. The patient frequently presented to the ED and was hospitalized 5 times. Emergent cholecystectomy and appendectomy were performed, with normal pathology. Six CT scans, one MRI, an angiogram, cystoscopy, CBC's, LFT's, blood and urine cultures, viral titers, lipase, porphyria evaluation, heavy metals, ANA, ds-DNA, complement levels and lipids were non-diagnostic. The only abnormalities were microscopic hematuria and beta-thalessemia minor. There was no pattern to the attacks and no exacerbating features. She had failed over-the-counter therapies and was taking no medications. She was well between attacks initially but became depressed over the past year. The frequency and severity of attacks and absence at work forced her to leave her job. She had been referred to psychiatric services on numerous occasions. Physical exam was unremarkable. Based on history, colchicine was started and she was instructed to obtain tests only during an attack. Several months later, after a tremendous response to colchicine, she had elevated LFT's, ESR, CRP and a leukocytosis upon presentation with abdominal pain and fever to 39.1.
DISCUSSION: FMF is an autosomal recessive condition manifesting in paroxysms of fever and severe abdominal pain. Primarily seen in persons of Mediterranean descent, it is also found in other groups, including Anglo-Saxons. Ten percent of patients present after the age of 20. The differential diagnosis includes acute surgical abdomen, acute intermittent porphyria, vasculitides/SLE, and relapsing pancreatitis/hypertriglyceridemia. Colchicine is the mainstay of treatment. A study published in 1991 determined that 72% of patients on colchicine averaged 1 attack in 6 months. Colchicine decreases the occurrence of amyloidosis, a serious consequence. FMF is primarily a clinical diagnosis; a reasonable evaluation includes a trial of colchicine and measurement of ESR, haptoglobin, CRP, and fibrinogen during an attack. FMF can be the cause of numerous ER visits, extensive laboratory testing and tremendous frustration for both patient and caregiver. High clinical suspicion is necessary and a PCP should handle management for optimal coordination of care. Validation of a patient's symptoms and distress can be of therapeutic significance and provide comfort in the setting of chronic disease.

THE SHOCKING CONSEQUENCE OF DISCONTINUING PHENYTOIN. B. Lee[1]; M. Rotblatt[2]. [1]UCLA-SFVP, Sylmar, CA; [2]UCLA/San Fernando Valley Program, Sylmar, CA. *(Tracking ID #115654)*

LEARNING OBJECTIVES: 1) To recognize antiarrhythmic properties of phenytoin. 2) To review treatment of recurrent ventricular tachycardia (VT).
CASE: A 68 year-old male presented to cardiology clinic with a complaint of multiple ICD firings. He had a single-chamber ICD placed 9 years previously for sustained VT which had been well controlled on chronic sotalol therapy with no ICD firings for the past 4 years. The patient denied chest pain, lightheadedness, or shortness of breath prior to firings. On further questioning, the patient had been taking phenytoin for seizure prophylaxis for an intracranial hemorrhage 4 years prior to admission, and had just been tapered off 3 weeks prior. Despite an increase in his dose of sotalol from 80 mg QD to 120 mg BID, the patient continued to experience firings of his ICD. He was subsequently restarted on phenytoin with complete resolution of ICD firings.
DISCUSSION: Sustained VT is defined as VT that persists for greater than 30 seconds or requires termination because of hemodynamic collapse. VT generally accompanies structural heart disease such as coronary artery disease, cardiomyopathies, right ventricular dysplasia, valvular heart disease, and heart failure. VT may also occur in the absence of structural heart disease as seen with metabolic disorders, Brugada syndrome, prolonged QT syndrome, or idiopathic VT. The prevention of recurrent VT includes drug therapy (with or without selection through programmed stimulation) as well as devices combining antitachycardia pacing with ICD. In our

patient, sotalol was started concomitantly with ICD placement in 1994 and phenytoin was started several years later for seizure prophylaxis. Though our patient had multiple risk factors for recurrent VT including a history of CAD s/p 4 vessel CABG, critical stenosis of his mechanical aortic valve, and heart failure (EF: 25%), the discontinuation of phenytoin appears to have caused the recurrent VT. Phenytoin is used mainly in the prophylactic management of tonic-clonic seizures and partial seizures with complex symptomatology. Moreover, phenytoin may be used for the prevention and treatment of seizures occurring during neurosurgery and in the treatment of status epilepticus. However, phenytoin is also a Class 1b antiarrhythmic, and an unlabelled use is in the treatment and maintenance of VT and paroxysmal atrial tachycardia, particularly in those patients who do not respond to conventional antiarrhythmic agents or cardioversion. Although phenytoin was started for seizure prophylaxis in our patient, it served a dual purpose as an antiarrhythmic as well. The VT was not well controlled despite increasing the sotalol dosage, and phenytoin was ultimately restarted with the desired effect.

THE UNFITTING PROSTHESIS. T. Tanabe[1]. [1]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #117100)*

LEARNING OBJECTIVES: 1) Recognize the importance of carfeful stump examination in diabetic patients. 2) Suspect limb- or life-threatening infections early and facilitate the diagnostic workup in diabetic patients.
CASE: A 63-year-old man presented with a pain at the left stump for three days. Past medical history included chronic obstructive pulmonary disease, systolic dysfunction and diabetes. The patient underwent below knee amputation of left leg in 1998. He noticed a dull pain 3 days prior to presentation when he was walking on prosthesis, which he had used for 4 years. He denied any trauma, fall or manipulation to the stump. His finger stick was under control until the pain started, and remained above 300. On physical exam he was afebrile, not in acute distress with blood pressure of 128/64, heart rate 74, respiratory rate 16, 97% saturation on room air. The stump had a narrow ulcer of 2 cm in length without discharge. There was no erythema or fluctuation around the lesion. Cleansing and sterile gauzes were applied. He was instructed not to wear the prosthesis until further notice and to return to clinic in three days. Laboratory findings at the first visit were within normal limits. On a subsequent visit, the patient presented with a more severe pain and reported foul odor from the stump. The exam showed a 2 cm sinus-tract formation extending medially to the left knee and the gauze was blood-tinged. The odor was distinctive immideately after removal of the gauze, which he changed with normal saline wet-to-dry dressing daily. The patient was prescribed oral amoxicillin/clavulanic acid and evaluated by the surgery that day, who performed debridement. After 10 days into treatment, he was evaluated again, when he reported no foul odor but the same severe pain at the stump. Bone scan was obtained and the result came back positive for osteomyelitis in the remaining tibia extending to the proximal femor. The patient was admitted to the surgery service for above knee amputation.
DISCUSSION: The regular stump examination is not recommeded as opposed to foot examination in diabetic patients. Peripheral neuropathy is present in over 80% of diabetic patients with foot lesions and the prevalence of diabetic foot ulcers has been estimated to be 3–8%. However, the prevalence of ulcer formation after amputations is not known. After diabetic patients undergo amputation, their risk of requiring a second amputation increases dramatically. Fever, chills and leukocytosis are absent in two thirds of patients with limb-threatening infection. Hyperglycemia is a common sign of limb- or life-threatening infection. It is imperative that clinicians maintain a high index of suspicion for serious infection when evaluating diabetic patients with sudden onset of uncontrolled hyperglycemia. Clinicians should also pay a close attention to the fitting of prosthesis and examine a stump regularly.

THIS RASH HURTS! J. Willis[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117522)*

LEARNING OBJECTIVES: 1. Identify the clinical presentation of herpes zoster. 2. Recognize the presenting symptoms that require intravenous therapy for herpes zoster.
CASE: A 26-year-old man presented with two days of a left-sided chest pain. The pain was constant, sharp and radiated to the left arm. He was admitted to the hospital for evaluation of acute coronary syndrome. His EKG's remained normal, as did serial troponin I's. The intense pain in the left lower chest continued with radiation now to the back. Two days following admission he noted an onset of the rash that he attributed to a recent contact with shrubbery. Over the next day, it progressed to a weeping, painful, pruritic rash along the left side of the lower chest. He noted associated fever and chills. His examination was normal with the exception of a vesicular rash along the T8 to T10 dermatome. There was exquisite tenderness to light touch along this same area. There were no ocular abnormalities and his lung examination was normal. His white cell count was 3,100 with 54% neutrophils; no bands. Remaining laboratory studies were normal.
DISCUSSION: Herpes zoster is a vesicular reactivation rash from prior exposure to the varicella virus. It frequently presents with a painful prodrome, with a subsequent vesicular rash that follows within the next forty-eight hours. Knowledge of the prodrome is important as other causes of chest pain can be falsely diagnosed. Excluding involvement of the ophthalmic branch of cranial nerve V is also important, as intravenous acyclovir is required to prevent corneal involvement and scarring. Hutchinson's sign is the appearance of vesicles on the tip of the nose, suggesting cranial nerve V involvement. The rash with herpes zoster is progressive, as if it is crawling along this skin (herpe- (L); to crawl). The dermatomal pattern is diagnostic and distinguishes zoster from other vesicular diseases (zoster- (G); girdle-like). The syndrome is also known as shingles, from the Latin, cingella; meaning girdle-like.

TOO YOUNG FOR AORTIC DISSECTION? J.L. Oyler[1]. [1]University of Chicago, Chicago, IL. *(Tracking ID #115741)*

LEARNING OBJECTIVES: 1. Recognize and treat aortic dissection in atypical patients. 2. Diagnose bicuspid aorta and manage complications like aortic dilation/dissection.
CASE: A 30 year old graduate student presents to Student Care with chest pain. One day prior to admission he experienced chest pain while on the exercise bicycle at the gym. Chest pain was sharp, substernal, non-radiating, 7/10, lasting seconds, pleuritic and associated with SOB. He had 2 episodes of syncope lasting seconds, precipitated by N/V. He denied diaphoresis, F/C/S, or viral symptoms. On physical exam he was afebrile, blood pressure in each arm was 105/80, pulse 96, RA sat 98%. He was a pale appearing male in mild distress due to pain. Cardiovascular exam revealed nl S1,S2 no M/G/R, lungs were clear, abdomen was benign, pulses were equal. Initial labs revealed normal CBC, BMP, LFT's, CK, MB, troponin, urine toxicology, RPR, ANCA, ANA and ESR. Initial EKG showed diffuse ST segment elevation, PR elevation in AVR. CXR showed widened mediastinum. CT scan showed pericardial effusion, anuerysmal dilation of the aortic root. Final diagnosis was made by TEE revealing bicuspid aortic valve, aortic dissection 3 cm above aortic root. He was taken to surgery, but had crushing substernal chest pain in the pre-op area and died of pericardial tamponade.
DISCUSSION: Aortic dissection is an unlikely diagnosis in a young normotensive male presenting with chest pain. In young patients predisposing factors for aortic dissection include: vasculitis, collagen vascular disease, bicsupid aortic valve, aortic coarctation, crack cocaine, and trauma. Although most aortic dissections present as chest pain, when associated with syncope most patients have Daily type A dissections involving the ascending aorta and increased incidence of tamponade and worse outcomes. CT, MRI, and TEE are all recognized as effective imaging techniques for aortic dissection. Treatment of aortic dissection includes blood pressure control and surgery to excise the intimal tear. Bicuspid aortic valve (BAV) is the most common congenital cardiac malformation. Males are affected 4:1. BAV is primarily diagnosed by echocardiography after presence of aortic ejection click +/– systolic ejection murmur is detected. Serious complications of valvular stenosis, regurgitation, infective endocarditis, and aortic dilation and dissection occur in >33% of patients with BAV. Accelerated degeneration of the aortic media, not valvular dysfunction, causes the vascular complications of BAV. Even when BAV is replaced by prosthesis, abnormalities in aortic media can cause aortic dilation. Antibiotic prophylaxis and blood pressure control are mainstays of therapy. Patients with BAV should be monitored by echocardiography at regular intervals. Once AI/AS, dilated aorta >4cm, increased LV size or decreased LV function occurs BAV patients should undergo surgery.

TRANSIENT LEFT VENTRICULAR APICAL BALLOONING: A NOVEL HEART SYNDROME. H.L. Korlakunta[1]; S.K. Thambidorai[1]; S. Denney[1]; I. Khan[1]. [1]Creighton University, Omaha, NE. *(Tracking ID #115715)*

LEARNING OBJECTIVES: To report a case of transient left ventricular apical ballooning without coronary artery stenosis, which mimics acute myocardial infarction with electrocardiographic changes and elevation of cardiac enzymes disproportionate to the extent of akinesia of left ventricle.
CASE: A 43-year-old white female with past medical history of hypertension and hyperlipidemia and family history of coronary artery disease presented with typical angina which occurred while she was giving a briefing to a large group. Her medications included hydrochlorothiazide and simvastatin. She was treated with sublingual nitroglycerin, morphine, and a beta-blocker with resolution of symptoms. Physical examination was unremarkable. Electrocardiogram showed minor non specific ST-T wasve changes and was negative for myocardial ischemia and injury. Laboratory workup revealed elevated serum cardiac troponin I (peak 2.03 ng/ml). Serum electrolytes were within normal limits. Coronary angiogram was performed which showed normal coronary arteries; severe distal anterior, apical, and distal basal hypokinesis; and ejection fraction of 25%. Echocardiogram reveled low ejection fraction, hypokinesis of apical segments of anterior, inferior, and lateral walls and distal segment of intraventricular septum. Repeat echocardiogram 3 days later showed improvement in regional wall motion abnormalities and ejection fraction rose to 45%. Subsequent electrocardiograms showed diffuse T-wave inversion with prolongation of QTc interval to 500 msec, which slowly reverted toward normal. The QTc interval before discharge was to 452 msec. The patient was discharged on a beta-blocker agent and an angiotensin-converting enzyme inhibitor and follow-up echocardiogram in 4 weeks was recommended.
DISCUSSION: A novel cardiac syndrome of left ventricular apical ballooning was recently described, which involves an acute onset of reversible left ventricular apical wall motion abnormalities with chest symptoms, electrocardiographic changes and minimal elevation of cardiac enzymes mimicking acute myocardial infarction. Patients have no angiographic evidence of coronary artery stenosis. There is complete recovery of left ventricular function in weeks. The precise etiologic basis of this syndrome is yet to be determined. Previous studies have indicated that triggering factors such as emotional exposure and physical stress may play a role in the pathophysiologic basis of this condition. This syndrome might be one of the clinical models of stress-related sudden death. Awareness of this syndrome is important because it mimics acute myocardial infarction and may inadvertently expose patients to futile administration of thrombolytic agents. In addition, since recurrence seems possible, there is need for prompt recognition and optimal treatment of this novel heart syndrome.

TRANSVERSE MYELITIS SECONDARY TO HERPES ZOSTER IN AN IMMUNOCOMPROMISED PATIENT. A. Halat[1]; J.T. Bates[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #116903)*

LEARNING OBJECTIVES: 1. Recognize the clinical presentation of transverse myelitis. 2. Review the appropriate evaluation and treatment of transverse myelitis.
CASE: A 70 year-old man with myasthenia gravis, status post thymectomy and now treated with azathioprine and prednisone, presented with progressive leg weakness, bowel and bladder incontinence, and skin lesions. He described a two week history of burning pain down the back of his legs. Examination revealed vesicles on the roof of his mouth and on his lower extremities. He had decreased strength and sensation in his bilateral lower extremities, absent reflexes at the knees and ankles bilaterally, and a positive Babinski sign on the right. Neither magnetic resonance (MR) nor computerized tomography (CT) imaging could be obtained. A lumbar puncture was performed, and the CSF revealed a negative gram stain, 112 white blood cells with 56% lymphocytes, an elevated protein of 120, and a glucose 48% of the serum value. Given the strong suspicion of a viral etiology, CSF was sent for herpes simplex (HSV) and varicella zoster (VZV) analysis by polymerase chain reaction (PCR). PCR demonstrated the presence of varicella zoster. Given this finding and the patient's clinical picture, it was felt that the patient had a transverse myelitis secondary to varicella zoster. The combination of the patient's myasthenia gravis and his immunosuppressive regimen was felt to have predisposed him to this infection.
DISCUSSION: Transverse myelitis involves progressive limb weakness with loss of tendon reflexes and a sensory level that is typically sudden in onset. While infection can cause transverse myelitis, it is not the only cause. Imaging with either MR or CT should first exclude myelopathy from a structural cause, such as a herniated disk, vertebral fracture, or malignancy. In the absence of structural causes, transverse myelitis can result from multiple sclerosis, systemic diseases such as Sjogren's syndrome and systemic lupus erythematous, post radiation changes, infarction of the spinal cord, and infection. In the absence of structural lesions, lumbar puncture should be performed to assess the degree of inflammation, document any infection, and to ascertain the presence of oligoclonal bands to assess for multiple sclerosis. Treatment depends on the underlying etiology, but if VZV or HSV is suspected, then empiric treatment with acyclovir should be started immediately while definitive PCR testing is pending. Unfortunately, in cases of transverse myelitis secondary to VZV the response to treatment is limited, and most patients do not recover full neurological function.

TROPICAL SPLENOMEGALY. S.C. Reddymasu[1]; S. Alla[1]; S. Schlanger[1]. [1]Creighton University, Omaha, NE. *(Tracking ID #116488)*

LEARNING OBJECTIVES: 1. Describe the common causes of massive splenomegaly in the sub-Saharan African immigrant population 2. Outline a cost-effective clinical approach to massive splenomegaly. 3. Discuss the treatment of tropical splenomegaly
CASE: A 35-year-old Sudanese woman who immigrated to the US 6 months ago reported abdominal discomfort, fatigue, and low-grade intermittent fever, particularly at night. She had no dyspepsia, hematemesis, melena, dysuria, or hematuria. She reported malaria episodes, one requiring hospitalization in 1992, and a subsequent episode 7 months ago. She denied kala azar, schistosomiasis, inborn errors of metabolism, and malignancy. Family history for leukemias and lymphomas were negative. Examination was remarkable only for massive splenomegaly. The platelets were 95,000. The hemoglobin was 12.8 gm/dl and she had 6,000 white cells with 8% eosinophils and 18% lymphocytes. Peripheral smear was negative. Hepatitis B core antigen was present. Urinalysis and urine -human chorionic gonadotropin were negative. Chest film was negative but computed tomographic scan of the abdomen was remarkable only for splenomegaly measuring 16 cm. Urine and stool examination for ova and parasites was negative. Total serum IgM was normal. Treatment began with chloroquine for presumed tropical splenomegaly.
DISCUSSION: This 35-year-old Sudanese immigrant with recurrent malaria presented with massive splenomegaly. Given her age and geographic background as well as the absence of evidence of hematologic dyscrasias and malignancy, and inborn errors of metabolism, we considered infectious etiologies. Schistosomiasis and kala azar were unlikely based on her clinical picture. Her presentation was consistent with chronic malaria syndrome—caused by low-grade antigenemia—or tropical splenomegaly—or hyperreactive malaria syndrome (HMS), thought to be caused by hyperfunctioning B-lymphocytes in response to malaria antigen present in blood. There is no clear-cut difference in diagnostic criteria or treatment between these entities. In malaria-endemic regions, they are the leading cause of splenomegaly (followed by lymphoma) when other entities cannot be demonstrated. Common tests done for HMS are serum IgM and antimalarial antibodies, but they are insensitive, nonspecific, and costly. Malaria parasite cannot be found on peripheral smear in HMS, though peripheral smear done every 8 hours over 3 days can show malaria parasite in chronic malaria; this is expensive and impractical. Consequently, a trial of weekly chloroquine for 6 months, checking for splenic regression (40%)—which is neither costly nor toxic, is advocated for massive splenomegaly in malaria-endemic areas with no obvious cause. Persistence of splenomegaly justifies evaluation for splenic lymphoma as well as assay for anti-leishmanial antibodies. Tropical splenomegaly should be treated given its association with splenic lymphoma and risk of hypersplenism.

TUBERCULOSIS LYMPHADENITIS: A PERSISTENT PAIN IN THE NECK. M. Lee[1]; A. Kosmin[1]; B. Taqui[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116178)*

LEARNING OBJECTIVES: 1. Recognize that tuberculosis (TB) lymphadenitis is still very common worldwide. 2. Recognize diagnostic and treatment strategies for TB lymphadenitis.
CASE: A 32 year old West African female with AIDS (CD4 334) and previously treated latent TB presented with four month history of progressive weakness and intermittent fevers/chills. She also complained of headaches, anorexia and weight loss, night sweats, nonproductive cough, nausea and post-tussive vomiting. One year prior, she had visited West Africa for several months. On exam, she had rectal temperature 103.5 and pulse 111. She had a 5×5 cm nontender mass at the anterior superior aspect of her right neck. She had 3/6 systolic murmur at the left apex. Lab data revealed WBC 5.4, Hgb 10.1, platelets 148. CXR, CT head and lumbar puncture were normal. Urine and blood cultures for bacteria, fungi and mycobacteria, serologies for Bartonella hensalae, and malarial smears were all negative. Echocardiogram and CT abdomen/pelvis were normal. Fine needle aspiration of the right neck mass revealed lymphoid cells (some atypical), epitheloid cells, RBCs and necrosis. Smears were negative for organisms, fungal elements and acid fast bacilli. After much debate, the patient was discharged on a four drug regimen for a presumptive diagnosis of TB lymphadenitis. Five weeks later, she was readmitted for enlarging painful neck mass. Surgical exploration revealed an underlying cervical abscess and lymph nodes that were positive for acid fast bacilli staining. Pathology showed granulomatous lymphadenitis with areas of necrosis. Cultures grew pan sensitive M. tuberculosis.
DISCUSSION: Tuberculous lymphadenitis remains a common cause of extrapulmonary TB worldwide. In developing nations, it causes 43% of peripheral lymphadenopathy. In the United States, 5.4% of TB is extrapulmonary, and 31% of these cases are lymphatic. Clinical presentation depends on the site of nodal involvement and the immune status of the patient. Immunocompetent patients present with an isolated chronic, nontender lymphadenopathy. Immunocompromised patients present with systemic symptoms and disseminated disease. The diagnosis of TB lymphadenitis is suggested histologically with necrotizing or caseating granulomata and confirmed with culture data from a lymph node biopsy. Fine needle aspiration (FNA) is safe and inexpensive but has sensitivity of 60–70% due to sample error. Excisional biopsy, the gold standard, is required if FNA is non-diagnostic. There is no consensus as to whether surgical excision is sufficient to treat TB lymphadenitis. Therefore, all patients are treated with a multidrug regimen, initiated prior to pathologic confirmation. Treatment regimen and duration are similar to that of pulmonary TB. Relapse rates of up to 3.5% have been reported.

WHY CAN'T MY PATIENT HEAR ME?. J.M. Weiss[1]; J.M. Sosman[1]. [1]University of Wisconsin Medical School, Madison, WI. *(Tracking ID #117050)*

LEARNING OBJECTIVES: 1. Identify extraintestinal manifestations of Ulcerative Colitis (UC). 2. Recognize that there is a well-documented association between sensorineural hearing loss and UC.
CASE: A 57 year-old man presented to his local MD with back pain. He was treated with Valdecoxib, but subsequently developed oral ulcers thought to be secondary to this medication. Two months later, he was found to have elevated liver function tests during a life insurance evaluation. Initial workup with viral hepatitis serologies was negative. Over the next three months, he developed a recurrent throbbing headache, jaw pain, and vertigo with nausea and vomiting. He was admitted to his local hospital. His workup included a normal head MRI/MRA but identified a microcytic anemia (Hct 35.5, MCV 80) with guaiac positive stools, a WBC 11.1 K, a Plt 440 K, an ESR of 116, and a CRP of 5.3. His temporal artery biopsy was negative. He began to complain of left sided earache and hearing loss and was transferred to our facility for evaluation. He was diagnosed with an acute idiopathic sensorineural hearing loss. He also complained of eye "floaters" and was found to have anterior iritis/uveitis. A liver biopsy to evaluate his abnormal LFTs (ALKPhos 523, GGT 1231, AST 23, ALT 37) revealed a possible small duct sclerosing cholangitis. Finally, his colono-scopy revealed quiescent colitis in the rectum, chronic inflammation in the left colon, and evidence of previous ulceration in the right colon. Although our patient never had problems with diarrhea—he was diagnosed with UC based on the above constellation of extraintestinal manifestations.
DISCUSSION: Ulcerative Colitis is an inflammatory bowel disease (IBD) involving the mucosal layer of the colon. UC is typically characterized by recurrent episodes of crampy abdominal pain and diarrhea (often bloody), however, patients may present in a variable manner. Extraintestinal manifestations are common and can occur in up to 25% of patients with UC or Crohn's IBD. These manifestations include reactive arthropathy (up to 20%), axial arthropathy, uveitis and episcleritis, skin lesions (erythema nodosum or pyoderma gangrenosum), and primary sclerosing cholangitis (2-5%). Of these, uveitis, axial arthropathy, and primary sclerosing cholangitis can occur at any time without active colitis. Sensorineural hearing loss has a well-documented association with UC and the relationship is speculated to be of autoimmune etiology (the prevalence of autoimmune disorders occur in up to 10% of UC patients). Once recognized, immediate treatment with steroids with or without immunosuppressive therapy is essential to prevent irreversible hearing loss. Our patient was started on high-dose oral steroids, but unfortunately continues to have significant hearing loss, tinnitus, and disequilibrium.

UNUSUAL NEUROLOGIC COMPLAINTS: CONSIDER MULTIPLE SCLEROSIS. N. Lischner[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116995)*

LEARNING OBJECTIVES: 1) Recognize signs and symptoms of multiple sclerosis. 2) Diagnose multiple sclerosis using history, physical exam and central nervous system (CNS) imaging.
CASE: A 34 year old black male presented to his PCP with a six month history of progressively worsening diplopia, clumsy gait, and episodes of extreme fatigue. A

few weeks prior to presentation, he also developed slurred speech. All symptoms seemed exacerbated by hot baths and physical exertion. He denied pain, paresthesias, dysesthesias, bowel or bladder changes, weakness, and vision loss. Remainder of ROS was negative. Physical exam was notable for slightly slurred speech, normal visual acuity, left eye adductor weakness, and bilateral hyperreflexic (3+) DTRs in the biceps, triceps, patella, and Achille's tendon without clonus. Exam also revealed a subtle gait disturbance, bilateral (L > R) dysmetria on finger-to-nose testing, and bilateral deficits on heel-to-shin testing. The remainder of his exam was normal, including negative Lhermitte's and Romberg signs. Brain MRI revealed extensive T2-weighted hyperintense lesions throughout the corpus callosum, periventricular white matter, deep and subcortical white matter, as well as left pons and middle cerebellar peduncle, consistent with a primary demyelinating disease such as multiple sclerosis. No gadolinium enhancement to suggest an acute demyelinating process was noted.
DISCUSSION: Multiple sclerosis (MS) is a chronic neurologic disease of autoimmune axonal demyelination. Symptoms include fatigue, bowel, bladder, or sexual dysfunction, motor weakness or spasticity, paresthesias, dysesthesias, ataxia, dysarthria, diplopia, vision loss, gait disturbance, balance problems, vertigo, and pain. Uhtoff's phenomenon, which is exacerbation of symptoms when the ambient body temperature is raised, is reported by some patients. Signs include optic neuritis, ataxia, dysarthria, dysmetria, internuclear ophthalmoplegia, clonus, dystonia, hyperreflexia, motor and sensory deficits. Lhermitte's sign, which is the sensation of electric shock in the extremities when the neck is flexed, can sometimes be elicited. Diagnosis of MS requires the presence of CNS lesions separated in time and site. Imaging the CNS can rule out alternate etiologies, such as infection or neoplasm. Brain or spine MRI is the usual modality. If MRI shows lesions consistent with demyelination, it can support the clinical diagnosis of MS. T2-weighted hyperdensities are typically found in the periventricular white matter, corpus callosum, centrum semiovale, and less commonly in the deep white matter structures and basal ganglia. Lesions are hypointense or not seen at all on T1-weighted imaging. Gadolinium enhancement of lesions indicates active inflammation; enhancement usually remains for 4–8 weeks after lesions become active.

URINARY URGENCY AS THE PREDOMINANT SYMPTOM OF NEURO. TB S.G. Driscoll[1]; D.T. Fisk[1]; M. Schapira[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #115957)*

LEARNING OBJECTIVES: 1. Recognize urinary urgency and intermittent back pain as indicators for CNS evaluation in a patient with disseminated TB. 2. Diagnose neuro TB utilizing the most appropriate radiological testing.
CASE: A 23 year-old, HIV negative man presented to the ER complaining of back pain and neck mass. The pain and neck mass began one month prior and were accompanied by malaise, drenching night sweats and an 8-pound weight loss. History was notable for immigration from Mexico two years prior. After admission, fluid aspiration from the neck mass grew pan-sensitive mycobacterium tuberculosis. Chest radiograph demonstrated a subtle right middle lobe infiltrate; chest CT showed a cavitary lesion within the area of the infiltrate. CT did not reveal any spine or bone pathology. The patient was initiated on isoniazid, rifampin, pyrazinamide, pyridoxine, and ethambutol. For the next six weeks, clinic visits documented complaints of urinary urgency that had predated anti-tubercular medication initiation. Post-void residual was 30 cc; prostate exam and multiple neurological exams were normal. Thoracic CT with contrast again detected no spine or cord pathology. MRI with gadolinium, however, noted enhancing basal cistern meningies, cortical lesions suggestive of tuberculomas, and evidence of epidural phlegmon and abscesses along the entire length of the thoracic cord to L1, deforming and displacing the cord, highly suggestive of neuro-TB. Steroids were initiated, isoniazid was doubled from 300 to 600 mg daily, ethambutol was discontinued, and his symptoms resolved within 2 weeks of therapy. At no time did the patient have altered mental status, seizures, or focal weakness.
DISCUSSION: This case demonstrates the importance of maintaining a high level of suspicion for neuro-TB in a patient with known or suspected TB. Suspicion for CNS involvement should be prompted not only by classically described neuro-TB symptoms of meningismis, mental status changes and focal neurological deficits, but also by mild symptoms such as urinary urgency and back pain. Urinary urgency has not been described as a presenting symptom of neuro-TB, though urinary retention is a recognized complication of spinal cord TB and meningeal TB has been implicated in diabetes insipidus development. These symptoms should be recognized as indicators of potential CNS pathology and appropriate diagnostic maneuvers pursued. This case was also remarkable in that MRI demonstrated extensive disease in the face of very mild symptomatology, confirming the great sensitivity of MRI for detecting neuro-TB. Given the growth of immunocompromised and immigrant populations in the United States, and the global ascent of multi-drug resistant tuberculosis, detection and treatment of TB will be an increasingly important aspect of health care in the future.

VENTRICULAR SEPTAL RUPTURE IN A PATIENT WITH COCAINE ABUSE. K. Dyehouse[1]; V.T. Martin[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #115676)*

LEARNING OBJECTIVES: Recognize the clinic manifestations, diagnostic workup and management of ventricular septal rupture.
CASE: A 51-year-old male, with untreated diabetes and hypertension presented with dyspnea on exertion and lower extremity edema of two weeks duration. He also complained of PND and orthopnea. There was no history of chest discomfort, diaphoresis, nausea, vomiting, fever, chills or sweats. Physical exam revealed tachycardia, with a IV/VI systolic murmur best heard at left lower sternal border with radiation to the right sternal border, jugular venous distention, bilateral crackles to mid-lung fields, and pitting edema to the mid-thighs. Laboratory data included negative cardiac enzymes and troponin-T. The urine was negative for protein but positive for cocaine. Chest x-ray revealed cardiomegaly and pulmonary edema. His electrocardiogram demonstrated sinus tachycardia with right axis deviation, right bundle branch block and right ventricular hypertrophy. An echocardiogram showed a large pericardial effusion, a ventral septal defect and an apical ventricular aneurysm. Right heart catheterization revealed elevated pressures (81/13 mmHg) and an oxygen saturation step-up from 53% to 71% in the right ventricle. Coronary angiography revealed a total occlusion of the first marginal and right coronary arteries. These findings were presumed to be a result of a myocardial infarction possibly precipitated by recent cocaine abuse. The patient underwent a patch closure of his ventral septal defect and is doing well in follow-up.
DISCUSSION: Acute coronary syndrome is the most common cardiac pathology associated with cocaine abuse. Cocaine is attributable to approximately 25% of nonfatal myocardial infarction in adults ages 18–48. Ventricular septal rupture is a rare complication of myocardial infarction with an incidence of 1–3 percent. The incidence has decreased 10-fold with the advent of thrombolytics. Clinical manifestations include: chest pain, shortness of breath, hypotension, development of a holosystolic murmur at the lower left sternal border with a thrill. Rapid diagnosis is essential to optimize survival. Doppler echocardiogram is the diagnostic test of choice. Left ventriculography can also be diagnostic. Right heart catheterization is useful in differentiating between papillary muscle rupture and septal rupture. Treatment usually requires surgical intervention. Current guidelines of the American College of Cardiology—American Heart Association recommend immediate operative intervention on patients with septal rupture, regardless of their clinical status. Medical therapies in the interim consist of mechanical support with an intra-aortic balloon pump, afterload reduction, diuretics, inotropic agents and vasopressors. The mortality rate is extremely high. The 30-day survival rate is 47 percent versus 24 percent in surgically versus medically treated patients.

VERTIGO: THE IMPORTANCE OF THE PHYSICAL EXAMINATION. A CASE REPORT AND REVIEW OF THE LITERATURE. FS. Drescher[1]; D. Berz[1]; R. Weiss[1]; K. Mark[1]. [1]Norwalk Hospital, Norwalk, CT. *(Tracking ID #117401)*

LEARNING OBJECTIVES: Dizziness and vertigo are common symptoms of patients presenting to general internists. Though there are numerous etiologies for this complaint, a good history and physical can often identify the diagnosis.
CASE: 63 yo white male with 3 days of right-sided earache and vertigo. He had a history of recurrent otitis media, hearing loss and bilateral mastoidectomy as well as diabetes. Initial otoscopic examination suggested severe right-sided otitis externa and a perforation of the right tympanic membrane. No nystagmus was noted. An ENT specialist was consulted and treatment with topical eardrops, intravenous quinolones and oral meclizine was begun. The patient's earache improved slightly but his vertigo persisted. On reevaluation the patient noted that his symptoms were worsened when pressure was applied to his right external meatus, which also resulted in the development of a profound nystagmus (see photographs). When this finding was described to the ENT consultant, he felt that it represented "the fistula sign" and recommended a CT-scan. This showed destruction of the horizontal semi-circular canal and a discontinuity of the petrous apex and tegmen tympani (figure 2). He was referred for surgical repair.
DISCUSSION: This case demonstrates the importance of the history and physical examination in the evaluation of vertigo. Though there are several useful clinical signs for evaluation of the vertiginous patient, in this case the fistula sign was most helpful. This test is useful in examining patients with recurrent vertigo. A finger is applied to the external meatus, which causes a pulse of air-transmitted pressure. If nystagmus is induced in association with symptoms of vertigo, bony destruction of the inner ear is likely. Demonstration of this sign as illustrated in this case, can result in prompt radiologic evaluation and surgical referral

WAITING FOR THE T IDE TO TURN: EISENMENGER'S SYNDROME. D. Garrett[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117463)*

LEARNING OBJECTIVES: 1) Recognize the signs and symptoms of secondary polycythemia. 2) Recognize potential causes of secondary polycythemia. 3) Review effective treatment modalities for secondary polycythemia.
CASE: A 33 year-old man presented with four days of headache, dizziness, and shortness of breath. He had a history of double outlet right ventricle and surgical banding of the right pulmonary artery at six months of age. His exam was remarkable for a ruddy complexion, and a puritic rash on his head, neck, and trunk. His conjunctiva was bright red and he had cyanosis around the lips and ears. A holosystolic murmur was heard at the apex that decreased with hand-grip. His PMI was medially displaced. He had clubbing and cyanosis in all extremities. The hemoglobin was 19; the platelet count was 113; and the MCV was 77. By EKG, he had right-axis deviation with left and right ventricular enlargement. An Echo demonstrated a significant VSD.
DISCUSSION: As corrective surgery for congenital heart disease has become more successful, more and more patients are living long enough to present to the general internist's clinic. Physicians should recognize the signs of residual congenital heart

disease, and know the appropriate time for referral and how to manage expected complications. This patient illustrates the importance of the physician's vigilance in detecting the reversal of flow through a VSD (Eisenmenger's syndrome). The signs of cyanosis and erythrocytosis suggest the beginning Eisenmenger's syndrome that results as the right ventricle increases in size and mass due to chronic pressure overload from the left-to-right VSD. The intracardiac shunt leads to hypoxia and a resultant secondary polycythemia. Unlike primary polycythemia, this is not associated with splenomegaly and thrombocytosis. Although both disorders have an increased RBC mass, mast cell proliferation, plethora, and microcytosis, patients with secondary polycythemia have suppressed erythropoietin and thus have thrombocytopenia as opposed to a thrombocytosis. Treatment by phlebotomy is based on symptoms, and an effort to maintain a hematocrit below 45. Iron supplementation is indicated in patients with secondary forms of polycythemia, where as it is contraindicated in primary forms. Oxygen supplementation for relief of hypoxia is a mainstay of treatment plans for these patients.

WEGENER'S GRANULOMATOSIS: DIAGNOSTIC CHALLENGES IN EARLY STAGES. H. Khurana[1]; S. Chittivelu[1]; L. Cation[1]. [1]University of Illinois at Peoria, Peoria, IL. *(Tracking ID #115856)*

LEARNING OBJECTIVES: To recognize chronic sinusitis and rhinitis as the most common presenting symptoms for Wegener's Granulomatosis (WG). To underscore that a strong index of suspicion is required for early diagnosis. To recognize that simple tests like C-ANCA and nasopharyngeal biopsy can help establish an early diagnosis of WG and that prompt treatment may potentially arrest disease progression.
CASE: An 18 year old white male was transferred to our institution for evaluation and management of acute renal failure and cavitating pulmonary nodules. He sought medical attention for a one-week history of nausea, vomiting, anorexia, arthralgias and non-productive cough. His medical history was significant for chronic rhinitis, sinusitis and repair of perforated nasal septum. Examination revealed pallor and saddle nose deformity. Laboratory abnormalities included mild leucocytosis, elevated BUN, creatinine and ESR. Urine analysis showed hematuria and proteinuria. ANA and anti GBM was negative. The diagnosis of Wegener's Granulomatosis (WG) was confirmed with a positive C-ANCA and lung biopsy. Patient responded to cyclophosphamide and prednisone therapy.
DISCUSSION: WG is an uncommon disease with an estimated occurrence of 3/100,000 population. The age of onset varies from 5 months to 60 years with a median of 40 years. Less than 15% of the cases occur below the age of 20. There is a female preponderance in younger age groups, as compared to adults where the gender difference is not marked. The "limited form" of WG is confined to upper and/or lower respiratory tract whereas the "classic form" also involves the kidneys. Most patients seek medical attention for symptoms like chronic sinusitis and rhinitis. However, there is progressive involvement of the lungs and kidneys in majority of patients by the time the diagnosis is established. Diagnosis in early stages of the disease can be established by keeping a high index of suspicion and simple tests like C-ANCA and nasopharyngeal biopsy. Early diagnosis and prompt use of appropriate therapy can slow down and may even arrest the progression of this potentially fatal disease

WEIGHT LOSS IN A PATIENT WITH METASTATIC MELANOMA. E.A. Sastre[1]; C. Bates[1]. [1]Beth Israel Deaconess Medical Center, Boston, MA. *(Tracking ID #116976)*

LEARNING OBJECTIVES: 1) Recognize that new symptoms in cancer survivors often indicate common benign conditions as opposed to recurrent malignancy; 2) List manifestations of hyperthyroidism; 3) Define the association between hyperthyroidism and hypercalcemia.
CASE: A 53 year-old female with history of hypertension and metastatic melanoma presents with weight loss and diarrhea. She was diagnosed with melanoma which metastasized to the lungs and liver in 1994. Treatment with interleukin 2 resulted in complete remission. On presentation, she described a 13 pound weight loss, abdominal cramping, non-bloody diarrhea, and fatigue. She denied fevers or chills but noted pruritus. Physical examination was notable for a normal thyroid gland, a normal cardiopulmonary exam, and mild left lower quadrant abdominal tenderness. Concern for recurrent melanoma was raised; her metoprolol was discontinued as she thought it was causing fatigue. The patient subsequently developed palpitations and dizziness. Laboratory values revealed normal liver function tests, calcium 10.9, an undetectable TSH, T4 of 5.2, and a T3 of 622. The patient restarted metoprolol; symptoms improved. Thyroid uptake scan demonstrated diffuse increased uptake consistent with Grave's disease. She was started on methimazole. Parathyroid hormone level was suppressed and both PTH-related protein and Vitamin D levels were normal. Treatment normalized thyroid function tests and serum calcium.
DISCUSSION: Physicians may assume that new symptoms in patients with prior malignancy are secondary to disease recurrence. However, these patients are also susceptible to common benign illnesses, such as hyperthyroidism, which may present similarly to metastatic disease. Symptoms include weight loss, diarrhea, palpitations, anxiety, and heat intolerance. Physical examination may reveal tachycardia, fever, moist skin, thyroid gland irregularities, arrythmias, and brisk reflexes. Suppressed TSH and elevated levels of T4 and T3 confirm the clinical suspicion. The most common etiology of hyperthyroidism, Grave's disease, is an autoimmune disorder; antibodies directed against TSH receptors on the thyroid gland increase thyroid hormone synthesis and gland size. The patient classically presents with diffuse goiter (90%), ophthalmopathy (50%), and dermopathy (<5%). Grave's disease is diagnosed by diffuse increased uptake on radioactive iodide uptake scan. One of the less common manifestations of hyperthyroidism is hypercalcemia. Thyroid hormone stimulates bone resorption through action on T3 receptors on osteoblasts and osteoclasts. In addition, elevated IL-6 levels also stimulate osteoclast activity. Approximately 8% of patients with clinical hyperthryroidism have hypercalcemia that usually resolves with treatment of hyperthyroidism.

WERNICKE ENCEPHALOPATHY. F. Nahab[1]; H. Limkemann[2]. [1]University of California, Los Angeles, San Fernando Valley Program, Sylmar, CA; [2]University of California, Los Angeles, Sylmar, CA. *(Tracking ID #102043)*

LEARNING OBJECTIVES: 1. Recognize the clinical manifestations of Wernicke Encephalopathy (WE). 2. Consider WE as part of the differential diagnosis of any acute oculomotor dysfunction and/or ataxia. 3. Review the CT and MRI findings in WE.
CASE: A 53 year old Hispanic-German gentleman with a history of hypertension and hyperlipidemia presented with double vision and inability to walk without assistance for 12 hours. He denied any witnessed ALOC, headache, weakness, trauma or fever. The patient admitted to a 20+ year history of binge drinking with his last binge occurring 3 weeks prior. Family history was significant only for a grandfather who died of a stroke. On exam, the patient's blood pressure was 143/95. Although alert and oriented × 4, on neurological examination the patient was found to have an isolated right medial rectus palsy and an inability to converge. Otherwise, cranial nerves were intact. Strength was 5/5 in BUE and BLE with 2+ DTRs symmetrically. Vibratory sensation was intact. No ataxic extremities were noted. Patient's gait was broad-based but steady however on tandem gait marked ataxia was noted. Romberg test was negative. Hemoglobin was 13.1 with an MCV of 101.3. Total cholesterol was 239 and triglycerides were 613. Liver function tests and chemistry panel were normal. The differential diagnosis included stroke, WE and multiple sclerosis so the patient was started on IV hydration supplemented with thiamine, folate, and MVI while awaiting imaging. CT showed no evidence of mass, bleed, or midline shift. MRI findings on T1- and T2-weighted, FLAIR, and DW images showed no evidence of acute stroke but noted increased signal intensity of the mamillary bodies in the T2-weighted image and showed mild periventricular white matter changes consistent with microvascular ischemic disease. Within 12 hours of the patient's initial presentation, the medial rectus palsy had resolved, convergence was intact, ataxia on tandem gait had resolved, and patient was discharged home.
DISCUSSION: WE is a neurological syndrome that can include oculomotor dysfunction, ataxia and/or disturbances of consciousness that range from mild confusion to coma. Clinical features develop over a few days to weeks and result from a lack of thiamine. Neuroradiology findings on CT scan include hemorrhages of the mamillary bodies. MRI findings are best visualized on T2-weighted images and include hyperintensity of the mamillary bodies, periaqueductal area, hypothalamus, thalamus, cerebellum and/or cerebral cortex. Often, administration of high doses of thiamine may resolve symptoms though untreated WE may be fatal or result in permanent neurologic damage. Therefore, it is important to consider WE in the differential diagnosis of any acute oculomotor dysfunction, ALOC and/or ataxia so as to begin thiamine supplementation early.

WERNICKE'S ENCEPHALOPATHY FOLLOWING 5-FLUROURACIL THERAPY IN A WOMAN WITH BREAST CANCER. A. Byrnes[1]; L. Coberly[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #115619)*

LEARNING OBJECTIVES: 1. Diagnose and act quickly to reverse Wernicke's Encephalopathy. 2. Recognize the potential side effects of chemotherapeutic agents such as 5-Fluorouracil and treat prophylactically or monitor closely to minimize complications.
CASE: Medication side effects are often overlooked when patients develop serious illness. We present an unusual case of a complicated Wernicke's Encephalopathy (WE) in a patient with recent neoadjuvant chemotherapy including 5-fluorouracil (5-FU). A 52-year-old female with a history of infiltrating ductal carcinoma (T2NXM0) presented with altered mental status. Her physical exam was normal except for a decreased level of alertness and poor cooperation. She had recently been admitted with similar symptoms, and had a normal head CT, a normal brain MRI with gadolinium, and three lumbar punctures, which were negative (including cytology) except for elevated protein. EEG showed moderate generalized slowing with epileptiform discharges.
DISCUSSION: This admission, repeat EEG on dilantin therapy revealed moderate to severe generalized slowing without epileptiform discharges. Head CT was normal. Suddenly, the patient became apneic (3 breaths/minute) and required intubation. She had a repeat MRI, revealing enhancement of the mamillary bodies consistent with WE, changes which, in retrospect, were present to a lesser degree on her prior MRI. She was started on intravenous thiamine and had an immediate increase in her spontaneous respiratory rate to normal. Her cognitive function returned. Unfortunately, she developed line sepsis with bacteremia and fungemia leading to a critical illness polyneuropathy, which prevented extubation. WE, caused by thiamine deficiency, is characterized by a constellation of neurologic abnormalities including a global confusional state, disorientation and lethargy, nystagmus and truncal ataxia. Respiratory depression is uncommon. Typically, EEG reveals diffuse slowing, and CSF is normal except for elevated protein, as in our patient. 5-FU therapy increases the risk of thiamine deficiency, and hence WE, as it blocks the conversion of thiamine to its active metabolite thiamine pyrophosphate (TPP). Patients with deficiency of dihydropyrimidine dehydrogenase (DPD, the enzyme responsible for 5-FU metabolism) are at greater risk of this adverse effect of 5-FU. Cancer patients appear to be at increased risk for thiamine deficiency. At baseline, they tend to have low levels of thiamine, as evidenced by liver biopsy and bioassay. Cancer patients also appear to have an increased incidence (3%) of DPD deficiency, thus making them more susceptible to the adverse effects of 5-FU. Careful monitoring, and prophylactic thiamine administration can be helpful.

WHAT CAUSED THE FEVER? A. Agha[1]; A. Kolpakchi[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #117405)*

LEARNING OBJECTIVES: 1. Review the definition of fever of unknown origin (FUO). 2. Construct a differential diagnosis of FUO. 3. Recognize that chronic bursitis can cause prolonged fever and constitutional symptoms.
CASE: A 68 year-old male without significant past medical history presented to his primary care provider with a one month history of malaise, anorexia, and 5lb weight loss. He was noted to have temperature up to 101 F on three consecutive clinic visits. The initial outpatient work up including CBC, liver function tests, chest x ray, urine and blood cultures were negative. He was then admitted to the hospital for work up of fever of unknown origin. Vital signs revealed temperature of 101 F, BP 140/80, RR 14, HR 80. Physical exam was unremarkable except for a thickened, non-tender left prepatellar bursa with small effusion. No warmth or erythema was noted. His labs revealed elevated sedimentation rate at 39 (0-20) and elevated C-reactive protein at 12 (normal being negative). The rest of the work up including RPR, MHA-TP, HIV, rheumatoid factor, ANA, hepatitis panel, urine and blood cultures, CXR, CT scan of thorax and abdomen was all negative. The patient continued to have elevated temperature up to 101.5 F while in the hospital, and the etiology of his fever remained unknown. The patient was reexamined again, and the previous non-tender thickened left prepatellar bursa was aspirated with 9cc of thick amber fluid obtained. Culture was positive for Staphylococcus Aureus sensitive to nafcillin. The patient was treated with nafcillin for 4 weeks with complete resolution of his symptoms.
DISCUSSION: The fever of unknown origin (FUO) is defined as fever >38.3 C on several occasions, duration of fever >3 weeks, and uncertain diagnosis after one week of study in the hospital. Differential diagnosis of FUO includes four major categories: infections (30%), malignancies (30%), collagen vascular diseases (10%) and unknown (30%). Interestingly, the FUO in our patient was from his chronic prepatellar bursitis. Literature search failed to produce a single case report of septic bursitis as the etiology of FUO. Prepatellar bursa is one of few bursas that can become infected, most commonly by Staphylococcus Aureus and other gram-positive organism (80%). Prepatellar bursitis becomes chronic in approximately 5% of patients. Bursa aspiration is indicated for diagnostic and therapeutic purposes. The treatment is with use of antibiotic for duration of 4 weeks.

WHEN A ROSE IS JUST A ROSE: A CASE OF MONONUCLEOSIS. R. Ashkenazy[1]; C. Bates[1]. [1]Beth Israel Deaconess Medical Center, Boston, MA. *(Tracking ID #116819)*

LEARNING OBJECTIVES: 1) Diagnose infectious mononucleosis (IM) using clinical and laboratory parameters; 2) Recognize the limitations of laboratory testing for IM.
CASE: A 37-year-old man had progressive fatigue and 5 days of temperature to 102.5 F, without sore throat. Physical exam was notable for temperature of 100 F, pulse of 100, pharyngeal erythema and cervical lymphadenopathy. The liver and spleen were not enlarged. WBC was 2.2 K with 28% PMN, 9% bands, 37% lymphs and 18% atypical lymphocytes. The platelet count was 97 K. Liver tests were elevated with AST of 373, ALT of 542 and alkaline phosphatase of 304. Monospot test was negative. EBV VCA-IgM, EBV VCA-IgG and EBV EBNA-IgG antibodies were negative. A throat culture was positive for rare group A strep; penicillin was prescribed. A rash developed 6 days later. Because the patient's wife was pregnant, the patient and his wife were tested for toxoplasmosis and CMV; serologies were negative. Over the next 8 days, he had increased anorexia and somnolence. Tests for HIV and hepatitis A, B and C were negative. He was referred to an infectious disease specialist. Four days later he was admitted for his deteriorating clinical state and uncertain diagnosis. Repeat monospot test and EBV VCA-IgM antibody were positive; EBV VCA-IgG and EBV EBNA-IgG antibodies were negative. Management was supportive and he recovered.
DISCUSSION: IM is most often caused by Epstein-Barr virus (EBV), a herpesvirus spread in saliva and, less commonly, through intimate contact or blood transfusions. Fever, pharyngitis and lymphadenopathy, with transient heterophile antibodies and atypical lymphocytes, characterize classic IM. Additional findings include fatigue, splenomegaly, rash (common after administration of ampicillin/amoxicillin) and various neurologic syndromes. EBV induces heterophile antibodies within 1 week of symptoms. The monospot test, a latex agglutination assay, and enzyme-linked immunosorbent assay (ELISA) are rapid diagnostic tests against these antibodies with a sensitivity of 86% and specificity of 100%. Heterophile antibodies peak between the second and fifth week of infection and may persist for up to a year. Epstein-Barr viral capsid antigen (VCA) antibodies are also diagnostic. IgM antibodies are expected at presentation, persist for 1 to 2 months and mark acute infection. IgG antibodies are expected at presentation, persist for life and mark acute or prior infection. IgG antibodies to EBV nuclear antigen (EBNA) appear 6 to 12 weeks after symptom onset and persist throughout life; they exclude acute infection early in an illness. This patient's initially negative EBV VCA IgM and IgG and concerns about perinatal transmission led to testing for other pathogens of mononucleosis-like syndromes. Of these, CMV is most common. Additional testing in EBV-negative patients depends on risk factors for, and clinical implications of, other infections.

WHEN ADDITIONAL HISTORY SOLVES THE MYSTERY: A CASE OF CAROTENOSIS CUTIS. M. Hadian[1]; B. Taqui[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116190)*

LEARNING OBJECTIVES: 1. Recognize the clinical manifestations of beta-carotenemia. 2. Review the diagnostic and therapeutic approach for beta-carotenemia. 3. Recognize the importance of returning to the patient for additional history taking when diagnosis is unclear.
CASE: A 61year-old previously healthy Asian female presented complaining that she had become yellow, especially during the prior week. She denied nausea, vomiting, diarrhea, constipation, abdominal pain, anorexia, weight loss, fever, chills, change in urine/stool color. She said she felt completely healthy, but she and her family were concerned about her marked skin discoloration. She is a nurse, but denied needle sticks or hepatitis exposures. Her only medication was a daily multi-vitamin. She denied alcohol, tobacco or drug use. On exam, she had diffusely yellow skin with deeper discoloration of palms and soles. She did not have scleral icterus. Her chemistries, CBC, TSH, cholesterol, liver function tests were all normal. Her urine was microscopically normal, but had an orange-yellow discoloration. At this point, further questioning revealed that the patient was a vegetarian who ate a lot of green leafy vegetables and carrots. She had recently increased her carrot intake to 2–3 pounds/day. Subsequently, serum carotene was ordered. The patient had a value of 322 (normal 6–77 mg/dl). She was reassured that this condition is benign and related to the consumption of too many carrots and yellow vegetables. Patient was discharged with appropriate dietary instructions. One week later she called to inform us that her skin color was back to her normal.
DISCUSSION: Carotenosis cutis, yellow-orange coloring of the skin, results from excessive intake of vitamin A precursors in food, principally fruits and vegetables. Natural beta-carotene acts as an anti-oxidant, but in excess amounts can lead to skin discoloration. The palms and soles are predominantly involved. The yellowing of the skin is differentiated from jaundice in that there is no scleral icterus. Other than cosmetic changes, carotenemia is not harmful. Hypothyroidism and smoking makes patients particularly susceptible to carotenemia. The omission of carrots and other colored fruits and vegetables from the diet leads to the rapid disappearance of the hyperpigmentation. Our case illustrates the importance of returning to the patient for additional history taking, especially when the case does not follow a common, well-known pattern.

WHEN AMOXICILLIN ATTACKS: A CASE OF SERUM SICKNESS-LIKE REACTION. J.A. Chang[1]; C.M. McEvoy[2]. [1]Creighton University, Omaha, NE; [2]University of Nebraska Medical Center, Omaha, NE. *(Tracking ID #115552)*

LEARNING OBJECTIVES: 1) Recognize the clinical manifestations of serum sickness 2) Diagnose serum sickness accurately and quickly 3) Treat serum sickness in an appropriate fashion.
CASE: Our patient is a 29-year-old Caucasian male. 15 days before the initial visit to allergy clinic, he had received Amoxicillin for sinusitis. 9 days later, he saw redness on his palm and the sides of his fingers; followed by progressive swelling, erythema, pruritis, and burning of his hands and feet, particularly on the dorsal surfaces. White rings appeared on his hands the next morning. He had blotchy erythema on his face, hands and feet. The hands and feet were swollen and very tender at the wrists and ankles. He was given a loading dose of prednisone (80 mg) by his PCP, followed with a Medrol Dose Pack for erythema multiforme. He initially improved, then developed worsening symptoms. 3 days before the allergy visit, he required subcutaneous epinephrine for acute angioedema. He presented to allergy clinic with severe, crippling joint pain. His temperature was 38.1. Diffuse, blotchy edema with linear wheals and flares over the face, trunk, and extremities was noted. ESR was 38, C3 was 161 and C4 was 33, with a CH50 of 199. Urinalysis showed protein of 30 mg/dL and blood of 25/uL. He was diagnosed with serum sickness secondary to amoxicillin and started on high-dose prednisone, which was slowly tapered over several weeks. His symptoms improved on this regimen. He has been symptom-free since about 4 weeks after the onset of symptoms, and has had no recurrences.
DISCUSSION: Serum sickness is the prototype of immune complex (type III) immune reactions. True serum sickness is caused by the administration of heterologous sera; serum sickness-like reaction results from non-protein drugs. Virtually all patients have fever and cutaneous reactions. Joint pain with or without swelling is present in about 2/3 of patients. Lymphadenopathy is also commonly seen. The pathophysiology is due to a combination of antigen with IgG or IgM immune complex deposition, leading to the release of vasoactive amines, which increase vascular permeability. The usual onset is 7–14 days after exposure to a trigger (commonly beta-lactam antibiotics); however, in a previously sensitized patient, symptoms may appear 2–4 days after exposure. The first line of treatment is to stop the suspected inciting agent; antihistamines and NSAIDS are used for pruritis and arthralgia. If severe symptoms exist, corticosteroids should be used for 10–14 days. Shorter courses are associated with recurrent symptoms which are more difficult to control. Serum sickness is likely to recur on reexposure and may not be predicted by skin testing.

WHEN GOOD INTENTIONS ARE NOT ENOUGH: A TRAGIC CASE OF I.V. PHENYTOIN USE. S. Daya[1]; S. Jagadeesh[1]; N. Shaikh[2]. [1]York Hospital, York, PA; [2]Mercy Catholic Medical Center, Lansdowne, PA. *(Tracking ID #117245)*

LEARNING OBJECTIVES: 1) Recognize the increased risk for adverse events with phenytoin use in patients with multiple comorbidities. 2) Recognize the importance of the appropriate rate of parenteral phenytoin administration in high risk patients.
CASE: A 37 year old Afro-Caribbean male with a known history of End Stage Renal Disease and liver cirrhosis presented to the renal unit to undergo his scheduled dialysis. During dialysis he was noted to be diaphoretic and tachypneic, this was followed by an episode of grand mal seizure which was treated with lorazepam given intravenously. Patient had a second episode of grand mal seizure, given the recurrent nature phenytoin was administered with a loading dose followed by continuous infusion. The seizure episode was successfully terminated with the above treatment regime. Concurrent cardiac monitoring during this period showed an initial sinus rhythm quickly change to sinus bradycardia and second degree

A-V block which deteriorated to asystole and cardiac arrest. Phenytoin infusion was discontinued and cardiopulmonary resuscitation (CPR) initiated. Patient was successfully resuscitated after 12 minutes with return to sinus rhythm and stabilization of hemodynamic parameters. He needed endotracheal intubation and mechanical ventilation for airway protection and oxygenation. Eventually the patient was extubated and a neurological evaluation revealed the patient to have significant cognitive and motor deficits which required long term nursing home care. An electroencephalographic study showed neurological damage consistent with hypoxic encephalopathy.
DISCUSSION: Phenytoin is a commonly prescribed anticonvulsant used to treat most types of seizure disorders and status epilepticus. Parenteral phenytoin administration is commonly undertaken with careful cardiac monitoring due to the risk of cardiac arrhythmias. The potential cardiac adverse effects include atrial and ventricular conduction disturbances, hypotension, ventricular fibrillation and reduced cardiac output. Cardiac effects are thought to be secondary to the propylene glycol diluent of the parenteral product. Phenytoin in its parenteral form is dissolved in 40% propylene glycol and 10% ethanol. Caution is advised with phenytoin use in any patient with cardiac disease because adverse effects may be potentiated or exacerbated. The drug is absolutely contra-indicated in patients with cardiac conduction abnormalities. Reactions to parenteral phenytoin occur more often in the elderly or in patients with other significant comorbidities such as renal or hepatic failure. The rate of intravenous administration of phenytoin is critically important to avoid or limit adverse cardiovascular events that could lead to serious long-term consequences.

WHEN TISSUE CAN'T ALWAYS BE THE ISSUE: USING CLINICAL CRITERIA TO DIAGNOSE CHRONIC NECROTIZING PULMONARY ASPERGILLOSIS. R. Pechulis[1]; B. Taqui[1]. [1]Temple University, Philadelphia, PA. *(Tracking ID #116208)*

LEARNING OBJECTIVES: 1. Recognize Chronic Necrotizing Pulmonary Aspergillosis (CNPA) as a clinical entity distinct from other forms of Aspergillus pulmonary disease. 2. Recognize risk factors and diagnostic criteria for CNPA.
CASE: A 55 year old African American female with sarcoidosis presented with one week of fever, nightsweats, anorexia and cough productive of dark sputum. She had a similar episode associated with hemoptysis 5 months prior. At that time, CXR revealed mycetoma and sputum grew Aspergillus fumigatus. On exam, she had T = 101.6, RR = 25. She had left apical bronchial breath sounds and right basilar rales. Lab data revealed Na 125, WBC 11. CXR showed a new thick walled left apical cavitary lesion with associated pleural thickening, parynchemal consolidation, diffuse reticulo-nodular interstital densities. The previously diagnosed right upper lobe mycetoma was not seen. The patient was treated for community acquired pneumonia, but remained febrile and symptomatic. Multiple sputum cultures grew Aspergilllus fumigatus and the patient had a bronchoscopy with trans-bronchial biopsy. The bronchoalveolar lavage culture was positive for Aspergillus fumigatus. Biospy specimen showed nonspecific inflammatory cells. After lengthy discussion with our consultants and patient, open lung biopsy was deferred and the patient was started on voraconazole for chronic necrotizing pulmonary aspergillosis. Since then, she has had sustained clinical and radiologic improvement.
DISCUSSION: Chronic necrotizing pulmonary aspergillosis (CNPA), also known as semi-invasive or chronic granulomatous aspergillosis, was first described in 1981. It is an indolant, locally invasive aspergillus infection without vascular invasion or dissemination, as seen in invasive pulmonary aspergillosis (IPA). It occurs in patients with underlying lung disease or mild immunocompromised states. This population is compromised enough to grow the fungus, but healthy enough to avoid the rapid demise that occurs in IPA patients. CNPA patients present with cough and constitutional symptoms. Hemoptysis occurs in 10% of cases. Radiologic studies reveal indolent upper lobe consolidation associated with pleural thickening. Cavitation and/or mycetoma occur in 50% of cases. The diagnosis is suggested by clinical presentation, isolation of Aspergillus from pulmonary secretions, and exclusion of other etiologies (anaerobes, mycobacteria, histoplasmosis, coccidiomycosis). The diagnosis is confirmed by pathologic evidence of tissue invasion or a response to specific antimycotic drugs. Transbronchial and percutaneous biopsies have low yield. Most patients have comorbid pulmonary conditions that make an open lung biopsy a high risk. The duration of therapy is not well established.

WHEN URGENCY IS MORE THAN AN OVERACTIVE BLADDER: INTERSTITIAL CYSTITIS. C.L. Spagnoletti[1]; M.A. McNeil[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115016)*

LEARNING OBJECTIVES: 1) Recognize the clinical presentation of interstitial cystitis (IC) 2) Diagnose IC in the patient with urinary urgency and frequency 3) Review the therapeutic options for IC.
CASE: Ms. G. is a 50 year old female who presented with complaints of daily urinary frequency and urgency and intermittent bladder pain for 8 weeks. She reported voiding up to 15 times per day, without an increase in her fluid intake or change in medications. Her bladder pain improved with voiding. She denied dysuria, hematuria, recent UTI, history of radiation therapy or abdominal or pelvic surgery. Her past medical history was significant for chronic low back pain. Her medications included ibuprofen and cyclobenzaprine. She was in a same-sex relationship and denied a history of sexual abuse. On pelvic exam, she complained of bladder tenderness on palpation of the anterior vaginal wall. Vaginal wet prep, KOH slide, GC and chlamydia were negative. Urinalysis, culture, and cytology were unremarkable. Cystoscopy revealed a decreased bladder capacity and presence of glomerulations after hydrodistention. A diagnosis of IC was made. She was started on amytriptyline, hydroxyzine, and pentosan polysulfate sodium. Within three months, she noted significant improvement in her symptoms of urgency, frequency, and pain.
DISCUSSION: IC is a poorly understood condition affecting up to 700,000 people in the U.S. Most are Caucasian and women make up 90%. The median age of onset is 43. It is a severe and debilitating chronic pain syndrome that afflicts the bladder, and is characterized by urinary urgency, frequency and bladder pain in the absence of other definable pathology. Patients present with urinary urgency and frequency early in the disease and later develop pain symptoms including suprapubic or pelvic pain, or dyspareunia. Dysuria and incontinence are not typical. IC is also characterized by flare-ups and remissions. There are many proposed theories of pathogenesis, but the cause is not known. The differential diagnosis is broad and includes diseases which affect the urinary, gynecologic, and gastrointestinal systems. IC is mainly a diagnosis of exclusion. 95% of IC patients complain of a tender bladder base during pelvic exam, and the presence of this in a patient with classic symptoms is highly suggestive. Urinalysis, culture, and cytology are negative. An abnormal cystoscopy is diagnostic, but is only indicated in refractory cases. If performed, reduced bladder volumes, glomerulations after hydrodistention, and/or Hunner's ulcers are seen. Therapy is directed at symptom reduction and improved quality of life. The mainstay of therapy includes the combination of tricyclic antidepressants, antihistamines, and pentosan polysulfate sodium, plus dietary modification and pelvic floor physical therapy. For more severe cases, intravesicular therapy or cystectomy have been used.

WHERE'S THE BEEF? AN INBORN ERROR OF METABOLISM PRESENTING AS A SEIZURE IN AN ADULT. S.D. Sisson[1]; D. Chaupin[1]; E. Schmidt[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #117081)*

LEARNING OBJECTIVES: 1) Recognize a rare cause of seizure in an adult 2) Understand the clinical sequelae of ornithine transcarbamylase deficiency.
CASE: A 53-year-old female with a history of achondroplasia was admitted for persistent abdominal pain, nausea, vomiting, and diarrhea. Past medical history was notable for chronic abdominal pain, attributed to chronic pancreatitis. In reviewing the patient's history of abdominal pain, she reported having abdominal pain and headaches since childhood, which she associated with eating meat. As a result, the patient had altered her diet to consist primarily of grains. Physical examination was notable for a cachectic, chronically ill-appearing female, lying still in bed. She had diffuse abdominal tenderness with rebound but without guarding. A CT scan of the abdomen showed acute pancreatitis with peripancreatic inflammation and multiple pseudocysts. As treatment, the patient was started on a standard parenteral solution of electrolytes, trace elements, glucose, amino acids, and lipids. Shortly after initiation of parenteral nutrition, the patient became somnolent and seized, confirmed by EEG. Benzodiazepines and phenytoin were administered, without a response. Parenteral nutrition was stopped, and on further evaluation an ammonia level came back profoundly elevated (190 mcg/dl). Liver function tests were normal. An elevated ammonia level in the setting of normal liver function suggested the diagnosis of a urea cycle disorder. An allopurinol challenge test was performed and confirmed the diagnosis of ornithine transcarbamylase deficiency.
DISCUSSION: In the normal host, ammonia produced by protein catabolism is converted to urea by a series of steps referred to as the urea cycle. Enzyme deficiencies in the urea cycle, including ornithine transcarbamylase deficiency, result in the accumulation of ammonia and precursor metabolites. This patient learned to avoid high protein foods in order to prevent precipitation of physical symptoms brought on by the accumulation of these toxic metabolites, resulting in protein malnutrition and cachexia. When parenteral nutrition (with amino acids) was administered to this patient as treatment for pancreatitis, accumulation of ammonia and other metabolites precipitated a seizure. An elevated ammonia level is found in all urea cycle enzyme deficiencies, including ornithine transcarbamylase deficiency. An ammonia level should be checked in all patients in whom a urea cycle enzyme deficiency is considered.

WOOSHING IN MY EAR: I THINK IT SOUNDS LIKE LUPUS. E. Choe[1]; H. Meatty[1]; D. Spruill[1]. [1]Tulane Health Sciences Center, New Orleans, LA. *(Tracking ID #117444)*

LEARNING OBJECTIVES: 1. Recognize the presentation of lupus nephritis 2. Recognize the clinical presentation of sagittal venous thrombosis.
CASE: A 19 year-old woman presented with two weeks of a headache associated with a "whooshing sound" in her left ear. She noted associated epistaxis, but no fever, neck stiffness or previous head trauma. She was afebrile and her vital signs were normal. She had a resolving discoid rash on her abdomen, but the remaining examination was normal. She had no focal neurologic deficits, and there were no carotid bruits. She had a history of renal insufficiency, and her baseline creatinine of 1.8 had increased on this admission to 6.4. Her hemoglobin was 4.0 g/dl; platelets 110. She had 250 blood and >100 RBC on microscopic examination of the urine. Her ANA was positive at 1:640 and she had low C3 levels with a false positive RPR. Her PTT was elevated. She was diagnosed with systemic lupus with renal failure secondary to lupus nephritis and was treated with high dose pulse steroids and-cyclophosphamide. Although a CT of the head was normal, the persistent headache prompted an MRI with contrast that revealed a sagittal vein thrombosis.
DISCUSSION: Renal impairment is a common presenting complaint of lupus, affecting 90% of patients with lupus at some point in their course. Our patient had diffuse proliferative lupus nephritis, the most common and the most severe form of disease. Aggressive therapy with high dose pulse steroids and cyclophosphamide is indicated in these patients. Lupus patients are also at risk for anti-phospholipid antibody syndrome inducing a venous thrombosis. While deep venous thrombosis

or stroke are the most common complications, a wooshing sound in the ear in the setting of a headache is suggestive of either severe carotid artery stenosis or venous thrombosis. In the latter diagnosis, the sound is induced from turbulence created from venous back-pressure from the thrombosis on the carotid artery flow. Fifty percent of lupus patients will have a CNS event of some type during the lifetime.

WWW.WPW: WHAT WOULD WOLFE-PARKINSON-WHITE DO? S. Kahlon[1]; J. Wiese[2]. [1]Tulane Health Sciences Center, New Orleans, LA; [2]Tulane University, New Orleans, LA. *(Tracking ID #117478)*

LEARNING OBJECTIVES: 1. Review the symptomatic presentation and treatment of Wolf-Parkinson-White Syndrome. 2. Recognize the medications contraindicated in Wolf-Parkinson-White.
CASE: A 35 year-old man presented after an episode of palpitations, shortness of breath, and an aching pain in the left upper chest and shoulder. He also noted lightheadedness that occurred suddenly and at rest, resolving spontaneously after twenty minutes. An ECG showed sinus rhythm with a rate of 83 BPM, left axis deviation, a QRS interval of 0.104 seconds, a PR interval of 0.126 seconds, and delta waves. Electrolytes and serial cardiac enzymes were normal. He was asymptomatic in the ER, and thus no treatment was given. He was discharged to clinic with a prescription for a calcium channel blocker to control the heart rate. At presentation in clinic, a repeat EKG was obtained demonstrating similar intervals and the delta waves noted above. Owing to the risk of accelerated conduction through the accessory pathway, the calcium channel blocker was held, and the patient was referred to cardiology for ablation.
DISCUSSION: Wolf-Parkinson-White Syndrome has a prevalence of 1/500 people, making it one of the more common congenital heart diseases. It is caused by an accessory electrical pathway between the atria and ventricles leading to conduction abnormalities that can cause arrhythmias. It is usually asymptomatic, discovered only by incidental EKG. When symptoms do present, they usually take the form of ventricular tachycardia (70%), atrial fibrillation (16%), or other arrhythmias. Recognizing the syndrome is important since treatment with Class I and III antiarrhythmics or radioablation is available. ECG changes of Wolf-Parkinson-White include the pathognemonic delta wave, a short PR interval (<0.12 seconds), and a widened QRS complex (>0.10 seconds) that are all manifestations of early ventricular activation through the accessory pathway. The EKG is also diagnostic of the location of the pathway: the left axis deviation in this case suggests that the pathway is posterio-septal, readily amenable to radioablation from a right heart cathertization. It is also important to recognize this syndrome to avoid administration of digoxin and Class II and IV antiarrhythmics that may increase AV nodal blockade, exacerbating the accessory pathway and potentially causing ventricular arrhythmias and sudden death.

YES, YOU CAN HAVE TOO MUCH OF A GOOD THING: A CASE OF THE MILK ALKALI SYNDROME. G. Ramani[1]; R. Granieri[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116446)*

LEARNING OBJECTIVES: 1) Recognize milk alkali syndrome as an increasingly more common cause of hypercalcemia 2) Recognize the role of dietary calcium carbonate in the milk-alkali syndrome.
CASE: The patient is a 49 year old female, with past medical history of osteopenia with recent shoulder and spine fractures, who presented with a three day history of increased fatigue, nausea, and weakness. The patient had become very confused, fallen several times, and was brought to the ED by her husband, who provided much of the history. She had been very concerned about both her recent diagnosis of osteopenia and recent heartburn, had been taking 100–250 Rolaids® (calcium carbonate, magnesium hydroxide) tablets per week, as well as large quantities of baking soda (sodium bicarbonate). Physical examination was notable for the patient being oriented only to name, and for inappropriate speech. Reflexes, strength, cranial nerve testing, and sensation were intact. Laboratory testing revealed a creatinine of 3.8, bicarbonate of 64, potassium of 2.3, and a total serum calcium of 20. ABG demonstrated a pH of 7.55, pC02 of 60, and pO2 of 99. EKG revealed no abnormalities. The patient was admitted to the hospital and vigorously rehydrated with normal saline . Her electrolytes corrected over several days. Her creatinine stabilized at 1.5, and her mental status improved. The patient was educated about judicious calcium supplementation and discharged to home.
DISCUSSION: The milk-alkali syndrome is characterized by renal failure, hypercalcemia, and metabolic alkalosis. Although once considered rare, increased awareness and screening for osteoporosis has resulted in a marked rise in the number of patients taking calcium supplementation. The pathophysiology is related to consumption of large quantities of calcium, in the presence of an absorbable alkali. As calcium levels rise, serum levels of calcitriol fall, thereby decreasing renal absorption of calcium. However, the ingestion of greater then 10 grams of calcium can overwhelm this mechanism, and the presence of a metabolic alkalosis can enhance renal absorption of calcium. Furthermore, hypercalcemia frequently worsens the metabolic alkalosis by stimulating proton secretion and bicarbonate reabsorption within the kidney. The diagnosis can usually be obtained by the history along with documentation of electrolyte abnormalities. Treatment consists of cessation of the offending agents, and rapid hydration with normal saline in patients with renal impairment or severe hypercalcemia. Although renal function usually improves, some residual insufficiency may persist. Prevention of this condition focuses upon educating patients of the importance of limiting their supplemental calcium to no greater than 2 grams a day.

INNOVATIONS IN MEDICAL EDUCATION

A FOURTH YEAR MEDICAL STUDENT ELECTIVE ON THE ADVANCED PHYSICAL EXAMINATION. C.L. Chou[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117167)*

STATEMENT OF PROBLEM OR QUESTION: After their introductory physical examination (PE) course, medical students generally receive little formal guidance and direction to refine their PE skills or to use evidence-based approaches. In addition, there are few examples of learner-centered approaches to the PE in the existing literature.
OBJECTIVES OF PROGRAM/INTERVENTION: 1) To review basic PE techniques; 2) to introduce evidence-based approaches to PE techniques; and 3) to solidify students' PE skills by scheduling them to teach in the pre-clerkship PE course.
DESCRIPTION OF PROGRAM/INTERVENTION: A group of ten fourth-year students met for seven three-hour seminars regularly spaced over the course of the two-week elective. Formal seminars for the first week provided time for peer practice, a review of basic epidemiology, a faculty-led seminar on the evidence-based approach to hypovolemia, and a review of useful teaching behaviors and techniques. Students were provided with a list of references from the JAMA Rational Clinical Examination series and were expected to select a question to investigate in depth for eventual presentation to the rest of the elective group. Formal sessions in the second week were then devoted to student-led seminars. In addition, students spent four hours each week teaching and observing pre-clerkship students in the introductory PE course. We provided flexibly scheduled time throughout the two weeks and encouraged students to use this time to practice PE techniques on adult or pediatric outpatients in faculty clinics, inpatients supervised by faculty, or peers.
FINDINGS TO DATE: Students gained confidence in their general PE skills, their teaching skills, and their ability to understand journal articles about evidence-based approaches to physical diagnosis. The aspects of the course that the students found most helpful were preparing and presenting their own seminars, and hearing their colleagues' seminars. The overall rating for the elective was 6.5 (1 = poor, 7 = outstanding).
KEY LESSONS LEARNED: An efficiently-scheduled two-week-long elective, incorporating concurrent patient care duties in which faculty was already engaged, provided a highly rated curricular activity for fourth-year medical students. Students preferred self-directed learning to experiential or didactic approaches. Fourth year electives such as this one may represent a relatively untapped opportunity for students who have completed their core clerkships to consolidate basic skills and to reinforce their clinical experience with an evidence-based approach.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

A GRASS ROOTS ELECTRONIC MEDICAL RECORD (EMR) TO IMPROVE HOUSESTAFF EFFICIENCY, COMPLIANCE WITH DUTY HOURS AND PATIENT CARE. K.B. Armitage[1]; R. Rathod[2]. [1]Department of Medicine, Case Medical School/University Hospitals of Cleveland, Cleveland, OH; [2]Department of Pediatrics, Case Medical School/Rainbow Babies and Childrens Hospital, Cleveland, OH. *(Tracking ID #115795)*

STATEMENT OF PROBLEM OR QUESTION: The ACGME duty hour rules implemented in July 2003 requires more efficient approaches to resident education and patient care.
OBJECTIVES OF PROGRAM/INTERVENTION: We identified housestaff progress note writing and the creation of a daily signout to be areas that provided an opportunity for improved housestaff efficiency. Our hopsital is an 850 bed academic medical center without an EMR. We implemented an electronic note writing and signout system for our residents, and then surveyed the residents regarding the time saving of the new system and compliance with ACGME duty hours.
DESCRIPTION OF PROGRAM/INTERVENTION: In October 2003 we instituted a computer based note-writing and signout system that was created by a current PGY2 in Pediatrics at Case. This resident was an IT consultant prior to attending Case Medical School, and prior to his internship created a electronic database system for use by his fellow residents. The system (RECS for Resident Electronic Centralized Signout) works by creating a database for each patient that can then be used to create progress notes and a standardized, formatted signout. Daily progress notes are created by updating patient information from the previous days note and are printed and placed in the patient's chart. Signouts are created using the updated information with little or no additional input. While not strictly an EMR, the data is stored on the hospital's server and is available when patients are readmitted. RECS is an EMR product that may be unique as a system specifically designed to make housestaff more efficient.
FINDINGS TO DATE: We surveyed our interns and residents via email to find out the estimated time savings gained from RECS. Interns on average report time savings of 1.6 hours/day. Residents use the system primarily when interns have the day off and reported time savings of 1.8 hours/day. Based on our informal reporting system, RECS has improved compliance with ACGME duty hours, particularly the "24/6" rule. Nurses and consultants have commented that the notes are legible and clearly identify the patient's service and the houseofficer's pager number. Interns surveyed noted that standardized signouts have improved off-hour coverage.
KEY LESSONS LEARNED: A resident-created EMR system was successfuly adopted by our housestaff. RECS creates efficiencies that improve compliance with duty hours and patient care.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: RECS will be demonstrated at the meeting.

A HANDS ON APPROACH TO TEACHING RESIDENTS AND MEDICAL STUDENTS ABOUT ASTHMA CARE AND GUIDELINES. R.L. Shriver[1]; R. Mangold[1]; G.A. Salzman[1]. [1]University of Missouri-Kansas City, Kansas City, MO. *(Tracking ID #115674)*

STATEMENT OF PROBLEM OR QUESTION: Asthma is a common chronic disease affecting 14 to 15 million people in the United States. Increasing awareness of the both the disease process and treatment guidelines for asthma among resident physicians and medical students improves delivery of care to patients. Many internal medicine residents and students are unfamiliar with the "Guidelines for the Diagnosis and Management of Asthma" published by the National Institutes of Health (NIH).
OBJECTIVES OF PROGRAM/INTERVENTION: To improve resident physician and medical student knowledge of the NIH "Guidelines for the Diagnosis and Management of Asthma" and thus, improve patient care.
DESCRIPTION OF PROGRAM/INTERVENTION: We have developed a comprehensive asthma care program that includes teaching of residents, medical students and patients, standardized order sets and assistance with developing asthma action plans. Our asthma clinical educator meets with each inpatient service on a bimonthly basis to educate residents and medical students regarding the NIH "Guidelines for the Diagnosis and Management of Asthma." We have developed an admission and discharge order set that prompts the physician to classify asthma severity and guides them though appropriate treatment, there is a similar set for discharge that requires a completed asthma action plan and prompt follow up in the asthma clinic. During a patient's hospitalization, the clinical educator is available for consult to do patient education and assist the rounding team with choosing appropriate medications and formulating an asthma action plan for the patient to use on an outpatient basis. A staff pulmonologist specializing in asthma care is also available at all times.
FINDINGS TO DATE: This program has improved resident physician and medical student knowledge regarding asthma which has thus translated to improved patient care via shorter and less frequent hospitalizations in our asthmatic population as well as improved compliance with outpatient follow up.
KEY LESSONS LEARNED: Resident physicians and medical students are receptive to using standardized order sets and following treatment guidelines when they are easily available and accompanied by individualized instruction.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Samples of teaching tools, action plan and order sets.

A WEB-BASED SYSTEM TO SUPPLEMENT PRE-CLINIC CONFERENCE. G.H. Tabas[1]; R. Granieri[1]; J. McGee[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115758)*

STATEMENT OF PROBLEM OR QUESTION: Pre-clinic conference at our large institution consists of faculty-led interactive case-based discussions that are repeated on multiple days of the week at three separate sites, accounting for nearly 600 lectures per year. Resident attendance varies because of off-campus rotations and because of ACGME duty hour requirements.
OBJECTIVES OF PROGRAM/INTERVENTION: We sought an alternative way to teach ambulatory medicine to our residents. Studies comparing web-based teaching and written formats have shown that web-based teaching provides greater learner satisfaction and learning efficiency with equal knowledge gained.
DESCRIPTION OF PROGRAM/INTERVENTION: Our system uses Pitt Med Navigator, a web-based program that we customized for our ambulatory teaching modules. Each section of the module begins with a case vignette, followed by a multiple-choice question (MCQ) based on the case. Choosing an answer triggers a brief explanation of why the answer is correct or incorrect. After each MCQ is a brief text page with bulleted points that reinforces the data to be learned and that offers links to supporting literature, practice guidelines, tables, graphs, pictures, and on-line tools. We were careful to limit the length of each text page to maximize the actual amount of text that users would read. A brief user satisfaction survey follows each teaching module. The module ends with a scored post-test consisting of 5 MCQs randomly chosen from a bank of 10 MCQs. Each user has three attempts to score 80% correct and receive credit for the module. The first module, Dyslipidemia, uses guidelines from the National Cholesterol Education Program and has links to an on-line risk calculator, to portions of the guidelines, and to landmark articles.
FINDINGS TO DATE: Of the 56 residents who have completed the module, passing rates on the 1st, 2nd and 3rd attempts were 63%, 23% and 2% respectively. After three attempts 7% did not pass and 5% did not complete the post-test. The average score on the satisfaction survey was 4.14 on a 5-point scale in which 5 was the highest score.
KEY LESSONS LEARNED: Most residents mastered the material in the Dyslipidemia module and were satisfied with the format. We plan to supplement many of our faculty pre-clinic conferences with web-based modules in order to reach a greater proportion of residents and to decrease repetitive faculty lectures. The faculty time required to create each module will be offset by reduced time devoted to repetitive conferences. Faculty-housestaff interaction will be preserved by one-on-one case-based discussions during clinic time.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: We will use a laptop computer with an internet connection to demonstrate the Dyslipidemia module.

A.S.A.P.—TEACHING STUDENTS TO SOLICIT EFFECTIVE FEEDBACK FROM THEIR RESIDENTS. J.M. Riddle[1]; S. Frellsen[2]. [1]Rush University Medical Center, Chicago, IL; [2]John Stoger Hospital? Rush Unversity Medical Center, Chicago, IL. *(Tracking ID #117554)*

STATEMENT OF PROBLEM OR QUESTION: A number of studies have found that feedback is one of the least frequently observed and most poorly accomplished clinical teaching behaviors. Residents provide a large percentage of the teaching that medical students receive, so are in a position to provide important feedback to students. Although we have conducted yearly retreats to improve internal medicine residents' teaching skills, we had not taught students the principles and skills for soliciting effective feedback
OBJECTIVES OF PROGRAM/INTERVENTION: To develop student skills in soliciting effective feedback from residents and to improve student satisfaction with feedback process.
DESCRIPTION OF PROGRAM/INTERVENTION: We developed a literature-based workshop to teach third year students to solicit feedback. We piloted the workshop with 22 students at the beginning of one of their inpatient medicine rotations. In the workshop we provided an overview about characteristics of effective feedback, followed by a recommended set of skills. The students were taught to Ask for feedback, ask for Specifics, ask for Advice on how to improve and Plan for follow-up on the feedback given. We trained chief medical residents in five scripted scenarios to act as "standardized resident teachers". In small groups, each of the students practiced soliciting feedback from one of the standardized resident teachers.
FINDINGS TO DATE: Students indicated a high degree of satisfaction with the workshop and an intention to practice the skills during their inpatient rotation. Instruments assessing student's attitudes about feedback and self-efficacy about use of the feedback skills were tested and are being revised. Students showed positive changes in both attitudes and self-efficacy over the four-week rotation.
KEY LESSONS LEARNED: Students enjoy learning through role-play with standardized residents. Our assessment tools appear to measure changes in students' attitudes about feedback. We plan to incorporate the workshop into the internal medicine clerkship orientation.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster showing standardized resident scripts and assessment instruments.

ADVOCACY CURRICULUM PREPARES PRIMARY CARE RESIDENTS FOR ACTIVIST ROLES. M.A. Earnest[1]; S.L. Brandenburg[1]; L.J. Adams[1]. [1]University of Colorado Health Sciences Center, Denver, CO. *(Tracking ID #115540)*

STATEMENT OF PROBLEM OR QUESTION: Physician advocacy education is particularly important when caring for medically underserved/vulnerable populations as they may not be able to advocate for themselves.
OBJECTIVES OF PROGRAM/INTERVENTION: 1. Recognize the vulnerability of patient populations and the unique role of physicians in understanding/identifying their needs. 2. Identify specific approaches for patient advocacy. 3. Provide an opportunity for primary care residents to participate in an advocacy project.
DESCRIPTION OF PROGRAM/INTERVENTION: A longitudinal curriculum ensures that all primary care residents are exposed to physician advocacy. The curriculum includes didactic sessions and the opportunity to participate in a group advocacy project. R1: Introduction to advocacy. Explores how physicians can help address societal problems that contribute to disease and health (case study of a tobacco tax.) R2: Develop specific media advocacy strategies and skills and apply them to the tobacco tax case study; develop specific messages in small groups. R3: Refine and reinforce advocacy skills by critiquing advocacy writing and spoken advocacy messages. Present a panel discussion with leaders in media, government and physician organizations. For residents who demonstrate a higher level of interest, a 1 month advocacy elective is offered, focusing on an advocacy issue of interest to the resident. When possible, they will be paired with a community advocacy group as well as a faculty mentor to help plan and implement an advocacy project focusing on legislation, media, or public education. This was piloted by a future chief resident in 2003.
FINDINGS TO DATE: Pre-curricular attitudinal surveys reflected varying views of physicians' roles in advocacy. Residents will be resurveyed at the end of residency to determine impact of this curriculum. The didactic sessions were rated 4.67 to 5.0 on a scale of 1 to 5, with 5 being most positive. Comments were very enthusiastic and residents felt empowered. The evaluation of the pilot elective was outstanding: "The month spent working on advocacy issues was one of the best learning experiences of my residency. It gave me significant insight into the political and social reasons for the lack of responsible healthcare for the underserved."
KEY LESSONS LEARNED: Residents are interested in developing advocacy skills. It is important to frame advocacy as an ongoing effort with incremental successes. Having residents work together increases success of the intervention and resident satisfaction.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster.

AN INNOVATIVE APPROACH TO THIRD-YEAR TRAINING. B.R. Ogur[1]; D. Hirsh[1]; D.H. Bor[1]; R. Arky[2]; M. Cox[2]. [1]Cambridge Health Alliance, Cambridge, MA; [2]Harvard Medical School, Boston, MA. *(Tracking ID #117499)*

STATEMENT OF PROBLEM OR QUESTION: Since medical students' clerkship experiences are mainly inpatient, and they do not develop longitudinal relationships with patients or clinical faculty, they gain an inaccurate view of clinical practice. Decreasing lengths of stay and increasing ambulatory care rarely allow students to see "whole episodes of illness" from initial presentation, through diagnosis, treatment, and outcome. Teaching has become ad hoc, largely relegated to residents, and perpetuating a lack of continuity from pre-clinical education, and diminishing attention to such critical topics as communication skills, professionalism, cultural competence, ethics, physical examination, and epidemiology.
OBJECTIVES OF PROGRAM/INTERVENTION: Our pilot fundamentally restructures clinical education such that all the traditional "core clerkships" are integrated into a single, year-long, clerkship, focused on longitudinal patient care, close mentoring, and group learning.

DESCRIPTION OF PROGRAM/INTERVENTION: 1. Central clinical experiences are based on following patients through all venues of care, with the primary sites being ambulatory care centers. 2. Students care for a patient cohort selected to provide a case mix and supervised by a faculty mentor. 3. Didactics are tutorial-based, facilitated by an inter-disciplinary team of faculty. 4. Basic science, clinical medicine, professionalism and key concepts from the social sciences are integrated. 5. Educational portfolios guide learning and provide a vehicle for formative and summative feedback.
FINDINGS TO DATE: Our longitudinal, integrated clerkship is a work in progress with planned implementation in July, 2004. Over 50 faculty, residents, students and educators have participated in planning, with high levels of support for the concept and for the implementation plan.
KEY LESSONS LEARNED: 1. Innovative programs based upon adult learning theory must inspire curiosity, self-motivation, and collaborative problem solving, and feel relevant and grounded in prior knowledge. 2. The new program's structure grows directly from understanding the current system's inadequacies and from creating a learning environment which will best prepare students for the world in which they will practice. 3. Curricular change requires building consensus with key collaborators in medical school and hospital leadership and at the sites of patient care delivery.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: We will present diagrams of patient cohort acquisition and of the mechanism for following patients longitudinally, descriptions of the faculty teaching and mentoring roles and demonstration of pilot materials created for the new program.

AN INNOVATIVE COMMUNITY MEDICINE ORIENTATION FOR BRIGHAM & WOMEN'S HOSPITAL INTERNS. A.M. Molnar[1]; J. Bigby[2]; J. Katz[1]. [1]Brigham and Women's Hospital, Boston, MA; [2]Harvard University, Boston, MA. *(Tracking ID #117281)*

STATEMENT OF PROBLEM OR QUESTION: Entering residents have few opportunities to acquaint themselves with their community, its resources, and the social conditions of their patients during a busy residency.
OBJECTIVES OF PROGRAM/INTERVENTION: —To familiarize entering residents with the neighborhoods surrounding Brigham & Women's Hospital (the neighborhoods where their patients live) and patient's social pressures before beginning patient care activities.—To enhance residents' ability to give patient-centered, culturally competent care.
DESCRIPTION OF PROGRAM/INTERVENTION: All entering interns were given the option to participate in a one day orientation to the community. One-half of the new interns chose to participate (36 interns, 14 leaders). BUILD (Brigham Urban Intern Learning Day) started with breakfast and a slide show describing the demographics of the Boston Healthcare environment. A lively panel discussion followed – Panelists included a state representative for the neighborhood, a community activist for healthcare access, and a community health worker. The participants then divided into three groups to go on walking tours of three of the main neighborhoods from which Brigham & Women's patient population derives—Dorchester/Roxbury, Jamaica Plain, and Mission Hill. In smaller groups of 5–10, the participants worked on a variety of community service projects for the remainder of the afternoon. Projects included: planting trees at a local housing project, sorting free-care applications at a community health center, discussing healthcare professions with teens at a local Latino community center, harvesting at a community garden, cleaning the healthcare van for homeless teens, trail maintenance at Boston Nature Center, etc.
FINDINGS TO DATE: Evaluation of the program is ongoing. Feedback from all participants was extremely positive.
KEY LESSONS LEARNED: A day long orientation to the community is an excellent way to begin residency and is popular among busy entering interns. Community orientation is an enriching experience for entering residents and hopefully allows participants to bring an understanding of their patients' community and social pressures as well as knowledge of available resources to enhance patient care.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster or talk describing the program. Evaluation of the program will be completed by the time of the meeting and will be available for presentation as well.

BALANCING CLINICAL TEACHING WITH CLINICAL PRODUCTIVITY: A TOOL FOR MEASURING TEACHING EFFORT. R.C. Anderson[1]; S. Green[1]; J. Mitchell[1]; M. Almoujahed[1]; G. Olds[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #115986)*

STATEMENT OF PROBLEM OR QUESTION: Teaching is a core mission of medical schools, but time for teaching may be perceived as under-recognized when faculty teaching efforts are not formally identified. Recruiting faculty for individual teaching programs such as physical diagnosis and ambulatory student rotations may be difficult if faculty view these activities as compromising clinical productivity, and thus, compensation.
OBJECTIVES OF PROGRAM/INTERVENTION: 1) To establish a tool in a Department of Medicine that accurately quantifies teaching-related activities; 2) To weight teaching activities based on their impact on faculty clinical productivity, 3) To encourage physical diagnosis and ambulatory student teaching by specifically recognizing the time devoted to these activities.
DESCRIPTION OF PROGRAM/INTERVENTION: The Department's 12-member Education committee developed a comprehensive list of all teaching and teaching administration activities and then assigned a quantity of time to each of these activities. The amount of time assigned was determined following group discussion and consensus of the committee members and then reviewed with the Chairman and Division Chiefs. Decisions about weighting of teaching activities were based on: (1) decreasing (or eliminating) credit for teaching where the learners actually help the faculty look more clinically productive such as inpatient wards, (2) giving partial credit in the ambulatory setting where the learner may slow down clinical productivity (weighted by the experience of the learner) and (3) giving "full credit" for teaching that cannot be done while a faculty member is seeing patients.
FINDINGS TO DATE: This tool has been well received by Division Chiefs and Department faculty. Beginning in July 2003, a percentage of teaching effort was designated for each individual faculty; this is being used in planning for individual overall goals for the year. Expectations for clinical RVUs will be tailored to reflect the amount of teaching time on an individual basis.
KEY LESSONS LEARNED: This tool to quantify teaching clearly defines time for teaching that is not rewarded by publication, title, or salary. It enables modification of appropriate RVU targets for clinical work based on teaching effort. By providing incentive for medical student teaching activities, we expect more willingness for faculty to participate in these activities.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster outlining details of this intervention with display of the instrument utilized for measuring teaching activity.

BEYOND CHART AUDITS IN PRACTICE-BASED LEARNING AND IMPROVEMENT; A CURRICULUM IN QUALITY IMPROVEMENT. A.M. Djuricich[1]. [1]Indiana University School of Medicine, Indianapolis, IN. *(Tracking ID #115185)*

STATEMENT OF PROBLEM OR QUESTION: Practice-based learning and improvement (PBLI), one of the six competencies defined by the ACGME, is particularly challenging for residency educators to implement. Besides performing chart audits, a common way to assess PBLI, residents often have many other innovative ideas to improve processes within the residency program, but previously have not been given a structured tool to organize the implementation of their ideas.
OBJECTIVES OF PROGRAM/INTERVENTION: To create a curriculum in Continuous Quality Improvement (CQI) that teaches internal medicine (IM) residents basic principles of CQI utilizing the Plan-Do-Study-Act (PDSA) cycle, with the following objectives: 1. Demonstrate adequate resident knowledge and skills in CQI processes. 2. Provide residents with the tools to devise their own CQI project ideas on improving systems. 3. Implement residents' projects through hospital, clinic and residency support.
DESCRIPTION OF PROGRAM/INTERVENTION: During their required one-month ambulatory rotation, 3rd year IM residents participated in a CQI curriculum, which included background readings, a brief lecture, and a small group discussion. Residents constructed ideas of their own choosing for CQI projects which had to relate to improving either one aspect of their education or clinical patient care. After receiving feedback by email from a faculty preceptor, each resident presented one CQI project in both oral and written format. Resident skill in understanding CQI methodology was assessed by the written projects. Residents' knowledge and attitudes regarding CQI were assessed with a short answer post-test and self-efficacy reflection. A final grade was determined by the post-test, group discussion participation, and the written project, which was evaluated based on five distinct criteria: adherence to the PDSA cycle, relevance, feasibility, affordability, and ability to measure outcomes.
FINDINGS TO DATE: 97% of residents passed the post-test (mean score 88.0%, range 60–100%). All 40 residents to date have designed adequate CQI projects. The mean project score was 38.0 points (maximum: 48; range 16–46). Several projects have been successfully implemented, and others are underway. Global evaluations of the curriculum have been uniformly positive. Residents commented that the timing of the curriculum would be improved if switched into the 2nd year, so projects could be designed with sufficient time for implementation.
KEY LESSONS LEARNED: A structured CQI curriculum can be successfully integrated into an IM residency ambulatory rotation. Residents, eager to make improvements in their residency, clinic and hospital systems, can learn knowledge of CQI principles, as well as the skill of constructing CQI projects within the PDSA cycle framework.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

BRINGING THE CONFERENCE ROOM TO THE BEDSIDE: USE OF A PORTABLE DRY-ERASE BOARD DURING ROUNDS. S. Kripalani[1]; D.P. Hunt[2]. [1]Emory University, Atlanta, GA; [2]Baylor College of Medicine, Houston, TX. *(Tracking ID #117542)*

STATEMENT OF PROBLEM OR QUESTION: Bedside teaching rounds promote patient-centered learning, demonstration of clinical skills, and role-modeling of good physician-patient communication. In spite of these benefits, attending physicians and trainees often choose to present patients in a conference room, where the team may use a blackboard or marker board to facilitate discussion. In order to capture the advantages of both settings, we carry a dry-erase board with us during bedside rounds.
OBJECTIVES OF PROGRAM/INTERVENTION: 1) To facilitate teaching during bedside rounds. 2) To provide an educational focal point for the ward team.
DESCRIPTION OF PROGRAM/INTERVENTION: We use a flat (i.e., no tray for holding markers), lightweight, plastic-rimmed, dry-erase board, available from any office supply store. While there are many sizes to choose from, either 16×20 inches (SK) or 20×30 inches (DH) works well, allowing a large writing surface while remaining easy to carry. After hearing the patient presentation, we obtain a focused history from the patient and demonstrate physical examination findings at the bedside. While providing patient education, we sometimes draw simple diagrams on the board to help explain the illness. We then return to the hallway outside the patient's

room where immediate teaching points are made. During these discussions, we generally write key points on the board as we help trainees refine the problem list, differential diagnosis, and/or treatment options. The boards are also useful for drawing diagrams of anatomic or physiological relationships, as well as diagnostic or therapeutic algorithms.
FINDINGS TO DATE: The board serves as a focal point for the learning environment on rounds. When the dry erase marker is uncapped, team members always gather around, knowing that the next five to fifteen minutes will be dedicated to teaching. In our experience, students and housestaff pay greater attention and participate more actively when key points are diagrammed or written down. Writing on the board also makes it easier to teach complex relationships, lay out a specific algorithm of medical decision-making, or weigh the advantages and disadvantages of a particular treatment option. Since the main points are written down, the board also benefits students who want to copy information into their own notebooks.
KEY LESSONS LEARNED: Residents and students consistently comment that the simple addition of the dry erase board to bedside rounds has a major visual impact on learning and organization of patient care.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster, demonstration with dry-erase board

CARING FOR THE COMPLEX PATIENT: TEACHING MEDICAL RESIDENTS ABOUT INTERDISCIPLINARY TEAM WORK. M. Schneidermann[1]; M. Wheeler[1]; E. Tan[2]; E. Miller[3]; A. Fernandez[1]. [1]University of California, San Francisco, San Francisco, CA; [2]Department of Veteran's Affairs, Washington, DC; [3]San Francisco General Hospital, SF, CA. *(Tracking ID #117096)*

STATEMENT OF PROBLEM OR QUESTION: Residents often feel incapable of effectively caring for the complex patients encountered in urban public hospitals, and despite the increased use of interdisciplinary models in clinical practice, resident education remains focused on individual physician-patient interactions.
OBJECTIVES OF PROGRAM/INTERVENTION: The goal of our educational program is to use an existing multidisciplinary clinical project to teach primary care medicine residents how to create and work within interdisciplinary teams to improve their care of complex patients.
DESCRIPTION OF PROGRAM/INTERVENTION: Second and third year primary care medicine residents participate in an educational seminar concentrating on the interdisciplinary management of complex patients. Every two months, a resident presents a challenging clinic patient to members of the High User Case Management (HUCM) team, comprised of social workers, a public health nurse, a psychiatrist, and an internist. The resident prepares a medical and psychosocial assessment of the patient using a format that defines the patient's barriers to care and the goals of treatment. Contributions of each team member are delineated, and clinic and community based resources are described. The resident develops an action plan for a particular clinical issue that engages hospital and community resources, including non-medical staff. Evaluation of the seminar occurs in two ways. Residents survey the sessions rating them on a five point Likert scale (1 poor to 5 excellent) for relevance, contribution to knowledge, and overall effectiveness. Feedback is also elicited through small group discussions.
FINDINGS TO DATE: Eighteen residents participated in seminar and 12 in evaluations. Residents ranked the seminars as highly relevant (mean = 4.5), as contributing to their knowledge (mean=4), and as overall effective (mean = 4.24). Residents also reported that the sessions allowed them to "reframe" their patients' issues, separate out contributing factors, diminish personal frustration with complex patients, and increase their leadership skills with non-physician teams. Residents found the sessions very helpful to their management of individual patients, but were unsure how generalizable this knowledge would be in other healthcare systems.
KEY LESSONS LEARNED: Multidisciplinary clinical programs generate opportunities for resident education. Our case management program for complex patients effectively uses case-based seminars to train residents to use an interdisciplinary approach to care. To improve our curriculum, we will clarify how the seminar's teaching objectives can be applied to other healthcare systems.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

COMPLEMENTARY AND ALTERNATIVE MEDICINE ELECTIVE: AN INTEGRATIVE MODEL. N.L. Nisly[1]; M.E. Rosenbaum[1]. [1]University of Iowa, Iowa City, IA. *(Tracking ID #117172)*

STATEMENT OF PROBLEM OR QUESTION: Medical and other health care students are faced with a growing use of Complementary and Alternative Medicine (CAM) practices by their patients, however the traditional medical curriculum does not prepare them to address their patient's use of CAM. Even when knowledgeable of the scientific information on CAM, students are often unfamiliar with the vast number of CAM modalities, which creates a barrier to successfully integrating that knowledge into patient care. We propose that a curriculum which provides evidence-based CAM education coupled with experiential sessions and exposure to CAM providers, enhances the educational experience and better prepares students to address CAM use .
OBJECTIVES OF PROGRAM/INTERVENTION: 1. Familiarize health care students with the evidence-based information on CAM, with emphasis on safety and efficacy. 2. Teach effective search strategies for reliable CAM information. 3. Introduce students to philosophical, practical, experiential and scientific information on key CAM modalities, through CAM providers and academic faculty.
DESCRIPTION OF PROGRAM/INTERVENTION: This interdisciplinary elective for medical and other health care students offers multiple learning formats, which are provided by both the medical school faculty and by licensed community CAM practitioners. It includes reviews of the relevant scientific literature, case-based learning and training on effective search strategies for reliable CAM information. Students also meet CAM practitioners, who offer them an unique opportunity to experience various CAM therapies through experiential and shadowing sessions.
FINDINGS TO DATE: The overall elective evaluation including 23 students FY 2001–03 show that 23/23 (100%) students met their expectations, with a mean overall evaluation score of 4.8, in a Likert 1-5 scale. Example of comments: "Prior to this course I had little to no knowledge base of alt meds. I learned things that I had never heard of before. This will help me in my career when working with pts. who use these alt meds".
KEY LESSONS LEARNED: Our surveys demonstrate the importance of a CAM curriculum in the medical and other health care student education. It also emphasizes the value of incorporating CAM providers in conjunction with the medical school faculty, in providing evidence-based education as well as relevant practical information and experience on CAM. This integrated effort provides an unique opportunity for students to benefit from the strengths of both cultures, improving CAM education.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster and power point presentations, pictures and short video of class activities.

DEVELOPING A COMMUNITY HEALTH FAIR TO PROMOTE COMMUNITY SERVICE BY RESIDENTS. K. DeLisma[1]; C. Wiley[1]; K. Carr[1]; A. Sofair[1]; T. Clarke[1]; S.J. Huot[1]. [1]Yale University, New Haven, CT. *(Tracking ID #117139)*

STATEMENT OF PROBLEM OR QUESTION: Many students participate in community service activities during medical school, but not residency. We propose that integrating community services activities into residency curricula can promote community involvement, public health education and resident scholarship.
OBJECTIVES OF PROGRAM/INTERVENTION: 1. Stimulate and cultivate housestaff and faculty's community services involvement 2. Promote community education and increase health resources awareness 3. Provide opportunities for resident scholarship in areas of community health.
DESCRIPTION OF PROGRAM/INTERVENTION: One resident (KD) developed the health fair as his scholarly project. He recruited faculty mentors (AS, KC, TC, SH) and a colleague (CW) as collaborators. After performing a literature review, goals, objectives, an operating budget and a timeline were developed. Residents, faculty and staff were recruited and contacts with community agencies established. Faculty-resident teams were appointed leaders for each station, fund raising, health fair design and advertising. The fair was held in conjunction with a city-sponsored festival. Stations included: Behavioral Health, Cardiovascular Health, Colon Cancer Screening, Community Health Resources, Low Vision Screening, Immunizations, Nutrition/Obesity/Fitness, Pediatrics, Respiratory Disease, Senior Citizen Resources, Public Health Department, Substance Abuse, Women's Health, and a Blood Drive.
FINDINGS TO DATE: 70 residents, faculty, nurses and staff participated in the Health Fair. There were 900 visitors. The first 500 completed a survey and rated their satisfaction with the health fair at 8.7 on a 10-point scale. Of 69 individuals without a diagnosis of diabetes who were screened, 9 were found to be low risk, 31 moderate risk and 29 high risk. All were offered referral. 221 individuals were screened for hypertension and/or hypercholesterolemia. 2 residents are using data from the health fair to develop scholarly projects.
KEY LESSONS LEARNED: A resident champion leader and resident involvement in all aspects of the project were critical as was holding the health fair in conjunction with an existing community activity. Garnering the support of community leaders and educating them about health fair goals was critical for obtaining space and resources from the city. Over 50% of the residents in the training program participated indicating that residents do have a strong interest in community health initiatives. Community service activities provide a rich opportunity for resident scholarship.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster with text, tables and pictures. Laptop computer with rolling PowerPoint.

DEVELOPMENT AND EVALUATION OF A MENTORING PROGRAM FOR INTERNAL MEDICINE RESIDENTS. M.S. Cunnane[1]; B. Hanusa[1]; R.A. Buranosky[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116612)*

STATEMENT OF PROBLEM OR QUESTION: Mentorship is an essential component of successful professional development, but little is known about the effective mentorship of physicians in training.
OBJECTIVES OF PROGRAM/INTERVENTION: Our objectives were to develop and assess a program designed to meet the mentoring needs of Internal Medicine residents at the University of Pittsburgh.
DESCRIPTION OF PROGRAM/INTERVENTION: The Mentorship Program, which assigned a General Medicine faculty mentor to each intern, was implemented in June 2002 to improve residents' personal and professional development. Faculty mentors and interns met at least quarterly to discuss career plans, research opportunities, and time managment. Rotation evaluations and conference attendance reports allowed the mentor to provide feedback about clinical performance; a list of residency requirements enabled mentors to review program expectations. Faculty participated in workshops during the year to enhance their mentoring skills.
FINDINGS TO DATE: To assess the program, a 21-item questionnaire was administered to 68 PGY-2 and PGY-3 Internal Medicine residents, 30 of whom had

participated in the assigned mentoring program. Among the 55 residents who completed the survey (81%), 67% identified at least one mentoring relationship: 40% of these were established through the mentoring program (assigned), and 60% were established through free choice (non-assigned). Career guidance and research guidance were noted as areas in which mentoring was desired (86% and 51% respectively), and were subsequently found to be areas in which mentoring occurred for most residents (75% and 47% respectively).There was no significant difference in meeting frequency (p = 0.49), receipt of career guidance (p = 0.88) or receipt of research guidance (p = 0.91) between residents with assigned and non-assigned mentors. Overall, 88% of residents reported benefit; perceived benefit differed significantly between assigned and non-assigned groups (75% vs. 97%, p = 0.04). Among the 1/3 of residents who did not identify a mentor (n = 17), 89% stated that they would have benefited from mentoring, and 58% would have preferred an assigned mentor.
KEY LESSONS LEARNED: Internal Medicine residents have specific needs for mentoring and benefit from mentoring relationships. Assigned mentoring augments existing relationships and provides an opportunity for mentoring to residents who otherwise might not receive it.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

DEVELOPMENT OF A LOW-COST MULTIMEDIA CD FOR CARDIAC AUSCULTATION INSTRUCTION. K. Poindexter[1]; D. Torre[1]; D.E. Simpson[2]. [1]Medical College of Wisconsin, Milwaukee, WI; [2]Society of Directors of Research in Medical Education, Milwaukee, WI. *(Tracking ID #116845)*

STATEMENT OF PROBLEM OR QUESTION: Previous research has documented gaps in cardiac auscultation skills among medical students. As faculty time to teach becomes increasingly precious the impact of low faculty cost approaches to teaching skills that require practice and repetition must be explored.
OBJECTIVES OF PROGRAM/INTERVENTION: To increase students cardiac auscultation knowledge and skills. To provide a multi-media, self directed learning application for students.
DESCRIPTION OF PROGRAM/INTERVENTION: During the period November to December 2003, thirty-four M3 students who were rotating on their required internal medicine clerkship were given a cardiac auscultation CDROM. The CDROM was developed using Microsoft Producer authoring soft ware; simulated murmurs and heart sounds were provided by Cardionics. The content of the CDROM included seven systolic murmurs, two diastolic murmurs, four heart sounds (S3, S4, and physiologic splitting of S2, fixed splitting of S2) and a pericardial rub. For each murmur/heart sound we developed and synchronize Power Point slides with instructor "voice over", sound files, and images of the main clinical and auscultatory characteristics of heart sounds/murmurs. At the end of the presentation 8 interactive MCQs with embedded heart sounds were included to test the acquisition of the material. The whole program took 16 minutes to review.
FINDINGS TO DATE: Preliminary results from students' evaluations reveal that >90% of students reported that the CD ROM was easy to use, increased their knowledge and skills of cardiac auscultation, and provided repeated opportunities for practice. Ninety-five percent of students rated the overall educational value of the CDROM very highly and indicated that the CDROM promoted self-directed learning. Student performance on a cardiac simulation test at the end of the clerkship revealed high level of skill acquisition (mean score 11; range 0–12).
KEY LESSONS LEARNED: Students are highly responsive to well structured, CD ROM based learning activities. Because cardiac auscultation skills are learned by practice and repetition this program's multi-media capabilities appears to be an effective and efficient strategy for teaching and reinforcing cardiac physical examination skills to third year medical students. Educators should consider the low cost and high yield of this tool to create and deliver curricular content to medical students.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: CDROM via laptop.

DOES VIRTUAL REALITY SIMULATION TRAINING IMPROVE RESIDENT LEARNING CURVES IN PERFORMING FLEXIBLE SIGMOIDOSCOPIES? J.S. Kunz[1]; J. Jorgensen[1]. [1]Madigan Army Medical Center, Tacoma, WA. *(Tracking ID #117511)*

STATEMENT OF PROBLEM OR QUESTION: Does training with virtual reality flexible sigmoidoscopy simulation decrease the number of practice attempts needed on live patients to effectively learn flexible sigmoidoscopy?
OBJECTIVES OF PROGRAM/INTERVENTION: To determine whether practice on a flexible sigmoidoscopy simulator improves the learning curves of internal medicine residents.
DESCRIPTION OF PROGRAM/ INTERVENTION: Eight internal medicine residents at the PGY-1 level were divided into groups of four. The study group received six hours of instruction on the flexible sigmoidscopy virtual reality simulator; the control group did not receive the simulator training. The two groups then performed sigmoidoscopies on live patients under staff supervision and were asked to fill out a follow up questionnaire after each procedure that determined whether the procedure was successful (criteria for success based on whether the resident achieved at least 35cm of insertion, conducted the procedure in less than 20 minutes, performed an adequate retroflexion, and performed the procedure independently). Failing any of the preceding categories was considered a procedural failure. Cumulative sum analysis was then used to construct learning curves for each of the eight residents. The Mann-Whitney U test was utilized to describe the statistical significance among these non-parametric results.
FINDINGS TO DATE: The number of attempts needed to learn flexible sigmoidoscopy in the control group was 19+/–5, whereas the number of attempts needed to learn flexible sigmoidoscopy in the experimental group was 10+/–4 ($P < .04$).
KEY LESSONS LEARNED: The use of virtual reality flexible sigmoidoscopy simulation is an effective training tool and appears to decrease the number of attempts it takes to successfully learn how to do a flexible sigmoidoscopy on a real patient.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

EFFECTIVENESS OF A HIP FRACTURE SERVICE AS A GERIATRIC TEACHING INTERVENTION IN AN INTERNAL MEDICINE RESIDENCY PROGRAM. L.N. Miura[1]; E. Eckstrom[1]; E. Meihoff[1]; L. Homer[1]; S. Jones[1]. [1]Legacy Portland Hospitals, Portland, OR. *(Tracking ID #116439)*

STATEMENT OF PROBLEM OR QUESTION: As the population ages, preparing future physicians to practice medicine with a focus on geriatrics becomes paramount. Various educational strategies for training housestaff, specifically those in internal and family medicine, have been proposed. We developed a geriatrician-led hip fracture service in 2001 to improve care to this elderly population during a high-risk procedure. We realized this new program was an ideal opportunity to teach internal medicine residents how to manage complex geriatric inpatients.
OBJECTIVES OF PROGRAM/INTERVENTION: To determine if a one month rotation on the hip fracture service could 1) increase resident knowledge of perioperative and geriatric medicine, 2) improve comfort level in caring for the acutely ill geriatric patient, and 3) demonstrate satisfaction with participation in such a rotation.
DESCRIPTION OF PROGRAM/INTERVENTION: Thirty-eight second-year internal medicine residents based at an academic-affiliated community hospital rotated for one month on the hip fracture service from 2001–2003. The residents rounded daily with the geriatrician and participated in the work-up and management of patients admitted to the service. Twice weekly didactics on perioperative medicine and topics such as delirium, pressure ulcers, and constipation were taught by the geriatrician. Residents completed a 7-item survey following this experience. Knowledge and comfort level in managing these patients was evaluated with a five-point Likert scale (1 = least, 5 = most). Responses were analyzed using a sign test.
FINDINGS TO DATE: Thirty-six of 38 residents (94.7%) responded. Resident satisfaction with the service was high, with a score of 4.1 (range 2.0–5.0). All 36 residents felt better able to handle acute hip fracture patients ($P < .001$), and 31 of 36 felt more comfortable with perioperative management ($P < .001$). Residents reported increased knowledge in pain management (80.6%), delirium (50.0%), and bowel regimens (36.1%) as other valuable lessons learned on the service.
KEY LESSONS LEARNED: Resident self-reported proficiency in the perioperative management of the elderly patient with acute hip fracture, as well as knowledge in several basic geriatric medicine topics, improved after rotating on a geriatric hip fracture service. Although we had no control group for comparison, this program appears to be an effective model for teaching geriatrics to housestaff in internal medicine. Furthermore, residents were very satisfied with this experience, suggesting we have found one way to enhance resident interest in caring for geriatric patients.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

ENHANCING M4 STUDENT EBM SKILLS USING PBL AND PEER TEACHING. R.C. Anderson[1]; J. Zebrack[1]; D. Torre[1]; D.E. Simpson[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #117311)*

STATEMENT OF PROBLEM OR QUESTION: M4 students must prepare to be lifelong learners per the AAMC outcome objectives report. Evidence-based medicine skills are a core component of self-directed learning.
OBJECTIVES OF PROGRAM/INTERVENTION: (1) To generate EBM clinical questions utilizing a problem-based learning (PBL) case-based session; (2) To increase efficiency in asking, acquiring, appraising, applying and assessing best evidence; (3) To solidify EBM knowledge and skills through teaching of EBM to peer students; (4) to enhance self confidence of EBM skills.
DESCRIPTION OF PROGRAM/INTERVENTION: M4 students (5–8 students) during a required month of Ambulatory Medicine participate in a PBL session using a patient case to generate relevant clinical questions. Students then identify EBM resources and use a self-accountability process to frame goals, methods and outcomes for filling EBM knowledge and skill gaps specific to each student. Findings are presented in a conference to their fellow M4 students and a group of approximately 10 M3 students who also are on Ambulatory Medicine. At the conclusion of this intervention, students rate their confidence in EBM skill areas (ask, acquire, appraise, apply, assess) and then retrospectively rate their confidence in these same areas at the beginning of the month. A T-test was utilized to compare mean ratings of self-confidence before and after the intervention (Likert scale 1–5).
FINDINGS TO DATE: 13 M4 students have completed this intervention to date. Each EBM skill area (ask, acquire, appraise, apply, assess) as well as teaching skill shows significant improvement in self-confidence ($P < .05$). The students rated the overall intervention as very beneficial and highly valued the opportunity to learn from and teach student peers.
KEY LESSONS LEARNED: This intervention is effective in increasing the confidence of M4 students in their EBM skills. A problem-based learning approach helped to identify pertinent clinical questions and a self-accountability process framed specific outcomes for each student. Finally, teaching to student peers solidified EBM skills.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster outlining details of the educational intervention. Copies of actual instruments used for assessment and examples of M4 products will be available.

EVIDENCE-BASED MEDICINE IN 7 HOURS: AN AMBULATORY CURRICULUM. D. Zipkin[1]; G. Khanna[1]. [1]California Pacific Medical Center, San Francisco, CA. *(Tracking ID #102296)*

STATEMENT OF PROBLEM OR QUESTION: Teaching residents to practice Evidence-Based Medicine (EBM) is imperative in order for them to provide up-to-date, cost-effective primary care. Time constraints make effective EBM teaching a challenge.
OBJECTIVES OF PROGRAM/INTERVENTION: To incorporate EBM into ambulatory teaching in a community-based categorical internal medicine residency program, emphasizing critical review of published studies in answering clinical questions.
DESCRIPTION OF PROGRAM/INTERVENTION: Categorical residents at California Pacific Medical Center in San Francisco spend one month per year in the primary care clinic. During a four week block, the curriculum is presented to 2–3 residents over seven hours. The components are: 1. Asking a clinical question, focused on the framing of a well-conceived question (1 hour) 2. Understanding study design—a review of the uses for cohort studies, case-control studies, clinical trials and systematic reviews (45 min) 3. Sample journal club—a presentation by faculty of a major current article (30 min) 4. Literature search skills—a computer session reviewing PubMed and Ovid search techniques (45 min) 5. Diagnosis—a review of sensitivity, specificity, likelihood ratios, pre- and post-test probabilities, and clinical application using a sample article and worksheet (1 hour) 6. Screening—a review of the concepts of lead time bias, length time bias and study design, using a sample abstract (30 min) 7. Treatment and Harm—a review of relative risk reduction, absolute risk reduction, number needed to treat/harm, using a sample article and worksheet (1 hour) 8. Prognosis—a review of the concepts of inception cohort and bias, using a sample abstract (30 min) 9. Journal club—presentation of articles by the residents, based on their clinical question (1 hour).
FINDINGS TO DATE: Seven residents have completed the program to date. Evaluations include pre- and post-tests of residents' self-reported knowledge and attitudes as well as course feedback forms. Overall feedback from residents has been uniformly positive. After completing the curriculum, residents are more likely to agree that they can find the best evidence to answer their questions and apply it to clinical practice. They are more confident in defining terms such as relative risk, likelihood ratio, and number needed to treat. Skills are assessed through participation in applying concepts as well as the journal club presentation. Evaluation of residents' performance is incorporated into the rotation evaluation.
KEY LESSONS LEARNED: EBM can be taught effectively in the ambulatory setting within a limited time frame.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

FACULTY DEVELOPMENT IN GERIATRICS TEACHING FOR SURGEONS AND SUBSPECIALISTS B.C. Williams[1]; J.T. Fitzgerald[1]; J.B. Halter[1]. [1]University of Michigan, Ann Arbor, MI. *(Tracking ID #116459)*

STATEMENT OF PROBLEM OR QUESTION: The large and growing number of older patients requires that non-primary care physicians possess basic skills in geriatrics.
OBJECTIVES OF PROGRAM/INTERVENTION: To develop geriatrics clinical and teaching "champions" among surgical and medical subspecialty faculty by, a) teaching faculty a comprehensive framework, clinical knowledge, and assessment skills in geriatrics relevant to their discipline, b) supporting faculty in developing and implementing a geriatrics curriculum for house officers in his/her discipline, and c) disseminating results within each specialty and subspecialty, and to medical educators.
DESCRIPTION OF PROGRAM/INTERVENTION: One faculty member from each of 6 medical subspecialties, 6 surgical specialties, Anesthesiology, Emergency Medicine, and Physical Medicine was recruited for participation (n = 15). Faculty were enrolled in 4 separate cohorts 6–12 months apart, and participated in 9–12 months of weekly 2-hour small group seminars. Seminars were highly interactive and included frequent presentations by participants. Resources to assist lead faculty include: a) a web-based teaching resources warehouse, b) an internal clinical website containing resource and referral information in geriatrics, and c) a Standardized Patient Instructor program for developing assessment and communication skills among house officers.
FINDINGS TO DATE: Of the 15 participating faculty, 11 have completed most or all the faculty development seminars, one has dropped out, and 3 begin January, 2004. Positive outcomes include: a) faculty report that the seminars were helpful and relevant, and increased their confidence in teaching and doing geriatrics, b) increased faculty knowledge in geriatrics, c) numerous new lectures and clinical rotations in geriatrics, and d) faculty are recognized as geriatrics "champions" in their home departments or divisions. Difficulties include: a) two faculty left the institution to enter clinical practice, b) time was not always protected, especially among surgical faculty, and c) implementing clinical teaching programs has been limited in some disciplines.
KEY LESSONS LEARNED: Non-primary care faculty development in geriatrics requires motivated faculty supported by department or division chairs, and substantial protected time. Regular, longitudinal, interactive small group seminars that require faculty to demonstrate skills and report progress are key to successful implementation. Early and ongoing efforts should be made foster support from home departments, and to maintian enthusiasm and ongoing learning and teaching by geriatrics-trained faculty after leaving the formal program.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster, teaching syllabi, static Web displays.

FELLOWS AS CLINICIAN EDUCATORS: TEACHING AND EDUCATION SKILLS DEVELOPMENT FOR FELLOWS. B.E. Johnson[1]; M.E. Rosenbaum[1]. [1]University of Iowa, Iowa City, IA. *(Tracking ID #117012)*

STATEMENT OF PROBLEM OR QUESTION: Internal medicine (IM) departments often hire recent IM fellows to function as clinician educators. But IM fellowships are challenged to provide training in teaching and education skills to match training in research. Teaching skills development requires faculty and medical educator expertise, time and expense; often too few fellows are in any one division to sustain a teaching program.
OBJECTIVES OF PROGRAM/INTERVENTION: We started the Fellows as Clinician Educators (FACE) program to fill this void. The objectives of the FACE program are: 1) to enhance skills in teaching, curriculum development and career planning for a cross-disciplinary group of IM fellows and, 2) to provide this training in a time- and cost-saving setting for the department of internal medicine and IM specialty divisions.
DESCRIPTION OF PROGRAM/INTERVENTION: The FACE program accepts interested fellows in any specialty division. The first year focuses on presentation and teaching skills enhancement. The second year consists of curriculum development and career planning. By the end of their second year, the participant should have a completed curricular element and a nascent teaching portfolio. Seminar-type sessions consist of didactics, self-assessment exercises, skill-practice activities, and discussion. Little "homework" is assigned beyond writing of a curriculum and compiling ones teaching portfolio. To enhance teaching skills outside the clinical setting, participants lead small groups of pre-clinical medical students. Fellows are observed while teaching and given formal feedback
FINDINGS TO DATE: 23 fellows, from 7 specialty divisions, have participated in the FACE program. Pre-program self-assessments show a desire to improve skills in lecturing, small group facilitation, and inpatient and outpatient teaching. Participants are involved in varying levels of teaching. Fellows who have completed the two-year FACE program have successfully written curriculum and begun a teaching portfolio. There are not enough data for pre/post-program comparison or to assess effect on career paths.
KEY LESSONS LEARNED: The FACE program provides future clinician educators teaching and educational skills development in a cross-disciplinary setting that may be missing in specialty fellowships. Strong financial and administrative support from department leaders confirms the consolidation of effort and manpower represented by this program.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

FOCUSING ON THE DOCTOR'S CULTURE: A FRAMEWORK FOR TEACHING CULTURAL COMPETENCE TO FIRST YEAR MEDICAL STUDENTS. C. Boutin-Foster[1]; L. Konopasek[1]; S. Morales[1]; P. Marzuk[1]; C.L. Storey-Johnson[1]. [1]Cornell University Medical College, New York, NY. *(Tracking ID #116462)*

STATEMENT OF PROBLEM OR QUESTION: Traditionally, cross-cultural curricula have focused on the patient's culture as being different. This approach may inadvertently suggest that the physician's culture is the norm or may reinforce stereotypes about specific cultural groups. A critical, yet often neglected aspect of cross-cultural curricula is that physicians, as a professional group, also have a unique set of values, beliefs, and behaviors that may influence their interactions with patients.
OBJECTIVES OF PROGRAM/INTERVENTION: The goal of the program is to enable students to: 1) understand the principles of cultural competence and 2) appreciate that the physician's culture can influence the doctor-patient interaction.
DESCRIPTION OF PROGRAM/INTERVENTION: This program is taught as part of the cultural competence curriculum of the first year doctoring course. The format is a 1.5-hour lecture consisting of a didactic session, self-reflection exercises, and clinical vignettes. Students participate in a series of exercises that illustrate the influence of the medical profession on their values and the influence of medical education on their views on health and illness. These exercises also illustrate the shared patterns of behaviors of physicians for example, their use of medical jargon. Clinical vignettes are used to illustrate how physician's culture can contribute to health disparities. Students evaluate the program by rating the extent to which it has aided their learning. Their knowledge and attitudes are assessed through a written exam. As part of the exam, they are shown a videotaped doctor-patient encounter in which the doctor and patient have concordant ethnicity and gender and are asked to describe the role of cultural competence in the encounter.
FINDINGS TO DATE: A total of 102 first year medical students participated in this course. Of these, 82% rated it as a helpful learning experience. On the written exam, most students demonstrated knowledge of the principles of cultural competence and demonstrated an awareness that the physician's culture can also influence the doctor-patient interaction.
KEY LESSONS LEARNED: Our findings suggest that discussing the physician's culture is an essential component of teaching cultural competence to first year medical students. Future work will focus on evaluating the impact of this course on clinical skills through OSCEs and determining whether the principles learned are sustained beyond the first year of medical school.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Clinical vignettes and videotapes used in the course will be available.

FROM CLASSROOM TO CLERKSHIP: A CURRICULUM FOR FIRST YEAR MEDICAL STUDENTS. P. Basaviah[1]; J.H. Muller[1]; L. French[1]; C.L. Chou[1]; W.B. Shore[1]; C. Chen[1]; L. Tong[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117492)*

STATEMENT OF PROBLEM OR QUESTION: Students can have significant difficulty adapting to the "ward culture." Further, medical students often complain that they do not see the clinical relevance of basic science instruction.

OBJECTIVES OF PROGRAM/INTERVENTION: A four-day curriculum occurring three months into medical school, "Clinical Interlude (CI)," was designed to introduce first-year medical students to the culture of the inpatient setting and to provide them with a context for the classroom material they are learning. Specific goals included: (1) observing patient-clinician relationships; (2) understanding dynamics of health care teams; (3) learning about the hospital experience from a patient's perspective; and, (4) delineating roles of non-physician health care providers.
DESCRIPTION OF PROGRAM/INTERVENTION: CI has been implemented in December 2001–2003 at UCSF for all first-year medical students (~140). Each student was assigned to an inpatient setting in one of 6 hospitals, to one of 11 clinical areas, and to one of 10 health care professional categories. The curriculum consisted of five key components: (1) a keynote speaker who was a clinician with a chronic illness herself; (2) a day of observation and interaction with inpatient teams during work rounds, bedside rounds, and didactic sessions; (3) an interview and exam of a hospitalized patient; (4) a session with a non-physician health care provider; and, (5) a small group to discuss reflections, facilitated by a faculty facilitator.
FINDINGS TO DATE: CI was highly rated in 2001 and received even higher ratings in 2002. On a rating scale of 1 = poor to 5 = excellent, overally quality scores improved from 3.8 in 2001 to 4.37 in 2002. Overall, ratings improved in 2002, with 66% rating the overall quality as very good or excellent in 2001 and 87% in 2002. Subjective assessments included students' answers to questions about the inpatient setting. Topics were based on their observations and included: discoveries about inpatient settings and teams, predictors of successful inpatient teams, and predictors of patient satisfaction.
KEY LESSONS LEARNED: The majority of students reported that the curriculum helped them recognize the importance of communication within teams, with non-physician health care providers and with patients. Students also recognized they can have control in defining the kind of physicians they will become. In conclusion, early clinical experiences provided first-year medical students with new insights and motivation for learning.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster, brochures, powerpoint/lcd (latter optional).

HARNESSING RESIDENT INTEREST AND INITIATIVE FOR EXCEPTIONAL LEARNING: THE CREATION OF A WEIGHT MANAGEMENT CLINIC. M. Jay[1]; D. Mann[1]; S. Zabar[1]. [1]New York University, New York, NY. *(Tracking ID #116578)*

STATEMENT OF PROBLEM OR QUESTION: How can residents translate their interest in a global health epidemic into a sustainable project that advances health care delivery?
OBJECTIVES OF PROGRAM/INTERVENTION: The objective of the program is for residents to learn how to generate new systems of patient care through the creation of a weight management clinic.
DESCRIPTION OF PROGRAM/INTERVENTION: After completing an advocacy project on obesity prevention and treatment for their health policy course, three NYU Primary Care third year residents identified a need to establish a clinic to address weight management. They discussed their ideas with the medical director and initiated meetings with a behavioral therapist, a nutritionist, and interested attendings. Through these meetings, an 18-week program was developed that focused on lifestyle change using standard cognitive behavioral techniques, nutrition, exercise demonstrations, and problem solving sessions. Residents screened all patients for eligibility and collected baseline information. Enrolled patients met for weekly group sessions run by residents and a multidisciplinary volunteer staff.
FINDINGS TO DATE: Three senior residents spent an average of 4–8 hours per week over a 10-month period on planning and implementation. Four junior residents spent 3–4 hours per week during their ambulatory blocks. They managed 3 groups of patients through completion. The residents developed expertise in the multidisciplinary management of obesity; acquiring skills in patient recruitment, group session management, and clinic administration. The residents also experienced collaborative relationships with specialties including bariatric surgery, endocrinology, and gastroenterology for joint clinical and research projects. The challenges of implementation included finding appropriate clinical and administrative mentorship, funding, and sustainability.
KEY LESSONS LEARNED: Residents achieve excitement, energy, and scholarship by learning about healthcare organization and management through researching an important community health need, seeking mentorship from diverse disciplines, and designing and implementing a new clinical service.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: A poster and other materials.

HOW TO IMPLEMENT A PROFESSIONALISM CURRICULUM ACROSS THE ENTIRE DEPARTMENT OF MEDICINE. R.C. Anderson[1]; M. Lodes[1]; J. Franco[1]; D. Torre[1]; J. Sebastian[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #117321)*

STATEMENT OF PROBLEM OR QUESTION: Professionalism is a cornerstone of physician practice and medical education. The ACGME and LCME require a consistent approach to teach and evaluate professionalism in a Department of Medicine.
OBJECTIVES OF PROGRAM/INTERVENTION: (1) To develop and implement a comprehensive program to address professionalism in faculty, fellow, resident and student activities; (2) To enhance mechanisms for feedback and follow-up of professionalism issues; (3) To better document and understand perceptions of unprofessional behavior.
DESCRIPTION OF PROGRAM/INTERVENTION: The Department of Medicine Education Committee was tasked by the Department Chairman to develop and implement a comprehensive professionalism curriculum for the Department. A subcommittee of faculty (1 female, 2 male) was identified as the core advisory group for students. Identified medical student leaders communicate to the subcommittee any student-identified issues that arise on Department of Medicine rotations. The Department residency and fellowship programs are being targeted with a series of case-based scenarios at morning report, fellows' conference and resident retreats.
FINDINGS TO DATE: Student liaisons are reporting 1 to 2 situations per 2-month block and anonymous student evaluations are showing 3 to 4 situations. One serious faculty issue was identified. Residents report satisfaction with case-based scenarios as means to frame discussion of unprofessional issues.
KEY LESSONS LEARNED: Student liaisons are not reporting all situations perceived as unprofessional. The reported episodes have led to specific actions including removal of a clinical faculty from teaching responsibilities and development of a case scenario based on an unprofessional resident-student interaction. An anonymous reporting system might be helpful to capture more situations perceived as unprofessional. Case-based scenarios are effective teaching tools for residency education.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster detailing educational strategies for student, resident and fellow education. Examples of case scenarios will be provided as handouts.

IMMERSION EDUCATIONAL EXPERIENCE FOR TEACHING ESSENTIAL CLINICAL SKILLS TO FIRST-YEAR INTERNAL MEDICINE RESIDENTS. K.J. Pfeifer[1]; L. Moraski[2]; S. Bamrah[1]; I.A. Gilbert[1]; S. Davids[1]. [1]Medical College of Wisconsin, Milwaukee, WI; [2]Medical College of Wisconsin, Wauwatosa, WI. *(Tracking ID #117351)*

STATEMENT OF PROBLEM OR QUESTION: Pressures to comply with work hour limitations combined with increasing variability in first-year resident skill sets make traditional educational venues insufficient for optimizing ACGME competency-based graduate medical education.
OBJECTIVES OF PROGRAM/INTERVENTION: Internal Medicine 101 (IM101) is a five-day course for first-year internal medicine residents intended to build a foundation of core skills and lifelong learning. It is designed to strengthen and enhance critical clinical skills, teach the basics of academic and professional development, introduce the concepts and methodology of systems-based practice and foster collegial and mentoring relationships between residents and key teaching faculty.
DESCRIPTION OF PROGRAM/INTERVENTION: Using the ACGME Core Competencies as framework, we created a forty-hour series of small group, interactive educational sessions for all first-year internal medicine residents (categorical and combined programs). Sessions focused on physical diagnosis, clinical test analysis, communication skills, systems-based practice and professional development. The course was limited to ten residents per 5-day session, and residents were relieved of all other duties. Sessions were led by faculty previously recognized for both excellence in teaching and expertise in given topics.
FINDINGS TO DATE: All resident (n = 24) and faculty (n = 13) participants completed post-course surveys using a five-point Likert scale (1= worst and 5 = best). Residents rated the course highly in all areas with mean ratings for overall course effectiveness, preparation for career and strengthening of professional relationships of 4.6, 4.5 and 4.5, respectively. Resident data supports this course as a worthwhile utilization of resident time as compared to other educational programs (mean 4.8) and should be offered again the following year (mean 4.9). Similarly, faculty found the course to be a good opportunity to increase interaction with residents (mean 4.7) and a better use of their teaching time (mean 4.6). They also characterized the residents as more engaged (mean 4.7) and their teaching as more effective (mean 4.5) in the IM101 course. Residents also completed pre- and post-course skills self-assessments and objective skills testing, and analysis of these data is in process.
KEY LESSONS LEARNED: IM101 is an effective means to integrate the ACGME Core Competencies into residency training. Overall, we found that IM101 resulted in high satisfaction and incorporation of a basic skill set across all residents, and anticipate follow-up data that shows sustained change in performance over time.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

INTEGRATING GERIATRICS AND VIRTUAL PATIENTS INTO THE MEDICAL SCHOOL CURRICULUM. K. Denson[1]; D. Kerwin[1]; D. Simpson[1]; E. Duthie[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #115693)*

STATEMENT OF PROBLEM OR QUESTION: The aging population and associated demands on the health care system have led to revised accreditation standards requiring that geriatrics be integrated into an already dense medical school curriculum.
OBJECTIVES OF PROGRAM/INTERVENTION: To implement a sustainable approach to increasing geriatrics education that is clinically relevant and permits longitudinal follow-up of geriatric conditions throughout the four years of medical school education. Our goal is to integrate geriatric medicine into the already present curriculum by providing video, still images and other materials in CD-Rom form that could be integrated into existing lectures.
DESCRIPTION OF PROGRAM/INTERVENTION: Five paper cases, each abstracted from an actual patient's chart, were developed to highlight common geriatric conditions and the progression of disease over time as the patients age 15–25 years. The cases were then presented to basic and clinical science faculty who had teaching responsibilities linked to the case topics (e.g. dementia, diabetes, osteoporosis, hypertension) to make modifications in the case and the progression of disease over time which would enhance incorporation of the case into their teaching. Faculty identified additional resources needed (e.g., radiographic images, lab findings) that would enhance case utility. The CD-Rom, in effect, makes the patient "come alive". CD accessible resources have been assembled for five cases and include 20–30 video vignettes per case using geriatricians and professional actors who "age" and change health status in response to disease progression. Still images, genograms, radiologic

images and histology slides are also incorporated into each CD to increase the available teaching resources.
FINDINGS TO DATE: The result is the creation of CD-Rom teaching tools that are used in the medical school curriculum to increase exposure of students to geriatric topics and principles and to supplement lecture content. The CDs have been well received by both the faculty and students over the last two years. In the initial 15 months, across the M1–M3 years 67% of the required courses and clerkships incorporated at least one case into the curriculum. During the M1–2 years over half of the required courses used the first two cases: M1 cases were used 18 times, M2 used 9 times. In comparing the 2001 and 2003 AAMC Senior Graduation Questionnaires the knowledge of healthy adults increased over 10% and adequacy of geriatrics training during clinical clerkships increased over 17%. In addition, students' perception that geriatrics education was part of all four years of their medical education increased from 25% to over 60%.
KEY LESSONS LEARNED: The accessibility of peer-developed, longitudinal geriatric cases, explicitly linked to basic and clinical science topics and associated images, video clips and teaching resources, is an effective and efficient strategy for increasing geriatric content within the medical school curriculum. Steps now involve further measurement of the use of the teaching CDs in the curriculum and the creation of a similar set of CDs that will focus on assessment of the topics presented to correspond with the ACGME Internal Medicine Training Program Requirements.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Demonstration of our teaching CDs will allow participants to individually use the computer to view the cases, video clips, radiographic images and lab findings contained on teaching CDs. In addition, a poster will be presented to highlight the impact of the CDs upon medical student education in the area of geriatrics.

INTEGRATING GERIATRICS INTO AN INTERNAL MEDICINE AMBULATORY CURRICULUM: TIME FOR A SENIOR MOMENT. M.M. Ziebert[1]; J.L. Mitchell[1]; M. Schapira[1]; D.E. Simpson[2]. [1]Medical College of Wisconsin, Milwaukee, WI; [2]Society of Directors of Research in Medical Education, Milwaukee, WI. *(Tracking ID #115512)*

STATEMENT OF PROBLEM OR QUESTION: The aging of our population together with the shortage of physicians trained in geriatrics demands that the care of the elderly become a focus for internal medicine residency training. Currently, barriers to implementing optimal geriatric teaching by academic generalists include insufficient curricular time, motivation, and resources.
OBJECTIVES OF PROGRAM/INTERVENTION: To improve the geriatric knowledge, skills, and attitudes of internal medicine residents and address barriers to teaching geriatrics by embedding geriatrics within existing core curriculum topics.
DESCRIPTION OF PROGRAM/INTERVENTION: Our current internal medicine ambulatory care curriculum includes a weekly conference that takes place before the continuity clinic sessions. At the conclusion of this conference, the residents now pause for a "Senior Moment." Residents are asked to consider whether the concepts highlighted in the conference can be applied to the care of the elderly. Using an unfolding case format with an emphasis on EBM and a reference article, the residents and faculty preceptor are prepared to discuss the geriatric focus.
FINDINGS TO DATE: In a review of the 46 ambulatory care topics in one academic year, 17 (37%) were appropriate for adaptation to Senior Moments. The following 7 topics were developed and implemented—hypertension, cancer screening, hyperlipidemia, valvular heart disease, osteoarthritis, sinusitis, prostate cancer and hyperlipidemia. An evaluation of the innovation was done from the resident and attending perspective. A sample of residents from one clinic site (n = 67) completed a post-conference questionnaire after each of the seven completed Senior Moments. Ninety-nine percent (99%) agreed that the Senior Moments would help them care for geriatric patients. A structured interview was conducted with a representative group of faculty preceptors who had used the Senior Moments in order to explore factors that influence its use. The faculty valued the Senior Moments' unfolding case format and the EBM emphasis, found the most effective Senior Moments to be those that emphasized functional assessment, and reported that they could incorporate this instructional method with only limited preparation. To strengthen the Senior Moments, faculty recommended highlighting the relevant ACGME competencies within each case and using time management skills to insure that sufficient time is allocated within the conference for the Senior Moment. KEY LESSONS LEARNED: The Senior Moment can enhance common ambulatory care topics by adding a geriatrics perspective to existing conference series discussions rather than initiating a separate curriculum. The Senior Moment's flexibility allows the faculty to emphasize clinical studies that enrolled elderly patients, guidelines for treatment in the elderly and/or geriatric functional assessment to meet the ACGME competencies.
KEY LESSONS LEARNED: Poster with ambulatory care curriculum and examples of prepared Senior Moments.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

INTEGRATING LEARNING MODELS FOR NEW GENERAL COMPETENCIES INTO AN INTERNAL MEDICINE RESIDENCY TRAINING PROGRAM. S. Wali[1]; P.P. Balingit[1]. [1]UCLA San Fernando Valley Program, Sylmar, CA. *(Tracking ID #117552)*

STATEMENT OF PROBLEM OR QUESTION: Residency programs must require its residents to obtain outcomes-based general competencies in six areas to the level expected of a new practitioner. Internal medicine residency programs are charged with creating novel strategies to teach and evaluate these new competencies.
OBJECTIVES OF PROGRAM/INTERVENTION: To design, implement, and evaluate experiential learning models in three of the new outcomes-based competencies introduced by the ACGME: practice-based learning and improvement, systems-based practice, and professionalism.
DESCRIPTION OF PROGRAM/INTERVENTION: The learning modules included the following components: 1) As part of their two to three month ambulatory medicine rotation, PGY-2 and PGY-3 residents participate in a 4-week evidence-based medicine curriculum, using a case-based format derived from actual scenarios encountered in clinic. Each resident receives a syllabus and completes a series of readings on general principles and specific methods used in applying the medical literature to the clinical practice of medicine. 2) PGY-2 and PGY-3 residents participate in Collaborative Care Rounds during their ward rotations. Members from the hospital care team, including social work, utilization review, physical therapy, public health, and home health meet biweekly with residents to provide input regarding patient care plans. Residents are evaluated on awareness of and responsiveness to the larger context and system of health care and the ability to effectively utilize resources. 3) Feedback is collected and reviewed quarterly from satisfaction surveys distributed to patients under the care of PGY-1, PGY-2, and PGY-3 residents in the continuity clinic and on inpatient ward services. Additionally, nursing and clerical staff are asked to evaluate housestaff on their commitment to carrying out professional responsibilities and sensitivity to a diverse patient population.
FINDINGS TO DATE: The newly-developed learning modules have been well-received. Preliminary data indicate a greater understanding of the knowledge, skills, and attitudes required in obtaining the three general competencies studied, as evidenced by resident responses on self-evaluation questionnaires administered prior and after participation in each module.
KEY LESSONS LEARNED: A curriculum which includes experiential learning modules to teach and evaluate the core competencies introduced by the ACGME is essential and feasible. Residents appreciate that attainment of these general competencies is necessary to become successful practitioners.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Oral or poster presentation, with samples of curricular materials.

INTERACTIVE, CASE-BASED WORKSHOPS: A NOVEL APPROACH TO TEACH CLINICIANS GERIATRICS AND GERIATRICIANS INTERACTIVE TEACHING. J. Brand[1]; H. Fernandez[1]; R.M. Leipzig[1]. [1]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #116357)*

STATEMENT OF PROBLEM OR QUESTION: As the population ages, improving practicing physicians' ability to care for older adults is increasingly critical. Continuing medical education (CME) is the traditional approach to increasing knowledge and improving practice. Historically didactic, previous physician surveys on CME delivery format have demonstrated the desire for increased personal interaction. Under the John A. Hartford Foundation and American Geriatrics Society sponsored Practicing Physician Education (PPE) project, two hour teaching sessions and toolkits were developed based on a physician survey which identified key geriatric topics to assist practitioners in evaluating and treating the most common Geriatric Syndromes.
OBJECTIVES OF PROGRAM/INTERVENTION: Adapt the PPE teaching methods to introduce in-house geriatrics faculty to an interactive teaching style and educate clinicians in geriatric content during a CME course.
DESCRIPTION OF PROGRAM/INTERVENTION: Geriatrics educational experts met weekly and a consensus was reached on a teaching model with participants forming two teams, competing in a Jeopardy game and discussing unfolding cases. The teaching format was piloted with 17 geriatrics medicine and psychiatry fellows. Feedback sessions were conducted immediately post training and modifications made to course materials and teaching format. A team of two geriatric and subspeciality faculty/fellow experts facilitated 20-person workshops on six topics (pain, cognitive impairment, depression, falls,CHF, urinary incontinence) as part of a CME course. Facilitator and participant satisfaction surveys were collected.
FINDINGS TO DATE: The modified curriculum emphasized increased facilitator-group interaction and provided faculty a new format to teach geriatrics CME. Preliminary participant survey data demonstrated a high level of satisfaction with the teaching style. In addition, workshop facilitators were enthusiastic about their experiences with the two-team approach and unfolding case study teaching style. Examples of the teaching tools will be shown.
KEY LESSONS LEARNED: A Jeopardy and unfolding cases engage both learners and faculty to teach geriatric content to practitioners in the setting of a CME course. While this method is faculty intensive, facilitators and learners were highly satisfied with the experience.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Examples of the teaching tools will be shown.

INTRODUCING THE MYERS-BRIGGS TYPE INVENTORY TO RESIDENTS DURING PSYCHOSOCIAL ROUNDS. R.S. Adler[1]. [1]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #116906)*

STATEMENT OF PROBLEM OR QUESTION: Understanding the concept of personality and its effect on the doctor-patient relationship is an important aspect of psychosocial training for internal medicine residents. The various personality traits, as defined by DSM IV, have negative associations for many residents which leads to difficulties in recognizing, tolerating, and adapting to the personality styles of patients. Can the concept of personality type be framed in positive terms and lead to greater acceptance of the inherent differences between doctors and their patients?
OBJECTIVES OF PROGRAM/INTERVENTION: To intoduce the Myers-Briggs Type Inventory (MBTI) to PGY 2's as a tool to understand their own personality type and enhance personal awareness of differences.

DESCRIPTION OF PROGRAM/INTERVENTION: Recognition of the traditional DSM IV personality traits is on on-going theme for PGY 2's in a well established psychosocial program taught in a small group setting for 150 internal medicine residents. As a pilot, three groups of PGY 2's were introduced to the MBTI, which classifies people into 4 personality types: guardians, artisans, idealists, and rationals. All types are valuable, but different from each other. All 16 residents in the three small groups volunteered to compete the self scored MBTI, to read the detailed description for their type, and to share the results with the other residents in their group. Of the 16 PGY 2's, 8 were women and 8 were men and comprised 43% of the 37 PGY 2's in the residency program.
FINDINGS TO DATE: Thirteen residents self classified as guardians, three as idealists, and none as artisans or rationals. The idealists were 2 female and 1 male resident. In the small group discussions, all residents indicated that the written descriptions generally matched their behavioral patterns, but without the negative feelings associated with the DSM IV personality schema. Since this was a pilot project, the use of the MBTI was not specifically evaluated although PGY 2's complete overall evaluations of the psychosocial program.
KEY LESSONS LEARNED: None of the residents had used the MBTI in the past. In this informal setting, they found it both interestng and useful for self understanding. The use of the MBTI will be expanded to all PGY 2's as another tool to foster acceptance of the differences between themselves and their patients. In addition, a specific evaluation of its use will be added.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING.

LESSONS LEARNED FROM A NEW MINI CLINICAL SKILLS ASSESSMENT FOR MEDICAL STUDENTS IN THE PRIMARY CARE CLERKSHIP. M.M. Green[1]; J. Butter[1]; G.J. Martin[1]; G. Makoul[1]. [1]Northwestern University, Chicago, IL. *(Tracking ID #117373)*

STATEMENT OF PROBLEM OR QUESTION: It is difficult to assess clinical skills (i.e.,communication, history taking, physical exam) in a consistent manner while students are on their clerkships.
OBJECTIVES OF PROGRAM/INTERVENTION: (1) Assess students' ability to perform a focused history and physical and to integrate findings into a write-up; (2) Evaluate students' ability to accomplish basic and difficult communication tasks; (3) Expose students to a clinical skills exam similar in format to the USMLE CSE.
DESCRIPTION OF PROGRAM/ INTERVENTION: We developed a 2-case, SP-based, mini Clinical Skills Exam (CSE) for students on the Primary Care Clerkship. Students were instructed to take an appropriate history, conduct a focused physical examination, and write up their findings and diagnostic impression. One case involved a 22yo female patient presenting with right lower quadrant pain. Given the details of this case, a sexual history would be considered appropriate; the advanced communication topic was to conduct a sexual history with a reticent gay patient. The other case focused on a 50yo female with multiple risks for osteoporosis presenting with acute low back pain. All encounters were videotaped. Immediately after each encounter, the SPs completed a structured evlauation of students' communication and physical exam skills. After finishing both encounters, students conducted a self-assessment while watching their own videotapes. Faculty reviewed and graded write-ups using a structured form and criteria, and met with students individually to provide feedback. This mini-CSE was first implemented in July 2003.
FINDINGS TO DATE: To date, 77 students have completed the mini-CSE; their response to both the SP encounters and faculty feedback has been positive. In the adbominal pain case, SPs reported that 25% of students provided a rationale for a sexual history, and 39% made them feel comfortable in this part of the interview. 58% of the write-ups included a sexual history, most of which were superficial (i.e., patient was sexually active, at risk for pregnancy, or had a history of STDs) With the exception of deep abdominal palpation (60% performed correctly), nearly all students performed well on the physical exam. In the back pain case, both SP reports and student write ups indicated that only about half of the students performed an adequate back and neuro exam.
KEY LESSONS LEARNED: (1) This is a valuable addition to the curriculum and provides useful information for improvement of student skills. (2) Students need more focused instruction in how and when to perform sexual histories. (3) At this stage, some students have trouble integrating appropriate exam maneuvers into the context of the patient visit.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Video of student-SP encounter as well as sample assessment tools, to be displayed via computer.

M3/4 IDC: A NEW INTERDISICPLINARY CURRICULUM FOR THIRD- AND FOURTH-YEAR MEDICAL STUDENTS. D.R. Reifler[1]; R.M. Golub[1]. [1]Northwestern University, Chicago, IL. *(Tracking ID #117227)*

STATEMENT OF PROBLEM OR QUESTION: Northwestern's preclinical curriculum includes medical decision-making, communication skills, ethics, medical humanities, economics, and other interdisciplinary topics; until recently this curriculum formally ended after two years.
OBJECTIVES OF PROGRAM/INTERVENTION: To expand and integrate coverage of interdisciplinary topics into the clinical years.
DESCRIPTION OF PROGRAM/INTERVENTION: Beginning in '02–'03, we implemented a new M3/M4 Interdisciplinary Curriculum that includes six M3 units and one M4 unit. M3 units are 1) Medical Decision-Making (MDM); 2) Nutrition Skills; 3) Difficult Conversations/Communication Skills; 4) Ethical, Legal, and Social Implications of Medicine (ELSI) Conference; 5) Bench-to-Bedside Conference (BBC); and 6) Patient, Physician & Society III (PPS III, a medical humanities unit). In the M3 year students meet for four hours on Friday afternoons once a month. Attendance is required, and on any given Friday each student attends three classes. Sessions emphasize student leadership and participation. Content focuses on application to patients students take care of. For the M4 unit, PPS IV, students meet monthly for 90 minutes. Attendance is required, and students' college affiliations are preserved. Class sessions focus on medical humanities, health economics and their ethical implications, and teaching. Students write a personal reflection on each topic in preparation for class. They also complete a new M4 teaching selective.
FINDINGS TO DATE: Students rated components from 1 (poor) to 5 (excellent). Mean M3 scores after 3 months were as follows: MDM, 3.21; Nutrition, 3.41; ELSI, 3.5; Communication Skills, 3.0; BBC, 3.0; and PPS III, 3.6. Students struggle with leaving clerkships to attend class, but attendance has been excellent. Faculty evaluations have been very positive. Students rated PPS IV 3.1 overall in its first year. Comments ranged from highly complimentary to derogatory. Students wrote compelling stories based on personal experience and taught many subjects. They appreciated the regular chance to see classmates.
KEY LESSONS LEARNED: We successfully created a third- and fourth-year interdisciplinary curriculum that integrates topics emphasized in the preclinical curriculum with clinical learning. Current plans are to expand this curriculum.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Power-point slides and/or poster demonstrating students' work in the various phases of the course.

MD-PH.D. RE-ENTRY CURRICULUM DECREASES ANXIETY. L.N. Dyrbye[1]; R. Tiegs[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #115839)*

STATEMENT OF PROBLEM OR QUESTION: After acquiring considerable clinical knowledge and skills during the first two years of medical school, MD-Ph.D. candidates part ways with their MD-only colleagues and spend 3-6 years pursuing their Ph.D. degree. Upon return to the MD program, MD-Ph.D. students report significant anxiety about re-entering the clinical curriculum.
OBJECTIVES OF PROGRAM/INTERVENTION: We developed a re-entry program to: 1. Decrease the anxiety of MD-Ph.D. students returning to the MD degree program. 2. Improve the clinical skills and performance of MD-Ph.D. students since most MD-Ph.D. students are not able to perform at the level of their MD-only colleagues during the early clinical rotations. 3. Update MD-Ph.D. students on recent advances in the computer-based clinical applications.
DESCRIPTION OF PROGRAM/INTERVENTION: Immediately prior to returning to the Year III clerkships, MD-Ph.D. students now participate in a re-entry program consisting of 10 half-day sessions. The first session includes a review of history taking and physical examination skills, clinical reasoning/diagnostic skills, use of the computer-based clinical applications, and basic clinical therapeutics. The following nine sessions begin with a one-hour, interactive, case-based discussion of topics in internal medicine, pediatrics, and psychiatry. Other activities include a half-day session devoted to interviewing standardized patients with psychiatric problems and discussing differential diagnosis and psychopharmacology. Two half-days are spent in both an outpatient internal medicine and pediatric clinic. During these assignments, students take focused histories, perform physical examinations, present cases, and discuss patient management. In addition, each student completes an evaluation of two hospitalized patients, presents the cases to their preceptor, and receives formative feedback. For the final two half-days, students examine hospitalized patients with pre-defined physical findings and discuss the patients with their preceptors.
FINDINGS TO DATE: Participating students completed a pre and post-intervention survey. Students reported a decrease in their anxiety about returning to the clinical curriculum and increased confidence in taking histories, performing general physical examinations, generating differential diagnoses, presenting cases, and navigating the computerized record system.
KEY LESSONS LEARNED: A well-designed, intensive, student-centered, clinical experience helps MD-Ph.D. students become more confident in their ability to function effectively in the clinical setting and facilitates the transition from the laboratory to clinical medicine.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING.

NEEDS ASSESSMENT FOR A FACULTY DEVELOPMENT PROGRAM IN EVIDENCE BASED MEDICINE. C.M. Warde[1]; L. Nicholson[2]; J.R. Boker[3]. [1]Long Beach Memorial Medical Center, Long Beach, CA; [2]University of California, San Diego, La Jolla, CA; [3]University of California, Irvine, Irvine, CA. *(Tracking ID #116247)*

STATEMENT OF PROBLEM OR QUESTION: Faculty clinicians are expected to teach and model evidence-based practice for medical students and residents, but frequently lack essential experience and skills in evidence-based medicine (EBM).
OBJECTIVES OF PROGRAM/INTERVENTION: To target learning needs, we conducted a needs assessment focusing on three areas considered necessary to achieve the overall goal of practicing and teaching EBM at the point of care. These are: 1) understanding of the evidence-based approach to health care; 2) knowledge and use of evidence-based computerized resources; and 3) skills in validity evaluation and result interpretation for common article types.
DESCRIPTION OF PROGRAM/INTERVENTION: A yearlong EBM faculty development program was initiated at two teaching hospitals—a university hospital and a university-affiliated community hospital. Thirty teaching faculty and opinion leaders were invited to participate. Each completed a two-part evaluation prior to the course: 1) a questionnaire to evaluate demographics, attitudes and exposure to EBM, computer literacy, and references used at the point of care; and 2) the previously validated Fresno Test of Evidence Based Medicine to examine EBM knowledge and skills.

FINDINGS TO DATE: Results of the two-part needs assessment revealed knowledge gaps in all three of the above objectives. For EBM approach to health care, 53% described their EBM knowledge as "fair" or "poor." While greater than 70% reported asking focused clinical questions before making therapy decisions, participants demonstrated only 60% accuracy at building these questions. For use of computerized resources, 86% of the university hospital faculty but only 19% of the community hospital faculty reported at least weekly use of an EBM resource other than Medline. In literature evaluation skills, more than 80% could name the appropriate study design for comparing therapies, but fewer than half could define relative risk reduction or a significant confidence interval. Identified barriers for practicing point-of-care EBM included insufficient internet access and computer literacy.
KEY LESSONS LEARNED: Despite important teaching and leadership roles, our faculty subjects are deficient in EBM skills and resource utilization. Knowledge deficits and barriers described above will need to be overcome before point-of-care EBM can be practiced and thereby modeled for future clinicians.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: On-line access will be used to demonstrate clinical information searches using EBM internet resources, and teaching materials will be available to potential collaborators.

OBJECTIVE STRUCTURED CLINICAL EXAMS (OSCES) TEACH ABOUT SUBSTANCE ABUSE. S.J. Parish[1]; M. Stein[1]; E.K. Kachur[2]; M. Ramaswamy[1]; J.H. Arnsten[1]. [1]Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY; [2]Medical Education Development, New York, NY. *(Tracking ID #116477)*

STATEMENT OF PROBLEM OR QUESTION: Internists are commonly required to manage substance abuse disorders. OSCEs provide necessary skills practice by exposing trainees to standardized clinical scenarios and permitting individualized feedback.
OBJECTIVES OF PROGRAM/INTERVENTION: Our 5-station Substance Abuse OSCE is designed to teach competencies in addiction medicine, provide a performance-based assessment, and deliver feedback. The 3-hour OSCE is completed during a PGY3 ambulatory block, which includes didactic substance abuse instruction.
DESCRIPTION OF PROGRAM/INTERVENTION: Experts in primary care and addiction medicine constructed scenarios addressing a range of substance abuse disorders (heroin, cocaine, alcohol) and readiness to change stages (pre-contemplation to maintenance). At each station residents had 10 minutes to build rapport, assess, and manage a standardized patient (SP) with a faculty observer. Faculty were trained to use 17-item rating forms covering communication, assessment, management, general organization and overall performance; provide 5 minutes of feedback; and deliver teaching points. SPs provided a global satisfaction rating and verbal feedback. Residents assessed their overall station performance.
FINDINGS TO DATE: To date, 29 PGY3 residents have participated. All faculty and 90% of residents fully or partially agreed that the stations resembled real encounters, and 90% of both faculty and residents agreed that the OSCE presented a good cross-section of substance abuse problems. Residents were more skilled in general communication (mean = 3.3) than assessment (mean = 2.8) or management (mean = 2.7) ($P < .0005$ for both comparisons). Residents performed similarly on alcohol and cocaine/heroin stations, but a reliability coefficient of 0.4 (Cronbach's alpha) suggests a moderate level of station specificity. For global performance, correlation between faculty and SP ratings was 0.6 ($P < .0005$). Residents rated themselves lower than faculty (mean 2.5 v. 2.9, $P < .0005$). Residents reported they definitely received valuable feedback (72%), were helped to identify weaknesses (69%), and learned something new (66%). Faculty affirmed they learned new information about residents' skills (74%).
KEY LESSONS LEARNED: A substance abuse OSCE with immediate feedback is useful for teaching addiction medicine competencies. Assessment and management in this area are more challenging for residents than general communication skills.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Hand-outs of sample clinical scenarios and rating forms.

PATIENTS AS TEACHERS: A MODEL FOR TEACHING ATTITUDES AND SKILLS OF LONGITUDINAL DOCTOR/PATIENT RELATIONSHIPS. E. Scully[1]; N. Angoff[1]. [1]Yale University, New Haven, CT. *(Tracking ID #117515)*

STATEMENT OF PROBLEM OR QUESTION: Medicine is increasingly focused on outpatient care, shifting from acute management towards prevention and chronic care. Clinical training continues to emphasize inpatient medicine and brief contact with the acutely ill leaving the specific skills of longitudinal care largely underdeveloped.
OBJECTIVES OF PROGRAM/INTERVENTION: The elective integrates medical students into a relationship with both a preceptor and an HIV-infected patient for the duration of medical school with the following objectives: 1) understand the relevance of basic science to patient care, 2) develop an awareness of a patient's life, home, beliefs and values and how they affect illness and treatment decisions, and 3) develop communication skills in the sensitive areas of sex, illegal behaviors and death.
DESCRIPTION OF PROGRAM/INTERVENTION: Ten first year students were selected by essay applications and paired with a preceptor. Each pair determined the structure with the majority of students shadowing the preceptor through clinics until a patient was selected. Once a single patient was identified, the student followed their care through appointments with the AIDS clinic, other physicians and through hospitalizations. Each student carried a pager and acted as the patient's first contact in case of problems, and had clear strategies of contacting preceptors/covering attendings. Student-patient contact frequency varied and was supplemented by home visits, phone and email contact. The student group meets monthly during the academic year, providing a forum for students to discuss their often emotionally charged experiences with the feedback and support of their peers. These meetings also include informal lectures on relevant topics including end of life decisions, HIV and Hepatitis C co-infection, and the role of the chaplain in care relationships. The program aims for students to evolve from the role of "friend" to that of caregiver and in the later years, students assume more responsibility, performing history and physical exams and writing chart notes.
FINDINGS TO DATE: There have been ~50 participants in the five years of the elective with evaluation through student questionnaires and informal survey of attendings and patients both of whom report that students enhance care. Student response has been extremely positive with the caveat that quality varies based on the particular student:preceptor relationship. Students specifically identify the early clinical exposure the elective allows, the singular quality of the longitudinal patient relationship, the development of communication skills and the experience of attempting to provide optimal care within the context of an individual's life.
KEY LESSONS LEARNED: Integrating a patient care experience throughout medical school allows early clinical exposure and uniquely longitudinal relationships.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING.

PERSONAL DIGITAL ASSISTANTS AT THE POINT OF CARE: A TRAINING PROGRAM FOR MEDICAL STUDENTS. A. Kho[1]; S. Kripalani[1]; D. Dressler[1]; V. Akopov[1]; Y. Cua[1]; L. Difrancesco[1]; N. Ilksoy[1]; C. Iverson[1]; J. Kleinbart[1]; G. Margolias[1]; J. Messler[1]; C. Sam[1]; N. Winawer[1]; M.V. Williams[1]. [1]Emory University, Atlanta, GA. *(Tracking ID #116142)*

STATEMENT OF PROBLEM OR QUESTION: Personal digital assistants (PDAs or handheld computers) allow physicians to rapidly access medication information, medical calculators, and decision support tools while providing patient care. However, most medical students currently receive no formal training in the use of these devices.
OBJECTIVES OF PROGRAM/INTERVENTION: (1) To increase medical student use of PDAs at the point of care, (2) to provide students with an electronic reference that addresses diseases commonly seen in inpatient Internal Medicine, and (3) to encourage an evidence-based approach to patient evaluation, treatment, and hospital discharge.
DESCRIPTION OF PROGRAM/INTERVENTION: The Emory Hospital Medicine Unit (EHMU) developed decision-support software and a series of PDA-based workshops that train medical students in the effective use of PDAs during their Internal Medicine clerkship. The workshops begin with an overview of PDAs, their medical applications, and existing software packages. Subsequent workshops use clinical cases to discuss common inpatient diseases, using PDA resources to guide students through the evaluation and treatment of the patient. The central feature of the curriculum consists of a set of nine evidence-based PDA software modules developed by EHMU physicians in close collaboration with a medical software developer. We chose the following topics based on their relevance to hospital medicine: acute coronary syndrome, asthma, community-acquired pneumonia, congestive heart failure, venous thromboembolic disease, chronic obstructive pulmonary disease, sickle cell pain crisis, diabetic ketoacidosis, and hypertensive crisis. Each module focuses on key steps in the diagnosis and management of the hospitalized patient. Each module also provides prognostic information, discharge criteria, recommended follow-up, as well as references, medical calculators, and "clinical pearls" that might be encountered on rounds. A companion website provides abstracts and full-text articles for additional reading.
FINDINGS TO DATE: We found that 88% of medical students used a PDA during their Internal Medicine rotation. Most (86%) of these students found the software modules somewhat useful to extremely useful in helping them learn about the evaluation and management of common inpatient illnesses.
KEY LESSONS LEARNED: Medical students are eager to use PDAs in clinical settings. An organized curriculum that includes discussion of medical PDA applications enhances the use of PDAs at the point of care.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: PDA, laptop computer.

PORTAL OF GERIATRIC ONLINE EDUCATION (POGOE). K. Denson[1]; E. Vandenberg[2]; W. Lyons[3]. [1]Medical College of Wisconsin, Milwaukee, WI; [2]Donald W. Reynolds/ADGAP, Omaha, NE; [3]Donald W. Reynolds and ADGAP, Omaha, NE. *(Tracking ID #117265)*

STATEMENT OF PROBLEM OR QUESTION: Although the U.S. population of adults age 65 and over is predicted to double from 35 million in 2000 (12.4%) to 70 million (20.6%) by 2030, the number of academic geriatricians remains—and is projected to remain—insufficient to train the number of physicians who will be necessary to care for an aging U.S. population (IOM 1993; Ann Intern Med. 2003; 139:S607–S614).
OBJECTIVES OF PROGRAM/INTERVENTION: The Portal of Geriatric Online Geriatric Education (POGOe) has been designed to enhance physicians' ability to meet the healthcare needs of older adults by providing those interested in geriatrics education with a single source for high-quality educational products while, at the same time, providing a venue to aid clinician-educators in demonstrating their scholarship for promotion.
DESCRIPTION OF PROGRAM/INTERVENTION: POGOe is a new online clearinghouse that provides a single source for high-quality peer-reviewed educational products. Experts in an array of medical, communication, and educational fields reviewed educational interventions used to teach geriatrics to internal medicine residents and methods of educational evaluation, identified potential criteria, and came to a consensus on the criteria needed for product acceptance. POGOe is searchable by type of learner, content area, type of instruction and assessment used, and type of learning environment. Grantees of the Donald W. Reynolds Foundation and the American Association of Medical Colleges/John A Hartford Foundation produced many of the initial products; however, we encourage all to submit. Examples of interest to teaching internists include: CD-ROM virtual patient cases covering

osteoarthritis, functional assessment, hearing and vision, and other geriatric concerns; a pocket card describing how to approach to older patients and common drug side effects; a home-visit curriculum combining Geriatrics and Palliative Care; a CD-ROM, Powerpoint and overhead product that can be used for case-based discussions of delirium in elderly ED patients; and Geri Pearl pocket cards for pain management, preoperative assessment, pressure ulcers, etc. POGOe is funded by a grant from the Donald W. Reynolds Foundation to the Association of Directors of Geriatric Academic Programs.
FINDINGS TO DATE: There are increasing numbers of products to teach geriatrics, however they can be difficult to access and are of undetermined quality. This is the first portal for accessing peer-reviewed geriatric educational materials. Thus far, evaluation has mainly been by user satisfaction surveys or changes in pre-post medical knowledge.
KEY LESSONS LEARNED: At this point in time, POGOe's peer review assures accuracy, clear educational learning objectives that should be able to be met by the product, pilot testing of the product with evaluation data, and, when appropriate, clear learner and teacher instruction materials. Many in the geriatrics clinician-educator community are developing competency-based evaluations for their educational products. As this occurs, it is likely that the requirements for acceptance to POGOe will change.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Powerpoint Presentation, Open Discussion, and will need a T-1 Line.

PRACTICE-BASED LEARNING: QUALITY IMPROVEMENT EDUCATION IN AN INTERNAL MEDICINE RESIDENCY PROGRAM. M.D. Virden[1]; E. Rouf[1]; N. Key[1]; A. Charbonneau[1]; E.E. Ellerbeck[1]. [1]University of Kansas Medical Center, Kansas City, KS. *(Tracking ID #116775)*

STATEMENT OF PROBLEM OR QUESTION: ACGME (Accreditation Council for Graduate Medical Education) core competencies include practice-based learning and improvement, and systems-based practice—domains of knowledge that have traditionally been difficult to teach in graduate medical education. Practical introduction to and learning of these core competencies have the potential to improve healthcare quality.
OBJECTIVES OF PROGRAM/ INTERVENTION: Design a case study approach to: 1) introduce a set of quality improvement measures for analyzing practice experience, 2) identify potential barriers to implementing quality measures in the clinic, and, 3) propose solutions to address quality of care concerns.
DESCRIPTION OF PROGRAM/INTERVENTION: We introduced a series of quality improvement modules to address improvement of clinic practice using real-life data obtained via the participation of the residents' clinic in a statewide quality improvement project. During the initial module, residents compared their pneumococcal vaccination rates with those of benchmark practices. A series of questions and a faculty-facilitated discussion walked the residents through national standards for pneumococcal vaccination, and focused on interpretation of the clinic's performance, factors that might contribute to this performance, system changes that might lead to improved performance, and potential barriers to making these changes. A survey assessed residents' prior knowledge of quality improvement, and gathered their input on topics for development of future quality improvement learning modules.
FINDINGS TO DATE: Residents found this to be an engaging learning experience, which provided them with information not covered elsewhere in their training. Residents expressed interest in examining other measures such as diabetes services and cancer screening.
KEY LESSONS LEARNED: Residents had received little or no prior training in quality improvement during their residency program. We anticipate future quality improvement modules based on this model will help residents effectively learn such core competencies as practice-based learning and improvement, and systems-based practice.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Computer, PowerPoint, Q&A.

PROFESSIONALISM: THE FOUNDATION OF ALL COMPETENCIES AND THE FUTURE OF MEDICINE. W. Wiese[1]; S. Eggly[1]. [1]Wayne State University, Detroit, MI. *(Tracking ID #117208)*

STATEMENT OF PROBLEM OR QUESTION: As society places increasing demands on physicians to articulate and exemplify the principles of professionalism, residency programs face the difficulties inherent in defining, teaching and measuring this elusive notion. Our institution has addressed components of this competency through a web-based learning module and essay, followed by an interactive workshop, and evaluated with an OSCE.
OBJECTIVES OF PROGRAM/INTERVENTION: To provide a comprehensive template for teaching and evaluating professionalism.
DESCRIPTION OF PROGRAM/INTERVENTION: On the website, residents read definitions of what it means to be a professional physician. They respond in writing to three open-ended questions regarding their personal defenition as well as their experiences with outstanding examples of professionalism and breaches of professionalism. Responses are incorporated into an interactive workshop where residents are challenged to explore the factors that contribute to unprofessional behavior and how they will manage these factors in their careers. Residents' responses are turned into cases, and the residents are asked to identify factors that may have led to the unprofessional behavior, and ways to respond when witnessing this behavior. Finally, residents suggest realistic strategies to decrease the incidence of unprofessional behavior from a personal and systems perspectives. Residents' competence in professional behavior, communication and interpersonal skills, and systems-based practice are assessed by a four-station OSCE in which 1) they must apologize to a patient whom they prescribed the wrong medication, and respond to the patient's request to create new systems to prevent this from happening to other patients; 2) obtain a sexual history from a flirtatious patient; 3) screen for domestic violence and provide available resources to a depressed patient who is being battered at home; and 4) respectfully organize an interaction with a patient that rambles inappropriately.
FINDINGS TO DATE: Responses to the assignment have been thoughtful and led to provocative discussions of the factors influencing professional behavior. Documentation occurs in that trainee's responses are placed in their evaluation file. The OSCE is also rated using the SEGUE framework. In addition, residents get a CD with their interaction for self-reflection or discussion with their clinic preceptor.
KEY LESSONS LEARNED: This workshop has been demonstrated to be effective in facilitating reflection and discussion of professional physician behavior.The OSCE provides an excellent assessment tool of professionalism and other competencies.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

PROMOTING SUBSTANCE ABUSE EDUCATION AMONG GENERALISTS: THE CHIEF RESIDENT IMMERSION TRAINING (CRIT) PROGRAM. D. Alford[1]; T.W. Clark[2]; J.H. Samet[1]. [1]Boston Medical Center, Boston, MA; [2]Health and Addictions Research, Inc, Boston, MA. *(Tracking ID #116852)*

STATEMENT OF PROBLEM OR QUESTION: Inadequate medical education about substance abuse.
OBJECTIVES OF PROGRAM/INTERVENTION: To increase Chief Residents' (CRs) interests, knowledge, and skills about substance abuse (SA) in order to facilitate teaching these issues to their trainees.
DESCRIPTION OF PROGRAM/INTERVENTION: We developed a 3-day, intensive Chief Resident Immersion Training (CRIT) program to teach state-of-the-art clinical knowledge in screening, diagnosis and management of SA disorders using case-based didactic presentations, small group workshops, skills practice sessions and site visits. Based on individual interests and course content, each CR designed an Action Plan (AP)—a project achievable during the first 4 months of their CR year that educates about SA screening, diagnosis and management. By means of pre- and post-program assessments, we evaluated CRIT's impact on a CR's knowledge, clinical practice, and teaching related to SA. We also assessed AP implementation.
FINDINGS TO DATE: We trained 40 CRs from 34 residency programs in 2 CRIT programs. Evaluation of the Year 1 cohort (n = 21) revealed the following: knowledge score—70% pre-CRIT, 82% post-CRIT; at 6 month follow up (n = 17/21; 81%), 35% were "more likely" and 59% were "much more likely" to incorporate SA content in their teaching; 71% "sometimes" or "usually" served as a SA resource for their students, house staff and faculty, compared to 18% pre-CRIT; and on average CRs reported percentage increases of the following SA clinical practices: screening (10%); referral (13%); and treatment (19%). Other 6 month findings included: average AP completion 48%; which resulted in new or expanded SA curriculum (47%); new SA-dedicated lecture or teaching event (59%); and development of protocols for SA screening (24%), SA treatment (29%), and links to SA treatment organizations (29%). Program evaluation limitations include subject self-report, potential desirability response bias, study size and absence of a non-intervention control group.
KEY LESSONS LEARNED: The Chief Resident Immersion Training (CRIT) program in Addiction Medicine for incoming Chief Residents increased knowledge, clinical practice, and teaching related to SA. The CRIT model is an effective educational approach for disseminating SA and possibly other content expertise to medical trainees.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING.

PROPOSED COMPETENCY PREREQUISITES FOR ENTERING THE CORE CLINICAL CLERKSHIPS. A. Goroll[1]; E.B. Bass[2]; M. Kuzma[3]; T. Defer[4]. [1]Massachusetts General Hospital, Boston, MA; [2]Johns Hopkins University, Baltimore, MD; [3]Drexel University, Philadelphia, PA; [4]Washington University in St. Louis, St. Louis, MO. *(Tracking ID #117125)*

STATEMENT OF PROBLEM OR QUESTION: Medical schools are reexamining students' preparation for the core clinical clerkships, especially in view of the renewed emphasis on core clinical competencies (e.g., the ACGME competency agenda).
OBJECTIVES OF PROGRAM/INTERVENTION: Our objectives were to 1) establish a consensus among representatives of family medicine, internal medicine, and pediatrics regarding the level of clinical competencies that students should attain prior to beginning the core clinical clerkships and 2) to develop a new preclerkship curriculum resource that educators can use to strengthen training in the identified fundamental competencies.
DESCRIPTION OF PROGRAM/INTERVENTION: Through a contract with the Health Resources and Services Administration, the Society of General Internal Medicine, the Clerkship Directors of Internal Medicine, and the Ambulatory Pediatric Association joined with the Society of Teachers of Family Medicine to assemble a Preclerkship Collaborative Workgroup. The Workgroup consisted of teams of experts in clinical teaching and curriculum design from each of the participating specialties. After reviewing the literature on clinical competency training and the results of an independent survey of core clerkship directors in family medicine, internal medicine, pediatrics, gynecology, surgery, and psychiatry, the Workgroup developed a consensus document specifying the prerequisite competency agenda essential to effective learning in the core clerkships. It elucidates six priority areas for reforming preclinical medical education: interviewing and physical examination skills, communication, professionalism, lifecycle and self-awareness, probabilistic thinking,

and systems of care. The Workgroup then designed a curriculum guide organized in terms of the ACGME competencies to serve as a resource for curriculum planners. The guide specifies learning objectives for the competencies pertinent to preparation for the core clerkships and provides teaching materials and suggestions for learning methods, and assessment.
FINDINGS TO DATE: The Workgroup has presented draft elements of the resource guide and the priority area document at national meetings of numerous organizations including the AAMC, STFM, CDIM, AAP, and SGIM. Feedback generally has been very positive, although some curriculum leaders have expressed concern about the needed resources and scant curriculum time available.
KEY LESSONS LEARNED: We have learned that educators across disciplines have remarkable agreement about the importance of the prerequisite competencies identified in the curriculum resource. Any successful reform attempt will need to address the resource and time issues specifically and creatively. The Workgroup's curriculum resource should enhance the ability of educators to reform preclerkship training and build on the ACGME competency initiative.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: A poster will outline the contents of the curriculum resource materials, and will give information on how to access the resource document.

RESIDENT REVUE: RESIDENT JOURNAL TO PROMOTE PROFESSIONALISM AND PBLI. J.M. Golbin[1]; J. Andrieni[1]; J. Bonheur[1]; J.M. Bratcher[1]; S. Fields[1]. [1]Lenox Hill Hospital, New York, NY. *(Tracking ID #116148)*

STATEMENT OF PROBLEM OR QUESTION: Medical education in traditional Internal Medicine residency programs is achieved via several modalities: morning report, teaching/work rounds, conferences, and independent research. This process can be enhanced with the use of a resident publication that encourages discussion of medical cases, unique EKG/radiographic findings, economic and ethical considerations, and other creative projects.
OBJECTIVES OF PROGRAM/INTERVENTION: 1) Promotion of residents' academic work; 2) Establishment of an outlet for personal creativity; 3) Advancement of ACGME core competencies of Professionalism and PBLI.
DESCRIPTION OF PROGRAM/INTERVENTION: Resident Revue (RR): The Medical Journal of Lenox Hill Hospital was established in 1998 by a group of residents who sought to create an academic newsletter written and edited solely by and for Internal Medicine residents. Initial features included a case presentation, a review of a medical topic, a review of a specific medication, and an interesting EKG/radiographic finding. RR evolved into a glossy magazine with approximately three editions per year. RR was further expanded with opportunities to write articles for the journal as scholarly activity in the new ambulatory medicine curriculum via an ACGME grant for "Resident Driven Graduate Medical Education." Resident submissions included articles on medical economics and medical ethics, creative writing of patient encounters, and artistic expression in medicine. RR is peer-reviewed by an editorial committee composed of IM residents, Chief Residents, and the faculty advisor.
FINDINGS TO DATE: Publications in RR have become poster presentations at national meetings. Faculty, medical students, and administration have taken an interest in this communication vehicle for IM resident work. Upcoming goals include measuring the development of resident writing and editorial abilities in a scholarly publication. Furthermore, the editorial committee will examine the change in resident practice patterns from evidence-based medicine articles provided by RR.
KEY LESSONS LEARNED: Residents are exposed to a wider breadth of medical knowledge due to the variety of cases presented in RR. Due to the creative opportunities in the journal, residents' humanistic qualities can be more clearly elucidated. RR promotes continuous professional development and increases residents' skill in publication submission and academic writing.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Copies of RR will be displayed and distributed during the presentation.

SOCIAL ACTIVISM IN MEDICINE: A NOVEL APPROACH TO INCORPORATING SOCIAL RESPONSIBILITY INTO UNDERGRADUATE MEDICAL EDUCATION. B. Moyers[1]; K. Luman[1]; J. Wagner[1]; A. Fernandez[1]; S. Jain[1]. [1]University of California, San Francisco, CA. *(Tracking ID #116168)*

STATEMENT OF PROBLEM OR QUESTION: The AAMC Medical School Objectives Project outlined learning objectives for undergraduate medical education to provide physicians-in-training with the attributes necessary to meet their individual and collective responsibilities to society. One of these critical areas includes instilling and cultivating a sense of social responsibility in medical students, with specific learning objectives in the areas of altruism and duty. However, it has been difficult to incorporate those objectives into traditional medical school curriculum.
OBJECTIVES OF PROGRAM/INTERVENTION: Our goal was to introduce medical students to the concept of social responsibility and activism by creating an elective that promotes the discussion of important social issues and the formation of mentoring relationships between students and physicians who have incorporated health advocacy, community education, and social activism into their professional lives.
DESCRIPTION OF PROGRAM/INTERVENTION: The Social Activism in Medicine elective is a year-long course that meets monthly and has been offered for two years. Each ninety-minute session is led by a socially active physician. Lecturers speak to their work within the context of a particular societal problem and how their training led them to incorporate activism into their careers. Titles of lectures have included "Care of the Disenfranchised," "Political Activism, Mental Health, and Human Rights," and "Health Literacy." The timing of each topic parallels the subject matter of the core curriculum; for example, the talk on global tobacco control initiatives occurs when students are learning pulmonary physiology and the effects of cigarette smoke.
FINDINGS TO DATE: Students have been enthusiastic about the elective. They have appreciated the chance to learn from physicians who have brought about changes to improve the health of their communities. Students have rated the elective very favorably and remarked on its strong inspirational value. In written evalautions, all students have agreed or strongly agreed that "this lecture motivated me to incorporate activism into my future career" and that "this material should be incorporated into the core curriculum."
KEY LESSONS LEARNED: The Social Activism in Medicine elective provides students with a unique opportunity to meet with and learn from socially active physicians. We hope that ongoing mentoring relationships develop and that students learn specific ways to become involved in their communities as social activists. By designing the elective to parallel the core curriculum, we hope that students see links to the traditional medical school curriculum. Further efforts will include trying to incorporate parts of this material in the core curriculum for all students.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

TARGETED ACADEMIC DETAILING TO REDUCE SUBOPTIMAL ANTIBIOTIC USE IN A TEACHING HOSPITAL. C.A. Morris[1]; M.A. Fischer[1]; J. Avorn[1]. [1]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116800)*

STATEMENT OF PROBLEM OR QUESTION: Overuse of antibiotics can increase costs, lead to adverse drug reactions, and promote bacterial resistance. Prior research has demonstrated that academic detailing can effectively change prescribing behavior, though this approach has been used less often in acute care settings.
OBJECTIVES OF PROGRAM/INTERVENTION: 1) To promote the appropriate use of three commonly used antibiotics for patients on the medical services of a large teaching hospital; 2) To implement academic detailing in a real-time intervention to educate resident physicians about better antibiotic prescribing; 3) To collect data on why certain antimicrobials are misused and to identify trends in suboptimal prescribing.
DESCRIPTION OF PROGRAM/INTERVENTION: Research assistants extract orders for vancomycin, levofloxacin and ceftazidime daily from the hospital's electronic order entry database; these are provided to several infectious diseases fellows working as academic detailers. The detailers review each case and if use seems suboptimal, contact the ordering housestaff for a one-on-one conversation to deliver a focused educational message based on the particular order. The rationale for the drug is discussed and alternatives strategies are proposed, when appropriate. The educator completes a brief online data form to record information about the encounter. Trends of optimal and suboptimal prescribing are fed back to the housestaff.
FINDINGS TO DATE: During 66 detailing days in 2003, 421 orders were reviewed. Common clinical situations in which levofloxacin was suboptimally prescribed included asymptomatic bacteriuria and as continuing therapy for patients transferred from other institutions while already receiving levofloxacin. Vancomycin was potentially overused in patients with coagulase negative Staphylococcus species bacteremia, and with skin and soft tissue infections. Ceftazidime was potentially overused in patients with suspected pneumonia, or as empiric coverage for presumed intraabdominal infection. Analysis of the operationalized program found that it has been well received by medical residents.
KEY LESSONS LEARNED: There are common and consistent patterns of antibiotic use and misuse, which can be targeted as topics for broader educational initiatives. Academic detailing can be successfully implemented as part of an ongoing quality improvement and physician education program. Resident physicians are eager to receive this timely and focused teaching.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: 1) Online collection of data about the detailing encounter; 2) Educational handouts used by academic detailers, available in print, via hospital intranet and on personal digital assistants (PDAs).

TEACHING ADDICTION MEDICINE IN A CLINICAL CLERKSHIP OF COMMUNITY MEDICINE: MEDICAL STUDENTS LIKE IT! J. Humair[1]; B. Broers[1]; P. Gache[1]. [1]Department of Community Medicine, Geneva University Hospital, Geneva. *(Tracking ID #116621)*

STATEMENT OF PROBLEM OR QUESTION: Although use of tobacco. alcohol and illicit drugs are major public health problems, teaching of addiction medicine is very limited in curricula of most medical schools.
OBJECTIVES OF PROGRAM/INTERVENTION: Since 1998, in 4th and 5th years of the undergraduate curriculum in Geneva, medical students attend a clinical clerkship in community medicine including teaching activities in addiction medicine with the following objectives: (1) to identify problematic use of tobacco, alcohol and illicit drugs in primary care; (2) to experience clinical contact with patients having these 3 major addictions; (3) to know the major therapeutic strategies for patients with addictive disorders.
DESCRIPTION OF PROGRAM/INTERVENTION: This 4-week clerkship organized for rotating groups of 8-12 students includes clinical and didactic activities in primary care. Regarding addiction medicine, students spend 2 full days in one of 4 substance abuse units providing multidisciplinary care to patients with either alcohol or illicit drug addiction. They attend 16 hours of interactive teaching including: (1) two problem solving tutorials about detection and management of alcohol and heroin abuse; (2) a workshop based on clinical cases about tobacco use and stage-matched smoking cessation interventions; (3) a workshop using role plays to teach motivational interviewing and counseling strategies facilitating behavior change.

FINDINGS TO DATE: We evaluated on a 5-point scale the satisfaction of this clerkship among 135 students in 2001–2003. Students rated clinical activities in both drug and alcohol abuse units with high mean scores for learning new knowledge (4.5 and 4.2 respectively) and supervision (4.5 and 4.4). Mean scores for achievement of objectives, relevance of activities and integration in the clerkship were high for both workshops on smoking cessation (4.5 for 3 criteria) and motivational interviewing (4.0, 3.9 and 4.0 respectively). Students wished to lengthen this program as it is the only significant exposure to clinical situations and public health problems related to addictions.
KEY LESSONS LEARNED: We successfully integrated 32 hours of teaching on addiction medicine in a community medicine clerkship. Students expressed a high level of satisfaction with clinical and interactive teaching dealing with addictions. Further research should explore whether teaching addiction medicine in medical school improves physicians' competences, clinical care and public health outcomes.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Examples of problem-solving script, clinical vignette and role play will be demonstrated.

TEACHING BREAKING BAD NEWS WITH CANCER PATIENTS. D.L. Stevens[1]; S. Zabar[1]; K. Hanley[1]; B.P. Dreyer[1]; A.L. Kalet[1]; M. Lipkin[1]. [1]New York University, New York, NY. *(Tracking ID #117510)*

STATEMENT OF PROBLEM OR QUESTION: Breaking bad news is a among the most dreaded of all the roles of the physician, but a doctor's skill in breaking bad news has been shown to have lasting effects on a patient's ability to cope with the new diagnosis. Future physicians need both the basic skills of breaking bad news as well as an appreciation of the profound impact this singular moment has in the lives of patients.
OBJECTIVES OF PROGRAM/INTERVENTION: We sought to develop and pilot a workshop for 1st year medical students that combined 1) an evidence based outline of the skills of breaking bad news, 2) a small group discussion with a patient about his/her experiences receiving a life threatening diagnosis and 3) practice breaking bad news using role play.
DESCRIPTION OF PROGRAM/INTERVENTION: As part of NYU's Physician, Patient and Society course, we developed and implemented a 2 hour small group seminar (8 students, 2 faculty members per group) for all 160 1st year students. A pilot group (4 of 20 small groups) were joined by patient-teachers—people in active treatment for cancer. Patient-teachers were prepared for their roles in advance and started the seminar off by discussing their own experiences in receiving bad news and the effect of the experience on their subsequent adjustment to living with a life threatening illness. Seminar faculty then led a discussion about the specific steps and skills involved in breaking bad news in which the patient-teacher was invited to compare this teaching to his/her own experiences. Students then broke off into pairs and practiced delivering a new diagnosis of hypertension in 2 role play cases. Groups that did not have a patient-teacher join them followed a similar format, but spent more time discussing the seminar faculty's experiences breaking bad news.
FINDINGS TO DATE: Students reported appreciating the opportunity to focus on the task of breaking bad news. Both students and faculty in the pilot groups reported that the presence of the patient-teacher made the learning experience much more compelling. Patient-teachers also found the experience to be postive, and all 4 agreed to return as patient-teachers when asked again 12 months later.
KEY LESSONS LEARNED: First year medical students are receptive and enthusiastic about learning to become skilled at breaking bad news. The presence of a patient-teacher who shares real experiences receiving and coping with bad news greatly added to both students' and faculty's satisfaction with the educational value of the seminar.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster outlining content/structure of workshop; Sample student handouts on breaking bad news; Copies of role play scenarios.

TEACHING CHRONIC ILLNESS CARE UTILIZING LEARNER-LED QUALITY IMPROVEMENT PROJECTS AND INTERPROFESSIONAL EXPERIENCES. R.B. Baron[1]; S. Janson[1]; M. Cooke[1]; L. Kroon[1]; K. Julian[1]; A.M. Leeds[1]; M.B. Potter[1]; E. Wade[1]; R.J. Rushakoff[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117278)*

STATEMENT OF PROBLEM OR QUESTION: Current medical practice demands that practitioners be skilled in chronic illness care.
OBJECTIVES OF PROGRAM/INTERVENTION: We developed a curriculum for primary care medicine residents, nursing and pharmacy students to 1) increase knowledge and skills in quality improvement techniques, 2) improve attitudes towards interprofessional care and 3) to teach the principles of chronic illness care.
DESCRIPTION OF PROGRAM/INTERVENTION: Primary care residents (n = 42), adult nurse practitioner students (n = 25) and pharmacy students (n = 30) were assigned concurrent morning continuity clinics to care for assigned patients with diabetes mellitus. Each session began with a 90-minute quality improvement conference. Learners were provided with a registry of their patients with diabetes and current patient outcomes. Working in interprofessional teams, learners were asked to design short-cycle quality improvement projects. Revised registry data was provided bi-monthly. Following the weekly conference, patients were seen by the interprofessional teams of providers.
FINDINGS TO DATE: Learners developed a wide variety of quality improvement projects addressing multiple aspects of chronic illness care. Learners announced the program by mail in three languages and contacted patients with abnormal HbA1c, patients without a recent eye exam or with elevated lipids or blood pressure. Several projects addressed the delivery service design and organization of health care: standing orders for blood tests were created, referral forms were eliminated for eye clinic visits, and group visits were initiated (glucometer training, self-management, nutrition). Projects were also aimed at patient self-management and community resources: goal-setting forms were developed and used, and several resource manuals were compiled and distributed (exercise resources, podiatrists, support groups). Projects also addressed decision support and clinical information systems: prevention reminder forms were revised and new forms were developed to support blood pressure management. After one year, 85% of learners rated their knowledge of the chronic care model as good to excellent and 83% of learners predicted a good to excellent likelihood they will apply new knowledge, skills and attitudes into their clinical practice.
KEY LESSONS LEARNED: Interprofessional, learner-led quality improvement projects are an effective technique for teaching chronic illness care to internal medicine residents and nursing and pharmacy students and are likely to impact their future practice.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Oral presentation or poster and supporting materials.

TEACHING MEDICAL RESIDENTS ABOUT PERSONAL FINANCE. G. Dhaliwal[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115106)*

STATEMENT OF PROBLEM OR QUESTION: Most resident physicians are financially illiterate and begin their careers at a substantial financial disadvantage compared to their college-educated peers (due to a decade-long year delay in receiving full salaries and escalating educational debt). Studies have cited physicians' financial concerns as an important cause of burnout, stress, and career dissatisfaction and have called for education in this area. A small number of residency programs teach financial matters such as practice management, managed care, and health care economics, but personal finance education is lacking. Residents' baseline knowledge of personal finance and investing and their attitudes toward receiving such education is unknown.
OBJECTIVES OF PROGRAM/INTERVENTION: To educate residents about the basics of personal finance.
DESCRIPTION OF PROGRAM/INTERVENTION: During their outpatient rotation, interns attend one 2 hour session that provides an overview of personal finance—income and spending, debt management, taxes, insurance, and retirement savings (special emphasis). Before the lecture, interns take the 2002 Vanguard/Money Magazine Investor Literacy Test. The average score of 1,000 randomly selected American investors was 40%. The financial news media and the test administrators regarded these results as a reflection of the poor financial literacy of most Americans. A post-session survey (questions outlined below) is administered.
FINDINGS TO DATE: The average score of the interns (n=36) on the Literacy Test was 39%, below that of college-educated investors (45%), but higher than subgroups which correspond to the typical resident: under age 35 (34%) and inexperienced investors (34%). The survey was administered on using a Likert scale where 1 = "strongly disagree" and 5 = "strongly agree." Average scores are reported in parentheses. Most respondents disagreed (1.7) with the statement, "I have adequate knowledge of personal finance." 86% have their pre-enrolled 401(k) from one hospital in a (default) savings account, and 72% have not enrolled in the 401(k) at another hospital. Attitudes were also assessed: "This session on personal finances was valuable." (5.0) / "It is worthwhile to replace a medical talk with a personal finances lecture during this rotation." (5.0) / "After this session I plan to make changes to my two 401(k) accounts." (4.9) / "After this session I have a better understanding of income, social security, and other taxes and how they affect my paycheck and finances." (4.7) Conclusion: Residents' knowledge of personal finance and investing is poor, but commensurate with the average American investor. A single session on personal finance is highly regarded and welcomed by the residents and can modify their financial decisions.
KEY LESSONS LEARNED:
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

TEACHING MEDICAL STUDENTS THE ASSESSMENT OF SUBSTANCE ABUSE WHEN EVALUATING PATIENTS DURING THEIR PRIMARY CARE CLERKSHIP. A. Wilk[1]; S.G. Chheda[2]. [1]University of Wisconsin-Madison, Madison, WI; [2]University of Wisconsin Medical School-Madison, Madison, WI. *(Tracking ID #116731)*

STATEMENT OF PROBLEM OR QUESTION: In Healthy People 2,010, addressing substance abuse is seen as an important strategy for improving the nation's health. However, primary care physicians do not identify and diagnose substance abuse with the same degree of accuracy as they do other preventable medical conditions.
OBJECTIVES OF PROGRAM/ INTERVENTION: The purpose of the study was to assess third-year medical students' knowledge and skills in screening and counseling patients with tobacco and alcohol use before and after an initial one and one-half hour case-based educational intervention and a required 8-week primary care clinical clerkship.
DESCRIPTION OF PROGRAM/ INTERVENTION: The educational intervention is one and one-half hour case-based, interactive learning session during the students' 1-day orientation at the start of their eight-week primary care clerkship rotation. The case is a 43 y.o. patient presenting with the common complaint of abdominal pain with a significant history of heavy alcohol use.
FINDINGS TO DATE: A questionnaire was developed to assess self-reported substance abuse knowledge, attitude and skills of medical students. A pretest—posttest design was used to assess proportional differences in medical student performance.

Proportional differences were analyzed by chi-square analysis. Total number of medical students was 21 during the first 8-week clerkship for the time period of July to August 2003. There was an overall trend in greater proportions of medical students performing tobacco and alcohol use screening after their 8-week primary care clerkship (absolute changes of 16% and 20%, $P = .13$ and 0.07). Student performance in counseling patients about tobacco cessation and safe alcohol use significantly improved 34% and 40% respectively, $P < .05$. Though improvements in identifying the CAGE questionnaire were not significantly different before and after the educational intervention and 8-week clerkship, the accurate interpretation did significantly improve (60% absolute change, $P < .01$).
KEY LESSONS LEARNED: Medical students reported greater performance in substance use screening and counseling after a one and one-half hour educational intervention and the completion of an 8-week primary care clerkship. We believe that medical students' greater performance and knowledge in substance use screening and counseling reflect a brief interactive educational intervention followed by 8 weeks of supervised outpatient clinical management of common medical conditions.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

"TEACHING PATIENTS" PROVIDE EFFICIENT, STANDARDIZED AND WELL-LIKED PHYSICAL EXAM SKILLS TRAINING. C.B. Aamodt[1]; D.W. Virtue[1]; R.A. Dahlberg[1]. [1]University of Kansas, Kansas City, KS. *(Tracking ID #115735)*

STATEMENT OF PROBLEM OR QUESTION: Traditionally, first- and second-year medical students learn physical exam skills by practicing on fellow students in small groups led by clinicians. This has several potential drawbacks, including emotional discomfort for the students, variability in the skills emphasized by different clinicians, and extensive use of scarce faculty time.
OBJECTIVES OF PROGRAM/INTERVENTION: To address each of these potential limitations of the traditional approach, we developed a "teaching patient" program, in which non-clinicians with previous experience as standardized patients became "teaching patients."
DESCRIPTION OF PROGRAM/INTERVENTION: A faculty general internist (the course director for the Clinical Skills course) taught physical exam skills to a single trainer who then taught 10 teaching patients (TP's). After the trainer's teaching session, the course director clarified and refined the teaching patients' physical exam skills. Following a lecture focusing on a specific component of the exam (e.g., HEENT, cardiovascular), each TP worked with a group of five students, each of whom performed that part of the physical exam. The TP guided students through the exams, reassured students about the level of discomfort involved, and provided immediate feedback regarding deviations from the standardized approach. One or two clinicians floated from room to room to answer questions and refine skills.
FINDINGS TO DATE: Based on a five point Likert scale (strongly disagree, disagree, neutral, agree, strongly agree) over 97% of students agreed that this was a good learning experience. Over 95% indicated that their physical exam skills had improved. Several students commented that they preferred examining teaching patients to examining each other.
KEY LESSONS LEARNED: a) Because there was turnover in teaching patients, developing an "expert TP" was a valuable step, since it avoided constant demands on the course director to teach new TP's. b) Despite identical training, TP's varied in their teaching skill, so ongoing oversight was necessary. However, fewer clinicians were required when TP's were involved than with the traditional model. c) Students may be more concerned about examining one another than is commonly realized, since we received spontaneous comments about this even though we made no specific inquiry.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: To demonstrate our techniques, we will show videotapes of training techniques, students interacting with teaching patients and clinicians helping to refine techniques. We will provide handouts with detailed information about TP compensation, motivation and background, our TP instruction manual, and student evaluation form.

TEACHING PSYCHIATRIC MEDICINE TO INTERNAL MEDICINE RESIDENTS: AN INTEGRATED TEACHING MODEL. T.E. Vettese[1]; D. Nistor[2]. [1]St. Joseph Mercy Hospital, Ypsilanti, MI; [2]St. Joseph Mercy Hospital, Ann Arbor, MI. *(Tracking ID #115539)*

STATEMENT OF PROBLEM OR QUESTION: The high incidence and prevalence of psychiatric disorders in medical patients in combination with a critical shortage of psychiatrists makes it vital that primary care residency training programs develop curricula that will teach future primary care physicians basic psychiatric care as well as coordination of care with psychiatrists and other mental health professionals.
OBJECTIVES OF PROGRAM/INTERVENTION: 1) Teach internal medicine residents to diagnose and manage psychiatric disorders encountered in the primary care setting. 2) Promote a biopsychosocial model of disease.
DESCRIPTION OF PROGRAM/INTERVENTION: Our integrated educational model involves our residents indentifying patients in their continuity clinic patient panel that would benefit from psychiatric evaluation. A referral is then made to our liaison psychiatrist. The psychiatrist and a third year medical resident assigned to an ambulatory block month rotate through the clinic 1–2 half days each week. This resident, under direct supervision of the psychiatrist, conducts a psychiatric assessment on referred patients. The attending psychiatrist provides the resident education regarding diagnosis, treatment and follow-up of the psychiatric disorder as well as direct feedback regarding interviewing and communication skills. The diagnosis and management plan is communicated jointly to the patient. The psychiatrist and the rotating resident provide recommendations to the patient's primary care resident regarding longitudinal managment. The psychiatrist is available for up to three follow-up assessments.
FINDINGS TO DATE: Resident evaluations of our integrated psychiatry experience have been excellent. Our internal medicine residents feel that they have gained increased knowledge in the area of psychiatry and that the information gained will be highly relevant to the practice setting. Additional evaluation measures including pre- and post-tests to formally assess knowledge acquistion and patient satisfaction surveys will also be implemented. Additionally, this experience has been helpful to evaluate and provide feedback to residents on communciation and interviewing skills.
KEY LESSONS LEARNED: An integrated psychiatry rotation can effectively teach internal medicine residents to diagnose, manage and coordinate care of psychiatric disorders in the outpatient setting and can serve as an important evaluation tool.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster and handouts.

TEACHING RESIDENTS PATIENT CENTERED CHRONIC ILLNESS CARE IN THE AMBULATORY SETTING: AN INTERACTIVE CURRICULUM. M. Nadkarni[1]; C. Westley[1]; C.L. Engelhard[1]; J. Green-Pastors[1]; J.T. Saunders[1]; J.D. Voss[1]. [1]University of Virginia, Charlottesville, VA. *(Tracking ID #117360)*

STATEMENT OF PROBLEM OR QUESTION: Residents receive little training in effective methods for managing patients with chronic illnesses and may not practice patient-centered, systems-based care.
OBJECTIVES OF PROGRAM/ INTERVENTION: This curriculum was designed to 1) Introduce concepts of ICIC chronic care model and patient-centered care 2) Improve resident skills in systems-based care 3) Help residents gain a greater understanding of patient barriers in managing chronic illness to enhance provision of patient-centered care.
DESCRIPTION OF PROGRAM/ INTERVENTION: We implemented a 12-hour interactive small group curriculum for all internal medicine interns during their ambulatory block. Four 1/2 day seminars included: 1. Introduction to the ICIC Chronic Care Model and systems-based care. 2. "Systems Walk" by trainees to replicate the patients' experience at a clinic visit 3. Diabetes Patient Self Simulation in which interns spent 72 hours living as a "diabetic patient". 4) Micro and macroeconomics in the Health Care System as it affects provision of care to patients with chronic illnesses. 5) Patient-centered interviewing training
FINDINGS TO DATE: 22 of 26 interns have completed the curriculum.Intern's evaluations indicate they feel more prepared to manage patients with chronic illnesses, better understand barriers to patients with chronic illnesses receiving excellent care, and better understand differences in managing patients with acute versus chronic medical problems. Interns also expressed a better understanding of the effect of systems based interventions on provision of care.
KEY LESSONS LEARNED: 1) Many interns lack knowledge of the principles of sytems-based care and differences in managing patients with chronic versus acute medical problems. 2) Simple interactive techniques effectively highlight barriers to excellent patient care and illustrate improved approaches to patient-centered, systems based care. 3) Having interns experiencee life through the eyes of a diabetic patient can lead to them to profound insights about the difficulties patients may experience in self care. These insights may lead to a more patient-centered approach when they care for patients in the continuity clinic setting.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster, curriculum description (handout) If desired, a powerpoint presentation of some components of the curriculum.

TEACHING RESIDENTS TO TEACH: A MINI-FELLOWSHIP TO IMPROVE TEACHING SKILLS AND ENCOURAGE CAREERS IN ACADEMIC MEDICINE. K. Julian[1]; M.M. Wamsley[1]; M. Vener[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115845)*

STATEMENT OF PROBLEM OR QUESTION: Residents in the core clinical training programs have primary responsibility for teaching medical students on the inpatient wards. Studies have estimated that residents spend up to 20% of their time on teaching activities, regardless of their department or future career plans (Greenberg LW, et al. Teaching in the clinical setting: Factors influencing residents' perceptions, confidence and behavior. Med Educ 1984;18:360–5). Despite residents' significant teaching responsibilities, most receive no formal instruction on how to teach effectively.
OBJECTIVES OF PROGRAM/INTERVENTION: 1) To create a resident teaching fellowship for a group of multi-disciplinary residents. 2) To give residents formal instruction on how to teach effectively. 3) To provide residents with practical leadership skills. 4) To guide residents in completion of an educational scholarly project.
DESCRIPTION OF PROGRAM/INTERVENTION: The Resident Teaching Fellowship is a six-month fellowship for selected mid-level residents from core clinical departments. Twelve participants meet six hours each month. Course content includes instruction on creating a positive learning climate, bedside teaching, small-group teaching, large-group presentations, feedback and evaluation, leadership skills, and assessing problem learners. The curriculum is geared towards a multi-disciplinary group of learners and utilizes didactic lectures, small-group discussion, role-play, and reflection on videotaped scenarios.
FINDINGS TO DATE: We piloted this fellowship this year with internal medicine, family practice, pediatrics, obstetrics/gynecology and orthopedic surgery residents. We hope to expand this fellowship to psychiatry, general surgery, and neurology residents this next year. Resident response to the fellowship has been uniformly positive. We have developed a pre-post self-efficacy evaluation as well as a pre-post

teaching self-assessment evaluation form. We are looking for an increase in resident's confidence in their teaching skills and an increase in utilization of specific teaching microskills. Results from this data analysis will be forthcoming.
KEY LESSONS LEARNED: Residents in all specialties are eager to improve their teaching skills. A successful teaching curriculum requires didactic instruction, teaching "practicum", and small-group reflection. Institutional support for teaching curriculum is mandatory for successful course implementation.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster presentation including sample curricular materials and program schedule.

TEACHING STUDENTS ABOUT MANAGING PATIENT CARE IN AN AMBULATORY CONTINUITY CLINIC. M. Stellini[1]; S. Popp[1]; K. Ling-Mcgeorge[1]; R.R. Frank[1]. [1]Wayne State University, Detroit, MI. *(Tracking ID #116592)*

STATEMENT OF PROBLEM OR QUESTION: Traditional hospital based clerkships and block ambulatory clerkships provide little opportunity to expose students to the type of care typically provided in contemporary primary care practices. Neither, is there time in the traditional curriculum to teach about the less clinically oriented topics which are key to providing efficient, high quality, cost-effective, evidence-based and ethically sound care of patients.
OBJECTIVES OF PROGRAM/INTERVENTION: Some of the objectives of the "Managing Care Curriculum" include understanding: healthcare delivery systems, the evidenced-based approach to practice, ethical dilemmas in practice, the physician's role in community based health assessment, potential barriers to optimal outcomes, as well as improved communication skills and increased exposure to ambulatory primary care practice.
DESCRIPTION OF PROGRAM/INTERVENTION: A six month, year three "Continuity Clinic Clerkship" (CCC) was developed. Students attend "clinic" one half day per week in the offices of volunteer, community based physicians. The CCC was developed and is run by a collaboration of the Departments of Internal Medicine, Family Medicine and Pediatrics with strong support of the Curricular Dean. In addition to caring for many ambulatory patients, including several who are seen multiple times in follow-up visits over the six months, students work on several "Clinical Learning Exercises" (CLEs). In completing the CLEs, students solve problems and consider several questions which are tied to the objectives. There is a written final examnation. A web based pre-test is used in conjunction with the final exam to evaluate the effectiveness of the clerkship.
FINDINGS TO DATE: There is a demonstrable improvement in knowledge of the material relating to the objectives during the clerkship. The CLEs are a vehicle to re-inforce curricular content introduced in years one and two as well as to introduce new material The clerkship has become well institutionalized and widely accepted.
KEY LESSONS LEARNED: This type of clerkship is successful and easily modifiable to allow the curriculum to remain current and relevant. Maintaining a large community based clerkship is challenging but manageable. Interdisciplinary cooperation is key to developing and maintaining large scale curricular change.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: We will display our syllabus, including the CLE's, as well as our evaluation of the effectiveness of the clerkship.

THE AREA OF CONCENTRATION IN UNDERGRADUATE MEDICAL EDUCATION. T. Bui[1]; M.A. McNeil[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116159)*

STATEMENT OF PROBLEM OR QUESTION: Medical students with particular interest in subjects such as women's health, geriatric medicine, disabilities medicine, and underserved populations find inadequate support and stimulation from traditional medical school curricula.
OBJECTIVES OF PROGRAM/INTERVENTION: The objective of the Area of Concentration (AOC) curricula is to enable medical students to pursue a rigorous, longitudinal academic program of their specific interest in addition to the standard curriculum. Under the guidance of dedicated academic and community mentors and through a structured approach, AOC students acquire the necessary knowledge, attitudes, and skills to work with special needs populations. The School of Medicine recognizes successful completion of the program by granting a Certificate.
DESCRIPTION OF PROGRAM/INTERVENTION: Four Areas of Concentration were formally recognized by the Curriculum Committee in 1999: disabilities medicine, underserved populations, women's health, and geriatric medicine. They share these common requirements—scholarly project, longitudinal experience, reflection, required electives, service-learning, and mentoring. Students are recruited in the first year through a formal application process. Weekly meetings of students and faculty mentors are important in maintaining contacts and interest throughout the four years. Poster presentation and certificate awards are presented to all AOC students who successfully complete all the requirements at the time of graduation.
FINDINGS TO DATE: The AOC in women's health and underserved populations are sponsored by faculty in the division of general internal medicine. Forty seven students have been awarded the AOC certificates in these 2 areas in the past 4 years. A large proportion of the scholarly projects involves surveys, needs assessment and health promotional activities. All the students surveyed believe that the AOC experience has been very rewarding. A majority of students feel that the AOC experience helps them improve their leadership skills and become a more culturally competent health care provider. Although many students plan to work with the AOC population of interest after residency, their career choices are quite diverse and not directly linked to their AOC interest.
KEY LESSONS LEARNED: A longitudinal curriculum for medical students designed to promote sustained interest and scholarship in health care for specific populations is achievable through the support of dedicated faculty mentors. Students acknowledge the significant influence that a longitudinal curriculum has on their commitment to the population of interest and in their personal and professional development.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Examples of student portfolios and poster presentations will be displayed at Meeting.

THE DESIGN AND IMPLEMENTATION OF A NEW MUSCULOSKELETAL MEDICINE ELECTIVE FOR THIRD-YEAR MEDICAL STUDENTS. E. Anish[1]; M. Elnicki[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116958)*

STATEMENT OF PROBLEM OR QUESTION: Studies suggest that a marked disparity exists between the frequency of musculoskeletal (MSK) problems presenting to general medical practices and the adequacy of training for medical school graduates. A need exists to improve the education that medical students receive in MSK medicine.
OBJECTIVES OF PROGRAM/INTERVENTION: 1) To design and implement an elective rotation in MSK medicine. 2) To improve the competency of medical students in the evaluation and management of common MSK disorders.
DESCRIPTION OF PROGRAM/INTERVENTION: A 3-week elective for third-year medical students was created combining the following: 7 half-day clinic sessions [primary care sports medicine (internal medicine/family medicine), orthopedics, rheumatology, and physiatry], 1 half-day of didactics, MSK exam workshops, and case discussions, and 1 half-day for self-directed study (utilizing a teaching syllabus and recommended readings). 1 half-day session was reserved for non-elective-related medical school teaching activities. Students also had the opportunity to help provide medical care at evening and weekend high school athletic events under faculty supervision.
FINDINGS TO DATE: A total of 7 students completed the rotation during the 2002–03 academic year. Their MSK medicine competency was assessed in 3 ways: 1) Score on a multiple-choice (MC) exam administered pre- and post-elective. 2) Score on the MSK questions included in a standardized MC exam given to all third-year students at the end of their required Ambulatory Care Clerkship (ACC). 3) Score on a MSK objective structured clinical examination (OSCE) station included as part of a multi-station OSCE completed at the end of the ACC. All 7 students showed improvement on their post-elective MC exam (12.1 vs. 15.1, $P < .01$). Compared to their peers, who did not choose the rotation, students completing the MSK medicine elective scored higher on the MSK questions included in the ACC MC exam (3.7 vs. 2.7, $P = .01$) and on the MSK station included in the ACC OSCE (91 vs. 77, $P = .02$). On both the ACC MC test and the OSCE, there was no significant difference in overall test scores between the students completing the elective and those who did not ($P > 0.5$ for both). Verbal and written feedback regarding the elective was extremely positive. The success of this elective is further reflected by having the maximal number of students (14) selecting this rotation for the 2003–04 academic year.
KEY LESSONS LEARNED: A multi-disciplinary MSK medicine elective that utilizes several teaching-modalities can be successfully implemented as part of a medical school curriculum. Students completing this elective demonstrated significant improvement in their knowledge of MSK medicine and in their MSK physical examinations skills.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

THE DRAMA OF ETHICS: "LISTENING TO LIFE". C. Barnard[1]; K. Neely[2]; J. Hauser[2]. [1]Northwestern Memorial Hospital, Chicago, IL; [2]Northwestern University, Chicago, IL. *(Tracking ID #115916)*

STATEMENT OF PROBLEM OR QUESTION: Finding the time and the appropriate setting to discuss ethical challenges in patient care can be difficult. Theater may offer an innovative framework to overcome these difficulties and allow clinicians to explore ethical challenges and their own personal reactions to their work roles and experiences.
OBJECTIVES OF PROGRAM/INTERVENTION: To use drama to initiate conversations among clinicians of various backgrounds about challenges in medical ethics and patient care. To foster interdisciplinary support among health care teams.
DESCRIPTION OF PROGRAM/INTERVENTION: The Medical Ethics Committee of an medical center sent an open letter soliciting "stories of caregiving" from hospital staff. The Committee's theme for the year was "Strangers at a Bad Time": the notion that we enter the lives of patients and families—often strangers—at difficult times, yet when intimacy is often most needed. More than forty stories emerged. A professional playwright and director helped craft the stories into a 45 minute play, "Listening to Life" which was cast entirely from hospital staff. While the script wove stories together in a dramatic narrative, it also emphasized the writers' experience of the demands and fulfillments of caregiving. The play was performed seven times for hospital staff and as the invited plenary program for a hospital-wide conference of oncology nurses during 2003. The play was also featured in the Chicago Tribune.
FINDINGS TO DATE: More than 650 people attended "Listening To Life." Approximately 150 returned formal evaluations, rating the program 4.9 on a 5-point Likert scale for quality and desirability of repeating it. Qualitative feedback was enthusiastic, emotional, and eloquent: "This reminded me of why I became a nurse." "It's like I was so very empty—and this performance filled me up." "It seems like so often we hear about the negative things in medicine (lawsuits, economics, etc) but are not reminded of what an enriching and wonderful profession it can be…It made me excited that I will, one day, be able to help people. Even more importantly, much of this helping seems not to have much to do with medicine, but merely compassion." Videotapes have been shared with six hospitals and programs for their

educational use. Consultations to the Medical Ethics Committee have increased from 1–2 to 8–10/month.
KEY LESSONS LEARNED: Caregivers were eager to offer their stories, their energies as cast and crew, and to attend and discuss this performance. With this commitment of time and energy, and modest financial resources, we enriched the Medical Ethics program, made it more accessible, and found this warmly received by our colleagues.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster or oral presentation. Videotape clips of performance also available.

THE EFFECT OF AN AMBULATORY CHIEF RESIDENT AND AN AMBULATORY MORNING REPORT ON INTERNAL MEDICINE RESIDENTS' PERCEPTION OF PRIMARY CARE. S.L. Alt[1]; S. Glavin[2]; X. Zhang[2]; J.N. Woodruff[1]. [1]University of Chicago, Chicago, IL; [2]The University of Chicago, Chicago, IL. *(Tracking ID #116463)*

STATEMENT OF PROBLEM OR QUESTION: Does the installation of an ambulatory chief resident and an ambulatory morning report improve internal medicine residents' perceived fund of knowledge and skills in primary care and their attitudes towards primary care?
OBJECTIVES OF PROGRAM/INTERVENTION: (1) To improve internal medicine residents' fund of knowledge in ambulatory medicine. (2) To improve internal medicine residents' attitudes towards primary care. (3) To improve the functioning of the resident continuity clinics and overall ambulatory rotation.
DESCRIPTION OF PROGRAM/INTERVENTION: PGY2 and PGY3 internal medicine residents participate in month long rotations in ambulatory medicine every 6 months. The rotation includes experiences in urgent care, continuity clinics, outpatient subspecialty clinics and lectures covering outpatient medicine topics and evidence-based medicine. In order to enhance learning opportunities and improve the overall ambulatory experience, half way through the academic year we instituted a new ambulatory chief resident and started an ambulatory morning report three times a week. We surveyed the residents before and after the intervention to assess whether their attitudes towards primary care had changed and to whether their perceived fund of knowledge and skills had improved.
FINDINGS TO DATE: We constructed dichotomous variables indicating the residents' reported improvement in their ability to practice general internal medicine and provide care in their continuity clinics with respect to fund of knowledge, interviewing skills, physical exam, differential diagnosis, test selection and treatment plan. By Chi-squared tests, statistically significant improvement was found in residents' perception of their fund of knowledge of general internal medicine (chi square = 0.03) and in the residents' perception of their ability to provide care in their continuity care clinics with respect to creating differential diagnoses (chi square = 0.04). A notable improvement in the residents' perception of their interviewing skills in their continuity clinic was also demonstrated (chi-square = 0.098).
KEY LESSONS LEARNED: The installation of an ambulatory chief resident and of an ambulatory morning report improved residents' perception of their fund of knowledge and their ability to perform in their continuity clinics, specifically with respect to their differential diagnoses and interviewing skills. The changes in the ambulatory rotation did not change attitudes towards primary care.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

THE EFFECT OF AN INTERACTIVE EVALUATION SKILLS WORKSHOP FOR FACULTY AND RESIDENTS ON THE COMPLETION RATE AND QUALITY OF THIRD YEAR MEDICAL STUDENT EVALUATIONS. D.T. Rubin[1]; J.N. Woodruff[1]. [1]University of Chicago, Chicago, IL. *(Tracking ID #117133)*

STATEMENT OF PROBLEM OR QUESTION: Do faculty development workshops in evaluation skills improve completion rate and quality of evaluations performed on third-year medical students during their clerkship experiences?
OBJECTIVES OF PROGRAM/INTERVENTION: 1. To improve faculty and resident completion rate of student evaluations. 2. To improve the quantity and quality of information included in the narrative section of student evaluations.
DESCRIPTION OF PROGRAM/INTERVENTION: Residents and attendings from the Department of Obstetrics and Gynecology participated in an interactive evaluation skills module lasting one hour. Participants reviewed the principles of evaluation, reviewed the roles of evaluation in medical education, identified barriers to effective evaluations and created strategies to overcome these barriers. Appropriate use of anchored Leikert rating scales and strategies for formulating effective narrative comments were also reviewed.
FINDINGS TO DATE: Three hundred and sixty-seven consecutive written evaluations performed on 133 students before the intervention and two hundred and sixty consecutive written evaluations performed on 102 students after the intervention were analyzed retrospectively. Analysis of both completion rate and the quality of narrative sections of student evaluations was performed. There was no difference in the completion rate of evaluations performed after the intervention compared to before the intervention. There was also no difference in both the average length of the narratives and documentation of feedback in the narratives after the intervention compared to before the intervention. There was a significant improvement in the number of specific examples of behavior documented in the narrative after the intervention compared to before the intervention. The average number of examples increased by 57% with a *P* value of .020.
KEY LESSONS LEARNED: Faculty development workshops in evaluation skills have no benefit in improving the completion rate of student evaluations. They may improve the quality of narrative comments by teaching faculty to use more specific examples of student behavior but do not seem to increase amount of narrative or documentation of feedback. The extremely low frequency with which specific examples of behavior and feedback are documented in the narrative suggests evaluators in medical education do a poor job of providing adequate detail in the narrative.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster.

TRAINING GENERAL INTERNISTS FOR INTERNATIONAL HUMANITARIAN ASSISTANCE MISSIONS. J.E. Rinaldo[1]; E. Berbano[2]; K. Dezee[2]. [1]Walter Reed Army Medical Center, Washington, DC; [2]Walter Reed Army Medical Center, Bethesda, MD. *(Tracking ID #103196)*

STATEMENT OF PROBLEM OR QUESTION: The term "general internal medicine" (GIM) implies a global scope. Yet there has been little effort in US GIM training programs to teach medicine appropriate to developing countries where poverty and conflict abound. Our trainees in a US Army medical center sends graduates to such settings frequently. Thus we need to develop training for our IM residents, and we are a natural nidus for exporting it to other GIM programs in the non-military sector. In a globalized medical environment beset by instability and marred by poverty, all internists should possess this knowledge base.
OBJECTIVES OF PROGRAM/INTERVENTION: 1. To identify the educational needs of IM physicians who perform humanitarian assistance medicine (HAM) in the US Army. 2. To use extramural didactic and field training in HAM within the GIM fellowship to train HAM "trainers." 3. To develop a formal curriculum in humanitarian assitance medicine (HAM) for all IM residents within our program. 4. To disseminate our HAM curriculum to other IM training programs in the non-military sector.
DESCRIPTION OF PROGRAM/INTERVENTION: To identify the educational needs of IM physicians who participate in HAM, we have designed an assessment tool for distribution to all Army IM graduates in years 2002–2005 in order to assess their perception of the gaps in their residency in HAM and their level of post-graduate participation in HAM. To train GIM trainers at the fellowship level, we have instituted graduate training in disaster medicine and have planned international non-military humanitarian field experiences through collaboration with a non-governmental organization NGO. We have begun a lecture series for IM residents on HAM. Finally, we have begun planning a national symposium through the Army ACP to publicize and disseminate these innovations.
FINDINGS TO DATE: All graduates and current members of our training program have been polled via electronic communications. These communications have revealed nearly universal interest by current trainees and substantial participation by previous trainees in HAM worldwide. A quantitative assessment tool has been designed for use by training directors of all six Army IM programs. We have identified five broad subject areas: Disaster epidemiology, maternal-child healthcare, tropical medicine, public health priorities for refugees, and the international healthcare relief community. Eight lectures have been given on these subjects. Efforts are underway to monitor the effectiveness of the program by pre and post testing of residents and by sequential administration of the assessment tool after deployment of the current (trained) residency cohorts.
KEY LESSONS LEARNED:
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

USE OF COMPUTER SIMULATED LUNG SOUNDS IN AN INTRODUCTORY TO PHYSICAL EXAM COURSE: DO STUDENTS THINK IT WORKS? J. Jevtic[1]; J.L. Sebastian[1]; D. Bragg[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #115656)*

STATEMENT OF PROBLEM OR QUESTION: Successfully teaching the skill of pulmonary auscultation in the classic lecture-discussion(LD) and small group model is associated with multiple barriers including recruitment of patients, changing auscultory findings, and the inability to objectively assess the knowledge and skills attained by student learners.
OBJECTIVES OF PROGRAM/INTERVENTION: To improve the knowledge and skills of second year(M2) students in pulmonary auscultation and assess their ability to accurately identify normal and abnormal lung sounds using PneumoSim^R, a computerized lung sound simulator.
DESCRIPTION OF PROGRAM/INTERVENTION: Following a one hour lecture on pulmonary exam and a small group session with patient interactions, we used the PneumoSim^R to introduce a new case-based curriculum that highlighted abnormal pulmonary auscultory findings associated with six common pulmonary diseases(asthma, pneumonia, pleural effusion, pneumothorax, heart failure and COPD). Immediately after the teaching module all students(n = 174) underwent a 15 question quiz to test their fund of knowledge to accurately identify normal and abnormal lung sounds. M2 students also completed a pre/post self assessment rating their confidence in their ability to identify lung sounds(1 = not confident; 6 = very confident). Paired t-tests were used to examine differences between pre and post student ratings.
FINDINGS TO DATE: Student's mean score on the quiz was 94.5%(±8.0) with a range 60–100%. M2 students reported that their ability to identify normal breath sounds, wheezes, crackles, pleural friction rubs and egophony all significantly improved after their exposure to the PneumoSim^R curriculum ($P < .001$). Despite the fact that only 54% of the students felt that the computer-simulated sounds were easy to hear using the infrared stethoscopes, 72% felt that this portion of the curriculum contributed positively to their ability to accurately identify common lung sounds. Overall, 81% of the students felt that the PneumoSim^R should be used in future teaching sessions.
KEY LESSONS LEARNED: Results of our pretest/posttest self-assessment survey indicated that M2 students felt that their ability to accurately identify lung sounds significantly improved after exposure to the PneumoSim curriculum.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

USE OF PELVIC SIMULATOR FOR RESIDENT PELVIC EXAM SKILLS TRAINING. K.S. Jorn[1]. [1]Society of General Internal Medicine, Jacksonville, FL. *(Tracking ID #116199)*

STATEMENT OF PROBLEM OR QUESTION: Entering G1 residents have varying degrees of skill in performing pelvic examinations. It is technically difficult to arrange live patient examinations for our resident trainees. Alternative methods of teaching and assessing resident pelvic examination skills are needed.
OBJECTIVES OF PROGRAM/INTERVENTION: 1) To assess basic resident skills in performing a pelvic examination. 2) To provide a forum for teaching basic pelvic examination skills. 3) To assess whether trainee level of confidence and performance of pelvic examinations were improved by the use of a simulator and a dedicated training session on pelvic examinations.
DESCRIPTION OF PROGRAM/INTERVENTION: New G1 residents were assigned to attend a 1.5 hour "Pelvic Examination Teaching Session" run by the primary author during the first 2 weeks of their first Ambulatory Rotation. Sessions consisted of a brief interactive didactic session followed by trainee examination of two commercially available Pelvic Simulators (NASCO products http://www.enasco.com/prod/Home). Then trainees were taken to an examination room and "walked through" a pelvic exam and Pap smear with demonstration of the equipment, policies, and procedures used at our institution.
FINDINGS TO DATE: Feedback on the sessions has been positive in general. For those residents who already had a good background in pelvic examinations, the simulators did not add much to the benefit of the session overall. Those residents who felt their exam skills were weaker did percieve some benefit from the simulators. Chart review shows little impact of the intervention sessions on pelvic exam performance but an effect would be difficult to capture in our patient population.
KEY LESSONS LEARNED: Pelvic simulators are not substitutions for examination of live patients but can provide an arena for basic skill assessment. Residents with a good foundation in GYN examination skills do not derive much additional benefit from the use of simulators. Residents find the didactic information and introduction to the policies and procedures of our institution helpful regardless of their baseline skill level. In our patient population, quantitative benefit of these sessions are difficult to assess. Similar sessions may be useful in other institutional settings as the difficulty in using live patients for resident education increases.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster or Verbal description of the Pelvic Examination Teaching Sessions. NASCO Pelvic Exam Simulator will be available for examination by meeting attendees.

USING AN AUDIENCE RESPONSE SYSTEM TO TEACH ABOUT PHYSICIAN-INDUSTRY INTERACTIONS. M. Stellini[1]. [1]Wayne State University, Detroit, MI. *(Tracking ID #116597)*

STATEMENT OF PROBLEM OR QUESTION: Many physicians-in-training, as well as practicing physicians are likely unaware of guidelines about appropriate physician-industry interactions. Inappropriate interactions between industry representatives and physicians, particularly trainees, can have a negative impact on patient care and healthcare expenditures.
OBJECTIVES OF PROGRAM/INTERVENTION: The objective is to present the American Medical Association (AMA) guidelines on physician-industry interaction as an example of an ethical, professional framework for behavior, to mixed audiences of faculty physicians and trainees. The secondary objective is to stimulate thought and self-reflection on this topic by using an audience response system during didactic sessions.
DESCRIPTION OF PROGRAM/INTERVENTION: A didactic session is delivered, which explains the AMA guidelines and their rationale. The session is made interactive by interspersing questions to the audience within the didactic material and discussing the responses immediately. Audience members respond via individual keypads and the responses are displayed electronically to the group as histograms after polling on each question is completed. Each individual's response remains anonymous; only aggregate data is displayed.
FINDINGS TO DATE: Most trainees and many faculty are unaware of the AMA guidelines or that any such guidelines exist. Many faculty and trainees endorse (and engage in) practices that are outside of the recommendations of the guidelines. Some audience members are willing to change behaviors after these sessons. The audience response system greatly enhances the value of the session by stimulaing discussion by audience members.
KEY LESSONS LEARNED: There is a need to educate practicing/faculty physicians as well as trainees about guidelines for appropriate interaction with industry representatives. Discussing the potential impact of such relations on clinical care and healthcare expenditures is important. Using an audience reponse system, "forcing" participants to declare their position on pertinent questions, enriches and improves the discussion. This type of presentation is a good means to begin a process of attitude and behavior change where appropriate.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: We will display the powerpoint presentation including questions and audience responses. We will discuss some interventions that can be done to change behavior which are enhanced by this presentation.

USING MUSIC TO TEACH BEGINNING HEART SOUNDS. S.E. Hoar[1]; H. Straker[2]. [1]George Washington University, Hyattsville, MD; [2]George Washington University, Washington, DC. *(Tracking ID #115184)*

STATEMENT OF PROBLEM OR QUESTION: Beginning heart sounds are typically taught by a combination of lecture and the use of recorded sounds, sometimes with a concommittant sound wave display and/or electrocardiographic recording. Students typically focus on taking notes instead of hearing and assessing the sound and clinically on the use and adjustment of the stethoscope. How can students learn the initial qualities of heart sounds without worrying about the cause or significance of the sound?
OBJECTIVES OF PROGRAM/INTERVENTION: To help students begin to hear and assess heart sounds.
DESCRIPTION OF PROGRAM/INTERVENTION: First year Physician Assistant students were given a 45 minute music session before any lecture on heart sounds or an introduction to use of the stethoscope. A local musician used multiple instruments in a live, interactive session. Students listened to a short piece, then tapped the rhythm and answered questions. The music session was followed by a short description of use of the stethoscope. The students then listened to their own heart sounds. Finally, the students received standard lectures with the use of prerecorded heart sounds.
FINDINGS TO DATE: Students were able to identify regular and irregular, slow, medium, and fast rhythms, pauses, gallops, split sounds, murmurs, and a rub.
KEY LESSONS LEARNED: Students enjoyed the break from the lecture format and focused on hearing the sounds and rhythms. The evaluation showed that the majority felt prepared to hear real heart sounds and that the program should be continued.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Either live music and/or CD will be demonstrated, if accepted for oral presentation.

"WORLDS APART": USING DOCUMENTARY FILMS TO TEACH CROSS-CULTURAL HEALTH CARE. A.R. Green[1]; J.R. Betancourt[2]; M. Grainger-Monsen[3]. [1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Massachusetts General Hospital, Boston, MA; [3]Stanford University, Palo Alto, CA. *(Tracking ID #116972)*

STATEMENT OF PROBLEM OR QUESTION: Cross-cultural education is now recognized as a necessary component in medical training at all levels. Innovative methods and tools are needed to engage students in this important area of learning.
OBJECTIVES OF PROGRAM/INTERVENTION: Documentary film is a particularly powerful medium for allowing its audience to connect with real people's experiences, and for fostering empathy and awareness. In order to bring to life the actual conflicts, issues and challenges faced by patients and healthcare professionals in cross-cultural medical encounters, we helped develop a series of short documentary films for use as teaching tools. We also developed a facilitator's guide to help educators lead meaningful, reflective discussions about these issues. The specific objectives are for learners to: 1) understand that patients and clinicians often have different values, beliefs, and perspectives on health and illness that can lead to conflict; 2) become familiar with challenges that are particularly relevant in cross-cultural healthcare; 3) develop a greater sense of curiosity, empathy, and respect towards patients who are culturally different.
DESCRIPTION OF PROGRAM/INTERVENTION: The program consists of four short films (10 to 14 minutes in length) that tell the stories of four patients, their families, and the healthcare professionals who care for them. These stories raise issues of patient mistrust, communication barriers due to language and culture, racial/ethnic disparities and stereotyping, and traditional alternative practices, among others. They deal with medical situations such as dialysis and renal transplantation, repair of an atrial-septal defect, gastric cancer, and the management of chronic medical illness. The films can be used in a variety of settings including large group presentations with reflective break-out sessions, as adjuncts for problem-based learning, and in courses on cross-cultural medicine, physician and patient, ethics, or social and behavioral sciences.
FINDINGS TO DATE: Two of the films were piloted with 150 first-year Harvard medical students followed by break-out sessions. The response was positive overall with average session ratings of 4.4 (4 = very good, 5 = excellent).
KEY LESSONS LEARNED: The Worlds Apart documentary films and facilitator's guide represent an innovative approach to raising the awareness of physicians-in-training to the relevance of cross-cultural issues in health care. They can be feasibly implemented into undergraduate and graduate medical curricula in a variety of ways. Further studies are needed to assess the impact of these films on cross-cultural knowledge and attitudes.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Video, poster and printed materials

WEB-BASED INNOVATIONS IN MEDICAL EDUCATION

DEVELOPMENT OF A LEARNER AUTHORED WEB-BASED CARDIAC AUSCULTATION SITE. S. Schwantes[1]; J. Beaversdorf[1]; D. Ficke[1]; R. Geck[1]; E. Johnson[1]; B. Konicek[1]; M. Walters[1]; D.E. Simpson[2]; D. Torre[1]. [1]Medical College of Wisconsin, Milwaukee, WI; [2]MCW, Milwaukee, WI. *(Tracking ID #116417)*

WEBSITE URL: http://instruct.mcw.edu/medicine/m3/ click on "NEW student developed cardiac auscultation web site"
BACKGROUND: Multiple studies have shown that medical students and postgraduate trainees need to improve their proficiency in cardiac auscultation. While Web-based instructional programs are being used with increased frequency to

promote a student-centered approach to learning, there is limited evidence regarding the impact of a learner designed website for enhancing cardiac auscultation skills.
CONTENT: To develop and evaluate a learner-authored web-based cardiac auscultation program.
DESIGN: During the period September to December 2003, 6 third year medical students, one 2nd year medical students and 1 faculty member met weekly to develop the structure and content for a web based cardiac auscultation web site. Students designed the website using Front Pageä and included 9 simulated cardiac sounds available from Cardionicsä: 3 systolic murmurs (aortic stenosis, mitral regurgitation, ventricular septal defect); two diastolic murmurs (mitral stenosis and aortic regurgitation); 2 extra heart sounds (S3, S4); a fixed splitting of S2(ASD); and a pericardial rub. Each murmur/heart sound was associated with a: (1) definition; (2) diagram of the chest with a "hot spot" showing the best area of auscultation and a hypertext link to an embedded multi-media sound file; (3)a table summarizing timing, change with maneuvers and/or position, associated physical exam findings and a phonocardiographic image of the sound/murmur; and (4) "cardiac pearls" in the form of brief teaching points or bedside clues about a specific cardiac exam murmur/sound.
EVALUATION: The site was piloted by twelve 3rd year students during a medicine clerkship rotation. Ninety percent of students reported that the site contributed to their cardiac auscultation knowledge/skills and 95% promoted self directed learning. All students agreed that the content was relevant to their learning needs and appropriate for their level of training. The 7 students who authored the program rated the educational value of the experience very highly.
SUMMARY: The use of a learner-authored web based instructional tools may improve the quality of learning outcomes. Teachers may need to take on new roles serving as facilitators of learning rather then pure didactic teachers to achieve and shape curricular objectives. Because cardiac auscultation skills are learned by practice and repetition, self-directed learning is an appropriate learning method to acquire those skills.

"DIFFICULT CONVERSATIONS" ONLINE FORUM: HELPING STUDENTS REFLECT ON COMMUNICATION CHALLENGES DURING CLERKSHIPS. G. Makoul[1]; M. Aakhus[2]; M. Altman[1]; M. Flores[1]. [1]Northwestern University, Chicago, IL; [2]Rutgers University, New Brunswick, NJ. *(Tracking ID #117541)*

WEBSITE URL: https://fsmweb01.northwestern.edu/weinberg/dcforum/admin/login.cfm
BACKGROUND: Medical students observe and experience many different types of challenging communication situations when on the clerkships. However, discussion or guidance regarding these situations tends to be rare. We created the Difficult Conversations (DC) online forum to give students the opportunity to reflect on and debrief one another about these situations. The DC Forum was launched in the summer of the 2003–2004 academic year; it is a required component of the Difficult Conversations unit. The unit is supported, in part, by a grant from the Kenneth B. Schwartz Foundation.
CONTENT: We developed a form designed to encourage detailed description and reflection when students submit their posts to the DC Forum. The form includes: (1) Topic; (2) How were you involved (observed, directly participated)? (3) Describe the difficult conversation; (4) How did you react at the time? (5) What were the goals of the encounter? (6) What went well? (7) What did not go well? (8) What would you do differently, if anything? (9) Did you talk with anyone about this? (10) Did you try to access other resources? (11) Overall, what did you learn from this experience that you could apply to other difficult conversations?. Similarly, we designed a form for students to use when responding to posts, which includes the following components: (1) What is your response to this description? (2) What would you have done differently, if anything? (3) Have you experienced or observed anything similar?
DESIGN: The DC Forum uses a text-based, newsgroup-style system: Once a student submits a post, others can respond. It is a web-based application written in ColdFusion 5.0 using the Oracle 9.2 database as a backend. There is an administrator interface for configuring forum parameters and a student interface for posts and responses.
EVALUATION: Posts were submitted by 55 of the 56 students in the first 4-month block of the Difficult Conversations unit. Students reported that the DC Forum was easy to navigate and valuable. The vast majority of their posts demonstrated insight into salient issues, goals, problems, solutions and lessons learned, whether about patient care or professionalism. Only about 40% of the students reported that they had talked to anyone about the situation; about half of these talked with a resident, with varying results.
SUMMARY: The DC Forum is filling a void in terms of faciliating reflection and dialogue about communication challenges. Many of the posts could be used as vignettes for teaching and faculty development. The same web-based tool could be offered to resident and attending physicians as well.

OSTEOED: DEMONSTRATION AND ANALYSIS OF FEATURES AND USAGE PATTERNS OF AN ON-LINE OSTEOPOROSIS EDUCATIONAL RESOURCE. M.B. Laya[1]; M. Migeon[1]. [1]University of Washington, Seattle, WA. *(Tracking ID #117427)*

WEBSITE URL: www.osteoed.org
BACKGROUND: Since the 1994 WHO Technical Report on osteoporosis, there has been an explosion of information on prevention, screening, evaluation and treatment of this disease. Educational needs of learners at different stages of professional training and the challenges of disseminating information across the five-state region served by our medical school were catalysts for the creation of an educational website on osteoporosis, OsteoEd (www.osteoed.org). The primary objective of the site is to provide evidence-based information for medical students, primary care residents and providers on the prevention, diagnosis and treatment of osteoporosis. A second objective is to accommodate a range of informational needs and learning styles by presenting the material in a variety of formats.
CONTENT: There are 17 cases on a wide range of topics each with 3 to 8 multiple-choice questions covering one teaching point per question. Feedback and additional information on the teaching point is provided. Over 100 "Common Question" are accessed through an indexed list or a search function. The site includes a general overview, drug monographs, on-line decision analysis tools, references by topic and patient information handouts in 4 languages.
DESIGN: OsteoEd provides a case-based learning format, an index and searchable database of content, and a downloadable application, OsteoEd for PDA. The "Osteoporosis IQ" quiz is designed to rate user knowledge and direct the learner to appropriate parts of the site. Funding is entirely through a private gift to the University for osteoporosis education. Faculty of the Division of General Internal Medicine at the University of Washington authored the site.
EVALUATION: In 2003, there were 82,917 visitors to the site; of these 5.6% (3246) were from US based educational domains. Thirty-five percent were from foreign domains. Top referrals were from the large commercial search engines. Page views per visitor were highest for referrals from bone disease societies, educational institutions, government sites and some foreign educational institutions. Top pages viewed were those "Common Questions" pertaining to prevention and the patient handouts. The most frequently viewed cases related to screening and secondary osteoporosis.
SUMMARY: OsteoEd traffic data demonstrate usage well beyond the original target group, largely as a result of referrals from commercial search engines. Growth in usage at educational institutions will require different marketing strategies. This might include attempts to increase links from key institutional sites.

THE PROFESSIONAL DEVELOPMENT PORTFOLIO: REFLECTION-IN-ACTION FOR MEDICAL STUDENTS. A.L. Kalet[1]; J. Sanger[1]; J.M. Chase[1]; A. Faatz[1]; A. Kozlovsky[1]; A. Bertkau[1]; J. Halpern[1]; S. Yadla[1]. [1]New York University, New York, NY. *(Tracking ID #116060)*

WEBSITE URL: tools.med.nyu.edu/profportfolio.
BACKGROUND: The ACGME and LCME have challenged us to evaluate professionalism but more sophisticated assessment strategies are needed. With substantial student involvement we designed and immplemented an on-line Professional Development Portfolio (PDP) for all entering medical students (class '07, N = 160), explicitly aimed at preparing future physicians to engage in self-reflection on professional behaviors.
CONTENT: After logging on, students view their individualized portfolio matrix displaying all required 1st year submissions. Students upload the appropriate document, write a brief 2–3 sentence reflection and submit. PDP content includes: standardized materials (e.g. essays, standardized patient interactions checklists, self, peer, patient, and faculty assessments) as well as individualized materials (e.g. evidence of community service and leadership activities) and comment cards, filed by others, either praising or expressing concern. We have currently designed 25 PDP submssions per 1st year student including contributions from all basic science courses (e.g. Anatomy students assessed their peer dissection partners' professional conduct). Annually, students write a 1–2 page self-assessment then meet face-to-face meeting with their Faculty-Partner (FP) to recieve individualized feedback, develop a learning plan for the coming year, and agree on a professionalism grade. Only students, assigned FP's, and PDP administrators have full access to the students PDP. FP's are promopted to review the PDP only when a comment card or the final assessment is filed. Students are email reminded starting 2 weeks prior to a submission due date and then every 30 days until the submission is recorded. We estimate maintainance of the PDP will take students 2 hours annually. PDP material will be considered toward AOA and other honors eligibilty.
DESIGN: The web-based portfolio was written in-house using Macromedia ColdFusion 5.0 middleware accessing an Oracle9i database. It is integrated with, and access is authenticated by PIMS, our school-wide personnel database.
EVALUATION: An IRB approved controlled pre/post evauation of the PDP is underway. Measures include; Professionalism Attitudes and Beliefs Questionnaire, a measure of moral reasoning, performance based assessments of communicaiton and ethics skills, student/faculty satisfaction and educational impact questionnaires.
SUMMARY: Collaboratively designed on-line portfolio systems can; support professional development through structuring a habit of self-reflection and provide detailed documentation of professionalism competence.

WEB-BASED SUPPORT IN TEACHING CLINICAL REASONING. N. Van Dijk[1]; J.L. Beex[1]; I. Mourer[1]; H.G. Grundmeijer[1]; W. Wieling[1]. [1]Academic Medical Center—University of Amsterdam, Amsterdam, . *(Tracking ID #116328)*

WEBSITE URL: Http://onderwijsgnk.amc.uva.nl; Login: test01; Password: test01. Website is in Dutch, will be translated when abstract is accepted.
BACKGROUND: Training in clinical reasoning is an important part of the medical curriculum. At the Academic Medical Center-University of Amsterdam clinical reasoning is taught by means of problem-based learning (PBL). Real-life cases are discussed in small groups, of 15 students and a mentor-clinician. Students are expected to prepare for the discussion by studying part of the case. However, poor

preparation of students frequently leads to less effective discussions. Furthermore increasing student-numbers and shortage on medical staff requires time-effective teaching. Information and communication technologies (ICT) can possibly improve preparation of students and their skills in clinical reasoning as well as time-effective teaching.
CONTENT: The web-based cases use a written patient case with multiple choice questions and a dynamic probability histogram. Students receive extensive feedback on their performance.
DESIGN: A system as a shell for interactive, computerized patient cases for individual web-based use has been built (JB). In each case students generate a differential diagnosis and select the most probable and high-risk diagnoses. A dynamic probability histogram of the differential diagnosis is shown. The student is expected to refine the differential diagnosis in the most effective way by medical history and physical examination. With the use of multimedia techniques physical signs such as pulmonary sounds, can be presented. In the following group-session the results of the students are discussed using the groups results per item and the individual experiences of the students. Subsequently the small group focusses on the medical, ethical and psychological aspects of the case in a 1,5 hour group session.
EVALUATION: A comparative study between 139 users and 79 non-users of the system and their mentors has been performed. Students spent an equal amount of time for the preparation of the group-meeting. Users of the system used more electronic handbooks (44.5% vs 0%) than non-users, but less regular handbooks (76.6 vs 87.3%). Mentors rated the students of the user-groups to have better knowledge on the subject, and an equal grow in insight, clinical reasoning and reflection on own knowledge. The educational goals of the program were gained in a higher level by users than by non-users, in less hours. A second comparative study will be performed in february 2004.
SUMMARY: Web-based case-learning can play a supportive role in teaching clinical reasoning to medical students.

INNOVATIONS IN PRACTICE MANAGEMENT

A COMPREHENSIVE APPROACH TO ASTHMA MANAGEMENT IN AN INNER CITY HOSPITAL SETTING. R. Shriver[1]; R. Mangold[1]; G.A. Salzman[1]. [1]University of Missouri-Kansas City, Kansas City, MO. *(Tracking ID #117054)*

STATEMENT OF PROBLEM/QUESTION: National agencies such as the NIH and Society of Asthma have educational campaigns for patients with asthma to assist in their medical care. In our inner city hospital we have a large population of asthmatic patients who do not have access to appropriate medical care and medications. Many of these patients primarily utilize only the emergency department for care leading to increased hospitalizations and mortality.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To develop accessible and affordable health care and education for patients with asthma.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: We have developed a comprehensive asthma care program that centers around a weekly clinic dedicated to asthma care. Patients presenting to the emergency department, the inpatient service or general medicine clinics with asthma are routinely referred to this clinic and are seen within a two week time frame. The day prior to their visit, they are called to remind them of their appointment. At their visit, all patients fill out a symptom questionnaire, undergo pre and post bronchodilator spirometry and have a chest x-ray. After evaluation by a pulmonologist specializing in asthma, the patients undergo individual education with a trained asthma clinician educator who along with the medical staff develops an asthma action plan for each individual. This guides them though treatment of an exacerbation at home, indicates when they need to seek medical care and provides the phone number for assistance. We have action plans in English, Spanish, and graphic versions. A copy of this is given to the patient and placed in their chart. In addition, it is placed in a computerized data base accessable by the emergency department and nurse advice phone lines. They then are provided assistance with obtaining their medications via samples or a pharmacy discount if needed. All patients are then given a follow up appointment.
FINDINGS TO DATE/ EVALUATION OF WEB SITE: Since instituting this program, the number of patients who have undergone asthma education has increased from 8% to greater than 50% while our patient show rate in clinic has increased by approximately 25%. In addition, our admission rates from the emergency department have decreased from 23% to 16.9%.
KEY LESSONS LEARNED: Having a comprehensive clinic in which patients see a physician, have individualized education and assistance with obtaining medications has improved access to care and patient compliance.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Sample teaching tools and demonstration of computerized asthma action plan database.

A COMPUTERIZED REFILL PROFILE AS A TOOL TO DECREASE MEDICATION ERROR, IMPROVE PATIENT SAFETY AND CLINICIAN EFFICIENCY. O. Melamed[1]; D. Nguyen-Khoa[1]. [1]Olive View—UCLA Medical Center, Sylmar, CA. *(Tracking ID #116538)*

STATEMENT OF PROBLEM/QUESTION: In a setting where mostly unsophisticated patients are served, rewriting prescriptions may result in medication errors and may significantly lengthen clinic visit time. This county hospital includes a pharmacy and is associated with three off-site outpatient health centers, two of which have on-site pharmacies. All centers are connected by a computer network. A limited ability exists to share patient charts between centers further complicating medication histories.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: 1). decrease medication errors by providing clinicians at every visit and any health center with a computer generated list of medications the patient filled at any of our pharmacy sites, 2). shorten the time and increase ease of refilling medications
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: A computer program was developed to compile a list of medications for a patient presenting to a given clinic. This integrated data list printed at the request of a clerk contained: patient ID information, clinics visited with dates, medications filled with directions for administration, the prescribing clinician and the number of refills. The list was then attached to the front of the chart and forwarded to the clinician who was able to make changes on it by checking a box under each medication stating: "refill," "delete," or "no action." The number of refills could also be entered. This revised profile was then used by the pharmacist to dispense medication.
FINDINGS TO DATE/ EVALUATION OF WEB SITE: This computer integrated pharmacy profile provided an updated list of medications at each visit. Provided with this information, clinicians were able to avoid duplications and prescriptions that would cause potential drug interactions. It also made easier tracking prescriptions for controlled substances. This procedure allowed the clinician to check a box instead of rewriting a prescription. It ensured legibility by using printed text. The major obstacles to the implementation of the profile during the pilot were: (1) computer network access, and (2) lack of cooperation of other services, e.g., clerical and nursing likely due to a perception of the lack of benefit from this procedure that increased their responsibility.
KEY LESSONS LEARNED: A computer integrated medication profile may serve as an important tool to communicate information between different clinics and facilities. An updated comprehensive legible medication profile may decrease medication errors when writing for refills and provides important data as described above. It allows providers to be more efficient while improving patient safety.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

A MODIFIED OUTPATIENT PAPER PRESCRIPTION BLANK TO REDUCE PRESCRIPTION ERRORS. A.G. Kennedy[1]; B. Littenberg[1]. [1]University of Vermont, Burlington, VT. *(Tracking ID #115903)*

STATEMENT OF PROBLEM/QUESTION: Omissions represent the most frequent category of prescription errors. Information technologies, such as computerized physician order entry, will likely represent the best long-term method to decrease prescription errors. However, these technologies have not yet been implemented in all outpatient settings. Low cost, low technology alternatives that are feasible now and are shown to reduce errors are warranted.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: 1. Pilot an outpatient, modified, paper prescription blank. 2. Obtain national feedback.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: We developed and implemented a modified paper prescription blank in one outpatient adult Internal Medicine clinic. Using a 2-month before-after design, the pilot compared the modified blank to a standard blank. Prescriptions dispensed by the outpatient pharmacy located in the same building as the clinic were reviewed. The primary outcome measure was change in omissions between standard and modified prescriptions per provider. Omissions were based on the 13 legal requirements of a prescription. Scores ranged from 0–13, with a score of 13 meaning 100% complete or 0% omissions. Secondary outcomes included change in clinically relevant problems between standard and modified prescriptions and provider satisfaction. To obtain national feedback, we presented the modified blank as a poster at the 26th Society of General Internal Medicine (SGIM) Annual Meeting. Attendees were asked to complete mock prescriptions and a survey.
FINDINGS TO DATE/EVALUATION OF WEB SITE: A total of 443 prescriptions written by 11 providers were dispensed by the pharmacy during the study. 150 prescriptions (34%) were completed using modified blanks. Modified blanks increased prescription score by 0.47 points (95% CI 0.08–0.86, $P = 0.02$). Pharmacists documented clinically relevant problems with 1 modified and 9 standard prescriptions ($P = 0.18$). 55 SGIM attendees completed the mock prescriptions and survey. 38 people (69%) believed the modified blank would prevent errors. 34 people (62%) stated they would be willing to try the modified blanks for 30 days. Feedback was used to revise the modified blank.
KEY LESSONS LEARNED: Modified paper prescription blanks significantly decreased outpatient prescription omission errors. Feedback suggests providers are willing to use modified blanks. The low-cost, low technology modified outpatient paper prescription blank represents an immediate option for reducing prescription omission errors while awaiting the implementation of more comprehensive technology.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

A PRIMARY CARE DISEASE MANAGEMENT PROGRAM FOR PATIENTS WITH CHRONIC NON-MALIGNANT PAIN. P. Chelminski[1]; T. Ives[1]; M. Pignone[1]; S. Prakken[1]; S. Perhac[1]; D. DeWalt[1]; R. Malone[1]; T. Miller[1]; B. Bryant[1]; J. Ripton[1]; C. Felix[1]. [1]University of North Carolina, Chapel Hill, NC. *(Tracking ID #101651)*

STATEMENT OF PROBLEM/QUESTION: Effective management of chronic non-malignant pain in primary care is difficult.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To test the effectiveness of a primary care, pharmacist-led disease management program for patients with chronic pain in a 3 month before and after trial.

DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: We developed a multidisciplinary program for chronic pain that combines the skills of internists, clinical pharmacists, and experts in pain and addiction medicine in an academic general internal medicine practice. The program included structured clinical assessments, a computer registry, regular follow-up visits, pain contracts, psychiatric consultation, and substance abuse referral. Primary care providers referred patients for baseline and 3 month assessment of pain, mood, and function using the Brief Pain Inventory (BPI), the Center for Epidemiological Studies scale (CES-D) and the Pain Disability Index (PDI), respectively. We monitored substance misuse through history and urine toxicological testing (UTS).
FINDINGS TO DATE/EVALUATION OF WEB SITE: Eighty-five patients with chronic pain were enrolled in the trial. Mean age was 51 years, 60% were male, and 78% were Caucasian; 93% were receiving opioids. At baseline, the average pain score was 6.5 on an 11-point scale. The worst pain was 9.2; the least pain, 4.5; and current pain, 6.9. The average CES-D score was 24.0. Mean PDI score was 47, suggesting significant disability. Sixty-three patients (73%) completed 3 month follow-up. Fifteen did not follow-up after substance misuse led to discontinuation of opioids; eight were lost to follow up. At 3 months, the average pain score improved to 5.5 ($P = .003$); the worst pain to 8.1 ($P < .001$); the least pain to 3.9 ($P = .038$); and current pain to 5.8 ($P = .014$). The mean PDI score improved to 39.3 ($P < .001$). Mean CES-D score was 18.0 ($P < .001$), and the proportion of depressed patients fell from 79% to 54% ($P = .003$). Substance misuse was found in 27 (31%) patients: fifteen had UTS positive for cocaine (12) or amphetamines (3); three were receiving opioids from more than one provider; seven had UTS persistently negative for prescribed opioids; one diverted opioids; one altered an opioid prescription.
KEY LESSONS LEARNED: A primary care-based disease management program can improve pain, depression, and disability scores for patients with chronic pain. Substance misuse and depression were common, and effective care of patients with chronic pain should include rigorous assessment and care for patients with these important co-morbid disorders.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster/Presentation.

A STRATEGY TO IMPROVE UTILIZATION OF GROUP EDUCATION CLASSES FOR PATIENTS WITH DIABETES. R. Stroebel[1]; T. Poterucha[1]; R. Chaudhry[1]; S. Scheitel[1]; S. Bjornsen[1]; L. Muller[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #116688)*

STATEMENT OF PROBLEM/QUESTION: Group diabetes education has been shown to improve clinical outcomes in patients with diabetes. Medicare and many private insurers will cover the cost of group education for qualifying patients. Previous efforts to enroll patients in available group classes, relying on physician referral or patient self-referral, were unsuccessful.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To consistently offer group diabetes classes to all eligible patients and maximize utilization of this resource.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: Our diabetes registry was used to identify patients with diabetes who met Medicare eligibility requirements for reimbursement. Lists were generated of patients in a physician's panel with two consecutive HgbA1c values over 7% or with a new diagnosis of diabetes. Letters were sent to the identified patients inviting them to attend a weekly series of four 2 1/2-hour group classes. The letters included a list of covered topics, a description of the group class structure, a statement emphasizing the importance of good diabetes control, and a statement regarding reimbursement. The patients' primary care physician signed the letters. The physician had the option of not sending the letter if the classes were felt to be inappropriate for the patient. Each month for five months (2/03–6/03) two different physicians' patients were sent letters. Class attendance was monitored through 9/03.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Letters were sent to 154 qualifying patients of the ten participating physicians. A total of 23 patients who were sent letters attended at least one class from 2/03 to 9/03. The patients attended an average of 2.9 out of the series of 4 classes. This program improved enrollment in the monthly group classes from an average of 3.6 enrollees per month to an average of 6.5 enrollees per month.
KEY LESSONS LEARNED: The use of our diabetes registry allowed us to identify patients eligible for group diabetes classes on the basis of poor glycemic control or new diagnosis of diabetes. The response rate to letters inviting patients to participate in group diabetes classes was 15%. The strategy of sending letters directly to patients improved the utilization of our group classes compared to our existing options of physician referral or patient self-referral. Further work is needed to reach the 85% of eligible patients who choose to not participate.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

A WEB BASED TOOL TO ASSIST TRIAGE OF UPPER RESPIRATORY INFECTION/ SINUSITIS IN ADULTS. R. Stroebel[1]; R. Chaudhry[1]; S. Scheitel[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #116012)*

STATEMENT OF PROBLEM/QUESTION: A registered nurse (RN) managed, phone-based triage and treatment protocol for uncomplicated upper respiratory infection (URI)/sinusitis has been used successfully at our medical center over the past year. The average phone time by RNs using this protocol is approximately 10 minutes.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To facilitate patient access and reduce RN phone time a web-based form was developed to intake significant portions of the history required by the protocol.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: The first three sections of the URI/sinusitis phone protocol were converted to a web-based form. These sections covered current symptoms, associated symptoms, and medical history. A patient care site was established on our institution's intranet. As an initial pilot group an e-mail message was sent to patients who were employed at our institution directing them to the site. Upon completion of the questionnaire and submission of the form an e-mail message was generated and transferred to a web-based messaging center used by the RN staff. Nurses reviewed the message and phoned the patient to complete the treatment protocol. The phone call established proper treatment, confirmed allergies, and identified the pharmacy of choice. If red flag symptoms were identified patients were given an appointment with their physician.
FINDINGS TO DATE/EVALUATION OF WEB SITE: E-mail messages were sent to 1895 medical center employees in November 2003. During the initial 8 weeks of the program 12 employee/patients accessed the URI/sinusitis treatment protocol via the intranet. The previous year we averaged 37 total URI/sinusitis encounters per 1900 patients during the same time period. The average phone time required by the RN to complete a web submission for the protocol was 5 minutes. The nursing staff was uniformly satisfied with the new process. Initial patient feedback has been very favorable.
KEY LESSONS LEARNED: Web access to a RN telephone treatment protocol for uncomplicated URI/sinusitis is a viable option for patients and providers. One-third of employee/patients utilizing the URI/sinusitis protocol chose the intranet option. We anticipate increased usage as familiarity with this option grows. Total phone time spent on each encounter by our nursing staff has gone from 10 to 5 minutes. Future work will involve extending the opportunity beyond the health center employees to all empanelled patients.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

A WEB-BASED TOOL TO IMPROVE DECISION-MAKING AND ADHERENCE TO CORONARY HEART DISEASE PREVENTION. S.L. Sheridan[1]; M.P. Pignone[1]; J. Shadle[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #117356)*

STATEMENT OF PROBLEM/ QUESTION: Previous studies have documented that patient awareness of global CHD risk is poor and utilization of effective primary prevention therapies to reduce coronary heart disease (CHD) risk is below 50%.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To evaluate a web-based tool to improve patients' awareness of their global CHD risk, physician-patient decision-making about CHD risk-reducing therapies, and adherence to treatment.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: We have developed a web-based decision aid, called Heart-to-Heart, that calculates patients' overall risk of CHD event in the next 10 years using a continuous Framingham equation; educates them about their global risk, their contributing risk factors, and the benefits and harms of various risk reducing therapies; and encourages them to choose risk-reducing therapies that would be acceptable and feasible to them for long-term CHD risk reduction. To test this decision aid, we are conducting a pilot randomized trial in our university internal medicine practice that compares the decision aid against usual care among adults ages 35–75 with no previous history of CHD or stroke.
FINDINGS TO DATE/EVALUATION OF WEB SITE: To date, we have enrolled a convenience sample of 33 adults. Mean age was 53. 58% were female, 76% were white and 21% African-American. 64% had at least some college education. 30% had a CHD risk of 0–5%, 27% of 6–10%, 27% of 10–20%, and 12% of >20%. 27% reported they were already planning to do something to lower their CHD risk. 22 patients received the decision aid and 11 received usual care. We have observed no difference in the proportion of patients with a specific plan to adopt a new CHD risk reducing strategy (32% vs. 36%). In pre-post testing, however, patients who received the decision aid (n = 22) had heightened concern about CHD risk (46% versus 36% pre-decision aid) and were more likely to recognize that the same way of reducing CHD risk is not right for everyone (32% vs. 19% pre-decision aid). 67% of patients who received the decision aid additionally reported that they had enough knowledge to make a decision about CHD prevention. 90% of decision aid users reported that they could use the decision aid without help.
KEY LESSONS LEARNED: A web-based decision aid about global CHD risk and CHD risk reduction is feasible for use in clinical practice and offers promise to improve knowledge and attitudes about CHD risk reduction. It is too early to tell whether it will impact patients' plans to adopt risk-reducing behaviors.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

A WOMENS PREVENTATIVE HEALTH CLINIC: A NEW APPROACH TO AN OLD PROBLEM. M. Singh[1]; J. Rohl[2]. [1]Metro Health System, Cleveland, OH; [2]Case Western Reserve University, cleveland, OH. *(Tracking ID #115783)*

STATEMENT OF PROBLEM/QUESTION: Although routine health promotion has been shown to be beneficial, chronic disease and being female have been shown to be barriers to effective health promotion. In addition, residency training programs with high turnover rates of providers create an environment for "missed opportunities".
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: Using a multidisciplinary approach to improve preventative services for women with chronic medical conditions while providing essential health promotion education to internal medicine residents.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: This multidisciplinary clinic, staffed by Internal Medicine and Obstetrics and Gynecology faculty, meets 1/2 day every other week. The alternating week the residents attend a didactic session on health promotion topics. The first and second year residents rotate through this clinic as part of their ambulatory block rotation. At this clinic visit, the provider focuses on routine screening for osteoporosis, breast, cervical and colon cancers, lipid profiling, CAD risk assessment, depression and domestic violence screening. An electronic intake form, specifically created for this clinic, serves as a prompt

for age appropriate screening. The patients, referred from continuity clinic, are aware that their health care maintenance will be the focus of this visit and that only emergent medical issues will be addressed. The residents are required to take a pre and posttest while rotating through the clinic and complete an evaluation of their experience.
FINDINGS TO DATE/EVALUATION OF WEB SITE: To date 15 residents have rotated through the clinic, This focused care clinic has been well received by the residents. Specifically, they like the direct education of patients regarding osteoporosis and hormone replacement. When asked how confident they felt dealing with PAP smears and osteoporosis screening after rotating through the clinic, the response was a 2.5 on a scale of 1–3 (1- less confident, 3- extremely confident). They also stated in their evaluation that they enjoy the focus on health care maintenance given the patients multiple medical problems. In addition, the supervision by the attending during the breast and pelvic exam is cited as an added benefit. The pre and posttest analysis is pending at the time of this abstract but some results should be available at the time of presentation.
KEY LESSONS LEARNED: Key lessons learned: A focused women's preventative clinic allows education of residents on essential health care promotions while providing patients with their much needed preventative care.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

ABIM PRACTICE IMPROVEMENT MODULES: LESSONS FROM THE FIELD. L.A. Lynn[1]; R.S. Lipner[1]; J. Folske[1]; D. Duffy[1]. [1]American Board of Internal Medicine, Philadelphia, PA. *(Tracking ID #116443)*

STATEMENT OF PROBLEM/QUESTION: The evaluation of performance in practice is necessary in ensuring high quality medical care. The American Board of Internal Medicine (ABIM) developed interative, computer-based modules for this purpose as part of maintenance of certification. Results of a field test of the Preventive Cardiology Practice Improvement Module (PIM) are presented.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: We sought to determine if completing the Preventive Cardiology PIM is feasible and valuable for practicing physicians, and if it identified gaps between actual and ideal care.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: The Preventive Cardiology PIM uses data from physicians' practices, including anonymous patient surveys, chart reviews, and self-analysis of the practice system. The chart review is based on NIH guidelines for cholesterol and blood pressure management. Data are synthesized as an interactive report that summarizes key clinical outcomes, processes of care, and patient satisfaction measures. Field testers developed an improvement plan and evaluated the module.
FINDINGS TO DATE/EVALUATION OF WEB SITE: 75 of 192 volunteer physicians (39%) completed the field test; they received credit toward recertification. Half were general internists, and most spent the majority of their professional time in patient care. On average, 18 patient surveys and 20 chart reviews were submitted for each participant, in addition to self-analysis of their practice system, an improvement plan, and evaluation of the module. Time for completion averaged 12 hours. Chart review data showed gaps between actual and ideal care. For example, the average percent of patients at or below the recommended goal for LDL cholesterol was 49%. Patient survey data and practice system reviews also suggested areas for improvement. 93% of the participants rated the overall value of the module as good, very good, or excellent. Participants rated components of the module on a 1 to 5 scale (strongly disagree to strongly agree). They generally agreed that the patient survey questions reflected important processes and outcomes (mean = 4.0, s.d. = 0.9), the chart review raised awareness of the quality of the care provided (mean = 4.2, s.d. = 0.8), and the practice system review raised awareness of how their practice system might be improved (mean = 4.1, s.d. = 0.9).
KEY LESSONS LEARNED: Completing the module was feasible but but complex. The PIM can be a valuable tool that highlights clinical guidelines and raises awareness about the quality of patient care.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: CD-ROM and toll-free telephone.

AN ELECTRONIC DIABETES REGISTRY AND POPULATION-BASED INTERVENTIONS IMPROVE DIABETES CARE. D.S. Smith[1]; G.M. Murphy[1]; D.V. Ravi[1]. [1]Yale University, New Haven, CT. *(Tracking ID #117135)*

STATEMENT OF PROBLEM/QUESTION: Diabetes is a major contributing factor to CHD and stroke, leading causes of death in the US. Traditional paper medical records and encounter-based care often fail to make relevant information accessible for monitoring diabetes control at each visit, and population-level data is difficult to obtain to permit proactive interventions. A disease registry organizes this information and links it to evidence-based guidelines, facilitating tracking and intervention in multiple risk factors over time.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: 1) Use of a diabetes registry to organize and track key data elements and make them available at each encounter. 2) Apply evidence-based best practices (ADA guidelines) to clinical care. 3) Identify population-level targets for intervention. 4) Identify outlier patients for case management. 5) Improve processes of care and measures of control for our diabetic patients.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: We used MS Access to develop an electronic diabetes registry. Each diabetic patient has a registry page containing updated indices, for use at each encounter regardless of the reason for that visit. Each clinician receives a quarterly summary report on the control status of diabetics in their panel. Population-based strategies we have utilized include: 1) Designation of a departmental nurse practitioner to tend the registry and develop programs. 2) Diabetes group visits. 3) Disease management outreach for outliers. 4) Targeted proactive interventions (such as mailed invitations to special flu shot clinics).
FINDINGS TO DATE/EVALUATION OF WEB SITE: In the three years since inception, we have increased our case identification by 19%, to 603 diabetics. There have been significant improvements in processes of care, such as an increase in pneumococcal immunization rate from 23% to 83%, dilated retinal exams from 45% to 71%, and use of urine microalbumin from 18% to 55%. Measures of control have also improved, such as glycosylated hemoglobin <7.0 from 26% to 35%, LDL cholesterol <100 from 42 to 49%, and blood pressure <130/80 from 59 to 78%.
KEY LESSONS LEARNED: A disease registry heightens attention to diabetes care at each encounter. Population-based priorities can be identified, and targeted programs developed. Focused attention uncovers patients "lost to follow-up" for whom control is often suboptimal, and helps identify the highest risk patients for intensive intervention. Significant improvement in control of risk factors can be achieved through intensification of monitoring and treatment, which we know from randomized trials will ultimately lead to improved patient outcomes.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

BUPRENORPHINE INITIATION AND MAINTENANCE IN PRIMARY CARE: A SUCCESSFUL INTERDISCIPLINARY APPROACH. D. Alford[1]; R. Saitz[1]; C. LaBelle[1]; J.H. Samet[1]. [1]Boston Medical Center, Boston, MA. *(Tracking ID #116758)*

STATEMENT OF PROBLEM/QUESTION: New federal legislation made buprenorphine prescription for opioid dependence possible in primary care in 2003. But improved access to care requires feasible approaches to care for these complex patients.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To improve access to treatment for opioid dependence using an interdisciplinary clinical model.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: We implemented collaborative care between primary care physicians and a nurse care manager (NCM). The NCM initially assessed substance use, medical and psychiatric history, and social support by telephone. For enrolled patients the NCM obtained laboratory tests and provided education and reviewed patient responsibilities (including signed consent). The NCM prepared a buprenorphine induction schedule based on physician-developed guidelines. Physicians reviewed and added to assessments, performed physical examinations, and prescribed buprenorphine. The NCM was in contact frequently with the patients until stable maintenance doses were achieved. The NCM encouraged mutual help meeting attendance, referred all patients for addiction counseling, and when needed for psychiatric evaluation, and provided appointment reminders. Patients had access to the NCM by cellular phone. At follow up visits, random urine samples for toxicology, observed dosing and pill counts occurred. With input from a patient's counselor and psychiatrist, individualized treatment plans were developed.
FINDINGS TO DATE/EVALUATION OF WEB SITE: In 6 months, 37 patients with opioid dependence were enrolled; 63% male, 96% white, median age 26 (range 18–52), 84% dependent on heroin and 16% dependent on sustained release oxycodone. Although 28% had medical co-morbidity, most (76%) had no primary medical care; 54% reported psychiatric co-morbidity but only 13% had previous psychiatric care. After 4 months, 30 (88%) remained in treatment; 1 tapered off, 3 switched to methadone maintenance, and 3 dropped out. Opioid urine tests were positive in: 100% at enrollment, 4% at 2 weeks, and 18% at 4 months. Other drug use (present in one quarter) changed little. At 4 months, 82% were regularly attending counseling (46%) and/or mutual-help meetings (50%), and 75% had social supports involved in their substance abuse treatment. The NCM averaged 17 patient contacts during the initial 2 weeks of treatment followed by 1–4 contacts per week. Physicians saw patients twice in 4 months on average.
KEY LESSONS LEARNED: Collaborative management of patients with opioid dependence with a nurse care manager resulted in feasible initiation and maintenance of buprenorphine in the primary care setting.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

CAN DISEASE MANAGEMENT INTERVENTIONS ENGAGE HARD-TO-REACH PATIENTS IN PRIMARY CARE? D. Schillinger[1]; H. Hammer[1]; M. Handley[1]; J. Palacios[1]; I. McLean[1]; A. Tang[1]; M. Schneiderman[1]; A.B. Bindman[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116509)*

STATEMENT OF PROBLEM/QUESTION: Little is known about the extent to which population-based approaches can engage high-risk patients with diabetes, such as those with limited health literacy and/or limited English proficiency.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: The goal of the IDEALL Project of the San Francisco Dept of Health is to implement and evaluate self-management support strategies for a diverse population. We are assessing the reach and effectiveness of a technologically-oriented and an interpersonally-oriented intervention, each tailored to the language and literacy needs of high-risk diabetes patients.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: Through a primary care registry, we are identifying diabetes patients who have HbA1c >8.0% and speak English, Spanish, or Cantonese, and are randomly assigning them to one of two interventions over 9 months. The first, automated telephone diabetes management (ATDM), employs interactive voice response technology in patients' native language for weekly surveillance of self-care and symptoms. Out-of-range answers trigger a response of ATDM health education or live-person phone follow-up through a bilingual nurse who encourages goal-setting through behavioral "action plans". The 2nd intervention, group medical visits (GMVs), involves 6–10 patients in monthly

meetings. Facilitated by a bilingual health educator and primary care physician, GMVs monitor disease status and encourage patients to become active participants in self-care through participatory learning and action plans.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Our initial findings focus on patient engagement with the two interventions over the first 3 months. Of 53 patients randomized so far, 45 (85%) are non-white, 28 (53%) have limited health literacy, 22 (42%) limited English proficiency, and mean HbA1c is 9.8%. Among ATDM patients (n = 27), 24 (89%) have completed at least one ATDM call; 21 of 24 (88%) have triggered at least one nurse call-back; and 19 of 21 (90%) have generated action plans. Among GMV patients (n = 26),18 (69%) have attended at least one GMV session; 7 of 18 (39%) have attended all GMVs; and 14 of 18 (78%) have generated action plans. Facilitators report "moderate" to "full" participation during GMVs for 16 of 18 attendees (89%).
KEY LESSONS LEARNED: Diabetes disease management strategies tailored to the language and literacy needs of high-risk patients appear to be associated with significant levels of patient engagement and have potential as adjuncts to primary care.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: We will demonstrate use of the ATDM system in 2 languages.

CARVING BACK DEPRESSION TREATMENT INTO PRIMARY CARE: A DEMONSTRATION PROJECT. M.D. Feldman[1]; M. Ong[2]; J. Bachman[3]; L. Sept[1]; P.A. Arean[1]; M. Wyman[1]; E.J. Perez-Stable[1]. [1]University of California, San Francisco, San Francisco, CA; [2]Stanford University, Palo Alto, CA; [3]United Behavioral Health, San Francisco, CA. *(Tracking ID #115200)*

STATEMENT OF PROBLEM/QUESTION: Depression often goes unrecognized in primary care settings, and even when detected may not be treated according to evidence-based guidelines. Barriers to proper depression care include lack of provider training, lack of adequate systems of care and "carved-out" health insurance coverage for mental illness. When mental/behavioral health care is carved out to and paid by a managed behavioral care organization (MBCO), the primary care practice may have little incentive to improve the quality of depression care.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: 1) Create and test new financial mechanisms by which primary care providers are paid by the MBCO for provision of depression care. 2) Train primary care providers in the chronic illness model of depression care.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: The UCSF DGIM is leading one of eight national demonstration projects supported by the RWJ Foundation initiative "Depression in Primary Care". In partnership with United Behavioral Health (UBH-the MBCO) and Blue Shield of CA (BSC-the health insurer) we have modified the economic and clinical relationships among the 3 organizations such that UCSF PCPs are credentialed and paid to treat depressed BSC patients whose behavioral health insurance is managed by UBH. Credentialed PCPs can bill UBH directly for a 15-minute "medication management" visit with their depressed patients. A UBH care manager coordinates the patients' care and maintains a registry to track pertinent clinical data.
FINDINGS TO DATE/EVALUATION OF WEB SITE: At baseline, PCP's felt that the current "carved-out" mental health system was unresponsive to their patients needs. To date, 79% (31) of eligible primary care PCP's at 4 UCSF primary care practices have been credentialed. They have identified 20 eligible patients. PCP's report participating in the project because they are financially compensated for spending more time with depressed patients and because they have access to a care manager and psychiatric consultation. PCP's are eligible to be paid directly by UBH for depression care in a unique financial arrangement not previously reported. Treatment outcomes, utilization, costs and patient and PCP satisfaction are being measured.
KEY LESSONS LEARNED: Primary care practices and patients are frustrated by the "carved-out" mental health system and are open to new clinical and economic models that incorporate the chronic care framework for depression treatment. Reimbursement of depression treatment by primary care providers can be achieved in an open health care system.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: poster/oral presentation, PCP training/credentialing materials.

CATCHING DEPRESSION EARLY: OUTREACH SERVICES TO MEDICALLY ILL PATIENTS. M.K. Ong[1]; M.D. Feldman[2]; J. Bachman[3]; F. Azocar[3]. [1]Stanford University, Stanford, CA; [2]University of California, San Francisco, San Francisco, CA; [3]United Behavioral Health, San Francisco, CA. *(Tracking ID #117191)*

STATEMENT OF PROBLEM/QUESTION: Medically ill patients often have co-morbid mental illness, particularly depression, but are less likely to use mental health services compared to other patients. Early detection and treatment of depression may minimize the health and economic costs of depression.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: Determine whether telephone-based outreach services can improve utilization of mental health services by medically ill outpatients. Future analyses will examine the cost-effectiveness of these outreach services.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: Medically ill individuals were identified from a large national employer by administrative health care utilization data. Primary-care patients in the intervention group were contacted by telephone-based outreach counselors, who performed behavioral health screening and offered referrals to mental health clinicians, support groups, support services, financial counseling, and legal aid. These patients will be matched to controls by demographics, medical diagnosis, and prior year medical costs. Cost and utilization data are being collected for the intervention and control groups.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Preliminary data on the 164 intervention individuals shows 135 (82%) were contacted by outreach counselors. Of the contacted individuals, 19% declined services and 9% did not need services. Among the contacted individuals, specialty mental health utilization increased from 2% six months prior to referral to 29% within six month of referral. During the six month period after referral, 9% of intervention individuals and 6% of controls had medical claims including a mental illness diagnosis. In the subsequent 11 months, 4% of intervention individuals and 8% of controls had medical claims including a mental illness diagnosis. Depression and adjustment disorder together made up 63% of all mental illness diagnoses.
KEY LESSONS LEARNED: Telephone-based outreach services are an effective method of engaging medically ill patients at risk for co-morbid depression with the mental health care system. These services could be incorporated into general medicine practices to improve the care of medically ill patients with co-morbid depression and other mental illnesses.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

DETERMINING REASONS FOR NONCOMPLIANCE WITH HEDIS DIABETIC MELLITUS GUIDELINES USING AN ELECTRONIC MEDICAL RECORD. PE. Roemer[1]; D. Dunham[1]; D. Baker[1]. [1]Northwestern University, Chicago, IL. *(Tracking ID #117467)*

STATEMENT OF PROBLEM/QUESTION: While it is understood that many patients who have diabetes do not get regular HgbA1C testing, little is known as to why this is the case.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: Our goal was to identify and quantify the reasons in which patients with diabetes did not get HgbA1C testing, and to determine the role of the electronic medical record (EMR) in measuring HgbA1C compliance in diabetic patients.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: We used our institutional EMR to employ a quality improvement query to identify our patients who had a diagnosis of diabetes but who did not have a HgbA1C tested over the ensuing year. After identifying the patients who did not have a HgbA1C checked, we developed a protocol for chart review to determine why patients did not have this routine screening test done.
FINDINGS TO DATE/EVALUATION OF WEB SITE: We found that of our approximately 20,000 patients we had 1403 that were diabetic. 200 of the 1403, or 14% did not have a HgbA1C checked in the year queried. Of those 200: 16, or 8% were misdiagnosed with diabetes and did not have a HgbA1C checked; 15, or 7.5% were first diagnosed with diabetes in 2003 (after the 2002 audit period); 12, or 6% had blood work for HgbA1C done at another site; 35, or 17.5% had blood work ordered but not completed by the patient; 14, or 7% did not adhere to recommended follow-up visits made by the physician; 63, or 31.5% were seen for urgent care appointments only and did not have follow-up for diabetic care; 26, or 13% of the patients were thought to have terminal illness and did not warrant tight glucose control; 19, or 9.5% had no reason not to have HgbA1C checked.
KEY LESSONS LEARNED: 1) An EMR can effectively identify diabetic patients who have not had HgbA1C testing 2) Non-adherence to physician recommendations was the main reason for not having a HgbA1C performed in this study.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

EMBARKING ON A HOSPITAL-WIDE TOBACCO USE CESSATION INITIATIVE. C. Milch[1]; S. Campbell[1]; A. Simon[1]; A. Huse[1]; P. Noga[1]. [1]TUFTS-New England Medical Center, Boston, MA. *(Tracking ID #116146)*

STATEMENT OF PROBLEM/QUESTION: Approximately 6.5 million smokers are hospitalized annually, motivating many to consider quitting, however, most are not advised to quit. Although the AHRQ Clinical Practice Guidelines recommend that hospitals institute systematic identification and treatment of every tobacco user, most hospitals have not due to organizational issues and financial concerns.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To design and implement a hospital-wide Tobacco Cessation Initiative to systematize the identification of patients who use tobacco and provide them with cessation assistance.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: The overarching goal of the initiative was ease of use to promote acceptance and adoption of its components. Key components were: a) Development of a brief form with checkboxes to assess and document patient tobacco use and desire to quit, and to prompt cessation assistance by clinicians; b) Partnering with a free tobacco cessation resource service offered by the Massachusetts Department of Public Health; and c) Implementation within existing hospital budget. Implementation occurred by: a) Securing top-level physician and nursing leadership support; b) Building a multidisciplinary team of dedicated physicians, nurses, and administrative personnel; c) Identifying unit-based nurse (RN) "champions" to promote the initiative and oversee operational aspects; d) Educating clinicians to become cessation "experts" through monthly education sessions; and e) Training a certified Tobacco Treatment Specialist (TTS) for post-discharge referral. To ensure equal care for non-English-speaking patients, the assessment form was translated into 7 languages and hospital interpreters were instructed on its use.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Based on pilot data, an estimated 25% (4,000 per year) of patients hospitalized at our institution use tobacco. 50% of patients agreed to the cessation referral service. The program implementation non-salary costs were $1300 for TTS training and development of educational sessions. We estimated annual additional RN time spent identifying tobacco users and offering cessation support is 667 hours (0.17 hrs./smoker). If the initiative doubles quit rates from 5% national baseline to 10%, the estimated additional annual RN

time per additional quitter is 3.3 hrs. (667 hrs./200 quitter) and per additional life saved is 10 hrs. (667 hrs./prevention of 30% premature deaths: 67).
KEY LESSONS LEARNED: A hospital-wide initiative to systematically identify tobacco users and offer cessation support is achievable without substantial practice changes or additional costs, and can be widely replicated in hospitals throughout the US.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: SLIDES AND HANDOUTS.

GROUP VISITS AND ACADEMIC GENERAL INTERNAL MEDICINE. D.E. Clancy[1]; K.S. Davis[1]; E. Brownfield[1]; M. Poston[1]; T. Wolfman[1]. [1]Medical University of South Carolina, Charleston, SC. *(Tracking ID #115666)*

STATEMENT OF PROBLEM/QUESTION: Are group visits for inadequately insured patients with type 2 diabetes feasible and acceptable in an academic general internal medicine setting?
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: 1) Evaluate the acceptability of health care delivery in group visits by patients, physician faculty, and trainees. 2) Evaluate the feasibility of healthcare delivery in monthly group visits for inadequately insured patients with type 2 diabetes in an academic setting. 3) Evaluate health outcomes as measured by HgbA1c, BP, and cholesterol response in patients with type 2 diabetes seen in group visits. 4) Evaluate effectiveness of group visits as a method for healthcare delivery in an academic setting through adherence to American Diabetes Association guidelines, as compared to usual care, and RVUs, as compared to national benchmarks.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: 188 patient with type 2 diabetes were randomized to receive care in group visits or usual care for 12 months. Six General Internal Medicine Faculty Physicians conducted the monthly group visits in a clinic that predominantly serves inadequately insured patients. Internal Medicine residents, medical students, and physician assistant students observed group visits during their month long ambulatory care rotations, completing Pre- and Post-observation Patient Physician Orientation Scale questionnaires to evaluate attitudes and expectations before and after the observation periods. Hgba1c, cholesterol, and blood pressure measurements, as well as patient satisfaction questionnaires were obtained from the patients at baseline, 6, and 12 months. Faculty physician opinions and expectations were elicited through focus groups before and after the 12-month intervention.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Patients, trainees, and General Internal Medicine Faculty physicians have found group visits an acceptable and feasible method of healthcare delivery. We are analyzing the data and will present results/trends in health outcomes, guideline adherence, patient, faculty physician, and trainee satisfaction.
KEY LESSONS LEARNED: Group visits are acceptable and feasible as a model for healthcare delivery in an academic General Internal Medicine setting.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Videotape of group visit; poster of findings; onsite discussion with participating Faculty Physicians from the group visits.

GUIDELINES VS. REALITY: PHYSICIAN EXPLANATIONS FOR NOT ADJUSTING CHOLESTEROL THERAPY. W.T. Lester[1]; R.W. Grant[1]; H.C. Chueh[1]. [1]Massachusetts General Hospital, Boston, MA. *(Tracking ID #117030)*

STATEMENT OF PROBLEM/QUESTION: Despite awareness of evidence-based guidelines, cholesterol management remains persistently sub-optimal in clinical practice.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: Efforts to improve quality of cholesterol management require a clear understanding of physician reasons for not optimizing therapy. We conducted a randomized trial of an informatics-based intervention to identify patients with coronary artery disease (CAD) or risk equivalents with LDL cholesterol (LDL-C) levels >100 mg/dL. The intervention facilitated cholesterol management via a "one-click" order-writing (described below). When primary care physicians (PCPs) deferred action, a "pop-up" questionnaire enabled PCPs to explain why evidence-based guidelines were not applied for that particular patient. We report here the results of this questionnaire (trial results will be reported elsewhere).
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: For each intervention patient, the PCP was alerted by a content rich e-mail message that provided: recent LDL-C trends, current medications, decision support with predicted LDL-C decline by statin dose, and other pertinent clinical data (co-morbidities, most recent visit note, allergies, liver function results). By clicking on one of three icons, PCPs could: 1) print a new statin prescription and corresponding patient letter, 2) print a completed lab requisition for a repeat fasting lipid panel and corresponding letter, or 3) defer any action. PCPs did not receive any information regarding their control patients. Block-randomization ensured equal numbers of intervention and control patients for each PCP.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Fourteen PCPs and 276 patients participated. Intervention patients (n = 124) were 51% women, 17% non-white race/ethnicity, with mean age = 64.8 (14.7) years and mean LDL-C = 125 (22) mg/dL. PCPs ordered a new prescription or repeat testing in 34 patients (27%) and deferred action in the remaining 90 (73%). The most common explanation for deferring action was "close enough" LDL-C (32 patients, 36%; mean LDL-C = 111.4 mg/dL). Explanations among the remaining 58 patients included: upcoming appointment (9 patients), other medical problems, e.g. metastatic cancer, severe stroke, alcoholism (9), cared for by another physician (8), and patient refusal to increase regimen (4). Two patients had adverse effects to statins, 2 were deemed too elderly (98 and 80 years old), and one had myocardial infarction by non-CAD mechanism (chest trauma).
KEY LESSONS LEARNED: An intervention to identify patients above cholesterol goal and facilitate evidence-based care resulted in therapy changes for less than a third of patients. Quality improvement efforts must account for the many reasons PCPs may have for individualizing their management of this seemingly straightforward clinical issue.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Powerpoint screen shots of e-mail intervention, new prescriptions, laboratory requisitions, patient letters, and "pop-up" PCP questionanire.

HELPING PRIMARY CARE PHYSICIANS COUNSEL MENOPAUSAL WOMEN: THE MENOPAUSE INTERACTIVE DECISION AID SYSTEM. N.F. Col[1]; G. Weber[2]; M.G. Cyr[3]; J.M. Fortin[1]; C. Landau[4]; D. Snyder[1]; R. Goldberg[5]. [1]Brigham and Women's Hospital, Boston, MA; [2]Harvard University, Boston, MA; [3]Brown University, Providence, RI; [4]Rhode Island Hospital, Providence, RI; [5]University of Massachusetts Medical School (Worcester), Worcester, MA. *(Tracking ID #117470)*

STATEMENT OF PROBLEM/QUESTION: The complex health needs of menopausal women are poorly met.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To develop and test a Menopause Interactive Decision Aid System (MIDAS) to help clinicians counsel women about menopausal symptom management and prevention.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: We developed the web-based MIDAS, which embeds a patient-specific Markov model and an evidence-based database of menopausal treatments. Treatment options are presented in an interactive matrix that can be sorted according to efficacy, treatment type, and symptom concerns, and includes explanations about treatment risks and benefits. Other features include personalized risk reports (cardiovascular disease, breast cancer, hip fracture); the impact of common treatments on these risks and menopausal symptoms; contraindications to specific treatments; tools that track symptoms; and a clinician summary of the patient's information. MIDAS was designed to enable immediate updating of the content database and risk models. Healthy peri- and postmenopausal women between the ages of 45 and 65 were recruited through fliers and clinician referral for usability testing lasting 1–2 hours. Participants independently interacted with MIDAS, performed structured tasks, and evaluated each section.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Usability testing (N = 9) results were favorable overall (89%). The treatment matrix and risk report sections were well-received and easily navigated. Specific responses included "attractive, clean, clear, easy to manipulate, helps you get answers you need". These usability findings are limited by small sample size, but guided the design and content of MIDAS. A randomized, controlled trial evaluating the impact of MIDAS in various primary care settings is in progress (N = 220), measuring its impact on patients' decisional conflict, decision satisfaction, knowledge, and risk perception; on patient-provider communication; on the efficiency of the counseling session and provider evaluation; on medical errors; and on utilization of health care resources.
KEY LESSONS LEARNED: Usability data suggest that MIDAS is well-received by women who are making decisions about menopausal therapies and has the potential to improve menopausal counseling.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: MIDAS will be shown using an online demo.

IMPLEMENTING A GROUP VISIT MODEL FOR ADULT PATIENTS WITH DIABETES: A PILOT. V. Weber[1]; J. Bulger[1]; J. Sim[1]. [1]Geisinger Medical Center, Danville, PA. *(Tracking ID #115691)*

STATEMENT OF PROBLEM/QUESTION: Optimal control of type 2 diabetes mellitus is an important and common clinical challenge in general internal medicine practice. One-on-one physician-patient encounters often do not provide adequate resources or time to address the educational and preventive needs of this population.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: In a data inquiry of our electronic medical record, we determined that ony 39% of our patients had hemoglobin A1c levels of less than or equal to 7.0%. Similarly, performance in screening interventions fell short of benchmarks. The goal of this pilot was to test new, team-based approaches to providing diabetes care and prvention.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: Group visits provide an alternative to one-on-one physician visits which can enhance patient satisfaction and improve patient outcomes. Our practice has previously reported the successful use of a group model in osteoporosis education, however we wanted to extend the model to combine education, the performance of screening and prevention measures, and clinical care. A physician and RN Certified Diabetic Educator (CDE) devised a joint group visit model. Diabetic patients from this physician's panel were invited to participate in a series of evening sessions which combined group education with individual one-on-one time with their physician. Four visits were held once weekly over a four week period. Education topics included basic monitoring, nutrition, exercise, foot care, and self-management. The physician met with each patient individually to make decisions regarding medication adjustment and answer questions. The patients received a follow-up appointment at three months and at one year to monitor progress, and maintained contact with the CDE in the interim.
FINDINGS TO DATE/EVALUATION OF WEB SITE: In the pilot group, the average hemoglobin A1c decreased from 8.5% to 7.5% in the first four months of the program. At baseline, only 14% of the group had a hemoglobin A1c below 7.0%. This increased to 43% over the period of study. Patients were highly satisfied with the program, and demonstrated improved knowledge of diabetes standards of care and glucose monitoring as a result of the pilot.

KEY LESSONS LEARNED: Group visits can improve short term diabetes control as measured by hemoglobin A1c, as demonstrated in this pilot study. Although a larger study involving longer term endopoints and clinical outcomes is needed, this pilot gave the impetus to expand the program within our practice, and provides evidence that this model can succeed in a traditional general internal medicine practice.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster, one-on-one interaction.

IMPROVEMENT OF BILLING IN A UNIVERSITY MEDICAL CENTER. D. Mcadams[1]; D. Simak[1]; W.N. Kapoor[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #117250)*

STATEMENT OF PROBLEM/QUESTION: Our practice experienced wide billing variability and inappropriate levels of charges for inpatients.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: 1. Improvement in admission, subsequent, and discharge day billing for the appropriate level of complexity. 2. Decreased variability of billing among physicians in our practice.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: By internal department review we found that many of our physicians were far under their potential inpatient billing level, despite seeing highly complex patients in a tertiary care center and completing the necessary chart documentation. Also, there was wide variability of billing practices for physicians in our group, even though the inpatient population seen by these practitioners was the same. There are several reasons for these problems. First, physicians do not understand billing rules or remember charting guidelines. Second, physicians often do not understand the implications of incorrect billing for their practice. Finally, time constraints occasionally restricted a physician from seeing a patient, and therefore a bill could not be submitted. Through a Quality Improvement initiative at our facility, we proposed several interventions to address and correct these problems. We hired a full-time Patient Billing Specialist to train, audit, and support faculty physicians. The billing specialist would meet with physicians prior to inpatient medicine rotations to review guidelines and cases; would attend a weekly meeting with physicians on the inpatient service to review their ongoing billing and documentation questions; and would review charts with physicians in real-time on the medical wards. Billing cards were revised for more simplicity and clarity. Finally, the attending-resident teaching conferences were reorganized to allow for increased clinical and charting time.
FINDINGS TO DATE/EVALUATION OF WEB SITE: 1. Billing appropriateness improved as compared to the National E/M bell curve and as confirmed by billing specialist chart review (Admission High Complexity billing increased from 17 to 51%; Subsequent Care Moderate Complexity billing increased from 42 to 85%; Discharge Day billing increased from 77 to 96%). 2. Physician billing variability was substantially reduced. 3. Billing revenue increased an estimated $78,000 for one quarter.
KEY LESSONS LEARNED: 1. Inpatient billing is within the control of the Division of Internal Medicine, and it improved with corrective actions set about by a Quality Improvement team. 2. Appropriateness of physician billing will increase if practitioners are educated, if they have time to document encounters, and if they are given technical support. 3. Physicians were given reassurance by having an accessible billing specialist.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

IMPROVING ACCESS. S.M. Scheitel[1]; R.J. Stroebel[1]; R. Chaudhry[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #115465)*

STATEMENT OF PROBLEM/QUESTION: Patients in the primary care internal medicine practice at Mayo Clinic, Rochester could not get timely access to see their physicians. The average number of calendar day until the third available appointment was 37 days.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To provide timely access to patients who called for an appointment with their physician or physician team.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: Piloted the intervention with three physicians and disseminated to the entire practice of 35 physicians. Two simple ground rules were established: 1. If you are working you see your own patients 2. When you are absent your team sees your patients. During the early stages of the intervention physicians worked down appointment backlog. The estimated demand for same day appointment slots was determined for each day of the week. The number of appointment types was simplified. Appointment type prioritization was eliminated. Optimal patient panel sizes were established to provide timely access. Appointment capacity was created by increasing non-visit care options for patients such as treating acute ills by nurse telephone protocols, communicating test results by telephone or correspondence, re-designing the delivery of preventive services and examining return visit intervals.
FINDINGS TO DATE/EVALUATION OF WEB SITE: The number of calendar days until the third available appointment fell from 37 days to 7 days after the first 7 months of implementation. The number of calendar days for the third same day appointment fell to zero days in the pilot group and remained at 8 days in the non-pilot group. Most days the number of patients seen by the pilot physicians roughly matched the number of allotted appointment slots. Appointment capacity was available for new patients. There was increased patient, appointment secretary and nursing satisfaction.
KEY LESSONS LEARNED: Providing timely access to patients is achievable in an academic, primary care, internal medicine practice. Patient's needs must be accommodated by both by visit and non-visit care. Ongoing measurement is essential to maintain optimal access.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Will present in any format.

IMPROVING ACCESS TO CARE FOR PATIENTS WITH CHRONIC HEPATITIS C IN AN INNER CITY HOSPITAL: PAIRING GENERAL INTERNISTS AND SPECIALISTS IN A MULTIDISCIPLINARY CLINIC. J.I. Tsui[1]; N. Traub[1]; N. Levy[2]; C. Iverson[1]. [1]Emory University, Atlanta, GA; [2]New York University, New York, NY. *(Tracking ID #116928)*

STATEMENT OF PROBLEM/QUESTION: Increasing numbers of patients are becoming aware of that they are chronically infected with hepatitis C (HCV). Recent improvements in HCV therapy offer better outcomes, however, inadequate access to care may limit the number of patients receiving treatment. We recognized that many patients with chronic HCV infection at Grady Memorial Hospital (a large public, urban hospital in Atlanta) were not receiving treatment for their disease. We perceived that this was because most general internists did not feel comfortable treating HCV-infected patients in medical clinic, and specialty resources were limited.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To create a multidisciplinary clinic where general internists take primary responsibility for managing patients with chronic HCV infection in conjunction with a hepatologist.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: The Grady Health System Liver Clinic is an innovative clinic designed to facilitate referral and treatment of patients with HCV. It operates one half day per week out of the General Medicine Clinic. The clinic is staffed by three general internists, a physician assistant, pharmacist, social worker, and a hepatologist. The hepatologist serves primarily as a consultant for the internists who do the majority of direct patient care. Patients are able to self-refer to the clinic.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Since its inception in May 2002, the clinic has a rapidly growing patient base. During the first 18 months, 468 patients have been enrolled in the clinic. The clinic demographics are as follows: median age 48 years; 45% female, 55% male; 76% African American, 20% White, 3% Hispanic/Asian/Other. The frequency of substance abuse problems is high: 56% report a history of IVDU, 63% report a history of cocaine use, and 31% report current alcohol use. Educational and employment levels are low: 43% have not graduated from high school, and 80% are unemployed. The majority of patients were diagnosed after 2001, demonstrating that newly diagnosed patients are expeditiously being referred to the clinic for care. The internists report that their knowledge and skills have rapidly improved, and they feel comfortable managing their patients within a multidisciplinary setting.
KEY LESSONS LEARNED: A multi-disciplinary clinic based in the general medicine setting for treating patients infected with HCV is feasible. The benefits for such a clinic are: 1) improved access to treatment in a setting where specialist resources are limited 2) multi-disciplinary support for the complicated patient needs associated with HCV treatment 3) expanded physician expertise in the management of chronic HCV infection.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

IMPROVING SURGICAL RISK ASSESSMENT, RISK FACTOR DOCUMENTATION, AND PERIOPERATIVE BETA BLOCKER UTILIZATION WITH A EVIDENCE BASED PHYSICIAN RISK EVALUATION FORM. R. Robinson[1]; R.C. Bussing[1]; C.Y. Todd[1]; L. Rogers[1]. [1]Southern Illinois University, Springfield, IL. *(Tracking ID #117224)*

STATEMENT OF PROBLEM/QUESTION: Beta blocker therapy in intermediate and high risk patients is known to reduce peri-operative cardiac events in non-cardiac surgery. Clinicians do not consistently recognize surgical risk factors and underutilize beta blockers.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: The purpose of this study was to determine the impact of an evidence based risk assessment form on: 1. physician recognition and documentation of risk 2. utilization of beta blockers.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: We designed a preoperative risk assessment form incorporating the Revised Cardiac Risk Index (Circulation 1999; 100:1043–49) and minor predictors of cardiac risk from Mangano (NEJM 1996; 335:1713–20). This form was provided to the 15 members of the SIU division of general internal medicine. Form use was voluntary.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Charts from 161 patients (100 pre-intervention, 61 post-intervention) undergoing risk assessment for non-cataract surgery were reviewed. The Chi square test was used to compare data before and after intervention. The study population was 38% female and 83% Caucasian with a mean age of 64 +/− 14 years. No significant demographic differences were found between the pre- and post-intervention groups. At the time of risk assessment, 24% were on beta blocker therapy for another indication. The preoperative risk assessment form was used for 82% of the post intervention preoperative risk assessments, and documentation of surgical risk factors improved from 59% to 79% ($P = .01$). Greater documentation of operative risk was found for the post-intervention group when compared with pre-intervention (82% vs. 36%, $P < .001$). Similarly, the post-intervention group demonstrated more frequent initiation of new beta blocker therapy at the time of the preoperative risk assessment visit (18% vs. 1%, $P < .001$), and greater overall rate of beta blocker therapy (43% vs. 25%, $P = .015$).
KEY LESSONS LEARNED: 1. Use of a standardized physician preoperative risk assessment form improves documentation of operative risk and surgical risk factors. 2. The use of this form also increases utilization of beta blocker therapy to reduce perioperative cardiac risk.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: 1. small group presentation with power point and handouts 2. poster presentation.

INCREASING UTILIZATION OF PREVENTATIVE SERVICES IN AN INTERNAL MEDICINE CLINIC. G.S. Fischer[1]; B. Ling[1]; D. Simak[1]; W.N. Kapoor[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115912)*

STATEMENT OF PROBLEM/QUESTION: A chart review in an internal medicine clinic revealed underutilization of widely-accepted preventative services (PS).

OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To increase utilization of PS (cholesterol screening, colorectal cancer screening, mammography, Pap tests, and vaccinations against Pneumococcus, influenza, and tetanus).
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: A multi-disciplinary Quality Improvement Team was assembled, consisting of physicians (MDs), nurses, medical assistants (MAs), phone receptionists, and medical records clerks. The team developed a multi-leveled intervention that included: (1) mailing patients (PTs) birthday cards reminding them to schedule annual prevention visits (PVs), (2) offering PVs to PTs when they call, (3) streamlining the electronic health maintenance flow sheet (HMFS) and reeducating MDs in its use, (4) having medical records clerks enter outside reports of PS into the HMFS ahead of PT visits, (5) developing patient education material to assist MDs in explaining PS, (6) creating electronic alerts to prompt MAs to order immunizations, and (7) providing quarterly feedback to MDs.
FINDINGS TO DATE/EVALUATION OF WEB SITE: There were increases in cholesterol screening (from 85% to 94%), colorectcal cancer screening (65% to 73%) mammography (69% to 76%), Pap testing (57% to 72%), and immunizations against pneumococcus (13% to 86%), influenza (55% to 76%), and tetanus (34% to 58%). There was striking interphysician variability. Physicians who were poorly compliant admitted to not using the HMFS regularly. Resident PTs had lower utilization rates than faculty PTs.
KEY LESSONS LEARNED: 1. An approach involving interventions at various points in the health care delivery system increased utilization of PS. 2. PTs of physicians who used the HMFS regularly utilized more PSs. 3. Interventions to increase the usage of the HMFS will be critical to ongoing improvement, and 4. Residents will need to be more fully included in ongoing improvement efforts.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Demonstration of computer based HMFS and immunization alerts. Presentation of work products of the multi-disciplinary project team, including flow charts and cause and effect diagrams.

INNOVATION IN PRACTICE: ATHENA DSS HYPERTENSION MANAGEMENT SYSTEM. M.K. Goldstein[1]; A.S. Chan[2]; S.B. Martins[3]; R. Coleman[3]; M. Shlipak[4]; H.B. Bosworth[5]; E.Z. Oddone[5]; M.A. Musen[6]; B.B. Hoffman[7]. [1]Stanford University, Palo Alto, CA; [2]Stanford Medical Informatics, Stanford, CA; [3]VA Palo Alto Health Care System, Palo Alto, CA; [4]University of California, San Francisco, San Francisco, CA; [5]Duke University, Durham, NC; [6]Stanford University, Stanford, CA; [7]Harvard University, West Roxbury, MA. *(Tracking ID #116784)*

STATEMENT OF PROBLEM/QUESTION: Information technology can support improved physician adherence to practice guidelines; however, it is hard to integrate decision support into clinical workflow
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: (1) Implement a guideline-based clinical decision support system for hypertension (HTN) into the clinical workflow of primary care clinics. (2) Evaluate the implementation by observing the extent of the clinician's use of the system.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: We provided automated decision support, ATHENA DSS, through pop-up windows in the Computerized Patient Record System (CPRS) in primary care clinics at three geographically diverse VA medical centers. ATHENA DSS combines patient data from CPRS with a HTN knowledge base to generate advisories about blood pressure (BP) control and drug management for hypertensive patients at each clinic visit. Clinicians may interact with ATHENA DSS by updating BP measurements from those recorded in CPRS, clicking a button indicating that recommendations have been considered, or simply allowing ATHENA's window to timeout (close). ATHENA also has a window to collect clinician feedback by checklist or free text.
FINDINGS TO DATE/EVALUATION OF WEB SITE: The ATHENA DSS displayed HTN advisory pop-up windows to 91 clinicians over a 15-month period. Recommendations were displayed for 10,165 unique patients (mean 112/clinician) and 17,219 patient visits (mean 189/clinician). Of the 86 of 91 clinicians who interacted with ATHENA DSS, eighty-six percent (74/86) updated the advisory by entering a new BP. Forty three percent of clinicians entered free text feedback. Overall, clinicians interacted with the ATHENA DSS for 55% of the patient visits, an interaction rate stable throughout the study period. Clinicians have interacted with the system extensively-updating BPs, sending text comments, and considering recommendations.
KEY LESSONS LEARNED: Integration of automated decision support for hypertension into primary care clinics is feasible and the usability and usefulness of the system is demonstrated by the extensive clinician interaction with the system.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: —Microsoft Powerpoint—Live demonstration of ATHENA DSS.

INTRODUCTION OF AN ADVANCED ACCESS MODEL INTO AN ACADEMIC SETTING. D.N. Goldson-Prophete[1]. [1]University of Medicine and Dentistry of New Jersey, Newark, NJ. *(Tracking ID #115388)*

STATEMENT OF PROBLEM/QUESTION: How to reduce the wait time for a new appointment in an outpatient ambulatory care practice?
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: 1. Decrease wait time for new appointments to 14–21 days 2. Increase patient visit volume
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: A typical "open-access" model reduces the time to the next available appointment to zero. This model is predicated on full–time physicians that maintain a percentage of open appointments on each day. However, in our academic practice faculty members are only available for clinical duties on a part-time basis each day. The Modified Open-Access Model (MO-AM) was an attempt to adjust a typical open access model to the challenges of an academic setting. All new patients were given the choice between the next available regularly scheduled appointment (4–6 weeks), or an MO-AM appointment in 24–48 hrs (72 hrs on a Friday afternoon). A limited number of appointments are available on each day for these patients. These appointments are kept in a separate book wherein slots are only made available on a weekly basis to avoid "booking" into the future.
FINDINGS TO DATE/EVALUATION OF WEB SITE: MO-AM was implemented in January of 2003. There were 7522 patient visits in the period from January to May of 2003. There were 5493 visits during the same period in the prior year (January to May of 2002). This represents a 36.9% increase in the visit volume for the practice. In addition, the actual number of patients seen in this period was 3391 as compared to 2736 in 2002—an increase of 23.9%. The average number of days to a new appointment between August and December of 2002 ranged from 17–56 days, with a median of 43 days. The average number of days to a new appointment between January and May of 2003 ranged from 8 to 43 days, with a median of 17 days. Implementation of the Modified Open Access Model reduced the average wait time for a new appointment from 4 weeks to 1-2 weeks overall, and <72 hrs for those that needed to be seen urgently. The no-show rate for new patient visits decreased from 50% to 20%.
KEY LESSONS LEARNED: 1. Decreased wait time resulted in increased compliance with appointments 2. MO-AM resulted in true growth of the practice with an increase in actual patient base 3. Open access appointment availability should be limited to one week in advance to avoid pre-booking
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: Poster Laptop.

INTRODUCTION OF COMPLEMENTARY AND INTEGRATIVE MEDICINE BY GENERAL INTERNISTS INTO THE PRACTICE OF AN ACADEMIC MEDICAL CENTER. D.L. Wahner-Roedler[1]; P.L. Elkin[1]; A. Vincent[1]; T. Schilling[1]; M.C. Lee[1]; L.L. Loehrer[1]; B.A. Bauer[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #116076)*

STATEMENT OF PROBLEM/QUESTION: Problem: With patients' (pts) increasing use of Complementary and Alternative Medicine (CAM), academic medical centers need to provide evidence-based CAM information and services within the cultural context of tertiary care.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: Objective: To introduce evidence-based CAM into the practice of our medical center.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: Intervention: To achieve our aim we initiated a 3-pronged approach described below.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Findings to Date: 1. Creation of an interdisciplinary CAM interest group: Regular meetings focusing on education, research, practice, open to all physicians and allied health staff of our medical center were initiated by a group of internists. 2. Survey of CAM use in 1,514 pts: a 85 question survey of CAM use addressing 3 domains: a) treatment/techniques, b) vitamins (vits)/minerals (excluding multiple vits with and without minerals, vit. D, folic acid, calcium, iron, potassium), c) herbs/dietary supplements, was administered to 1,514 consecutive pts presenting for an appointment. Response rate: 99.5%; median age: 61 years, gender: male 45%, CAM use: 76% (80% women, 72% men). The 5 most frequently used CAM treatments were: vit.E, exercise for a specific problem, vit. C, chiropractic, spiritual healing. 3.Pilot Study – CAM consults for 102 pts: after documenting a high CAM use we initiated a pilot study offering CAM consults at no cost to 102 pts presenting to a General Internal Medicine Division. Consults were performed by a licensed pharmacist (TDS) with back-up by an MD (AV) trained in CAM. Results: gender: 78% females, median age: 56 years, median length of consult: 30 min. CAM modalities used by pts were reviewed, drug interactions discussed, and questions in regard to use of CAM for a specific medical problem answered. Pts were encouraged to review the information with their primary MD. After the consult pts were asked to fill out an evaluation form. All pts found the session helpful and indicated that a CAM consulting service should be implemented at our center. Ninety-eight percent of pts were willing to pay for the service, if not covered by their insurance, with 44% willing to pay $41.00 or more.
KEY LESSONS LEARNED: Key lessons learned: Involvement of individuals from multiple disciplines across the Institution under the leadership of general internists helped to build support for CAM. Documentation of our pts' use of CAM emphasized the importance of this issue. Our consult pilot showed that pts are very interested in receiving evidence-based information about CAM. As a result the CAM-Program has been endorsed by the Department of Medicine. A routine, fee-for-service CAM consulting service will be implemented at our institution in 2004; contract discussions with local CAM providers are underway to explore opportunities to provide specific services to pts and staff.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

PHYSICIAN-NURSE COMMUNICATION IN INPATIENT GENERAL MEDICINE. J.J. Mohr[1]; C.T. Whelan[1]; J. Arneson[1]; J. Gradman[1]; M. Ang[1]. [1]University of Chicago, Chicago, IL. *(Tracking ID #117141)*

STATEMENT OF PROBLEM/QUESTION: The literature suggests that poor MD-RN communication patterns are associated with poorer clinical outcomes and patient satisfaction, lower job satisfaction for nurses and increased nurse turnover. Poor communication and conflict is a common problem on the inpatient medicine units at UCHospitals and is cited as affecting provider, staff, and patient satisfaction.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: The purpose of this study was to gain insight into communication patterns between inpatient MDs and RNs. Results were used to design interventions to improve MD-RN communication using quality improvement methodologies.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: During May 2003, we conducted 4 focus groups, 2 with nurses (n = 8) and 2 with housestaff (n = 8).

Questions elicited opinions and stories about MD-RN interactions within the institution, perceptions of actual vs. ideal MD-RN relationships, experiences of MD-RN conflict, and suggestions for improvement. Discussions lasted 1 hour and were audiotaped and transcribed for analysis. Members of the research team independently coded transcripts using the constant comparative method. Discrepancies in coding were reconciled by research team consensus.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Five factors emerged from the analysis: 1) Education and Training, 2) Organizational Support, 3) Culture, 4) Relationship, 5) Team Approach. Subcategories further defined each factor, e.g., subcatories for the factor Relationship were racial differences, respect, trust, socio-economic differences, and gender differences.
KEY LESSONS LEARNED: Knowledge gained from this study was used to design initiatives that are currently underway to improve MD-RN communication and working relationships. Three specific interventions based on suggestions from the focus groups and our perceived ability to affect change are currently being pilot tested to improve MD–RNcommunication on the inpatient medical wards: 1) Include nurses on attending rounds. 2) Send alphanumeric pages to housestaff. 3) Create educational materials for monthly housestaff orientation.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: We will present a brief description of how to design and facilitate focus groups and provide multiple examples from the rich narrative that resulted from our study. The coding structure will be presented in a cause and effect diagram that clearly outlines the factors that emerged in our study of MD-RN communication.

PHYSICIAN-TO-PHYSICIAN COMMUNICATION: METHODS, PRACTICE AND MIS-GIVINGS WITH PATIENT HANDOFFS. D.J. Solet[1]; J.M. Norvell[2]; G.H. Rutan[1]; R.M. Frankel[1]. [1]Indiana University Purdue University Indianapolis, Indianapolis, IN; [2]Respiratory Consultants, Methodist Hospital, Indianapolis, IN. *(Tracking ID #116981)*

STATEMENT OF PROBLEM/QUESTION: A daily ritual in teaching hospitals is the changeover or hand-off, whereby physicians or medical teams relay patient information to a covering physician, and in this presentation we will highlight problems in communication when the care of hospitalized patients is transferred from one physician to another.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: Our objectives were to identify current problems with the changeover process, obtain data to elucidate how medical students and residents are taught this process and to propose a feasible solution to the problems encountered.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: Gaining a better understanding and standardization of the changeover process could lead to a reduction in the number of "near misses" and harmful medical errors; therefore, the process by which changeovers occur was evaluated and three major barriers to effective communication in patient handoffs were identified.
FINDINGS TO DATE/ EVALUATION OF WEB SITE: First, we identified problems with the physical setting like lighting and background noise and with the social environment where social hierarchies can interfere with the changeover process. Second, while physicians speak a common "medical language", a great deal can be lost in the transfer of information between physicians of different ethnic backgrounds or when colloquialisms are used. Finally, the medium of communication can be a barrier to providing an effective changeover. The method by which medical students and residents are taught the changeover process is variable, and medical educators across the United States are being surveyed to inquire about how and when their medical students are taught the changeover process. Preliminary data suggests that most medical students are taught informally by housestaff and these housestaff were in turn taught by the same method, but empiric data is pending.
KEY LESSONS LEARNED: We gained knowledge on the key elements that should be included in the changeover form and effective communication tactics that should be employed in the changeover process. In the upcoming year, we will institute a pilot program at our institution that will provide strict guidelines for the changeover process.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: The guidelines for preparing and executing an effective changeover will be demonstrated along with a demonstration of a computer-based model currently used to generate a changeover list.

SUCCESSFUL STRATEGIES FOR INCORPORATING PREVENTION IN GENERAL INTERNAL MEDICINE PRACTICES: PROJECT 90 BY 2000. R. Chaudhry[1]; R. Stroebel[1]; S. Scheitel[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #116372)*

STATEMENT OF PROBLEM/QUESTION: Assessing and delivering adult preventive services during busy clinical encounters is a challenge which all practices face. Project 90 by 2000 was undertaken to improve delivery of adult preventive services in a multispecialty practice at Austin Medical Center-Mayo Health System which serves a population of 40,000 citizens in southeastern Minnesota.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To improve delivery of adult preventive services.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: Thirty charts of adult patients were abstracted every month for the delivery rates of age appropriate colon, breast, and cervical cancer screening; tobacco use and cessation advice; lipid screening; hypertension screening; and tetanus, pneumococcal, and influenza screening. A goal to achieve 90% of all eligible adult preventive services by end of year 2000 was established. A multidisciplinary team was convened to oversee the project. QI teams for individual preventive services were established. USPSTF guidelines were followed. Clinical practice was tooled with past history forms, pocket prevention guides, and standing orders for nursing staff. Physician and nurse education was undertaken to standardize the preventive services delivery. Public education was also undertaken by posters in exam rooms, hallways, waiting areas, grocery stores, nursing homes, and pharmacies. Newspaper articles and advertisements in newspapers were also undertaken.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Colorectal cancer screening improved from 60% in 1997 to 94% in 2000. Breast cancer screening improved from 72% in 1997 to 96% in 2000. Cervical cancer screening improved from 84% in 1997 to 94% in 2000. Influenza vaccination improved from 38% in 1997 to 96% in 2000. Pneumococcal vaccination improved from 50% in 1997 to 100% in 2000. Tetanus vaccination improved from 40% in 1997 to 92% in 2000. Tobacco use screening improved from 88% in 1997 to 98% in 2000. Tobacco cessation advice improved from 60% in 1997 to 82% in 2000. Lipid screening improved from 90% in 1997 to 98% in 2000. Hypertension screening improved from 86% in 1997 to 92% in 2000. All eligible preventive services completed improved from 70% in 1997 to 94% in 2000.
KEY LESSONS LEARNED: Utilizing principles of quality improvement and having all members of the health care delivery team contribute in the process of assessment and delivery of preventive services can help reach the goal of improvements in the delivery of preventive services. Educating the patients about the needed preventive services, clinical information system development, delivery system redesign, and leadership support are all necessary for a model of successful delivery of preventive services.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

THE DISCHARGE NAVIGATOR: A WEB-BASED INNOVATION TO BETER MANAGE INFORMATION FLOW DURING HOSPITALIZATION. J.M. Kramer[1]; W.F. Bria[1]; S. Lim[1]; F. Lee[1]; J. West[1]; S.K. Saint[2]; A.M. Fendrick[1]. [1]University of Michigan, Ann Arbor, MI; [2]Ann Arbor VA Medical Center, Ann Arbor, MI. *(Tracking ID #117416)*

STATEMENT OF PROBLEM/QUESTION: Maintaining the continuity and quality of healthcare, from outpatient care to hospital care and back, challenges almost every health delivery system. The management and transfer of critical information is likely a key to successful practices providing high quality of care. However, managing the chain of communication throughout a patient's hospitalization to the time of discharge is made far more difficult with decreasing length of hospitalizations and increased patient turnover. Even more challenging are the multiple providers, roles, and increasing number of handoffs. These factors are likely increasing the loss of critical information about discharge plans. Any discontinuity may result in medical error, reduced quality, and increased resource utilization.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To address these challenges, we created the Discharge Navigator. This is a web-based, information management tool, integrated with the enterprise electronic medical record. Key objectives for this system include better coordination of tasks, interdisciplinary use of information, elimination of redundant information tasks, and improved timeliness in our communications to referring physicians.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: Focus groups and user-centered design resulted in a unique 12-step task and workflow representation that produced nursing and physician discharge documentation. In addition to managing inpatient summaries, the information collected allowed the generation of cross-shift reports or "sign-outs."
FINDINGS TO DATE/EVALUATION OF WEB SITE: The system has been well received and has been used to produce 528 discharge summaries during 564 inpatient encounters. We will demonstrate the innovative results of our design process including the task breakdown structure, task state manager, electronic medical record integration methods, and the incorporation of the process knowledge into each task.
KEY LESSONS LEARNED: Discharge information can be managed in a coordinated fashion and can replace traditional discharge work products. Careful application design allowed a successful implementation and improvments in information coordination among multiple inpatient information stakeholders.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING: We will present the key features the Discharge Navigator in an oral presentation or in poster format.

THE RACE FOR EFFICIENCY: AN INNOVATIVE METHOD TO IMPROVE PATIENT CARE IN AN ACADEMIC MEDICAL CENTER. R. Blankstein[1]; J.W. Nathanson[1]; J.N. Woodruff[1]. [1]University of Chicago, Chicago, IL. *(Tracking ID #117296)*

STATEMENT OF PROBLEM/QUESTION: Prompted by the new ACGME duty-hours guidelines, we sought to identify inefficiencies in hospital operations at a large academic medical center. Past attempts (i.e. committee meetings, incident reports, and safety hot-lines) failed to gather adequate detail for prioritization of problems.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: (1) To quantitatively identify patient-care related problems which are encountered by residents on the general medicine wards. (2) To determine "root cause" for a maximum number of incidents through collaboration with hospital support services and other departments. (3) To propose and implement high yield solutions to the most common problems, thereby making the most effective use of limited hospital resources.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: A one week period of intense data collection was used to identify problems encountered by the house staff on the general medicine wards. Residents completed "Data Cards" on each problem they encountered. Information collected included the details of each adverse event as well as a quantitative estimate of the impact on patient care and on resident work time. Cards were reviewed daily and assigned to the appropriate "Problem Area". Each card was faxed in real time to the appropriate care center manager for investigation of "root cause". After collection of the data was complete,

a working group was established to review the data, identify fixable problems with the highest frequency, and propose changes to improve patient care and efficiency of hospital operations.
FINDINGS TO DATE/EVALUATION OF WEB SITE: Over one week, we identified 199 problems in 25 different categories relating to patient care. On average, each problem consumed 26 minutes of resident time. Problems resulted in 31 delayed discharges. Most complaints (72%) were associated with a minor effect on patient care; 26% were associated with a significant effect and 2% with a severe effect on patient care. Twenty-six percent of the problems arose from inefficiencies at the Ward Clerk position.
KEY LESSONS LEARNED: A short but intense resident-driven effort to comprehensively identify problems encountered on the medicine wards was very effective. Collaboration with hospital leadership and commitment of hospital staff to follow up each problem in "real-time" allowed us to determine root causes as well as potential solutions. This detailed information enabled better targeting of limited resources in an effort to create meaningful changes in the efficiency and safety of patient care.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

TO STUDY PATIENT SATISFACTION WITH THE USE OF A NURSE-BASED TELEPHONE PROTOCOL FOR MANAGEMENT OF URI SYMPTOMATOLOGY. R. Chaudhry[1]; R. Stroebel[1]; H. VanHouten[1]; J. Naessens[1]; S. Scheitel[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #116144)*

STATEMENT OF PROBLEM/QUESTION: Acute upper respiratory infection is a common, self-limiting viral infectious illness. Patients can be treated by RN telephone protocol for patients with symptoms of viral URI or acute sinusitis. Patient satisfaction with RN telephone management has not been assessed in past.
OBJECTIVES OF PROGRAM/INTERVENTION/WEB SITE: To determine if a nurse-based telephone protocol for management of URI and acute sinusitis will result in patient satisfaction equivalent to usual care.
DESCRIPTION OF PROGRAM/INTERVENTION/WEB SITE: January 2002 to July 2002 patients calling with symptoms of cough, runny nose, sinus pain or infection were triaged to a guideline-based registered nurse (RN) telephone treatment protocol (intervention) or usual care (control). Patients of 10 physicians were enrolled in the intervention group, whereas patients of the other 21 physicians received usual care (cluster randomization). Based on protocol questions, the RN determined if the patients' symptoms were suggestive of viral infection, bacterial sinusitis, or another diagnosis requiring physician evaluation. Symptomatic measures only were suggested for presumed viral infections. Cases of presumed bacterial sinusitis were treated with first line antibiotics (amoxicillin, erythromycin, or sulfamethoxazole/trimethoprim). Patient satisfaction was assessed by sending all patients in both groups a survey form within 30 days of their initial contact.
FINDINGS TO DATE/ EVALUATION OF WEB SITE: Forty-five out of 77 patients in nurse telephone treatment group (58.4%) and 76 out of 135 patients (56.3%) in the usual care group responded to the survey. 88.9% in telephone group rated the care to be good to excellent whereas 100% in the usual care group rated care to be good to excellent ($P = .006$). 89% in the telephone group and 96% in usual care group thought that it was somewhat to very easy to have illness evaluated ($P = .146$). 60% of patients in telephone group and 52.6% of patients in the usual group will prefer telephone care in the future, whereas only 31.1% of patients in the telephone group and 39.2% in usual group would prefer clinic visit for evaluation of their symptoms ($P = .455$).
KEY LESSONS LEARNED: Both telephonic and office-based evaluation and treatment for URI can result in high levels of satisfaction. Although use of a guideline-based nurse telephone triage protocol for evaluation and management of URI symptomatology had lower satisfaction compared to usual care ($P = .023$), a majority of patients in both groups desire telephone evaluation of their symptoms as an alternative to a visit with their physician.
MODALITY(IES) USED TO DEMONSTRATE INNOVATION AT MEETING:

SCIENTIFIC ABSTRACTS

A BEHAVIORAL STAGE-MATCHED INTERVENTION FOR IMPROVING HYPERTENSION CONTROL. S. Natarajan[1]; E. Santa Ana[2]; P. Nietert[2]; K.M. Magruder[2]. [1]VA New York Harbor Healthcare System and New York University, New York, NY; [2]Medical University of South Carolina, Charleston, SC. *(Tracking ID #117389)*

BACKGROUND: The Transtheoretical model for health behavior change is a useful framework for facilitating behavior change by tailoring interventions to a person's readiness for change. Among individuals with hypertension, this study evaluated the efficacy of a behavioral stage-matched telephone-delivered counseling intervention for: 1) increasing adherence to exercise, diet, and medications, and 2) improving blood pressure (BP) control.
METHODS: Baseline stage of change (precontemplation, contemplation, preparation, action, maintenance and termination) for exercise, diet, and medications as well as systolic and diastolic BP were assessed in 120 veterans with hypertension attending a routine health care appointment. Participants were randomized 1:1:1 to receive a stage-matched intervention (SMI), a health education intervention (HEI), or usual care (UC). Interventions were delivered by monthly telephone calls for six months to participants in the SMI and HEI groups. Stage of change (for exercise, diet, and medication) and BP was evaluated at 6-month follow-up using multivariate analysis of covariance (MANCOVA) and logistic regression.
RESULTS: There were no significant baseline differences between groups. At 6-month follow-up, a significantly greater proportion of participants in SMI were in later (action or maintenance) stages of change for exercise (63.9%) and diet (72.7%) adherence compared to participants in HEI (exercise: 25%, diet: 15.2%) or UC (exercise: 11.1%, diet: 12.1%). At 6 months SMI was a significant independent predictor for being in the later stages of change (action/maintenance) for exercise ($P < .0001$) and diet adherence ($P < .0001$). All but 3 participants (96.6%) reported being fully medication adherent. At 6-month follow-up, MANCOVA adjusting for baseline BP indicated that systolic BP was significantly lower in SMI (129 mm Hg, standard deviation [SD] = 13.9) than HEI (139.2 mm Hg, SD = 18.2, $P = .032$) and UC (140.2 mm Hg, SD = 19.5, $P = .015$). Diastolic BP was significantly lower in SMI (74.7 mm Hg, SD = 8.9) than UC (81.3 mm Hg, SD = 14, $P = .017$), but not HEI (79 mm Hg, SD = 9.1, $P = .098$).
CONCLUSION: In this randomized study, a Transtheoretical stage of change-matched intervention led to improved adherence for exercise, diet, and taking medications, and lowered BP among veterans with hypertension. This study provides preliminary evidence that stage-matched interventions hold promise for improving hypertension control among veterans.

A COMPARISON OF DIABETES CARE QUALITY IN VA AND COMMERCIAL MANAGED CARE: THE TRIAD STUDY. E.A. Kerr[1]; R. Gerzoff[2]; S.L. Krein[1]; J.V. Selby[3]; J.D. Piette[1]; J. Curb[4]; W.H. Herman[5]; D.G. Marrero[6]; V. Narayan[2]; M. Safford[7]; C.M. Mangione[8]. [1]VA Ann Arbor Healthcare System and University of Michigan, Ann Arbor, MI; [2]Centers for Disease Control and Prevention (CDC), Atlanta, GA; [3]Kaiser Permanente Division of Research, Oakland, CA; [4]Pacific Health Research Institute, Honolulu, HI; [5]University of Michigan, Ann Arbor, MI; [6]Indiana University Purdue University Indianapolis, Indianapolis, IN; [7]University of Medicine and Dentistry of New Jersey, Newark, NJ; [8]University of California, Los Angeles, Los Angeles, CA. *(Tracking ID #116059)*

BACKGROUND: Studies have shown improved quality of care in the Department of Veterans Affairs (VA) relative to Medicare. No studies, however, have compared care in VA to that delivered in commercial managed care (CMC) organizations, nor have they focused in depth on chronic, outpatient conditions. We sought to compare the quality of diabetes care between patients in VA and those enrolled in CMC organizations using equivalent and pre-specified sampling and measurement methods.
METHODS: We enrolled patients with diabetes from 5 VA medical centers (N = 1285) and 8 CMC organizations (N = 6920) in 5 matched geographic regions. We compared scores on 10 identically specified quality measures (e.g., annual hemoglobin A1c [A1c], annual low density lipoprotein cholesterol [LDL]) and 4 satisfaction measures (e.g., satisfaction with quality of diabetes care), adjusted for patient demographic and health characteristics.
RESULTS: VA patients had better scores than CMC patients on all process measures, ranging from a 10 percentage point difference on performance of an annual A1c (93% versus 83%; $P = .006$) to a 25 percentage point difference on aspirin use counseling (74% vs. 49%; $P < .001$). There was no difference in blood pressure control between VA and CMC patients, but VA patients had better control of LDL and A1c (86% vs. 72% for LDL < 130 mg/dl, $P = .002$; 92% vs. 80% for A1c < 9.5%, $P = .006$). Satisfaction was similar between the two cohorts.
CONCLUSION: We found that diabetes processes of care and 2 of 3 intermediate outcomes were substantially better for VA study patients than for CMC patients. Commercial plans may benefit from a better understanding of VA quality improvement programs, especially regarding enhancing LDL and A1c control. However, there was room for improvement in blood pressure control in both VA and CMC.

A COMPARISON OF THE QUALITY OF MEDICAL CARE MEASURED BY INTERVIEW AND MEDICAL RECORD. J.T. Chang[1]; C.H. MacLean[2]; C.P. Roth[2]; N.S. Wenger[1]. [1]University of California, Los Angeles, Los Angeles, CA; [2]RAND, Santa Monica, CA. *(Tracking ID #117145)*

BACKGROUND: Chart-based measurement has been considered the gold standard for many measures used to estimate quality of care. However, patients can report on many aspects of their care, including some that may be poorly documented in the medical record, and interview can be a cost-effective data collection method. Using a set of process measures developed for vulnerable older adults, we compared performance scores obtained using data from patient interviews and medical records.
METHODS: The Assessing Care of Vulnerable Elders (ACOVE) quality indicators (QIs), a set of 236 explicit process measures covering 22 conditions, were used to assess care in a random sample of vulnerable older adults from two senior managed care plans. Data were available from both interview and medical records for 245 patients. 60 QIs were measured with data available from both sources. We performed a priori classification of the "gold standard" data source for the 60 QIs as follows: patient interview would be the better source for information for QIs measuring communication and nonprescription medications (16 QIs); the medical record would be a better source for QIs measuring routine medical procedures (14 QIs); the remaining 30 QIs had no preferred data source. Performance scores were computed as the percentage of indicated care processes that patients received.
RESULTS: Performance assessed by the 30 quality indicators without a preferred data source scored the same by interview 66% (95% CI, 64% to 68%) and medical record 65% (95% CI, 64% to 67%). Quality of care measurement by the 16 QIs for which interview was the a priori preference had a much higher mean quality score by interview 66% (95% CI, 63% to 68%) than medical record 30% (95% CI, 27% to

32%). Examples of such QIs include education for a newly prescribed medication (99% interview v. 15% chart, $P < .001$), prescribing a bowel regimen with chronic opioid treatment (83% interview v. 0% chart, $P = .004$), and aspirin therapy in patients with diabetes (73% interview v. 49% chart, $P = .019$).
CONCLUSION: Quality measurement using patient interviews mirrors medical record findings for many care processes. Excluding interview data from a chart-based quality assessment system will significantly miss information on communication processes and nonprescription medication use.

A COMPARISON OF TWO HOSPITALIST MODELS WITH TRADITIONAL CARE IN A COMMUNITY TEACHING HOSPITAL. M. Halasyamani[1]; P. Valenstein[1]; M. Friedlander[1]; M. Cowen[1]. [1]Saint Joseph Mercy Hospital, Ann Arbor, MI. *(Tracking ID #101659)*

BACKGROUND: Many studies have documented significant length of stay and cost savings when hospitalist care is compared to usual care. However, there have not been any studies that have compared the outcomes of more than one hospitalist model in a single site. We report the resource utilization and clinical outcomes of two hospitalist models compared with a traditional care model within a single site.
METHODS: This is a retrospective cohort study conducted between July 2001 and June 2002 in a tertiary care community-based teaching hospital. Patients: 9,984 inpatients cared for by community physicians, academic hospitalists, or private hospitalists. Main Outcome Measures: Length of stay, variable costs, 30-day readmission rates, in-hospital and 30-day mortality, all adjusted for potentially confounding factors including age, diagnosis, insurance, severity of illness, and admission from the emergency department.
RESULTS: Patients of academic hospitalists had significantly lower average length of stay ($P = .0005$) and odds of 30-day mortality (OR = 0.77; 95% CI 0.77, 0.92), compared with traditional community physicians. Private hospitalists did not differ from community physicians in average length of stay or 30-day mortality. Academic hospitalists did not differ from community physicians in variable direct costs ($P = .08$); however, community physicians had significantly lower variable direct costs compared with private hospitalists ($P = .04$). In-hospital mortality or 30-day readmission did not differ significantly among the three physician groups
CONCLUSION: Different hospitalist models may have distinct effects on patient outcomes. Future studies should examine the specific organizational characteristics of hospitalists that contribute to improved patient care and resource utilization.

A COMPUTER-BASED DECISION AID IS AN EFFECTIVE TOOL FOR EDUCATING WOMEN SEEKING INFORMATION ABOUT BRCA1/2 GENETIC TESTING. M.J. Green[1]; S.K. Peterson[2]; M. Wagner Baker[3]; G.R. Harper[4]; L.C. Friedman[5]; W.S. Rubinstein[6]; D.T. Mauger[1]. [1]Penn State College of Medicine, Hershey, PA; [2]University of Texas M.D. Anderson Cancer Center, Houston, TX; [3]Penn State Cancer Institute, Hershey, PA; [4]Penn State Cancer Institute, Allentown, PA; [5]Baylor College of Medicine, Houston, TX; [6]Evanston Northwestern Healthcare, Evanston, IL. *(Tracking ID #116010)*

BACKGROUND: The demand for cancer genetic testing is increasing, and primary care practitioners have limited time and resources for educating patients about hereditary cancer risk. We conducted a clinical trial evaluating the effectiveness of an interactive, computer-based decision aid ("Breast Cancer Risk and Genetic Testing") to educate women about BRCA1/2 genetic testing.
METHODS: This was a randomized, controlled trial of 211 women with family or personal histories of breast cancer enrolled at six study sites from 2000–2002. Participants received standard one-on-one genetic counseling (Counselor Group, n = 105) or education by a computer-based decision aid (Computer Group, n = 106) followed by genetic counseling. The computer program was accessed via personal computer and participants spent 45–60 minutes using it. Outcomes included: knowledge, risk perception, genetic testing intentions, state anxiety and length of the counseling sessions. Outcomes were compared pre- and post-intervention in each group, and were stratified by low (<10%) vs. high (≥10%) risk of carrying a mutation.
RESULTS: Both groups had comparable demographic characteristics, experience with computers, medical literacy, and baseline knowledge of breast cancer and genetic testing. Mean age was 44 years, 56% completed college, and 93% were white. Mean knowledge scores (range 0–100% correct) increased in the Counselor Group from 53% pre-counseling to 82% post-counseling ($P < .0001$), and in the Computer Group from 55% to 91% ($P < .0001$). Mean knowledge scores post-computer use were higher compared with post-counseling alone ($P = .01$) among low-risk women. Neither frequency of computer use in daily life nor confidence in computer skills were related to changes in knowledge scores. Among low risk women in both the Counseling and Computer Groups, there was a significant decline in participants' post-intervention estimates of their absolute risk of developing breast cancer, as well as their intention to undergo genetic testing. Further, neither counseling nor computer use resulted in increased anxiety. Finally, for low risk women, counseling sessions were significantly shorter ($P = .03$) when preceded by computer use (77 minutes) compared to counseling without prior computer use (89 minutes).
CONCLUSION: The computer-based decision aid was more effective than standard genetic counseling for increasing knowledge of breast cancer and genetic testing among women at low risk for carrying a BRCA1/2 mutation. The program's use among low risk women was associated with shorter subsequent counseling sessions and a diminished perception of breast cancer risk, along with a decreased likelihood of pursuing genetic testing. Primary care practitioners seeking to educate women who are concerned about their inherited risk for breast cancer may find this program to be a useful educational tool.

A LOW-CARBOHYDRATE, KETOGENIC DIET FOR TYPE 2 DIABETES MELLITUS. W.S. Yancy[1]; M.E. Foy[1]; E.C. Westman[1]. [1]Duke University, Durham, NC. *(Tracking ID #117291)*

BACKGROUND: Low-carbohydrate diets lead to weight loss, and in one study led to improved glycemic control in diabetics. The objective of this pilot study was to examine the safety and effectiveness for glycemic control of the low-carbohydrate, ketogenic diet (LCKD) in patients with type 2 diabetes.
METHODS: In a Veterans' Affairs Medical Center outpatient clinic, we recruited overweight (body mass index [BMI] >25 kg/m2) subjects taking oral hypoglycemic agents and/or insulin, or having a hemoglobin A1c >6.0% without medication. Subjects received LCKD counseling, with an initial goal of <20 g carbohydrate/day, and were encouraged to take a multivitamin and drink 6–8 glasses of fluids daily. Diabetes medication dosages were reduced by approximately 50% at diet initiation; diuretic medications were reduced by 50% or discontinued, and subsequently reinstituted if needed. Subjects returned every other week for 16 weeks for body and vital sign measurements, counseling, and further medication adjustment if needed. Fasting blood and 24-hour urine tests were obtained at weeks 0, 8, and 16. Serum electrolytes and kidney function tests were monitored additionally at weeks 2 and 12.
RESULTS: Nineteen of the 25 subjects who were enrolled completed the study. Eighteen subjects were men; 13 were White, 5 were Black. The mean [+ SD] age was 56 ± 8 years; mean BMI was 39 ± 6 kg/m2 (range 28-51 kg/m2). From baseline to week 16, hemoglobin A1c decreased by 15% from 7.4 ± 1.5% to 6.3 ± 1.1% ($P < .001$) while diabetes medications were discontinued in 6 subjects, reduced in 7 subjects, and unchanged in 5 subjects. Mean body weight decreased by 7% from 131 ± 19 kg to 122 ± 20 kg ($P < .001$). Fasting serum glucose decreased from 163 ± 70 mg/dL to 136 ± 48 mg/dL ($P = .05$) and triglycerides from 242 ± 268 mg/dL to 144 ± 124 mg/dL ($P = .005$). Changes in other serum lipid measurements were not statistically significant. One hypoglycemic attack requiring assistance occurred during the study. In linear regression analyses, weight change at 16 weeks did not predict change in hemoglobin A1c.
CONCLUSION: The LCKD reduced glycemia, body weight and serum triglycerides in type 2 diabetic patients but close medical supervision was required to adjust diabetic and blood pressure medications. Controlled trials are needed to determine the safety and effectiveness of this diet compared with conventional weight loss diets.

A MULTIFACETED APPROACH TO TEACHING QUALITY IMPROVEMENT TO RESIDENTS. E.S. Holmboe[1]; L. Prince[2]; M.L. Green[3]. [1]Yale University, New Haven, CT; [2]University of Connecticut, Farmington, CT; [3]Yale University, Waterbury, CT. *(Tracking ID #116930)*

BACKGROUND: Understanding and applying quality improvement (QI) is now recognized as a core competency for all physicians. Educators need new curricula to train and evaluate residents and to improve residents' current and future clinical practice.
METHODS: A controlled longitudinal cohort study of a multifaceted self-directed curriculum in quality improvement. We studied residents in a university based internal medicine program. A four week QI course targeting PGY-2 residents during an ambulatory medicine rotation consisted of a syllabus with core readings from the recent Institute of Medicine reports, training in clinical care audits, performance of a resident self audit of their continuity clinic diabetic patients, weekly self-reflection facilitated by a faculty member, and completion of a commitment to change (CTC) survey. PGY-3 residents, who did not complete the QI course, served as concurrent controls. The primary outcome was changes in key diabetes process and outcome of care metrics. An independent abstractor performed baseline (1 year prior to start of QI course) and follow-up (1 year after day 1 of QI course) medical record audits. To be eligible for analysis, the resident must have seen the patient at least once in both the baseline and follow-up years.
RESULTS: In the first year of the program, thirteen PGY-2 residents completed the QI course. However, only 95 (out of a possible 155) diabetic patients were eligible for analysis. Despite the small number of patients, several process and outcome of care metrics improved in the PGY-2 group. The proportion of patients with blood pressure <130/80 rose from 32% at baseline to 59% at follow-up, the proportion of patients with LDL <100 rose from 66% to 73%, and patients receiving yearly monofilament exam from 15% to 27%. Compared to 13 matched control PGY-3 residents, patients in the PGY-2 group were significantly more likely receive foot exams, pneumovax, and a baseline ECG ($P < .05$), and although not statistically significant, more likely to achieve goal blood pressure and have a hemoglobin A1c measured. The 13 PGY-2 residents proposed ("committed to") 39 individual changes at the end of the rotation. At the 6 month follow-up, the 13 PGY-2 residents believed they had fully or partially implemented 35 (90%) of their individual changes.
CONCLUSION: This study demonstrates that a multifaceted self-directed curriculum in quality improvement is highly valued by residents, leads to changes in self-reported practice behaviors, and can also lead to modest but meaningful effects on actual patient care. Future work should involve a larger number of residents and investigate the impact of systems on resident learning in quality improvement.

A NATIONAL COMPARISON OF THE PERFORMANCE OF TRADITIONAL MEDICARE AND MEDICARE MANAGED CARE. B.E. Landon[1]; A.M. Zaslavsky[1]; S. Bernard[2]; M.J. Cioffi[1]; P.D. Cleary[1]. [1]Harvard University, Boston, MA; [2]Research Triangle Institute, Research Triangle Park, NC. *(Tracking ID #115742)*

BACKGROUND: Since 2000, the Centers for Medicare and Medicaid Services (CMS) has been collecting information on beneficiaries' experiences with care for both

Medicare managed care (MMC) and fee-for-service (FFS) Medicare using similar versions of the Consumer Assessment of Health Plans Study Survey (CAHPS®).
METHODS: CMS administered MMC and FFS versions of the CAHPS survey to samples of beneficiaries from Medicare + Choice organizations and from geographic strata within traditional FFS Medicare. The main outcomes measures were four overall ratings (of the plan, personal doctor, care received overall, and care received from specialists), 5 measures summarizing experiences with care (getting care you need, getting care quickly, communication with providers, courtesy and respect of doctor's office staff, and paperwork, information and customer service) and reports of receipt of 3 preventive services (flu shots, pneumonia vaccinations, and smoking cessation advice). Differences between MMC and FFS within states were assessed with weighted *t* tests after adjusting for casemix and non-response. For estimates at the regional and national level, state estimates were combined after weighting by the MMC enrollment in the state.
RESULTS: We analyzed responses collected in 2000 and 2001 from 299,058 beneficiaries enrolled in MMC (RR 82%) and 198,811 enrolled in FFS Medicare (RR 68%). MMC and FFS respondents were similar to each other and to the Medicare population as a whole. Nationally, FFS Medicare beneficiaries rated their experiences with care higher than did MMC beneficiaries, for instance in ratings of care received (8.91 on a scale of 1–10 versus 8.86, $P < .001$ in 2000 and 8.88 vs. 8.78, $P < .001$ in 2001). Differences between FFS and MMC varied across states, however. Managed care enrollees reported significantly fewer problems with paperwork, information, and customer service (2.62 vs. 2.55, $P < .001$ in 2000 and 2.59 vs. 2.51, $P < .001$ in 2001) and managed care enrollees were also more likely to report having received immunizations for influenza and pneumonia (from any source) and smokers were more likely to report having received counseling to quit smoking.
CONCLUSION: In this report, we summarize beneficiary experiences with traditional FFS Medicare and Medicare managed care over a two-year period. Neither MMC nor FFS Medicare is superior in all aspects. Our data suggest that managed care excelled in delivering preventive services while traditional Medicare excelled in other aspects of care related to access and beneficiary experiences. These relative strengths should be considered when making policy decisions that affect the availability of choice or incent beneficiaries to choose one model over another.

A NATIONAL SURVEY OF PRIMARY CARE PRACTICE-BASED RESEARCH NETWORKS. W.M. Tierney[1]; B.L. Hudson[1]; C.C. Oppenheimer[2]; A. Finn[1]; J. Benz[2]; A. Zafar[1]; D. Lanier[3]; D.S. Gaylin[2]. [1]Indiana University School of Medicine, Indianapolis, IN; [2]National Opinion Research Center, University of Chicago, Washington, DC; [3]Agency for Healthcare Research and Quality, Rockville, MD. *(Tracking ID #115672)*

BACKGROUND: Most research is performed in academic medical centers where patients, providers, and care are atypical. Practice-based research networks (PBRNs) are a potential resource for performing relevant research in real-world settings and translate research into everyday practice. U.S. primary care PBRNs have not been described.
METHODS: We identified 111 PBRNs of primary care practices that perform patient-based clinical research that had applied for funding through AHRQ'S PBRN initiative or the Robert Wood Johnson Foundation's Prescription for Health program or belonged to the Federation of PBRNs. Using a Web-based survey, we assessed PBRNs' history, size, location, organization, resources, and operations. We invited each PBRN director to participate and recontacted all non-respondents by e-mail or telephone.
RESULTS: 84 (76%) of the 111 PBRNs completed the survey between May and November of 2003. They contain 2,724 practices in 44 states and Puerto Rico caring for more than 16 million patients, an average of 198,112 patients per PBRN (range 1,200 to 2.7 million). Of the 32 PBRNs with practices in a single primary care specialty, 17 (53%) are family medicine, 10 (31%) pediatrics, and 1 (3%) general internal medicine [GIM]. Of 52 (62%) with multiple specialties, 51 (98%) had family medicine practices, 39 (75%) pediatrics, and 37 (71%) GIM. Mean patient age is 19 (SD = 64) years; 38% are under 18 and 18% over 60 years old; 60% of patients are white, 22% black, and 18% other races; and 18% are Hispanic. Insurance coverage is 45% private, 42% state/federal, and 13% none. Most PBRNs (63%) believe they are young, under development; 37% feel they are mature. The majority (76%) are affiliated with academic medical centers while 7% are affiliated with professional societies. A quarter have completed no studies, while half have completed 4 or more. Research is both descriptive (of populations 57%, diseases or treatments 54%, and individual patients 27%), and interventional (28%). The mean number of patients studied was 1,775 (SD 3,666, median 888, range 16–20,000). Common research foci have included prevention (49%), diabetes (37%), cardiovascular risk (31%), mental health (27%), and cancer (19%). The PBRNs site funding, community involvement, and informatics as needing improvement.
CONCLUSION: Primary care PBRNs are large, numerous yet young. Minority and under-insured patients are over-represented. Despite being "practice based," most have ties to academia and have performed relatively few (but large) studies of common primary care issues. PBRNs are a potentially rich national resource for community-based research.

A PATIENT REMINDER LETTER IMPROVES COMPLIANCE WITH FECAL OCCULT BLOOD TESTING. G.P Barnas[1]; D. Ehley[2]. [1]Medical College of Wisconsin, Milwaukee, WI; [2]Milwaukee VA Medical Center, Milwaukee, WI. *(Tracking ID #116878)*

BACKGROUND: Colorectal cancer screening is recommended by the USPSTF and the VA for all patients age 50 and older with either annual fecal occult blood testing (FOBT), a sigmoidoscopy every 5 years, or a colonoscopy every 10 years. Achieving this goal in a majority of patients has been proven difficult in clinical practice. While prior studies have focused on methods to improve providers offering screening studies to their patients, we chose to study if patient compliance with returning FOBT cards once issued could be improved by sending a reminder letter to patients who were given a set of FOBT cards but did not return them within one month.
METHODS: All patients seen in Primary Care outpatient clinics at the Milwaukee VA Medical Center issued FOBT cards Sept–Dec 2001 were analyzed weekly via electronic medical record review of orders and lab results to determine whether or not they returned the cards within a one month time period. Those who did not were randomized to receive either a mailed reminder letter encouraging them to return their cards or else usual care and follow-up. The percentage of cards returned in both groups over the succeeding months was then analyzed to determine the impact of the reminder letter on the overall return rate.
RESULTS: A total of 2,230 patients were issued FOBT cards within the four month study period. A total of 1,240 cards were returned within one month of issue indicating an initial patient compliance rate of 55.6%. The 990 patients who did not return their cards were then randomized to receive a reminder letter (496 patients) or usual care (494 patients) as a control group. Of those patients receiving letters, 131 (26.4%) subsequently returned the FOBT cards compared to only 32 (6.5%) of controls (Chi-square, $P < .001$). This difference represents an absolute increase in the subsequent return rate of 19.9% (for every 5 reminder letters sent—one additional FOBT test was returned). This would translate into an improved overall compliance rate of 67.3% vs. 58.5% if this intervention was implemented clinic-wide. In analyzing the time impact of the reminder letter on the return rate –87.5% of cards that were eventually returned were returned within 21 days of sending the reminder letter.
CONCLUSION: A standardized one month reminder letter is a useful and low cost method to further enhance patient compliance with colorectal cancer screening. This is especially true in clinics or facilities that have electronic records in place that can be used to monitor the ordering and return status of FOBT cards.

A PILOT RANDOMIZED CONTROLLED TRIAL OF EXPOSURE TO A WOMEN'S SAFE SHELTER USING QUALITATIVE METHODS TO EXPLORE RESIDENTS' PERSPECTIVES ABOUT INTIMATE PARTNER VIOLENCE (IPV) EDUCATION. R.S. Brienza[1]; L.M. Whitman[1]; M.L. Green[1]; L. Ladouceur[1]; I. Alexander[2]. [1]Yale University School of Medicine, New Haven and Waterbury, CT; [2]Yale University School of Nursing, New Haven, CT. *(Tracking ID #116669)*

BACKGROUND: Although IPV remains a major problem, patients are not screened routinely. Multiple curricula have been described for IPV screening and intervention, however, deficiencies exist in efficacy evaluation and study design. We conducted a randomized trial of exposure of IM residents to a women's safe shelter.
METHODS: We studied residents in a university based IM training program during the ambulatory block rotation. We randomized residents to usual methods (lecture, video, role play—controls) or usual methods plus a visit to a women's safe shelter (cases). The shelter visit consisted of a meeting of women survivors facilitated by a counselor focusing on experiences with the health care system. The primary outcome was residents' perspectives on IPV education, which we assessed via independent focus groups of convenience sub-samples of cases and controls. A non-study investigator facilitated the focus groups using a discussion guide. Transcripts from the focus groups were independently analyzed by different investigators, using common coding techniques and the constant comparative method of thematic analysis. Emerging themes from case and control groups were then contrasted.
RESULTS: Subjects included 36 Primary Care IM residents randomized to case (n = 18) or control (n = 18) groups during academic year 2001–02. Most participants were female (total: n = 20, 58%; focus group subsample: n = 10, 59%). Five audiotaped focus groups were conducted (2 case, n = 4 & 3; 3 control, n = 4,3, & 3). Case group themes included 1) impact of educational interventions (hearing real women's stories, women's experiences with clinicians, and interactions between different educational methods), and 2) knowledge and practice (physician's role, frustration with process, definition of success, dispelling stereotypes, and IPV facts). Control group themes focused on 1) screening barriers (handling "yes" responses, offending patients, and stereotypes) and 2) information learned to overcome or manage barriers (how to ask, resources, and universality of risk). Thematic differences included the described impact, by the case group, of hearing real women's stories at the safe shelter and planned change to screen all women, not just "red flag" situations. Conversely, controls focused more on desire for clearer guidelines for how and when to screen and intervene.
CONCLUSION: These results suggest that exposure to women survivors at a safe shelter may have a different impact on IM trainees than standard educational methods alone. Future research using these results to inform quantitative survey design and aimed at evaluating practice behaviors following educational interventions is needed.

A PILOT STUDY OF A LOW CARBOHYDRATE KETOGENIC DIET FOR OBESITY-RELATED POLYCYSTIC OVARY SYNDROME. E.C. Westman[1]; W. Yancy[1]; J. Hepburn[1]; J. Mavropoulos[1]. [1]Duke University, Durham, NC. *(Tracking ID #117295)*

BACKGROUND: Polycystic ovary syndrome (PCOS) is the most common endocrine disorder among women of reproductive age, and is frequently associated with central obesity, insulin resistance, and dyslipidemia. Because recent evidence demonstrates that a low carbohydrate ketogenic diet (LCKD) leads to weight loss and improvements in insulin sensitivity, we conducted this uncontrolled trial of the diet for PCOS.

METHODS: Subjects were recruited from the community. Inclusion criteria were signs or symptoms suggestive of PCOS (chronic anovulation, hyperandrogenemia, hirsuitism), age 18–45 years, body mass index >27 kg/m^2, and motivation to lose weight. Subjects received LCKD counseling, with an initial goal of <20 grams of carbohydrate per day, gradually increased as tolerated. Subjects were instructed to take a multivitamin and to drink 6–8 glasses of water daily. Fasting blood samples were obtained at weeks 0, 10 and 24.
RESULTS: Eleven women were enrolled; 5 (45%) completed the 24-week study. In the 5 adherent subjects, there were significant reductions from baseline to 24 weeks in body weight (101.5 to 89.2 kg, $P = .01$) and percent free testosterone (2.2 to 1.7%, $P = .04$). There were non-significant changes in insulin (23.7 to 8.2 mg/dl), glucose (97.4 to 79.2 mg/dl), testosterone (51.8 to 48.0 mg/dl), hgbA1c (6.0 to 5.4%), perceived body hair (3.8 to 2.4 on a 7-point scale), LDL (120.0 to 131.8 mg/dl), and triglycerides (101.8 to 73.2 mg/dl). Two women who had previous difficulty becoming pregnant, became pregnant during the study.
CONCLUSION: In women with obesity and a clinical diagnosis of PCOS, a LCKD led to weight loss and a reduction in percent free testosterone over a 24-week period in those able to adhere to the diet. Further controlled studies are needed to determine whether this approach is superior to other weight loss methods for the treatment of PCOS.

A RANDOMIZED CONTROLLED TRIAL OF A PATIENT-ACCESSIBLE ELECTRONIC MEDICAL RECORD. S.E. Ross[1]; C. Lin[2]; L. Wittevrongel[2]; L. Moore[2]. [1]University of Colorado Health Sciences Center, Aurora, CO; [2]University of Colorado Health Sciences Center, Denver, CO. *(Tracking ID #117056)*

BACKGROUND: Several medical institutions have given patients access to online medical records. Giving patients access to online medical records may improve doctor-patient communication and patient self-care. At the same time, direct access to medical records may make patients confused or worried, and may interfere with clinical practice. Patient-accessible medical records have not yet been studied in a clinical trial.
METHODS: We enrolled 107 patients with congestive heart failure. 54 patients were randomly assigned to the intervention group, which received 12 months of access to a patient-accessible online medical record including clinical notes, laboratory results, and other test results. This system also allowed patients to communicate with the practice electronically. 53 patients were assigned to the control group, which received standard care over the same period. Patients completed surveys at baseline, 6 months, and 12 months. Surveys assessed health status, adherence, and patient satisfaction. The number of visits to the practice, to the emergency department, and to the hospital were tracked. Message volume (electronic and telephone messages) was also tracked.
RESULTS: After 12 months, general adherence, as measured by the Medical Outcomes Study adherence measure, was significantly improved in the intervention group. (85 vs. 79 on 100 point scale, $P = .01$). The intervention group demonstrated a trend towards improvement in several questions assessing patient satisfaction with doctor-patient communication. The intervention group did not differ from the control group in health status, number of clinic visits, or number of hosptializations. There were more emergency department visits in the intervention group (20 vs. 8, $P = .03$), but only 4 of the visits in the intervention group were associated with use of the online medical record in the week preceeding. Overall message volume for the first 6 months was increased in the intervention group (146 messages vs. 88) but not in the second 6 months (110 vs. 103). Nurses responding to messages did not perceive a change in message volume, and reported that no inappropriate electronic messages were sent by patients.
CONCLUSION: In a population of patients with congestive heart failure, access to a patient-accessible online medical record resulted in improvement in general adherence and a trend towards improvements in patient satisfaction with doctor-patient communication. This access did not change health status or overall utilization of services. It was implemented with modest increases in messsage volume, and patients used it appropriately.

A RANDOMIZED TRIAL COMPARING TELEMEDICINE CASE MANAGEMENT WITH USUAL CARE IN OLDER PATIENTS WITH DIABETES MELLITUS. S.J. Shea[1]; R.S. Weinstock[2]; J. Starren[1]; J. Teresi[3]. [1]Columbia University, New York, NY; [2]Joslin Diabetes Center, SUNY Upstate Medical University, Syracuse, NY, Syracuse, NY; [3]Hebrew Home for the Aged at Riverdale, Bronx, NY. *(Tracking ID #116378)*

BACKGROUND: Telemedicine is a promising method for delivering health care services but large randomized evaluation studies are lacking.
METHODS: We randomized 1,665 Medicare beneficiaries aged 55–84 years, with diabetes, and living in federally designated medically underserved areas of New York State (890 in Upstate NY, 775 in New York City) to receive telemedicine diabetes case management vs. usual care. At baseline, 70.1% reported household income <$20,000/year and 79.0% responded "No" to the question "Do you know how to use a computer?". Intervention subjects received a home telemedicine unit that supported 2-way video conferencing with a nurse case manager at a diabetes center, upload of home glucose and blood pressure measurements to case management software, and access to an educational website. Evaluation data were collected in person at baseline and 1 and 2 years follow-up, with masking of evaluation staff to group assignment. Findings reported here are for an interim analysis of 1 year follow-up (N = 1,334). Group mean value at baseline was subtracted from follow-up value for each group; net differences between intervention and usual care are shown. P values are based on standard errors adjusted for clustered randomization by physician practice.
RESULTS: See Table
CONCLUSION: Telemedicine is an effective method for providing diabetes case management to medically underserved older patients.

Table shows mean values at 1 year follow-up

	Usual Care	Intervention	Net Δ	*P* Value
Glyc Hgb (%)	7.17	6.96	−0.17	<.01
Systolic BP (mmHg)	140.7	137.5	−3.6	<.0001
Diastolic BP (mmHg)	70.1	68.5	−1.9	<.0001
Total Cholesterol (mg/dl)	182.4	170.4	−10.7	<.0001
Triglyceride (mg/dl)	171.8	154.7	−16.1	<.0001
LDL Cholesterol (mmHg)	105.9	95.8	−9.3	<.0001

A SEXUAL HISTORY/HIV COUNSELING WORKSHOP USING STANDARDIZED PATIENTS INCREASES KNOWLEDGE AND IMPROVES SKILLS. S.A. Haist[1]; A. Hoellein[1]; G. Talente[2]; M.L. Jessup[1]; J.F. Wilson[1]; C. Griffith[1]. [1]University of Kentucky, Lexington, KY; [2]East Carolina University, Greenville, NC. *(Tracking ID #116327)*

BACKGROUND: To determine the effect of a sexual history/HIV counseling (SHHIV) workshop on knowledge and clinical skills of workshop participating 3rd-year medical students versus students not participating.
METHODS: A 4-hour SHHIV workshop was developed as part of a new curriculum for a required 3rd-year medical school 4-week primary care internal medicine clerkship. The workshop was interactive with students participating in 4 standardized patient (SP) cases representing different challenges (27 year- old man, "I want an HIV test"). A faculty preceptor then discussed the cases. The students were provided an 11-page SHHIV reference. The workshop was delivered at the beginning of 12 of the 24 rotations during 2001–02 and 2002–03. All students on all rotations were assigned SHHIV textbook readings and participated in a preventive care (PC) SP wWorkshop. At the end of the 4 weeks, all students took a 139-question written exam (9 SHHIV questions) and a 9-station SP exam (1 SHHIV station and 2 PC stations). Total SHHIV (35 items), sexual history (11 items), infectivity (12 items), condom use (5 items) and STD testing (7 items) scores were determined. After each SP station, students completed a station-related open-ended written exercise (list HIV risk factors). Simple means, standard deviations, and multiple regression approaches were used to compare the results of workshop-participating students vs. non-participating students. The 2 PC SP checklist scores were a control variable for the checklist analyses and USMLE Step 1 score was a control variable for both the exam questions and the post-SP open-ended written exercise.
RESULTS: 81 students participated in the SHHIV workshop and 85 did not. Workshop participants scored 7.1 on the SHHIV written questions vs. 6.7 for the non-participants ($F = 5.05$, $P = .03$). On the SHHIV SP checklist, total SHHIV scores of participants were higher than non participants (24.9 vs. 20.3; $F = 18.2$, $P < .001$) as were subscale scores for sexual history (8.4 vs. 6.7; $F = 20.8$, $P < .001$), infectivity (7.7 vs. 5.4; $F = 18.3$, $P < .001$), and STD testing (6.1 vs. 5.6; $F = 3.8$, $P = 02$). Scores on the opened-ended SP post-encounter exercise were no different for participants vs. non-participants (4.91 vs. 4.76, $F = 1.3$, $P = .27$).
CONCLUSION: Students participating in a 4-hour SHHIV workshop using SPs had better SHHIV clinical skills as assessed by an SP exam and had greater SHHIV knowledge as assessed by 9 written questions compared to students not participating in the SHHIV workshop four weeks later.

A SNAPSHOT OF HEALTHCARE FOR AMERICAN INDIANS: THE NATIONAL HEALTHCARE DISPARITIES REPORT. P. Johannson[1]; E. Moy[1]; S. Siegel[1]; H. Burstin[1]. [1]Agency for Healthcare Research and Quality, Rockville, MD. *(Tracking ID #115982)*

BACKGROUND: The National Healthcare Disparities Report, released on December 22, 2003, represents the first in an annual report to Congress that tracks prevailing disparities in healthcare delivery by race, ethnicity, and socioeconomic status in priority populations. However, data on certain populations, including American Indians and Alaska Natives (AI/ANs), are often limited by insufficient numbers to allow reliable estimates for many measures.
METHODS: The data for the report come from a variety of nationally representative federal data sets. These data are used to assess the healthcare received by AI/ANs across a broad range of access to care and quality of care measures. Differences between AI/ANs and whites are quantified and presented in this abstract as relative rates. In addition, gaps in the ability of extant data to provide reliable estimates for AI/ANs are identified.
RESULTS: Overall, half of quality of healthcare measures and a third of access to care measures allowed for reliable estimates for AI/ANs populations. Among the measures utilized by the National Healthcare Disparities Report with adequate sample sizes, significant healthcare disparities were found in healthcare quality and access among AI/ANs. We found that AI/AN populations received worse quality of care than the comparison population for numerous measures, including: lower rates of breast cancer screening for women 40 and over (Relative Rate [RR], 0.68), renal transplantation (RR, 0.78), cholesterol screening (RR, 0.87), and prenatal care in the first trimester (RR, 0.82). For measures of diabetes management, sample sizes were insufficient to provide reliable estimates for the AI/AN population. On access to healthcare, AI/AN populations had worse access to care than the

comparison population for numerous measures including: no health insurance coverage (RR, 2.51), % of patients with difficulty getting appointments on short notice (RR, 1.71), % of patients filling a prescription for medication in the past year (0.86), % of patients with dental visits (0.55), and outpatient visits per population (0.24).
CONCLUSION: Significant healthcare disparities were demonstrated in the quality of care and access to care for American Indians, when compared with the white population. However, large differences on many measures between AI/ANs and whites did not obtain statistical significance due to limited AI/ANs sample size in federal data sets. Enhanced data collection efforts targeted at AI/AN populations are needed. These results suggest that targeted improvement efforts are needed to reduce disparities among American Indians and reduce the significant preventable burden of disease.

A SYSTEMATIC REVIEW OF RESIDENCY ETHICS AND PROFESSIONALISM CURRICULA. J.R. Rosenbaum[1]; M.L. Green[1]. [1]Yale University, Waterbury, CT. *(Tracking ID #117557)*

BACKGROUND: In the past two decades, ethical and professional lapses among physicians have received increasing attention. Several bodies, including the ACGME, now mandate or recommend training in these areas. A summary and analysis of the experience to date would help educators identify or develop curricula for their own programs. Thus, we performed a systematic review of reported residency ethics and professionalism curricula.
METHODS: We identified curricula by searching Medline, PsychInfo, Educational Resources Information Center, two bioethics databases, Association of Program Directors in Internal Medicine Educational Clearinghouse, several medical education journals, and bibliographies of collected articles. We included articles that focused on ethics or professionalism education of residents exclusively or as part of a larger educational program. We abstracted information on demographics, curriculum development, learning objectives, instructional strategies, and evaluation methods and results.
RESULTS: Our search identified 36 curricula, including 29 that addressed ethics and 7 that focused on issues of professionalism. Inclusion criteria showed good inter-rater reliability (Kappa = 0.77, $P < .01$). Only 8 curricula included descriptions of how the curricula were developed, and 6 included needs assessments. Thirty-two articulated goals or objectives. Most curricular objectives aimed to increase awareness of ethical issues, knowledge of values and ethical principles that should be used to guide behavior, or the residents' ability to apply this knowledge effectively in clinical practice. More recent curricula focused more on case based discussion and less on ethical theory. The most commonly used instructional strategies included small group discussions (n = 26), lectures (13), role playing (8), videotape as either a trigger or feedback tool (8), and self-reflection exercises (7). Nine curricula sought to have an impact on institutional culture. Only 8 reports included an evaluation of at least one of the following effects of the curricula on the learners: knowledge (n = 6), attitude (3), behavior/performance (3), or skills (1). The six evaluations that met our criteria for adequate study design suggest that ethics and professionalism curricula can have a measurable, though modest, impact on knowledge, skills, and performance. The successful curricula involved either case based discussions that incorporated residents' own case experiences or standardized patients as instructional strategies.
CONCLUSION: A broad array of types of educational interventions for ethics and a smaller number for professionalism have been reported. Given the limitations of the descriptions available, these reports offer little guidance to educators seeking to develop or adapt curricula for their programs. More work needs to be done to assess which instructional strategies are most effective in influencing ethical and professionalism knowledge, skills, and behavior, though the data suggest that meaningful impact is possible.

A SYSTEMATIC REVIEW OF THE MULTIMEDIA COMPUTER FOR OFFICE-BASED PATIENT EDUCATION. J.L. Wofford[1]; E.D. Smith[2]; D.P. Miller[1]. [1]Wake Forest University, Winston-Salem, NC; [2]University of New Mexico, Albuquerque, NM. *(Tracking ID #116183)*

BACKGROUND: Compared with the ubiquity of the multimedia computer in formal education, the use of computer-assisted patient education in the clinical setting is rare. the objective of this study was to explore the potential use of the multimedia computer for patient education in the ambulatory health care setting.
METHODS: Data Sources: All relevant English-language studies from MEDLINE and Cochrane Library databases, and reference lists of key articles. Study Selection: Randomized controlled trials using computer–assisted patient education. The MEDLINE search was performed in September 2002. Two independent assessors reviewed the retrieved citations. Data Extraction: Seventeen randomized trials of computer-assisted patient education were identified. Data were extracted on trial characteristics and computer strategies. Two reviewers independently rated trial quality using established criteria.
RESULTS: Data Synthesis: Outcomes examined in these trials included clinical measures (7/17, 41.1%), knowledge retention (8/17, 47.1%), health attitudes (12/17, 70.6%), level of shared decision making (4/17, 23.5%) health services utilization (3/17,17.6%), and costs (4/17, 23.5%). Three trials targeted patients with breast cancer, but the educational domains were otherwise diverse. The quality of trial methodology was adequate with regard to testing the results of randomization (14/17, 82.3%) and reporting the analysis of main effect variables (12/17, 70.6%) but not adequate with regard to reliability of the randomization process (6/17, 35.3%), blinding of outcomes assessment (3/17, 17.6%), or sample size definition (5/17, 29.4%). Two trials made use of the internet, and four trials used touchscreen technology for patient interactions. Most computer strategies used audio but only three used video as a communication strategy. The computer was located in the clinical setting in one third of studies. Separate office visits were required in two trials where the computer was sited at the clinical setting.
CONCLUSION: The potential for improving office efficiency through computer-assisted patient education has been demonstrated, but better proof of the impact on clinical outcomes will be necessary before computer-assisted patient education becomes acceptable in the office setting.

A SYSTEMATIC REVIEW OF THE OBSERVATIONAL STUDIES OF THE EFFECTS OF SLEEP DEPRIVATION ON RESIDENT PERFORMANCE. K.E. Fletcher[1]; W. Underwood[2]; S.Q. Davis[3]; R.S. Mangrulkar[2]; L.F. McMahon[2]; S.K. Saint[2]. [1]Medical College of Wisconsin/Milwaukee VAMC, Milwaukee, WI; [2]University of Michigan, Ann Arbor, MI; [3]University of Chicago, Chicago, IL. *(Tracking ID #115606)*

BACKGROUND: New work hour regulations have begun for all resident physicians in the United States. While the primary goal is to improve patient safety by decreasing resident fatigue, solutions often create discontinuity of care. We have previously reported that interventional studies found equivocal results with respect to patient safety. Herein, we assess the effect sleep deprivation has on resident performance based on observational studies, thereby further informing the process of how best to improve patient safety in the context of resident work hour restrictions.
METHODS: We used electronic databases and additional methods to search the English-language literature for studies published since 1966 that evaluated any aspect of resident work hours. All potentially pertinent studies were independently reviewed by 2 investigators.
RESULTS: The total number of studies included was 118. Of those, 34 were about interventions which had been implemented to reduce the effects of fatigue or work hours (results previously reported). The remaining 84 studies were observational studies; the 44 studies with patient safety relevance are included in this report. Evidence for the effects of sleep deprivation on patient outcomes may come from studies that evaluate 4 types of outcomes: 1) patient-related adverse events; 2) medical errors; 3) performance on tests or simulated situations; and 4) tests of cognitive function. Few studies directly assessed the effects of sleep deprivation on actual patient outcomes. Of these, one assessed actual errors and 3 used self-reported errors. These studies do not provide strong evidence that sleep deprivation worsens patient outcomes. However, a larger group of studies focusing on test performance or simulation does suggest that test scores appear to be worse in sleep-deprived groups. Skills such as laparoscopic simulations may also decline, and tasks requiring vigilance also tend to worsen. Finally, the studies of cognitive function using psychological tests found, in general, that reaction time, concentration and dexterity seem to be adversely affected by sleep deprivation, while memory and problem solving are less affected.
CONCLUSION: Unfortunately, few studies have related sleep deprivation to actual patient outcomes. Evidence suggests, however, that sleep deprivation may adversely impact certain aspects of cognitive function and performance, especially those activities requiring vigilance and dexterity. Defining the resident tasks that are especially susceptible to sleep deprivation and those susceptible to discontinuity should inform the allocation of responsibilities within a resident team to maximize patient safety.

A VOLUNTARY REPORTING SYSTEM IN IDENTIFYING MEDICAL ERRORS ON A TEACHING SERVICE: A DESCRIPTIVE STUDY. K. Maynor[1]; E. Holmboe[1]. [1]Yale University, New Haven, CT. *(Tracking ID #117263)*

BACKGROUND: The identification of medical errors has historically relied upon reviewing sentinel events and medical record audits. Little is known about the voluntary disclosure and perception of medical errors by healthcare workers in the clinical setting. The objective of this study is: To categorize the perception, types and nature of errors as identified by nurses, faculty, and residents by a voluntary reporting system for patients on a teaching service in a community hospital.
METHODS: This is a descriptive prospective cohort study of resident admissions at a 250-bed community hospital from 9/1/02 to 9/1/03. The chief resident on the post-call day encouraged residents to voluntarily report potential medical errors using a standardized card. Anonymous incident report cards with drop boxes were placed on the medicine floors to allow any healthcare provider to report perceived medical errors on house staff patients. The definition of medical error was adopted from the IOM's report as "failure of a planned action to be completed as intended or use of a wrong plan to achieve an aim" and were screened by the primary investigators. Any disagreements regarding the classification of error were resolved by consensus. The events were then categorized as an error of drug administration, therapeutics, diagnosis, or procedure.
RESULTS: There were 104 potential medical errors that were voluntarily reported. Upon review, 90 events met the definition of a medical error. Of these errors, 55 (61%) were reported by residents while 35 (39%) were by anonymous reporting. Nurses were responsible for all but one anonymous error reports. Individuals more often reported errors involving other healthcare providers in 74 (82%) than self-disclosure of errors in 16 (18%). The types of medical errors disclosed varied greatly between residents and nurses. Residents disclosed errors of diagnosis in 18 (33%), drug administration in 16 (29%), and therapeutics in 16 (29%). Resident therapeutic errors were defined by medication dosing in 5 (31%) and therapeutic decisions in 11 (69%). Nursing reported mostly drug administration errors in 23 (66%).

CONCLUSION: In this study of voluntary disclosure, residents were more likely to disclose errors of diagnosis and therapeutics while nurses reported drug administration errors.

ABUSE OF PRESCRIPTION PAIN RELIEVERS AND CO-USE OF OTHER DRUGS: A POTENTIAL BARRIER FOR OFFICE-BASED TREATMENT WITH BUPRENORPHINE?
L.D. Woodard[1]; J.R. Kramer[1]; P. Richardson[1]; L. Capistrano[1]; C.M. Ashton[1]; R.O. Morgan[1]. [1]Houston Center for Quality of Care and Utilization Studies & Baylor College of Medicine, Houston, TX. *(Tracking ID #116676)*

BACKGROUND: Prescription pain reliever abuse has significantly increased the number of patients requiring treatment for opiate addiction. Recent U.S. legislation allows physicians to prescribe buprenorphine to treat opiate-addicted patients in their practices. However, physicians have been reluctant to embrace this treatment option, possibly due to concerns regarding use of other illicit substances among patients who abuse pain relievers. In this study, we: (1) estimated the prevalence of co-use of heavy alcohol, marijuana, and other illicit substances among persons who abuse prescription pain relievers, and (2) determined the demographic factors associated with this co-use.
METHODS: We used data from the 2000 National Household Survey on Drug Abuse to identify users of prescription pain medication (93% of which were opioid analgesics) for non-medical purposes within the prior year. Logistic regression was used to determine predictors of use of heavy alcohol (≥5 drinks, 5 + times within prior month), marijuana (prior year), and other illicit substances (prior year) among users of pain relievers. Model predictors were age, sex, race, education, employment, household income, veteran status, and metropolitan statistical area.
RESULTS: Approximately 2.9% of Americans reported non-medical use of pain relievers during the prior year. Of these, large percentages reported heavy alcohol, marijuana, and other illicit substance co-use (23.1%, 46.1%, and 46.0%, respectively). Controlling for other predictors in the model, age, race/ethnicity, and marital status were all broadly associated with heavy alcohol, marijuana, or other illicit substance co-use. Younger persons were more likely to be co-users than those aged 50 years and older ($P \leq .001$ for all three types of co-use); Whites were more likely than other race/ethnicities to co-use ($P \leq .001$ for all three types of co-use); and single individuals were more likely than those who were married to co-use ($P \leq .0001$ for all three types of co-use). Men were more likely than women to co-use heavy alcohol and marijuana ($P \leq .0001$ and $P \leq .001$, respectively), but not other illicit substances, while individuals with a college education were more likely to co-use other illicit substances than those with less education ($P \leq .001$). Education level was unrelated to differences in heavy alcohol or marijuana co-use.
CONCLUSION: Co-use of heavy alcohol, marijuana, and other illicit substances is high among users of prescription pain relievers. Individuals who are younger, White, male, and unmarried are most likely to use multiple substances. These findings suggest that substance co-use is prevalent among users of prescription pain relievers and may be a barrier limiting physician acceptance of office-based treatment with buprenorphine.

ACCES TO EMERGENCY CONTRACEPTION IN TWO ECONOMICALLY DISPARATE NEIGHBORHOODS IN NEW YORK CITY.
R. Agarwal[1]; J. Olson[1]; H. Kunins[2]. [1]Albert Einstein College of Medicine, Bronx, NY; [2]Albert Einstein College of Medicine, New York, NY. *(Tracking ID #117013)*

BACKGROUND: Emergency contraception is a safe and effective treatment for unwanted pregnancy. Despite the FDA advisory committee recommendation in 2003 that pharmacies dispense emergency contraception (EC) without a prescription, EC is currently available only by prescription in most states. Little is known about the actual access to EC, and whether access varies among economically disparate neighborhoods. In this study, we investigated access to EC in two economically and ethnically distinct neighborhoods in New York City.
METHODS: Pharmacies were identified by zip code through the New York State Education Department. Using 2 internet directories, phone numbers were identified for all licensed pharmacies in the 6 zip codes from the disadvantaged South Bronx (SB) and in the 3 zip codes from the affluent Upper East Side (UES) in Manhattan. We called all pharmacies with listed phone numbers and administered phone interviews with the available pharmacist. Specialty pharmacies were excluded. The interview assessed business hours, time necessary to fill a prescription and if pharmacies kept EC in stock.
RESULTS: 104 general pharmacies with listed telephone numbers were identified. Interviews were conducted with 96 pharmacies in the SB (N = 51) and in the UES (N = 45), for a combined response rate of 92%. Pharmacies in the SB and the UES were equally likely to report that they stocked at least 1 of the 2 brands of hormonal contraception marketed as EC (78% vs. 84%, $P = .6$). However, SB pharmacies were less likely than UES pharmacies to carry both brands of EC (47% vs. 73%, $P = .02$). Pharmacies in the SB and the UES were equally likely to be able to fill an EC prescription within one hour (84% vs. 90%, $P = .4$). SB pharmacies were less likely to be open past 6 pm on weekdays (55% vs. 89%, $P = .001$) and less likely to be open on both Saturday and Sunday (31% vs. 71%, $P < .001$).
CONCLUSION: A majority of pharmacies in both the disadvantaged South Bronx and the affluent Upper East Side of Manhattan stock at least 1 form of EC. In addition, most pharmacies report being able to fill a prescription for EC rapidly. More limited hours of pharmacy operation in the South Bronx, however, may adversely affect poor women's access to EC. Physicians who provide care for women from economically disadvantaged neighborhoods should counsel patients of potential difficulty in accessing EC due to constrained pharmacy hours.

ACCURACY OF COMPUTERIZED MEDICATION LISTS BEFORE AND AFTER AN INTERVENTION TO IMPROVE PRESCRIBING.
B. McClimon[1]; A. Hoth[1]; R.I. Shorr[2]; M.J. Barnett[3]; G.E. Rosenthal[1]; P. Kaboli[1]. [1]University of Iowa, Iowa City, IA; [2]University of Tennessee, Memphis, TN; [3]Iowa City VAMC, Iowa City, IA. *(Tracking ID #117237)*

BACKGROUND: Due to the lack of reliability of the medical record as an accurate source of medication history, computerized medication records have been recommended to improve medication safety. However, to our knowledge, no studies have evaluated the validity of medication profiles found in computerized medical records. The objective of our study was to determine the accuracy of a computerized medication list before and after a collaborative phamacist-physician (PharmD-MD) intervention in older veterans to improve prescribing.
METHODS: The sample included 530 primary care patients 65 years and older receiving prescriptions for >5 medications in a VA primary care clinic. A structured medication history and medical records review was performed to confirm the list of medications the patient was taking. Patients were randomized to usual care or an intervention in which therapeutic recommendations were presented to patients' primary care providers. Accuracy of the computerized medication list was assessed at baseline and 3 months and included omissions (medications not on computer list) and commissions (medications on list that were no longer being taken). Changes over time between groups were assessed using analysis of covariance (ANCOVA).
RESULTS: Patients (mean age, 74 years; 98% male) were taking a mean of 13.9 ± 5.1 medications at baseline and 13.1 ± 4.8 at 3 months; 66% were prescription, 22% over-the-counter (OTC), and 11% vitamins/herbals. At baseline, only 5% had complete agreement between the computer medication list and what the patient was taking and increased to 8% at 3 months, with no difference between the groups ($P = .37$). Rates of omissions decreased from 24% in the intervention group to 20% at 3 months, while omission rates decrease from 22% in the control group to 20% at 3 months ($P = .27$). The most frequent omissions were aspirin, vitamins/herbals, acetaminophen, and non-steroidals. Of omissions, 34% were prescription, 35% OTC, and 31% vitamins/herbals. The commission rate for the intervention group was 12% at baseline and 9% at 3 months, and for the control group was 13% at baseline and 11% at 3 months ($P = .15$). The most frequent commissions were aspirin, non-steroidals, and anti-hypertensive agents. Of commissions, 66% were prescription, 29% OTC, and 5% vitamins/herbals.
CONCLUSION: We found very few computerized medication lists to be accurate and only 4 of 5 medications being taken were on the computer list. A PharmD-MD intervention had only minimal impact on improving the accuracy of the list. Barriers to accurate medication lists should be investigated and medication databases used in research should be evaluated for accuracy.

ACCURACY OF TESTING FOR CORONARY ARTERY DISEASE IN WOMEN: A SYSTEMATIC REVIEW.
M.S. Beattie[1]; L. Metz[1]; K.E. Fleischmann[1]; D.G. Grady[1]; R.F. Redberg[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116780)*

BACKGROUND: Many studies have suggested the accuracy of testing for coronary artery disease (CAD) in women may be different compared to men. This systematic review evaluates the accuracy of exercise echocardiography (echo) and exercise myocardial perfusion imaging (MPI) in women and men. It also evaluates the test characteristics of MPI with Thallium (Tl) compared to technetium sestamibi (MIBI) imaging.
METHODS: PubMed, Cochrane, and DARE databases were searched for articles published from 1/90 to 7/03. Inclusion criteria were: 1) Cardiac cath was a gold standard, 2) Data was presented that allowed calculations of true positive, true negative, false positive, and false negative, 3) Clear definitions of positive test and positive cath were provided. Exclusion criteria were: 1) Less then 10 women were studied, 2) Testing was done exclusively after infarction, angioplasty, bypass surgery, or during acute coronary syndrome, 3) Pharmacologic agents were used as stressors. 34 authors were contacted to obtain gender-stratified data. Of these, 5 sent gender-stratified data, however 2 of these studies were excluded because they contained less then 10 women.
RESULTS: 3,389 titles were identified, 340 articles were reviewed, and 17 were included. Of these, 13 used MPI (6Tl, 5 MIBI, 2 both) and 4 used echo. The MPI studies included 888 women and 2,451 men. The echo studies included 344 women and 345 men. The table shows mean weighted positive and negative likelihood ratios (LR) with 95% confidence intervals.
CONCLUSION: Positive LR for both echo and MPI, in both men and women, varied from 1.5 to 3, differences that are not clinically significant. Negative LR, similarly, were not clinically different, and varied from 0.1 to 0.4. Verification (or referral) bias plays a large role in estimating sensitivity and specificity, decreasing sensitivity by up to 30% and increasing specificity by up to 60%. Only 2 studies controlled for this.

	T1 + LR	T1 – LR	MIBI + LR	MIBI – LR	echo + LR	echo – LR
Men	1.93 (1.51–2.46)	0.14 (.09–.22)	3.12 (1.82–5.37)	0.09 (.05–.18)	1.54* (1.20–1.98)	0.36* (.24–.53)
Women	2.32 (1.87–2.88)	0.34 (.27–.44)	2.57 (1.58–4.17)	0.33 (.22–.50)	2.95 (2.28–3.79)	0.26 (.19–.36)

*Estimates based on only 2 echo studies that stratified for gender and included men

ADHERENCE TO ANTIHYPERTENSIVE MEDICATIONS RELATED TO THERAPEUTIC CLASS AMONG ASIAN AMERICANS AND PACIFIC ISLANDERS COMPARED TO WHITES. R.P. Gelber[1]; D.A. Taira[2]; J.W. Davis[2]; T.B. Seto[3]. [1]University of Hawaii John A. Burns School of Medicine, Honolulu, HI; [2]Hawaii Medical Service Association, Honolulu, HI; [3]The Queen's Medical Center, Honolulu, HI. *(Tracking ID #115873)*

BACKGROUND: Medication adherence is a complex behavioral process, involving knowledge, motivation, environment, and resources. Research on adherence has emphasized the need to consider ethnic and cultural backgrounds when developing adherence plans. However, few studies have attempted to identify factors that are most predictive of adherence for specific racial and ethnic groups, particularly Asian Americans and Pacific Islanders (AAPI). Objectives: To assess variation in adherence related to antihypertensive therapeutic class among Japanese (n = 13,836), Filipino (n = 3,818), Chinese (n = 2,376), Korean (n = 469), and part-Hawaiian (n = 3,924) patients, as compared to whites (n = 4,144), and to examine factors associated with adherence in these patients.
METHODS: The study population was comprised of 28,567 adult patients enrolled in a large health plan in Hawaii (July 1999–June 2003), who had a diagnosis of hypertension and had filled at least one prescription for an antihypertensive medication. Members with antihypertensive medication in their possession at least 80% of the time were considered adherent. Multivariable logistic regression models were used to identify factors associated with adherence and to compare adherence across ethnic groups.
RESULTS: Overall adherence rates were less than 65% among all ethnic groups. After adjustment for patient age, gender, morbidity level, health plan type, isle of residence, comorbidities, and year of treatment, Japanese patients were more likely than whites to adhere to antihypertensive therapy [OR = 1.2 (1.1–1.3)], whereas Filipino [OR = 0.65 (0.60–0.70)], Korean [OR = 0.81 (0.69–0.95)], and Hawaiian [OR = 0.86 (0.80–0.96)] patients were less likely to adhere. These results were consistent across therapeutic class, suggesting that observed differences were related to factors other than therapeutic class. For all racial and ethnic groups, beta blockers and calcium channel blockers had the highest adherence rates, followed by ACE inhibitors and angiotensin receptor blockers. Members taking thiazide diuretics had the lowest adherence rates. Other factors associated with lower adherence included younger age, high morbidity level, living in remote areas, and history of congestive heart failure.
CONCLUSION: Our findings of substantial disparities among AAPI sub-groups highlight the need to examine sub-groups separately. Further study is needed to determine appropriate interventions, particularly for Filipino, Korean, and Hawaiian patients and to examine the impact of non-adherence on health and economic outcomes.

AFRICAN-AMERICAN PATIENT'S REASONS FOR UNDERGOING OR REFUSING ELECTIVE KNEE/HIP JOINT REPLACEMENT SURGERY. J.P. Lopez[1]; K. Kwoh[1]; S. Ibrahim[2]. [1]University of Pittsburgh, Pittsburgh, PA; [2]Veterans Administration, Pittsburgh, PA. *(Tracking ID #117177)*

BACKGROUND: Knee or hip osteoarthritis (OA) is a leading cause of disability in the elderly and total joint replacement is an effective treatment option for end-stage disease. There is marked racial disparity in the utilization of this effective treatment option. Racial variations in expectations and perceptions regarding joint replacement may contribute to this disparity. We conducted 8 focus group interviews to examine African-American (AA) patient's perceptions and expectations regarding reasons for undergoing or refusing total joint replacement.
METHODS: Elderly AA men and women with chronic hip/knee pain attending a community-based primary care clinic in inner city Cleveland were asked about their perceptions and expectations regarding care for their hip/knee pain. Each 90-minute focus group session was attended by 8–12 invited participants, and was led by a trained moderator and AA facilitator. The sessions were audiotaped, transcribed and 2 independent analysts coded the transcripts for thematic structure using NUD*IST® software. The main themes were tabulated, and actual text was analyzed to record specific nodes that emerged from each theme.
RESULTS: There were 61 participants; mean age was 63.5 years (range 49–77). The mean years of education was 13 (range 10–22); 75% were Protestant, 12 % were from other Christian denominations and 13% were non-Christian; 49% were married; 48% reported annual household income of less than or equal to $20,000; 72% of the sample were women. Major reasons patients cited for having joint replacement were: 1) all other treatment options were exhausted; 2) to relieve pain; 3) to increase mobility; 4) knew of someone else who had successful joint replacement surgery; 5) need to replace worn out previous knee/hip prosthesis. Major reasons cited for refusal to undergo the procedure if offered included: 1) fear of surgery in general, and of being cut; 2) personal experience with others who had unsuccessful surgeries; 3) desire to try other treatment options first; 4) unsatisfactory experience during rehabilitation from previous joint replacement surgery; 5) no desire for repeat a procedure after the previous prosthesis had worn out.
CONCLUSION: Elderly AA men and women with chronic knee/hip arthritis pain expressed specific reasons for and against joint replacement that should be addressed in clinical decision-making regarding this treatment option.

AFRICAN-AMERICANS' PARTICIPATION IN HIV RESEARCH: IF YOU ASK, THEY WILL SAY YES. M. Garber[1]; G. Switzer[2]; B. Hanusa[2]; R.M. Arnold[2]. [1]University of Pittsburgh Medical Center, Pittsburgh, PA; [2]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #117079)*

BACKGROUND: Despite the increasing incidence of HIV infection in the African-American population, national participation rates of African-Americans in HIV treatment trials remain low. This study assessed factors associated with research participation among HIV-infected African-Americans at the Pittsburgh AIDS Center for Treatment (PACT), an ambulatory care clinic within the University of Pittsburgh Medical Center.
METHODS: In December 2002, 286 African-American patients were registered at PACT. Within the period July to November 2003, 228 African-American patients were seen at the clinic and 200 (87%) of them were recruited to complete a one-time only, anonymous questionnaire. The survey, which asked about actual participation and willingness to participate in future HIV research, was developed after reviewing the literature and identifying variables influencing research participation; it was reviewed by content experts and a focus group of patient volunteers. Univariate 2 and multivariate polychotomous logistic regression were done using Stata 7.0. (Stata Corporation, TX).
RESULTS: Of 203 patients approached, 2 had dementia and 1 declined participation. 56% were male and 78.5% were between ages 25–50. 63% had achieved trade school or some college education and 44% had Medicaid. 155 (78%) had known about their disease for over 2 years and 21% were identified as having AIDS based on CD4 count; 122 (61%) had been registered at our clinic for over 2 years. Of the 200 respondents, 114 (57%) had been asked to participate in medical research. 98 (86%) of those asked, agreed to participate and 80 (70%) enrolled in a research study. 55 (69%) of enrollees felt good about contributing to research and 65 (81%) would participate in future studies. Of patients who agreed but did not participate, 36% cited time constraints and 29% reported drug side effects as deterrents. Univariate analyses showed that patients who had known about their HIV infection for 2 years, had been at PACT for 2 years, and with higher levels of education, were significantly more likely to enroll in research. Multivariate analyses revealed that only length of time at PACT was significantly associated with enrollment in research. Of 86 patients who had never been asked to participate in research, 59% said they would be willing to participate in future research. Multivariate analyses indicated that prior research participation ($P = .023$) and a commitment to staying in the Pittsburgh area ($P = .046$) were significantly related to willingness to participate in future research.
CONCLUSION: The major barrier to participating in research among HIV-infected African-Americans at a university-based clinic is never having been asked.

ALCOHOL AND FOLATE INTAKE AND BREAST CANCER RISK. C. Duffy[1]; A.R. Assaf[1]; M.G. Cyr[1]; G. Burkholder[1]; E. Coccio[2]. [1]Brown University, Providence, RI; [2]Memorial Hospital, Pawtucket, RI. *(Tracking ID #116920)*

BACKGROUND: Research suggests breast cancer risk is higher in postmenopausal women who consume alcohol. Folate may modulate the increased risk of breast cancer in alcohol drinkers via its role in DNA replication and cell division. However, results of studies have differed in the alcohol intake at which folate modulates risk. The relationship among alcohol, folate and breast cancer risk needs to clarified. We sought to examine this relationship in a more ethnically and socio-economically diverse group of women.
METHODS: The observational study (OS) of the Women's Health Initative (WHI) enrolled 93,724 postmenopausal women aged 50–79 at 40 clinical centers throughout the US. Women were eligible to participate if they were postmenopausal, unlikely to move within three years, and not enrolled in any other clinical trial. Total folate was calculated from a modified Block food frequency questionnaire (FFQ), and reported supplement use, both obtained at baseline. Alcohol intake was determined from the same FFQ and converted into grams per day. Breast cancer cases were reported on a yearly medical update form, and were centrally adjudicated. We examined the relationship between alcohol and breast cancer by multivariate logistic regression, controlling for known or suspected risk factors (age, family history, reproductive history, use of hormone therapy, breast biopsies, breast feeding, income, education, BMI, tobacco, and physical exercise). We then tested for an interaction between alcohol and folate. SAS version 7.0 was used for all analysis.
RESULTS: The mean age of women in the OS was 63.5 years, 83% were non-Hispanic white and 17% were of other ethnic/racial groups. Sixty-six percent were currently married, while 41% had at least a college degree. Seventeen percent of women had incomes less than $20,000 per year. The median alcohol intake was 5.6 g/day and average baseline folate intake was 446 mcg/day. There were 1783 cases of breast cancer in just over 5 years of follow-up. In the adjusted model with non-drinkers as the reference, women consuming <4.33 g alcohol/d had an OR = 1.07 (0.94, 1.21), between 4.33 and 15 g alcohol/d an OR = 1.18 (1.02, 1.37) and for >15 g alcohol/d an OR = 1.26 (1.07, 1.48).We did not find a relationship between folate and breast cancer risk in our adjusted model, and there was no interaction between alcohol and folate.
CONCLUSION: In this large, ethnically and socio-economically diverse cohort of postmenopausal women, moderately low level consumption (3–7 drinks/week) was associated with increased breast cancer risk. We did not however, find evidence for folate modulating this relationship. Increasing folate intake in women who consume moderately low levels of alcohol may not reduce risk of breast cancer.

ALCOHOL BRIEF INTERVENTION IN PRIMARY CARE: A SYSTEMATIC REVIEW. N. Bertholet[1]; J. Daeppen[1]; M. Fleming[2]; V. Wietlisbach[3]; B. Burnand[4]. [1]Alcohol Treatment Center, Lausanne, Switzerland; [2]University of Wisconsin-Madison, Madison, WI; [3]Institute of Social and Preventive Medicine, University of Lausanne, Lausanne, Switzerland; [4]Institute of Social and Preventive Medicine, Lausanne, Switzerland. *(Tracking ID #115583)*

BACKGROUND: The purpose of the present review was to evaluate the evidence of the effectiveness of brief interventions aimed at reducing chronic alcohol use and harm related to alcohol consumption, conducted among individuals actively attending primary care but who were not seeking help for alcohol problems.

METHODS: Randomised trials reporting at-least one outcome related to alcohol consumption and conducted in outpatients who were actively attending primary care centre or provider were selected using Cochrane Central Register of Controlled Trials, MEDLINE, PsycINFO, ISI Web of Science, ETOH database, and bibliographies of the retrieved references and previous reviews. Selection and data abstraction were performed independently and in duplicate. We assessed validity of the studies and performed a meta-analysis for studies reporting alcohol consumption at 6 or 12 months follow up.
RESULTS: We included 24 reports, reporting results of 19 trials and including 5,639 individuals. Seventeen trials reported a measure of alcohol consumption, eight reporting a significant effect of intervention. The meta-analysis showed a mean pooled difference of −41 (95% CI: −54; −28) g of pure ethanol per week in favour of brief intervention group. Evidences for other outcomes (laboratory values, health related quality of life, morbidity and mortality, health care utilisation) were inconclusive.
CONCLUSION: Our systematic review indicated that brief intervention might be effective for both men and women in reducing alcohol consumption compared to a controlled intervention, in a primary health care population. The meta-analysis confirmed the reduction in alcohol consumption at 6 and 12 month. Further research should precise the components of effectiveness of brief intervention and the evidence of effects on morbidity, mortality, and quality of life related outcomes.

ALCOHOL CONSUMPTION AND THE PREVALENCE OF THE METABOLIC SYNDROME IN WHITE, BLACK, AND MEXICAN AMERICANS. M.S. Freiberg[1]; H.J. Cabral[2]; R.S. Vasan[3]; R.C. Ellison[4]. [1]Boston University School of Medicine, Boston, MA; [2]Boston University School of Public Health, Boston, MA; [3]Framingham Heart Study and Boston University School of Medicine, Framingham, MA; [4]Boston University School of Medicine and Public Health, Boston, MA. *(Tracking ID #116836)*

BACKGROUND: While alcohol has been known to favorably influence select lipid components, the association between alcohol consumption and the metabolic syndrome (MBS) has not been adequately investigated.
METHODS: We analyzed data on 8,198 subjects from the Third National Health and Nutrition Examination Survey (NHANES III). Eligible subjects fasted ≥8 hours, were evaluated for all components of the MBS, and answered questions pertaining to alcohol consumption as well as potential confounders. Subjects were diagnosed with the MBS if they had ≥3: abdominal waist circumference >102 cm in men, 88 cm in women; serum triglycerides ≥150 mg/dL, serum high density lipoprotein cholesterol <40 mg/dL in men, <50 mg/dL in women; blood pressure ≥130/85 mmHg or taking blood pressure medication; or fasting serum glucose ≥110 mg/dL or taking antidiabetic medication. Alcohol consumption was defined as: (1) currently drinking (≥1 drink per month) or not currently drinking (<1 drink per month); (2) the number of alcoholic drinks per month of any type of alcohol categorized into not currently drinking, 1–<20, 20–<50, or ≥50 drinks per month; and (3) the number of beverage-specific drinks per month categorized into not currently drinking, 1–<20, or ≥20 drinks per month. Multiple logistic regression analyses were performed to estimate the odds ratio (OR) for the prevalence of the MBS in subjects consuming alcohol as compared to current non-drinkers. SUDAAN was used to obtain proper variance estimates given the NHANES III complex sampling design.
RESULTS: After adjustment for age, sex, race/ethnicity, education, income, tobacco use, physical activity, and diet, subjects who consumed alcoholic beverages ≥1–<20, 20–<50, and ≥50 drinks per month had OR for the prevalence of the MBS of 0.66, 0.34, 0.33 respectively as compared with current non-drinkers ($P < .05$ for all values). The OR for prevalent MBS was particularly reduced for beer and wine drinkers as compared to current non-drinkers. The association of alcohol intake ≥20 drinks per month with the MBS was consistent across race/ethnicities, but was most striking in white men and women (OR = 0.35 and 0.22 respectively $P < .05$). Alcohol consumption was significantly associated with a lower OR for the prevalence of 3 components of MBS: low serum HDL cholesterol, serum triglycerides, and high waist circumference ($P < .05$).
CONCLUSION: Moderate alcohol consumption, especially beer and wine, is associated with a lower prevalence of the metabolic syndrome and with favorable influence on serum lipids and waist circumference. The observed association is strongest in white individuals. Additional investigations are warranted to confirm these findings.

ALCOHOL COUNSELING REFLECTS QUALITY OF PRIMARY MEDICAL CARE. R. Saitz[1]; N.J. Horton[2]; J.H. Samet[1]. [1]Boston University, Boston, MA; [2]Smith college, Northampton, MA. *(Tracking ID #102573)*

BACKGROUND: Some primary care physicians do not screen for or address alcohol problems because they believe patients do not want to discuss their alcohol use. We hypothesized that 1) receipt of alcohol counseling is associated with higher patient-perceived quality of primary medical care, and that 2) quality of primary care is associated with alcohol consumption.
METHODS: We studied a prospective cohort of adult hazardous drinkers in an urban academic primary care practice. All were subjects in a randomized trial testing the provision of physicians with patients' alcohol screening results. Trained research staff interviewed hazardous drinkers (current use of risky amounts or a positive response to a CAGE alcohol screening question) after a visit with their primary care physician. They were asked if they had received alcohol counseling (advice on safe drinking limits, to cut down or abstain, or referral), and they were assessed on 3 domains of primary care performance (of 7) from the Primary Care Assessment Survey (PCAS)—Communication, Comprehensiveness (contextual knowledge of patient), and Trust. Six months later subjects completed the 30-day Timeline Follow-back interview to assess alcohol consumption. Multivariable longitudinal regression models were used to test the associations between 1) counseling and the 3 PCAS scales (possible range 0–100), and then 2) between PCAS scales and consumption, adjusting for clustering within physician, sex, race, education, comorbidity, randomized group, level of physician training, having met the physician previously, drinks per drinking day and alcohol problems.
RESULTS: Of 312 subjects enrolled, 301 reported information on receipt of alcohol counseling during the visit; 288 subjects who saw 40 physicians completed the PCAS measure of quality of primary care. Subjects' (n = 288) characteristics were: mean age 43; 61% men; 57% black; 77% saw a faculty physician and 71% had seen the physician previously; 132 (46%) reported alcohol counseling. Subjects drank on average 6 drinks per drinking day; 223 had assessment of consumption 6 months later. Adjusted mean PCAS quality scores were higher in patients who had received alcohol counseling: Communication 85 vs. 76, $P < .0001$, Comprehensiveness 67 vs. 59, $P < .01$, Trust 79 vs. 77, $P = .06$. Quality of primary care was not associated with odds of hazardous drinking 6 months later (adjusted odds ratio 1.0 for all 3 scales).
CONCLUSION: Alcohol counseling by primary care physicians is associated with higher quality care from the patient's perspective. Quality of care was not associated with subsequent drinking. Nonetheless, these results indicate that screening and intervention for alcohol problems can enhance the quality of primary medical care.

AMBULATORY MANAGEMENT OF HYPERCHOLESTEROLEMIA IN PATIENTS WITH ATHEROSCLEROSIS: DIFFERENCES BY SEX AND RACE. S.D. Persell[1]; S. Maviglia[2]; D.W. Bates[2]; J.Z. Ayanian[3]. [1]Northwestern University, Chicago, IL; [2]Brigham and Women's Hospital, Boston, MA; [3]Harvard Medical School, Boston, MA. *(Tracking ID #114034)*

BACKGROUND: Women and black patients with cardiovascular disease receive fewer invasive procedures. Less is known about sex and race differences in risk-factor management. We assessed outpatient cholesterol management and control by sex and race.
METHODS: We performed a 1-year observational cohort study of the care received by 243 patients with coronary heart disease, cerebrovascular disease, or peripheral vascular disease and a low-density lipoprotein cholesterol (LDL-C) >130 mg/dl receiving primary care at 10 general medicine clinics affiliated with an academic medical center. We analyzed 1082 office visits eligible for cholesterol management. Main outcome measures were intensification of cholesterol lowering medication or LDL-C monitoring at clinic visits, and attainment of LDL-C <130 mg/dl within 1 year.
RESULTS: Medication intensification or LDL-C monitoring occurred at 31.2% of women's and 38.5% of men's visits, ($P = .01$), and at 37.3% of black and 31.7% of white patients' visits ($P = .09$). Independent predictors of these actions included female sex (adjusted odds ratio [OR], 0.71, 95% CI, 0.50–1.00), preceding LDL-C (OR per 10 mg/dL, 1.17, 95% CI, 1.10–1.24), medication non-adherence (OR, 1.81, 95% CI, 1.25–2.61), having a new clinical problem addressed (OR, 0.47, 95% CI, 0.35–0.63), and seeing a primary care clinician other than the patient's primary care physician (OR, 0.12, 95% CI, 0.06–0.25). Visits of black patients were more likely to result in these actions, OR 1.20 (0.81–1.78), but this difference was not statistically significant. In one year, an LDL-C <130 mg/dl was achieved less often for women than men (41% vs. 61%, $P = .003$), and for black patients than white patients (39% vs. 58%, $P = .01$). Adjustment for clinical characteristics and cholesterol management attenuated the relationship between having LDL-C <130 mg/dl and sex (OR women vs. men, 0.58, 95% CI, 0.29–1.13) but not race (OR black vs. white, 0.40, 95% CI, 0.19–0.84).
CONCLUSION: In this high-risk population with uncontrolled LDL-C, women received less intense outpatient cholesterol management than men. For black and white patients management was similar. Women and black patients were less likely than men and white patients, respectively, to achieve moderate LDL-C control after 1 year. Physicians' outpatient cholesterol management decisions may account for some of the disparity in cholesterol control between women and men but do not explain differences between black and white patients.

AN ASSESSMENT OF BREAST CANCER RISK CONDUCTED AT THE TIME OF SCREENING MAMMOGRAPHY. R.C. Burack[1]; N. Patel[2]; J. George[1]; R. Everson[1]. [1]Wayne State University, Detroit, MI; [2]Karmanos Cancer Institute, Detroit, MI. *(Tracking ID #117308)*

BACKGROUND: The Breast Cancer Prevention Study demonstrated that tamoxifen use was associated with a 47% breast cancer risk reduction among women whose Gail model 5-year breast cancer risk was 1.7%. However, identification of these higher risk women is a challenge in the primary care setting. As an alternative, we assessed the feasibility of conducting Gail model risk assessment during mammography visits.
METHODS: Breast cancer risk factor information was collected at the time of mammography visits. 5-year breast cancer risk was estimated for each woman based on the Gail model risk algorithm. The number of breast cancers expected and "prevented" over 5 years among higher risk women was estimated assuming a 47% risk reduction with chemoprevention.
RESULTS: Among 18,817 visitors, 14,174 (8,568 African-American [AA] and 5,506 White) women presented for screening mammography. 5.3% of AA and 31.0% of White women had Gail scores 1.7%. The "number needed to screen" (NNS) to identify higher-risk women is <50 for all age groups of AA women and <10 for all White sub-groups. However, the "number needed to screen and treat" (NNT) with tamoxifen is substantially higher for all groups.
CONCLUSION: The observed age-ethnicity differences in Gail score risk reflect variation in the distribution of risk factors and breast cancer incidence. Risk

assessment at the time of mammography offers an effective method to identify higher-risk women. This information can then be shared with the referring primary care provider who can use it in support of risk-related counseling.

	Age, years	n	Gail score %> 1.7	NNS (screen)	Chemoprevention among all screened n cancers expected	n "saved" (47% RRR)	n "saved" per 1000	NNT (treat)
AA	40–49	3,070	2.3	44	1.8	0.8	0.3	3,700
	50–59	3,242	4.2	24	3.5	1.7	0.5	1,948
	60–69	2,256	10.9	10	6.6	3.1	1.4	723
	Sub-total	8,568	5.3	19	11.9	5.6	0.7	1,526
White	40–49	2,139	15.0	7	8.0	3.8	1.8	567
	50–59	2,168	30.9	4	17.4	8.2	3.8	265
	60–69	1,199	59.8	2	19.4	9.1	7.6	132
	Sub-total	5,506	31.0	4	44.8	21.1	3.8	262

AN ASSESSMENT OF MEDICAL STUDENT KNOWLEDGE AND LEARNING ABOUT THE HEALTH CARE SYSTEM. J.R. Agrawal[1]; J. Huebner[2]; J. Hedgecock[3]; A. Sehgal[4]; P. Jung[5]; S. Simon[6]. [1]Brigham and Women's Hospital, Cambridge, MA; [2]University of Washington, Seattle, Seattle, WA; [3]American Medical Student Association, Reston, VA; [4]Case Western Reserve University, Cleveland, OH; [5]University of Maryland College Park, College Park, MD; [6]Harvard Medical School, Boston, MA. *(Tracking ID #116271)*

BACKGROUND: The health care delivery system and its problems remain important issues for future physicians. How well medical students learn about these topics is not well known.
METHODS: We conducted a mail survey among a national probability sample of first-fourth-year medical students in the United States. We received responses from 295 first-year students (57%) and 475 fourth-year students (56%).
RESULTS: When asked where the US ranked in the 2000 World Health Organization's ranking of 191 nations based on health systems performance, only 11% of respondents correctly identified the answer (near 40th place), while 89% overestimated US performance in this assessment. 32% of respondents incorrectly asserted that the US had the highest life expectancy of any nation, and over one-third (34%) reported (incorrectly) that the US had the lowest infant mortality rate. Nearly all were aware of the adverse health consequences of uninsurance and the fact that the numbers of uninsured have risen over the past decade, but 40% of both first- and fourth-year students underestimated the numbers of uninsured individuals in the US. 27% were not aware that the US has the highest health cost per-person of any nation, and 61% were not aware that the administrative costs of private health insurance exceed that of Medicare. Of note, fourth-years did not perform any better than first-years on knowledge questions. 96% of all respondents felt that knowledge of health policy is important to their career as a physician, and over half expressed dissatisfaction with their teaching on the subject in medical school, with fourth-years more significantly more likely to express this dissatisfaction than first-years (57% vs. 49%, $P < .05$). 89% of all respondents wanted increased exposure to health policy with fourth-years significantly more likely to favor additional required medical school coursework (67% vs. 48%, $P < .05$).
CONCLUSION: Our study suggests that medical students demonstrate some gaps in basic knowledge concerning the US health care system particularly in the areas of cost, finance, quality, and access, and moreover that these deficiencies are not addressed in the medical school classroom.

AN EMPIRICALLY DERIVED TAXONOMY OF FACTORS AFFECTING PHYSICIANS' WILLINGNESS TO DISCLOSE MEDICAL ERRORS. L.C. Kaldjian[1]; E.W. Jones[1]; T. Tripp-Reimer[1]; S.L. Hillis[1]; G.E. Rosenthal[1]. [1]University of Iowa, Iowa City, IA. *(Tracking ID #116005)*

BACKGROUND: Voluntary disclosure of medical errors by physicians is necessary if patient safety is to improve, but the factors that motivate or impede disclosure are complex. We employed qualitative methods to develop a taxonomy of factors that affect physicians' willingness to disclose errors.
METHODS: A MEDLINE search of literature from 1975 to 2003 was performed to identify factors that facilitate or impede disclosure. Articles were included if they had a first author, focused on the clinical experience of physicians, and discussed error disclosure or reporting. 20% of the articles were analyzed for inter-rater and intra-rater reliability for classifying factors identified in individual articles. We then conducted 5 exploratory focus groups (medical students, interns, residents, academic and community physicians) to identify additional factors and vernacular expressions. Factors identified by the focus groups were combined with those from the literature review and then reduced by aggregating similar factors together in order to facilitate pile sorting that was performed by 20 participants. Pile sorting results were subjected to hierarchical cluster analysis and a scheme of 8 clusters was selected. Pile-sorting participants were then invited to one of 3 focus groups to validate the selected cluster scheme.
RESULTS: 606 articles underwent full review and 316 articles met inclusion criteria, revealing 93 factors (35 beliefs and values and 58 fears and barriers). The 5 exploratory focus groups identified 16 additional factors, which were added to the results of the literature review for a total of 109 items. To facilitate pile sorting, similar factors were aggregated together, reducing the number of factors for sorting from 109 to 61. Cluster analysis of the item piles led to the selection of an 8-cluster scheme. The process of validation of this scheme led to relocation of 4 items to different clusters and dismissal of 2 items (1 redundant and 1 refractory to categorization). The 8 domains of the final taxonomy (with the number of items in each domain in parentheses) are as follows. Factors that facilitate disclosure: Respect for Patients (4), Personal Integrity (13), Improving Professional Relationships and Education (5), Improving Care of Patients and Communities (6). Factors that impede disclosure: Attitudinal Barriers (8), Uncertainties (4), Helplessness (8), Fears and Anxieties (8). For example, the domain "Personal Integrity" contained: accountability, duty, courage, integrity, altruism, humility, compassion, following conscience, doing the right thing, golden rule, alleviating guilt, pursuing forgiveness, and religious faith or spiritual beliefs. The domain "Uncertainties" contained: uncertainty about how to disclose errors, uncertainty about which errors should be disclosed, causal uncertainty regarding the causes of adverse events, and disagreements about errors between supervisors and trainees.
CONCLUSION: Factors affecting the voluntary disclosure of medical errors are many and complex. Our empirically derived taxonomy describes this complexity and organizes it into 8 domains, providing a conceptual framework for measuring the impact different factors may have on disclosure of errors to health systems, fellow professionals, and patients; it is relevant to patient safety, medical education, and professionalism and can help design voluntary error reporting systems and educational interventions.

AN EVALUATION OF THE ABUSE ASSESSMENT SCREEN, A BRIEF SCREENING TOOL FOR DOMESTIC VIOLENCE, IN AN URBAN GENERAL MEDICINE POPULATION. C. Foldes[1]; D.R. Korenstein[2]; J. Wisnivesky[2]; A. Frieman[2]; T. McGinn[2]; A.L. Siu[2]. [1]Baylor College of Medicine, Houston, TX; [2]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #115020)*

BACKGROUND: The prevalence of domestic violence (DV) has been measured in multiple medical settings, but has not been well studied in a predominately middle-age Hispanic and African American urban general medicine population. Physicians rarely screen for DV, often citing time as a limiting factor. This study has three main objectives (1) to evaluate the performance characteristics of the Abuse Assessment Screen (AAS), a validated 4 item screening tool for lifetime DV, (2) to determine the prevalence of lifetime DV in an older multi-racial urban general medicine population, and (3) to measure predictors of lifetime DV.
METHODS: In this cross-sectional study, the AAS was administered in English and Spanish to 305 randomly selected women attending a general medicine practice. The prevalence of lifetime DV was measured using the AAS. A positive response to 1 question is considered a positive screen for DV. The performance characteristics of the AAS were also measured. Logistic regression analysis was used to estimate adjusted odds ratios (OR) and 95% confidence intervals for the factors associated with lifetime DV.
RESULTS: Participant ages ranged from 21–85 years (median 52). 43.9% were Hispanic, 40.7% were African American, and 7.9% were Caucasian. Prevalence of lifetime DV using the AAS was 45.9% (95% CI 40.2–51.7). A DV history was associated with having a partner with a substance abuse history [OR 5.6 (95% CI 3.1–10.2)], a mother with a DV history [OR 3.3 (95% CI 1.9–5.9)], poorer self-perception of health [OR 2.1 (95% CI 1.1–3.9)], and not being married or widowed [OR 1.9 (95% CI 1.04–3.6)]. Speaking primarily Spanish was protective [OR 0.49 (95% CI 0.2–1.0)]. The sensitivity of the first question of the AAS, AAS#1, compared to the entire AAS was 97.9% (95% CI 93.9–99.6%).The likelihood ratio (LR-) for a negative AAS#1 is 0.021.
CONCLUSION: In this study of predominately middle-age Hispanic and African American women, the prevalence of lifetime abuse is similar to other studies in general medicine settings, 45.9%. We found AAS#1 to be highly sensitive and specific. To our knowledge this is the first evaluation of how one question performs to detect lifetime DV. Using a lifetime prevalence of DV of 45.9% and the LR- of 0.021, the post-test probability of a negative response to AAS#1 is 1.8%, essentially ruling out a history of DV. This question, "Have you ever been emotionally or physically abused by someone important to you?", could easily be incorporated into a general medicine provider's practice.

AN EVALUATION OF THE VA COLORECTAL-CANCER SCREENING PERFORMANCE MEASURE: DOES IT MEASURE QUALITY OF CARE? L.C. Walter[1]; N.P. Davidowitz[1]; P.A. Heineken[1]; K.E. Covinsky[1]. [1]VA Medical Center, San Francisco, CA. *(Tracking ID #103221)*

BACKGROUND: The Department of Veterans Affairs (VA) manages the largest health care system in the U.S., and the Institute of Medicine has recommended many principles of VA quality measurement be applied to the U.S. health care system as a whole. VA measures quality of care by calculating scores on several performance measures, such as colorectal-cancer (CRC) screening. The objective of this study was to determine whether compliance with the national VA CRC performance measure reflects quality medical care.
METHODS: We reviewed medical records of all 229 patients audited for CRC screening in 2002 at a VA facility by national VA auditors. We abstracted data to calculate the CRC performance measure (defined by the VA Technical Manual as having fecal occult-blood testing within 1 year, sigmoidoscopy within 5 years, or colonoscopy within 10 years among patients aged ≥52 yeas with life expectancies >6 months). We determined the frequency in which there were valid reasons for not screening patients, which included poor prognosis (Charlson comorbidity-age combined risk score ≥4) and patient refusal.

RESULTS: The mean age of audited patients was 69 years (35% ≥75 years). Auditors calculated a CRC screening rate of 58%. This score indicated poor quality of care because it was less than the national goal of 65%. However, 69% of patients had a Charlson comorbidity-age combined risk score ≥4, which is associated with >50% chance of death within 10 years and illustrated by such patients as an 89 year-old woman with severe dementia, a 94 year-old man with metastatic prostate cancer, and a 76 year-old man on dialysis who died prior to the audit date. Of the 97 patients counted as receiving poor quality care for not being screened, 37% declined screening, 10% failed to go to scheduled tests, and 9% had documentation by clinicians that screening was contraindicated. Auditors missed screening documentation in 21%. Of the 132 "screened" patients, 42% had tests for diagnostic purposes.
CONCLUSION: The VA CRC performance measure is a poor indicator of the quality of medical care. Many audited patients classified as receiving poor quality care for not being screened had valid reasons, such as poor prognosis or patient refusal, and screening these patients would have represented poor quality care. Many patients classified as receiving good quality of care had CRC testing for diagnostic purposes rather than because of screening recommendations. The VA should consider significantly changing the CRC performance measure since it classifies high testing rates as good care regardless of who received it, why it was done, or whether the patient wanted it.

AN EVIDENCE-BASED MEDICINE JOURNAL CLUB: IMPACT ON EBM KNOWLEDGE OF RESIDENT PRESENTERS AND PARTICIPANTS. D.A. Feldstein[1]; R. Gangnon[1]. [1]University of Wisconsin-Madison, Madison, WI. *(Tracking ID #116300)*

BACKGROUND: Evidence-Based Medicine (EBM) is a required component of Internal Medicine Residencies' curriculum. The "best" method of teaching EBM has not yet been identified. The objectives of most residency programs' EBM Journal Clubs (JC) are to teach critical appraisal skills and keep up with current literature. JCs have been shown to improve biostatistic and critical appraisal skills, but have not been evaluated for improving broader EBM knowledge including asking clinical questions and searching the literature. The objectives of this study are to: 1) evaluate the effect of an EBM JC on residents' EBM knowledge using a knowledge assessment test; and 2) evaluate the effect of level of training and degree of participation in JC on residents' change in EBM knowledge.
METHODS: In August of 2001 the University of Wisconsin Internal Medicine Residency Journal Club was modified to incorporate a comprehensive EBM curriculum. The JC is a twice-monthly conference comprised of two components. During the first 40 minutes a PGY-3 presents a clinical scenario followed by a clinical question, search strategy, critical appraisal of a retrieved article and how to apply the evidence in patient care. During the second portion of the Journal Club a faculty member presents a brief EBM core topic in an interactive format. Residents' EBM knowledge was assessed by a 29 question multiple choice test developed to evaluate the implementation of this new EBM curriculum: the test includes questions about asking clinical questions, search strategies, critical appraisal, interpreting trial results, and study types. PGY-1, PGY-2 and PGY-3 residents took the EBM knowledge assessment test in June of 2001 prior to the implementation of the new JC and again in June of 2002.
RESULTS: Nine PGY-3s who were presenters showed weak evidence of improvement in EBM knowledge with a mean baseline score of 14.3 out of 29 (95% CI 9.9 to 18.7) and a mean increase of 5.0 correct answers (CI 0.0 to 10.0, $P = .08$). 23 PGY-1s and 23 PGY–2s who were participants showed no evidence of improvement with a mean change of –0.3 (CI –1.9 to 1.3), and 1.3 (CI –1.5 to 4.1), respectively.
CONCLUSION: An EBM JC that incorporates didactic teaching and an EBM curriculum improved the EBM knowledge of presenters at JC. However, this format did not appear to improve participants' (PGY-1 or PGY-2s') EBM knowledge. Because previous studies have shown that workshops can change critical appraisal skills, we plan to add a half-day EBM workshop during the PGY-2 year and retest for improvement after this intervention. We will also evaluate other residency teaching venues to reinforce the EBM curriculum.

AN EXPLORATION OF THE INTERACTION OF RATIONING AT THE PROVIDER AND SYSTEM-WIDE LEVELS. S. Hurst[1]; R. Forde[2]; D. Pegoraro[3]; A. Perrier[4]; S. Reiter-Theil[5]; A. Slowther[6]; M. Danis[7]. [1]Centre Medical Universitaire, Geneva, Switzerland; [2]The Norwegian Medical Association, Oslo, ; [3]Fondazione Lanza, Padova, ; [4]Geneva University Hospital, Geneva, ; [5]Universitaet Basel, Basel, ; [6]Ethox Institute of Health Sciences, Headington, ; [7]National Institutes of Health, Bethesda, MD. *(Tracking ID #116032)*

BACKGROUND: Limited heath care resources are a ubiquitous reality that have been studied at the organizational level and at the level of the individual clinician. Yet little research has focused on the interactive effects of rationing at these two levels.
METHODS: We developed a survey instrument to examine the frequency, criteria and strategies used of bedside rationing, and the perceived availability and equity of access to resources in the health care system. Content validity was assessed through expert assessment and scales were tested for internal consistency reliability. The questionnaire was translated into Norwegian, and back translated to English to assess accuracy. We administered the survey instrument to general internists in Norway. Data were analyzed using descriptive statistics and correlations were assessed by Spearman's rank correlation.
RESULTS: Scales for bedside rationing, rationing criteria, perceived scarcity, perceived equity were acceptably reliable (Cronbach's alpha = .84, .79, .82, .62 respectively). Survey respondents (N = 127) ranged in age from 27–74, were predominantly male (87%), and were largely outpatient-based (79%). Although only 31% of physicians agreed that they should ration, 85% reported that they did ration in their practices, with time being the most frequently rationed resource. Most frequent strategies for rationing expensive resources were explanation to patients (89%), substitution of less expensive options (82%), refusal of requests (81%), and delay of interventions (71%). All respondents perceived some resources as scarce with the most prominent being: access to nursing home, mental health services, and rehabilitation for stroke. Respondents witnessed adverse outcomes from rationing infrequently, but a small minority of respondents had encountered severe adverse events: death (17%) or permanent disability (5%). While 96% of respondents thought everyone in Norway should have equal access to needed medical services and thought they were given enough means to treat their patients according to their best interest (74%) and fairly (76%) , 55% thought access was not equal. Frequency of rationing by clinicians was correlated with perceived scarcity of resources (Spearman's rho, $P = .000$).
CONCLUSION: Through the development of a survey instrument to examine rationing at the provider and health system levels, we have observed a relationship between provider rationing and perceived system-wide scarcity. Results from Norway, which provides universal health insurance, may serve as a benchmark for studies in other countries.

AN OBJECTIVE ASSESSMENT OF THE EFFECTIVENESS OF AN EBM FACULTY DEVELOPMENT PROGRAM ON CLINICIANS' KNOWLEDGE. D.A. Feldstein[1]; K.M. Hla[1]; C.L. Gjerde[1]; B.M. Anderson[1]; P.K. Kokotailo[1]. [1]University of Wisconsin-Madison, Madison, WI. *(Tracking ID #116570)*

BACKGROUND: Community physician preceptors are increasingly responsible for teaching evidence-based medicine (EBM) to students. Primary care community physicians often do not have a good understanding of EBM concepts and do not incorporate EBM into their teaching. The Primary Care Faculty Development Program (PCFDP) teaches EBM to practicing clinician preceptors. The goal of this yearlong program is to make the participants proficient in using and teaching EBM. We previously determined efficacy of the program by participants' self-assessments of pre- and post-program EBM skills. In the few studies assessing practicing physicians' improvement in EBM skills after an educational intervention only one major study has looked at objective improvement. This was following a 3 day intensive workshop. There is bias in self-assessment of skills, and the effectiveness and retention of a longer intervention remains unclear. The main objective of this study was to determine participant's change in EBM knowledge following the EBM curriculum using an objective knowledge assessment test.
METHODS: The EBM curriculum is taught in four sessions throughout the year-comprising 18 hours of teaching. Teaching formats used include large group, small group, in-class problem solving and computer-based hands-on sessions. The EBM knowledge assessment test was developed from a test previously used to measure resident EBM knowledge. It contains 25 multiple choice questions covering the following areas: 1) asking clinical questions; 2) searching; 3) EBM resources; 4) critical appraisal; 5) calculating ARR, RRR, NNT; 6) characteristics of diagnostic tests and post-test probability of disease; and 7) interpreting confidence intervals. Participants for the 2002-2003 year were given the test at the beginning of the first session prior to any EBM teaching (pre) and again after the last session (post) 10 months later.
RESULTS: 16 of 22 (73%) participants took both pre- and post-tests and were included in the final analysis. There was a significant improvement in the participants EBM test scores. The mean (and 95% CI) of correct answers on the pre-test was 13.6 (11.9–15.2), and on the post-test was 19.4 (18.2–20.6). This was a mean increase of 5.8 correct answers (4.2–7.4). The relative increase in correct answers following the intervention was 43%.
CONCLUSION: Our data demonstrates that community primary care physicians significantly increased their knowledge across a wide range of EBM skills through our yearlong program. The length of the program indicated that there was good retention of EBM knowledge at ten months using this format. We plan to retest participants six months after completion of the program to see if there is continued retention.

ANTIBIOTIC PRESCRIBING HAS DECREASED:DIFFERENCES REMAIN AMONG PHYSICIANS, RESIDENTS, AND MIDLEVEL PROVIDERS. C.L. Roumie[1]; N.B. Halasa[1]; K. Edwards[1]; Y. Zhu[1]; R.S. Dittus[1]; M.R. Griffin[1]. [1]Vanderbilt University, Nashville, TN. *(Tracking ID #115978)*

BACKGROUND: We measured trends in antibiotic prescribing for adults, and determined if physicians, nurse practitioners/physician assistants (NP/PA), and resident physicians had similar prescribing patterns.
METHODS: Antibiotic prescribing per 1,000 adults during all outpatient visits and visits for respiratory conditions where antibiotics are rarely indicated (acute bronchitis, cough, upper respiratory tract infection, asthma, allergic rhinitis) were estimated using the National Ambulatory Medical Care Survey (NAMCS) and the National Hospital Ambulatory Medical Care Survey (NHAMCS), 1995 through 2000. Factors associated with inappropriate prescribing for respiratory diagnoses including time period, provider type, and additional provider and patient characteristics were evaluated using multivariate logistic regression.
RESULTS: From 1995–1996 to 1999–2000, visits associated with antibiotic prescriptions decreased 4%, resulting in 12.6 fewer antibiotic prescriptions per 1000 adults. This decrease was confined to visits for respiratory diagnoses where antibiotics are not indicated. The proportion of visits associated with an antibiotic prescription fell from 42% to 33% (adjusted Odds Ratio [OR] 0.66, 95% Confidence Interval [CI] 0.52 to 0.82). There was no compensatory increase in antibiotic prescribing associated

with other diagnoses. Compared to physicians, who prescribed antibiotics for 39% of such visits, NP/PAs and resident physicians prescribed antibiotics for 50% (adjusted OR 1.80, 95% CI, 1.23 to 2.64) and 25% (adjusted OR 0.58 95% CI, 0.42 to 0.81) of visits, respectively.
CONCLUSION: Inappropriate outpatient antibiotic prescribing for respiratory conditions has declined yielding a decrease in antibiotics use among adults. Variations in adherence to guidelines remain among different practitioners; successful campaigns reducing antibiotic use for specific respiratory diseases should be extended to all practitioners.

Factors associated with antibiotic prescribing for Targeted Respiratory Diagnoses

Provider/Practice Characteristics	% Prescribed antibiotic	Odds Ratio (95% CI)	Adjusted Odds Ratio* (95% CI)
Provider MD	38.5	1.0 (ref)	1.0 (ref)
NP/PA	49.8	1.58 (1.12, 2.24)	1.80 (1.23, 2.64)
Resident	24.8	0.53 (0.39, 0.71)	0.58 (0.42, 0.81)

ANTICOAGULATION TESTING AND PATIENT SATISFACTION. R. Chaudhry[1]; R. Stroebel[1]; D. Dupras[1]; S. Scheitel[1]; E. Tangalos[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #115930)*

BACKGROUND: Point of Care INR (POCINR) testing by fingerstick (Coagucheck) combined with protocol directed, dosing instruction can be utilized for the monitoring of warfarin therapy for patients on chronic anticoagulation. POCINR testing has several advantages for patients including ease of access, improved turn-around time, less discomfort, and face-to-face review of written dosing instructions by the team RN. Patient satisfaction with the new technology in a face-to-face clinical encounter has not yet been ascertained.
METHODS: The Division of Community Internal Medicine (CIM) in collaboration with Laboratory Medicine implemented POCINR testing for patients on chronic anticoagulation in 2002. Prior to POCINR testing patients had their ProTime measured by venipuncture and were provided with the results protocol directed instructions on warfarin dosage by a telephone call from a RN. 216 consecutive patients were surveyed one month after the POCINR fingerstick testing and face-to-face counseling were implemented.
RESULTS: A total of 187 (87%) patients responded to the survey. When comparing the patients' past experiences with venipuncture and telephone management to POCINR, 77% had less pain, 81% reported blood collection to be easier, 96% reported receiving results faster, 68% reported improved communication on warfarin dosing, 76% reported improved opportunity to ask questions, 74% reported improved ease of making future appointments, 91% of patients reported overall satisfaction with the new system and 94% of patients preferred POCINR testing and face-to-face counseling. All results were statistically significant ($P < .0001$).
CONCLUSION: The overwhelming majority of our patients on chronic anticoagulation preferred POCINR testing and face-to-face counseling over venipuncture (ProTime) and telephone management.

ANTIVIRALS AND ANTIBIOTICS FOR INFLUENZA IN THE UNITED STATES, 1995–2001. J.A. Linder[1]; D.W. Bates[1]. [1]Division of General Medicine, Brigham and Women's Hospital, Boston, MA. *(Tracking ID #101660)*

BACKGROUND: Antiviral medications cost-effectively reduce influenza-related morbidity and potentially mortality. Antibiotics may be indicated for some patients with influenza, but concern exists about antibiotic overprescribing. Our goals were to: 1) measure the rates of antiviral and antibiotic prescribing for patients diagnosed with influenza and 2) evaluate independent predictors of antiviral and antibiotic prescribing.
METHODS: The National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Survey (NAMCS/NHAMCS) are probability samples that collect data from physician practices and emergency departments throughout the United States. We analyzed visits with a diagnosis of influenza that occurred in the 6 influenza seasons from October 1, 1995 to May 31, 2001 (n = 1,050). We used SUDAAN software, which accounts for the complex sampling design of the NAMCS/NHAMCS, to measure the rates of anti-influenza antiviral medication (amantadine, rimantadine, zanamivir, and oseltamivir) and antibiotic prescribing. We evaluated independent predictors of antiviral and antibiotic prescribing using multivariable logistic regression.
RESULTS: There were 18.6 million visits (95% confidence interval [CI], 14.5 to 22.7 million visits) with a diagnosis of influenza in the U.S. from the 1995–1996 season to the 2000–2001 season. The sample had a mean age of 34, was 44% male, and 85% white. Visits were to community outpatient practices (88%), emergency departments (8%), and hospital-based outpatient departments (4%). Of community outpatient practice visits, 54% were to family practice physicians, 20% were to pediatricians, and 19% were to internists. Physicians prescribed antivirals in 18% of visits and antibiotics in 30% of visits. There was no significant linear change in antiviral or antibiotic prescribing over time. In multivariable modeling, the lone independent predictor of antiviral prescribing was Medicare insurance (odds ratio [OR], 0.1 versus private insurance; 95% CI, 0.0–0.6). Independent predictors of antibiotic prescribing were Medicaid insurance (OR, 2.0 versus private insurance; 95% CI, 1.1–3.6) and visits to emergency departments (OR, 0.5 versus community outpatient practice visits; 95% CI, 0.3–0.9). Men were marginally less likely to receive antibiotics than women (OR, 0.6; 95% CI, 0.4–1.0).
CONCLUSION: Although cost-effective, antiviral medications were prescribed to only 18% of patients diagnosed with influenza. Antibiotics were prescribed to only 30% of patients. Antiviral and antibiotic prescribing both appear to be affected by non-clinical factors, possibly related to drug benefits. To reduce influenza-related morbidity and possibly mortality, efforts could be undertaken to increase appropriate antiviral prescribing, especially in seasons when vaccine delivery is delayed, there is insufficient vaccine supply, or there is poor influenza-vaccine matching.

ARE CLINICIAN-EDUCATORS AND CLINICIAN-INVESTIGATORS PROMOTED AT THE SAME RATE? THE PROSPECTIVE STUDY OF PROMOTION IN ACADEMIA. B. Beasley[1]; S. Simon[2]; S.M. Wright[3]. [1]University of Missouri-Kansas City, Kansas City, MO; [2]UMKC, Kansas City, MO; [3]Johns Hopkins Bayview, Baltimore, MD. *(Tracking ID #116455)*

BACKGROUND: Academic medical institutions are grappling with how to optimally evaluate and promote clinician-educators. Yet, clinician-educators have continued concerns about their promotability. No prior prospective studies of promotion have been performed across institutions to address this issue.
METHODS: In the Spring of 2000, we began to prospectively study 183 junior Department of Medicine faculty who volunteered to participate. The faculty were at the rank of Assistant Professor from 80 institutions in 35 states. We obtained baseline demographics, job characteristics, institutional characteristics, the factors that motivate these individuals in their work, and the systems that are available to them to support scholarship. In the spring of 2003, we contacted all 183 faculty to determine the primary outcome measure: whether they had been promoted to Associate Professor and the date of their promotion.
RESULTS: We classified 107 (58%) participants as clinician-educators (CE's) and 63 (34%) as clinician-investigators (CI's) by either their self-selection or by set criteria. Thirteen participants (7%) were unable to be placed into these categories. The 7th-year promotion rate for CE's was 32%, while for CI's it was 53% (Hazard Ratio for CE's compared to CI's = 0.7, 95% CI 0.6–0.9). Other variables that were significant positive predictors of promotion included meeting with Chairman/Chief more than yearly, (HR = 1.7, 95% CI 1.2–2.4 compared to "never meet"), working more than 60 hours per week (HR = 1.5, 95% CI 1.1–1.9 compared to 50 or less), having less than 10% patient care without learners (HR = 1.4, 95% CI 1.1–1.8 compared to more than 30%), having seen the institution's promotion guidelines (HR = 1.5, 95% CI 1.2–1.9), and having a grant management office (HR = 1.2, 95% CI 1.0–1.5). Significant negative predictors included having 5% or less research time (HR = 0.6, 95% CI 0.4–0.8 compared to greater than 30%), being located in the Northeast (HR = 0.7, 95% CI 0.5–0.9 compared to other regions), and having a low job satisfaction score (HR = 0.7, 95% CI 0.6–0.9 compared to high). Variables that were not significant included gender, race, medical school class rank, being AOA, and family responsibilities. Multivariable analyses are being performed, and these will offer explanations as to why CE's are promoted at a diminished rate.
CONCLUSION: Differences were noted between clinician-educators' and clinician-investigators' promotion rates. These may be explained by particular job characteristics, systems to support scholarship, and institutional variables.

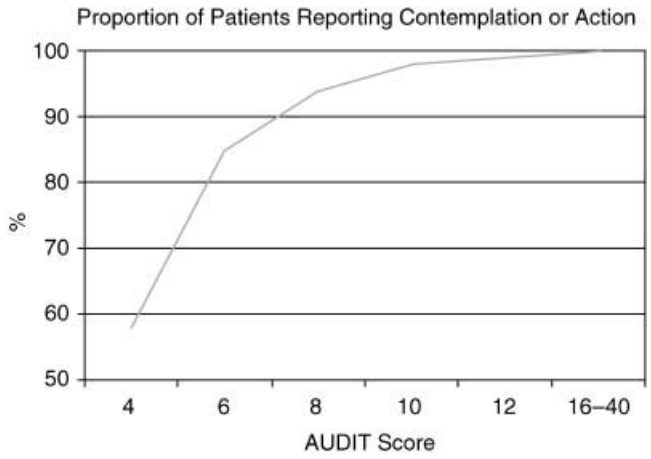
ARE PHYSICIANS LESS LIKELY TO DISCLOSE SERIOUS ERRORS THAT ARE NOT APPARENT TO PATIENTS? T.H. Gallagher[1]; A.D. Waterman[2]; J.M. Garbutt[2]; I. Fischer[2]; A.G. Ebers[2]; M. Krauss[2]; W.C. Dunagan[2]; W. Levinson[3]; V.J. Fraser[2]. [1]University of Washington, Seattle, WA; [2]Washington University in St. Louis, St. Louis, MO; [3]University of Toronto, Toronto, Ontario. *(Tracking ID #117144)*

BACKGROUND: Disclosure of errors is desired by patients, recommended by ethicists, and required by some state laws and accreditation standards. However, little is known about what factors influence whether physicians actually disclose errors.
METHODS: We surveyed all 1505 practicing physicians in internal medicine and family practice at Washington University/BJC Healthcare (St. Louis), University of Washington, and Group Health Cooperative (Seattle) as part of a survey of 2,583 physicians. The response rate to date is 56%. Respondents randomly received one of two scenarios: an overt error (10-fold insulin overdose and hypoglycemic arrest) and an error that would be less apparent to a patient (failure to check lab test ordered after starting medicine resulting in hyperkalemia and cardiac arrest). In both scenarios the patient recovers uneventfully. 5 closed ended questions assessed how much information respondents would disclose about the error. Respondents' attitudes about error disclosure and previous experience disclosing errors were also assessed. All associations are significant at $P < .01$.
RESULTS: Respondents were predominately male (76%), and had been practicing an average of 16 years. 51% were in private practice. 98% agreed that serious errors should be disclosed to patients, and 50% reported having personally disclosed a serious error. Physicians disclosed less information in response to the inapparent error (hyperkalemia) compared with the overt error (insulin overdose). For example, physicians in the hypkeralemia scenario were less likely to chose a disclosure statement that made explicit reference to the error compared to the insulin scenario (39% vs. 70%). Hyperkalemia scenario respondents were also more likely not to mention the error's cause (25% vs. 10%). In both scenarios respondents disclosed significantly less information if they did not strongly agree that serious errors should be disclosed, if they felt disclosure would risk a lawsuit, if they felt less responsible for the hypothetical error, if they agreed that they might not disclose an error if the patient was unaware that the error happened, and if they were in private vs. academic practice. In addition, physicians disclosed more information if they had previously disclosed a serious error, were satisfied with their most recent serious error disclosure, and if they felt relief after disclosing this error to the patient.

CONCLUSION: Characteristics of an error, such as whether the error is overt vs. inapparent to the patient, as well as physicians' attitudes about and experience with disclosure, may affect how physicians discuss medical errors with patients. Accounting for such factors in their policies and training may help patient safety programs improve the disclosure process.

ARE PRIMARY CARE PATIENTS WITH AT-RISK DRINKING READY TO CHANGE? E. Williams[1]; D. Kivlahan[1]; R. Saitz[2]; J. Merrill[1]; K. Bradley[3]. [1]University of Washington, Seattle, WA; [2]Boston University, Boston, MA; [3]VA Puget Sound, Seattle, WA. *(Tracking ID #117376)*

BACKGROUND: Patients' readiness to change may influence the effectiveness of interventions for at-risk drinking. We evaluated readiness to change among Veterans Affairs (VA) primary care patients who screened positive for at-risk drinking.
METHODS: Male outpatients at 7 VA GIM clinics were eligible who returned a mailed survey, screened positive for at-risk drinking on the Alcohol Use Disorders Identification Test (AUDIT) consumption questions (≥4 points), and responded to 3 questions about readiness to change. Patients were categorized into stages of change (precontemplation, contemplation, action) based on a validated algorithm. The AUDIT was used to categorize patients based on severity of drinking problems: <8 (least severe), 8–15, 16–19; and 20–40 points (most severe). We used logistic regression to model alcohol-related variables associated with readiness to change (contemplation or action), adjusting for demographic characteristics and self-reported medical and psychiatric comorbidity.
RESULTS: Of 4,110 patients with at-risk drinking, 83% were classified in contemplation or action categories (34% and 49% respectively). The prevalence of contemplation or action increased as AUDIT scores increased (Figure). Using logistic regression, the severity of drinking problems was a strong predictor of contemplation or action (Adjusted OR 4.8 for AUDIT scores 8–15, CI 3.7–6.0; AOR 12.7 for AUDIT 16–19, CI 5.1–31.4; AOR 27.3 for AUDIT 20–40, CI 8.6–87.9). Other significant predictors were prior alcohol treatment (AOR 1.7; CI 1.3–2.2) and advice to decrease or stop drinking from a primary care provider in the past year (AOR 3.1; CI 2.2–4.3).
CONCLUSION: Patients with more severe drinking problems, and those reporting prior alcohol-related treatment or advice are more likely to report readiness to change. However, even among patients with the least severe drinking problems, most at-risk drinkers report either contemplating change or actively trying to decrease their drinking. These data suggest reason for optimism in disseminating brief interventions for at-risk drinking in primary care settings.



ARE SENIOR MEDICAL STUDENTS PREPARED FOR THE ACGME COMPETENCIES? STUDENTS' SELF-ASSESSMENT OF THEIR TEACHING SKILLS. D. Torre[1]; J. Zebrack[1]; D. Simpson[1]; J. Sebastian[1]; R.C. Anderson[2]; J. Jevtic[1]; J. Beaversdorf[1]. [1]Medical College of Wisconsin, Milwaukee, WI; [2]Medical College of Wisconsin, Pewaukee, WI. *(Tracking ID #115977)*

BACKGROUND: Skills in self-assessment and teaching are strongly associated with three of the ACGME core competencies: communication, professionalism and practice-based learning/improvement (facilitate the learning of students and other health professionals). While many medical schools offer opportunities for fourth-year medical students (M4) to teach, most M4 students have few formal opportunities to practice self-assessment skills specific to their role as teachers. We therefore designed a teaching exercise to determine the extent to which high achieving M4 students accurately assess their own teaching skills.
METHODS: Thirteen M4 student volunteers, all members of our local chapter of the Alpha Omega Alpha Honor Medical Society, served as trained evaluators during an objective structured clinical exam (OSCE) that was administered to all second year medical (M2) students at the end of their Introduction to Clinical Examination Course. M4 students used a standardized checklist to evaluate the proficiency of M2 students (n = 190) in performing an abdominal, cardiovascular and chest examination on a standardized patient. After completing the formal checklist, M4 students were instructed to provide M2 students with additional formative feedback and "coaching." At the end of the OSCE session, all M2 students completed a 12-item form to evaluate the teaching effectiveness of their M4 student preceptor. Using a parallel form, M4 students assessed their own teaching skills immediately after each session
RESULTS: Each participating M2 and M4 student returned an evaluation form that used a 5-point Likert scale (5 = excellent, 1 = poor) to assess specific components of the teaching encounter. Comparison of ratings showed significant differences with higher M2 ratings compared to M4 self-assessments in each of the relevant ACGME competency areas such as communication (e.g. asked/answered questions clearly)[$P < .01$], professionalism (provided constructive feedback without belittling me)[$P < .01$] and practice-based learning (took advantage of teaching opportunities)[$P < .01$]. With respect to overall teaching effectiveness, the M2 evaluations of their M4 teachers were significantly higher than the M4 self-assessment ratings (4.9 vs. 4.1, p value < .001).
CONCLUSION: Consistent with the literature in self-assessment, high achieving M4 students underestimated their competence as educators. In preparation for residency, inclusion of self-assessment activities within a variety of instructional venues may help enhance students' proficiency as teachers and physicians

ARE THE INCENTIVES IN INCENTIVE-BASED PHARMACEUTICAL BENEFIT PLANS OPERATING AS INTENDED? W.H. Shrank[1]; R. Kravitz[2]; S. Ettner[3]; P.A. Glassman[4]; H.N. Young[5]; S.M. Asch[6]. [1]UCLA/Greater Los Angeles VA Healthcare System, Los Angeles, CA; [2]Univerity of California, Davis, Sacramento, CA; [3]University of California, Los Angeles, Los Angeles, CA; [4]Greater Los Angeles VA Healthcare System, Los Angeles, CA; [5]University of California, Davis, Sacramento, CA; [6]RAND, Los Angeles, CA. *(Tracking ID #116112)*

BACKGROUND: A majority of Americans with pharmaceutical benefits are now enrolled in three-tiered, incentive-based pharmaceutical benefit plans. These plans use patient cost-sharing requirements as incentives to steer medication choices towards "preferred" formulary options that are less expensive for insurers. Three-tier plans are predicated on the following assumptions: 1) physicians believe it is important to control patients out-of-pocket costs, 2) physicians feel accountable for controlling patients' costs when prescribing, 3) physicians are aware of patient's out-of-pocket costs when prescribing, and 4) physicians and patients discuss costs and benefits of treatment options at the time of prescribing. Little is known about whether these assumptions are being met. Recent Medicare legislation endorsing an increasing role of private health plans in the provision of prescription drugs to seniors underscores the importance of examining these assumptions directly.
METHODS: A self-administered, written survey was offered to physicians participating in the California Medical Association Leadership Conference. 131 responses were received of the 205 participants present (64% response rate). Many of the non-respondents were not physicians and the response rate of physicians in the room was likely much higher.
RESULTS: While 90% of physicians either strongly or somewhat agreed that is important to manage patient's out-of-pocket costs for prescription drugs, only 25% strongly or somewhat agreed that it is their "responsibility" to help. Physicians believe that they do not possess the necessary information to predict patients' out-of-pocket expenses at the time of prescribing. 59% of physicians report that they never or seldom are aware of the "preferred" formulary option when prescribing, and 70% never or seldom are aware of patients' out-of-pocket costs at the time of prescribing. Only 15% of physicians report discussing out-of-pocket costs with patients all or most of the time. Instead, 69% of physicians surveyed somewhat or strongly agreed that it is the responsibility of the pharmacist to be familiar with patients' out-of-pocket costs. Nevertheless, 67% of physicians either strongly or somewhat agreed that phone calls from pharmacists are "bothersome."
CONCLUSION: Physicians report that several basic assumptions of the three-tiered, incentive-based pharmaceutical benefits structures are not currently met. Physicians do not have the necessary information at the time of prescribing to help patients manage their out-of-pocket costs, and they do not hold themselves accountable for doing so. Instead, physicians rely on patients to respond to their financial incentives at the pharmacy, communicating their price preferences indirectly and likely less efficiently. Further research should identify whether improved information systems to assist physicians at the time of prescribing or simplified benefit structures would allow the incentives in tiered pharmacy benefit plans to operate as intended.

ARE THE TYPE AND NUMBER OF FOOD STORES IN A NEIGHBORHOOD ASSOCIATED WITH THE HEALTH OF ITS RESIDENTS? A.F. Brown[1]; A. Ang[1]; A.R. Pebley[1]. [1]University of California, Los Angeles, Los Angeles, CA. *(Tracking ID #116523)*

BACKGROUND: Residence in poor neighborhoods has been associated with poorer access to supermarkets, but greater access to small markets and convenience stores. In prior research, small markets were found to have limited fruits, vegetables, and whole grain products and to charge higher prices. We studied the relationship between the type and number of food stores in a neighborhood and self-rated health.
METHODS: The Los Angeles Family and Neighborhood Study (LA FANS) uses a representative sample of 65 neighborhoods in Los Angeles County, with an oversample of poor areas, to evaluate area influences on health. Food stores in each census tract were identified using commercial data and were categorized as supermarkets, small markets, convenience stores, and specialty stores using North American Industry Classification System codes. Self-rated health was ranked from 1 (Poor) to 5 (Excellent). Neighborhood SES is an unweighted mean of data from the 2000 Census (poverty, education, employment, occupational status, and median housing

value). Information on individual characteristics was obtained from in-person surveys. We constructed multilevel ordered logistic models to evaluate the independent influence of population-adjusted number and type of food sources on self-rated health after adjustment for neighborhood SES and individual age, sex, race/ethnicity, income, education, immigrant status, and chronic conditions.
RESULTS: Among the 2623 adult respondents (response rate 70%) included in this analysis, mean age 40 years, health status was reported as excellent by 21%, very good 25%, good 31%, fair 19%, and poor 4%. There was a higher density of small markets and convenience stores in poorer neighborhoods. In adjusted analyses, lower self-rated health was associated with residing in neighborhoods with more small markets (OR = 0.91, $P = .008$). Residing in a neighborhood in the middle or lowest SES tertile was also associated with poorer health, as were lower individual income, less education, male sex, older age, non-immigrant status, and having a chronic condition.
CONCLUSION: The type and number of food stores in a neighborhood is significantly associated with health, independent of other individual and neighborhood characteristics. A higher concentration of small markets, which tend to have less variety and charge higher prices than supermarkets, is associated with lower self-rated health. These findings may be particularly important for persons with a chronic condition, such as obesity, diabetes, or hypertension, where there is compelling evidence that diets high in fresh vegetables are associated with better outcomes. It is therefore important to evaluate the role of the availability of healthy foods and other neighborhood characteristics on health.

ASIAN AMERICANS' HEALTH CARE EXPERIENCES AND RATINGS: DIFFERENCES BETWEEN VIETNAMESE AND CHINESE IMMIGRANTS. Q. Ngo-Metzger[1]; M. Massagli[2]; B. Clarridge[3]; D. Sorkin[1]; R.S. Phillips[4]. [1]University of California Irvine, Irvine, CA; [2]Massachusetts General Hospital, Boston, MA; [3]UMass-Boston, Boston, MA; [4]Harvard University, Boston, MA. *(Tracking ID #115485)*

BACKGROUND: Asian Americans are a fast growing minority group. We surveyed a national cohort of limited-English proficient (LEP) Chinese and Vietnamese immigrants to evaluate their health care experiences.
METHODS: We surveyed 4410 patients with office visits during the last month at 11 health centers in 8 U.S. cities. We measured demographics, health status, and health care experiences at the last visit and in the last 12 months. Patients could answer the mailed survey in English, Vietnamese, or Cantonese or Mandarin Chinese. We used logistic regression to examine how pts demographics and problem experiences (with front desk staff, access to care, communication, and trust) predicted ratings of the last visit and of care received in the last 12 months (excellent/ very good/ good vs. fair/poor), with separate analyses for Vietnamese, Cantonese, and Mandarin Chinese patients, adjusting for age, health status, and whether patients saw their usual doctors.
RESULTS: We received 3258 surveys (response rate 74%): 1292 from Vietnamese; 1121 from Cantonese; and 678 from Mandarin Chinese patients. Ninety-nine percent were foreign-born, 90% were LEP,and half had <9 years of education. Vietnamese reported less problems with care compared to Chinese patients. One quarter of Vietnamese reported that doctors did not explain things in a way that they could understand, compared to 39% of Chinese patients ($P < .001$). Eleven percent of Vietnamese reported having problems trusting their doctors, as compared to 34% of Cantonese and 44% of Mandarin patients ($P < .001$). Vietnamese were less likely to rate the care received at the last visit and in the last 12 months fair or poor, and more likely to recommend the clinic to others ($P < .001$). In multivariable analyses, problems with front-desk staff (adjusted OR 7.2, 95% CI 4.7–11.1 for Cantonese; aOR 10.4, 95% CI 6.0–18.1 for Mandarin; aOR 26.6, 95% CI 13.1–54.0 for Vietnamese) and difficulty getting care (aOR 3.2, 95% CI 1.9–5.2 for Cantonese; aOR 3.4, 95% CI 1.8–6.3 for Mandarin; aOR 4.6, 95% CI 1.8–11.7 for Vietnamese) were important predictors of poor ratings of care received in the last 12 months. Not having trust in the doctor was a significant predictor of poor ratings of the last visit (aOR 5.3, 95%CI 3.0–9.4 for Cantonese; aOR 3.1, 95% CI 1.3–7.5 for Mandarin; aOR 15.1, 95% CI 5.9–38.4 for Vietnamese).
CONCLUSION: In a national cohort of Asians, Vietnamese reported less problems and gave higher ratings of care than Chinese patients. For all patients, problems accessing care and with front desk staff were associated with poor ratings of care received in the last 12 months. Trust in the doctor was a significant predictor of last visit ratings.

ASPIRIN, STATINS, OR BOTH THERAPIES FOR PRIMARY PREVENTION OF MYOCARDIAL INFARCTION: A COST-UTILITY ANALYSIS. M. Pignone[1]; S. Earnshaw[2]; J.A. Tice[3]; M. Pletcher[3]; M. Wilson[2]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]RTI Health Solutions, Raleigh, NC; [3]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116539)*

BACKGROUND: Aspirin and statin drugs are both effective in preventing myocardial infarction (MI) for patients with no history of previous cardiovascular events, but no studies have compared these agents in terms of their cost-effectiveness for primary prevention of coronary heart disease (CHD).
METHODS: We developed a Markov model to compare the cost and utility of 4 strategies: aspirin, statins, both drugs, or neither drug among men and women without a history of cardiovascular disease at 4 different ages (35–45, 45–55, 55–65, 65–75) and 4 different 10-year CHD risk levels (2.5%, 7.5%, 15%, and 25%). The model was run over 20 years. All patients began in the healthy state and could transition annually to: non-fatal MI, angina, aspirin-related gastrointestinal (GI) bleeding, statin-related myopathy, stroke (including hemorrhagic stroke), or death. Patients were assumed to receive both aspirin and statins after MI and stroke. Treatment efficacy data and risk of adverse events were taken from published meta-analyses; utility estimates were drawn from published literature. Direct cost data were drawn from published literature, inflated to 2003 dollars. Specifically, annual costs of aspirin and statins were $16 and $713, respectively, based on Red Book prices. Costs and benefits were discounted at 3%.
RESULTS: Among 45–55 year-olds, aspirin was both more effective and less costly compared with no treatment when the Framingham 10-year global CHD risk was greater than or equal to 7.5%. At 2.5% 10-year risk, the cost per quality adjusted life year (QALY) gained was $13,800 for men and $27,700 for women. Statins alone, compared with no therapy, had cost-utility ratios of $173,000, $89,700, $50,800, and $32,800/QALY at 10 year risk levels of 2.5%, 7.5%, 15%, and 25%, respectively, for men and $238,900, $96,200, $51,600, and $33,300/QALY for women. The addition of statins to aspirin increased effectiveness at an incremental cost (men/women) of $190,500 / $267,600, $103,100 / $113,100, $62,500 / $65,900, and $48,100 / $49,100 /QALY at risk levels of 2.5%, 7.5%, 15%, and 25%, respectively. Statins had similar cost-utility ratios to aspirin when statin cost was $200–350 per year.
CONCLUSION: Aspirin is more cost-effective than statins as the initial drug for CHD prevention at all risk levels for men and women, and appears cost-saving for 45–55 year old patients with 10-year CHD risk of 7.5% or higher. At their current price, adding statins to aspirin is cost-effective when pre-treatment 10-year CHD risk is ≥25%.

ASPIRIN USE AMONG ADULTS WITH DIABETES: RECENT TRENDS AND EMERGING GENDER DISPARITIES. S.D. Persell[1]; D.W. Baker[1]. [1]Northwestern University, Chicago, IL. *(Tracking ID #114460)*

BACKGROUND: Despite high cardiovascular risk among adults with diabetes, aspirin use has been low in the past. It is not clear whether aspirin use increased following the 1997 American Diabetes Association position statement recommending aspirin for diabetic adults at increased risk for cardiovascular disease (CVD). We conducted this study to determine recent trends in the use of aspirin among patients with diabetes and to identify patient characteristics associated with underuse.
METHODS: We conducted a time-series analysis using cross-sectional data from statewide telephone surveys conducted in 7 states in 1997 and 20 states in 1999 and 2001 as part of the Behavioral Risk Factor Surveillance System. This analysis included 875, 3205, and 4272 subjects in 1997, 1999, and 2001, respectively. The study population included adults age 35 or older who reported physician diagnosed diabetes but not only gestational diabetes. We classified individuals as regular aspirin users if they reported taking aspirin every day or every other day. To examine trends over time, we compared aspirin use in states for which data was available in consecutive years. We conducted a stratified analysis based on the presence or absence of diagnosed CVD and used logistic regression to assess the independent association of regular aspirin use with age, sex, race, education, income, and CVD risk factors.
RESULTS: Aspirin use increased from 37.5% in 1997 to 48.7% in 2001. In 2001, 74.2% (95% CI, 70.9–77.5) of diabetic adults who reported physician diagnosed CVD, but only 37.9% (95% CI, 35.1–40.1) of those without CVD used aspirin regularly, including less than 40% of adults who had diagnosed hypertension, hypercholesterolemia, or who smoked. After adjusting for cardiac risk factors and socioeconomic characteristics, among those without CVD, aspirin use was less common among women aged 35–49 (adjusted odds ratio [OR] 0.22, 95% CI 0.14–0.35) and 50–64 (adjusted OR 0.53, 95% CI 0.37–0.80), and for men aged 35-49 (adjusted OR 0.46, 95% CI 0.28–0.75) compared to men >65 years old. For those with diagnosed CVD, aspirin use was lower among women (adjusted OR 0.42 compared to men, 95% CI 0.29–0.60), adults under age 50 (adjusted OR compared to >65 year-olds 0.52, 95% CI 0.29–0.94), and the uninsured (adjusted OR 0.46, 95% CI 0.24–0.87). The disparity in aspirin use between men and women appeared between 1997 and 2001.
CONCLUSION: Aspirin use among adults with diabetes increased in recent years. However, use among diabetics without known CVD remains low, even among people with other risk factors for CVD. Women and people under 50 are less likely to be using this effective, inexpensive therapy.

ASSESSING RESIDENTS' ATTITUDES TOWARDS A NIGHT FLOAT SYSTEM USING A MULTI-DIMENSIONAL SCALED QUESTIONNAIRE. H. Jasti[1]; B.H. Hanusa[2]; R. Granieri[2]; M. Elnicki[2]. [1]Univ of Pittsburgh*, Pittsburgh, PA; [2]Univ of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116683)*

BACKGROUND: To address residents' working hours, a Night Float (NF) system has been instituted in residency programs across the country. There are few recent studies that have examined the perceptions and attitudes of residents in multiple broad areas of a NF system.
METHODS: We developed a 115-item questionnaire to measure attitudes towards 6 potential domains of the NF rotation. We focused on 3 of these domains, namely patient care, education, and satisfaction. For each domain, a principal components analysis was done and factor scores were computed. Analysis of variance compared the means of the factor scores by postgraduate year of training, namely PGY 1 (interns) vs. PGY 2 and 3 (residents).
RESULTS: The response rate was 90% (n = 149). The first domain of 12 questions dealt with patient care. Factor analysis yielded 3 factors: continuity of care, patient-physician relationship, and patient care by physician. The 3 factors explained 57% of the variance. The second domain, consisting of 10 questions reflecting residents'

thoughts on education during NF, generated 5 factors, explaining 78% of the variance. The third domain of 9 questions, dealing with overall satisfaction, resulted in one factor, explaining 60% of the variance. In the patient care domain, both interns and residents felt that continuity of patient care was preserved (mean 18.6 vs. 18.9, $P = .67$). However, interns were more likely than residents to feel that the patient-physician relationship was well maintained (mean 5.9 vs. 5.1, $P = .01$). Residents were more likely to think a "shift-work" mentality developed with NF (mean 6.7 vs. 5.4, $P < .001$). In the education domain, residents were more likely than interns to state that there was more emphasis on service (mean 3.7 vs. 3.3, $P = .03$) and less focus on learning about the impact of patient interventions (mean 7.3 vs. 6.5, $P = .01$). In the overall satisfaction domain, interns were more satisfied with the NF rotation than the residents (mean 35.5 vs. 30.7, $P < .001$).
CONCLUSION: Our questionnaire was able to extract factors with good face validity from different domains assessing residents' attitudes towards the NF system. While interns were more satisfied with the NF rotation, including the preserved patient-physician relationship and education, residents felt there was less of an emphasis on learning. Some of the differences may be institution dependent. In our NF system, interns focus mainly on patient cross-coverage, while the residents only admit new patients. Interns and residents have different educational goals. Although the current NF system seems to meet those of the interns, the development of additional strategies to enhance the educational component for residents may increase their overall satisfaction.

ASSESSING THE FREQUENCY OF FAILURE TO ADHERE TO BLACK-BOX WARNINGS IN OUTPATIENTS. K.E. Lasser[1]; D.L. Seger[2]; T. Yu[2]; J. Fiskio[2]; A.C. Seger[3]; A.S. Karson[4]; D.W. Bates[3]. [1]Cambridge Health Alliance/Harvard Medical School, Cambridge, MA; [2]Partners HealthCare System, Wellesley, MA; [3]Brigham and Women's Hospital, Boston, MA; [4]Massachusetts General Hospital, Boston, MA. *(Tracking ID #115334)*

BACKGROUND: Adverse drug events (ADEs) are a leading cause of injury and mortality in the United States, with one estimate being 100,000 deaths per year. However, relatively little is known about the nature and frequency of ADEs or potential ADEs in the ambulatory setting. We sought to determine the frequency with which outpatient drugs are prescribed in violation of black box warnings, which are released by the Food and Drug Administration, and represent one measure of potential ADEs.
METHODS: We identified all drugs that had a Physicians' Desk Reference black box warning in 2002 about drug-drug interactions (DDIs), drug-disease interactions, and drug-lab interactions. Using the electronic longitudinal medical record (LMR), we then identified all ambulatory patients seen from January-December 2002 at all Partners HealthCare-affiliated outpatient practices who were prescribed a drug with a black box warning. We used these data to calculate the frequency with which drugs were prescribed in violation of warnings for DDIs.
RESULTS: We identified 95 drugs with a black box warning about DDIs, drug-disease interactions, and drug-lab interactions. Of these, 55 (57.9%) had a warning that was so vague that it required clarification from medical specialists at 3 Partners HealthCare-affiliated hospitals. For example, the drug valproate contains a black box warning to check liver function tests at "frequent intervals," but does not specify how often to monitor liver function tests. Sixty-nine of the 95 drugs (72.6%) were prescribed in the 2002 LMR. Of a total of 324,578 patients prescribed a medication in the 2002 LMR, 33,779 (10.4 %) were prescribed a drug with a black box warning about DDIs, drug-disease interactions, and drug-lab interactions. Of the 1,107 patients who were prescribed a drug with a DDI warning, 401 (36.2%) were also prescribed a contraindicated drug. Of 1,139 orders for drugs with a DDI warning, 419 orders (36.8%) were prescribed with a contraindicated drug. Implicated drugs included: Dihydroergotamine (1 DDI in 1 patient), Thioridazine (3 DDIs in 3 patients), Ergotamine (9 DDIs in 9 patients), Propoxyphene (641 DDIs in 377 patients) and Ketorolac (14 DDIs in 13 patients).
CONCLUSION: Black box warnings about drug-disease and drug-lab interactions are often imprecise and could be improved. Physicians frequently prescribe drugs despite black-box warnings, which may place patients at important risk of harm. Future analyses should assess how frequently such prescribing results in patient harm.

ASSESSMENT OF A RESEARCH-BASED HEALTH ACTIVISM CURRICULUM FOR MEDICAL STUDENTS. S. Cha[1]; J.S. Ross[1]; G. Sacajiu[1]; P. Lurie[2]. [1]Montefiore Medical Center, Bronx, NY; [2]Public Citizen, Washington, DC. *(Tracking ID #116904)*

BACKGROUND: Few opportunities exist in medical education to teach physicians the research and advocacy skills necessary to inform and advocate for socially equitable health policy. At Montefiore Medical Center, Bronx, NY, we designed a curriculum for fourth-year medical students in Research-Based Health Activism (RBHA). Our objective was to assess the course and its impact on students' career goals.
METHODS: The RBHA curriculum is a one month course, teaching the major skills of health activism to enable students to design community and advocacy-based research projects. The course includes sessions on (1) health policy, (2) physician activists as role models, (3) advocacy strategies, and (4) research methods. At the conclusion of the course, students present a research proposal and advocacy plan, and are encouraged to finish these projects at their home institutions. Six students completed the course in 2002 and 15 in 2003. Students from 2003 completed pre- and post-course surveys using Likert scales assessing course expectations, success at meeting educational objectives, and career goals. Main educational objectives included self-assessed ability to generate a research question, design an advocacy plan, and design and present a research proposal. Data was analyzed using descriptive statistics and McNemar's test.
RESULTS: Students represented all regions of the country, 12 (80%) from outside of the New York City region. Ten (67%) were female, 7 (47%) identified as non-white, and 13 (87%) intended to begin training in a primary care specialty. All students "agreed" or "strongly agreed" that the course met all educational objectives. The number of students intending to pursue careers "significantly" or "exclusively" involving advocacy was 6 (40%) prior to the course and 9 (60%) after the course ($P = .51$). The number of students intending to pursue careers "significantly" or "exclusively" involving research was 2 (13%) prior to the course and 10 (67%) after the course ($P < .01$). The sessions identified as most valuable were within the physician activists as role models and advocacy components of the course. All students completed a research project addressing social or economic disparities in health care. Three of the six 2002 students finished projects at their medical schools.
CONCLUSION: Our curriculum in RBHA met educational objectives for a diverse group of students. The course significantly increased interest in careers involving research. While there was a nonsignificant increase in interest in careers involving advocacy, many students entered the course with a strong interest in advocacy.

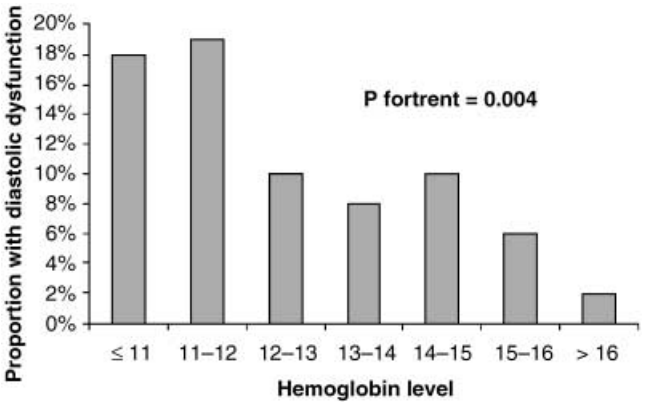
ASSESSMENT OF INDICATIONS CITED FOR THROMBOPHILIA SCREENING IN AN URBAN HEALTH REGION. H.L. McArthur[1]; S.H. Chou[1]; M. Poon[1]; D. Southern[1]; E.A. MacKay[1]. [1]University of Calgary, Calgary, Alberta. *(Tracking ID #116031)*

BACKGROUND: Thrombophilia testing is an expensive diagnostic process for which there is considerable uncertainty regarding optimal patient selection for screening. Our specific objectives were to describe the indications cited for testing in an urban health region as well as to review the yield of these studies by indication.
METHODS: An administrative database of the thrombophilia tests performed in Southern Alberta, Canada, in 2002 was examined. Testing of one or more of: Factor V Leiden, APC Resistance, Factor II Mutation, Antithrombin III, Protein C, Protein S and Lupus anticoagulant was performed. Indications for testing were categorized as first pulmonary embolism (PE); first deep vein thrombosis (DVT); recurrent PE or DVT; unusual site of venous thromboembolism (VTE); arterial thrombosis; family history of thrombosis or thrombophilia in a first degree relative; family history of thrombosis or thrombophilia in a non-first degree relative; and other.
RESULTS: Of the 906 thrombophilia studies assessed, the documented indications for testing were: a first PE (11.4%); a first DVT (15.8%); recurrent PE or DVT (12.8%); an unusual site of VTE (6.5%); arterial thrombosis (13.7%); a family history of thrombosis in a first degree or non-first degree relative (16.4% and 2.2%, respectively); a family history of thrombophilia in a first degree and non-first degree relative (7.7% and 1.3%, respectively); and other (11.8%). There was no clear indication for testing in four studies. In analysis of the test results by indication, test results were normal for 77.7% of the patients with a first PE; 71.3% of the patients with a first DVT; 70.7% of the patients with recurrent PE or DVT; 71.2% of the patients with an unusual site of VTE; 79.0% of the patients with arterial thrombosis; 68.9% of the patients with a family history of thrombosis in a first degree relative; 75.0% of the patients with a family history of thrombosis in a non-first degree relative; 44.3% of the patients with a family history of thrombophilia in a first degree relative; 75.0% of the patients with a family history of thrombophilia in a non-first degree relative; and 72.9% of patients with other reasons cited for testing.
CONCLUSION: The most commonly cited indications for thrombophilia testing were a family history of thrombosis in a first degree relative, a first DVT and arterial thrombosis. In contrast, the yield of positive test results was highest for a less common indication—a family history of thrombophilia in a first degree relative. This combination of findings suggests that the current pattern of testing does not provide an optimal balance of effectiveness and efficiency of screening for thrombophilias, and that real-time filtering of referrals may be needed to limit testing for less appropriate indications.

ASSOCIATION OF ANEMIA WITH DIASTOLIC DYSFUNCTION IN PATIENTS WITH CORONARY ARTERY DISEASE: FINDINGS FROM THE HEART AND SOUL STUDY. D. Nair[1]; M. Shlipak[1]; B. Angeja[1]; H.H. Liu[1]; N.B. Schiller[1]; M.A. Whooley[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116303)*

BACKGROUND: Anemia is associated with left ventricular hypertrophy and with adverse outcomes in patients with systolic heart failure, but the relationship of anemia with diastolic dysfunction has not been studied. We performed a cross-sectional study to evaluate the association of anemia with diastolic dysfunction and left ventricular hypertrophy in outpatients with coronary artery disease.
METHODS: Patients with known coronary disease from two VA Medical Centers, one University-based medical center, and nine local health clinics were recruited into the Heart and Soul Study. We measured serum hemoglobin (Hgb) and performed transthoracic echocardiography in 822 participants. We defined diastolic dysfunction as diastolic-dominant pulmonary vein flow, and left ventricular hypertrophy as left ventricular mass index >90 g/m^2. Using multivariate logistic regression models, we determined the independent association of moderate ($11 < hgb < 13$) and severe ($hgb < 11$) anemia with left ventricular hypertrophy and diastolic dysfunction after adjustment for other baseline characteristics.
RESULTS: Participants with moderate or severe anemia (n = 197; 24%) were older and less likely to be male or white, compared with participants without anemia. The prevalence of DD was 8% in participants without anemia, and 13% and 24% in participants with moderate and severe anemia. After multivariate adjustment, moderate anemia (adjusted OR 2.0, 95% CI 1.1–3.5; $P = .02$) and severe anemia

(adjusted OR 6.6, 95% CI 1.9–23.2; $P = 0.003$) remained strongly associated with diastolic dysfunction. When entered as a continuous variable, each 1 mg/dl decrement in Hgb was associated with a 40% (95% CI: 10% to 60%) increased odds of diastolic dysfunction. In contrast, anemia had a minimal association with left ventricular hypertrophy. Compared with participants with no anemia, the OR was 1.4 (95% CI 1.0–2.1; $P = .08$) in participants with moderate anemia and 1.6 (95% CI 0.6–4.6; $P = .38$) in those with severe anemia.
CONCLUSION: We found anemia to be strongly associated with diastolic dysfunction, but not with left ventricular hypertrophy, in this community-based study of outpatients with established coronary artery disease. Diastolic dysfunction may be a critical mediator via which anemia promotes the development and progression of heart failure.



ASSOCIATION OF BODY WEIGHT WITH PERCEIVED HEALTH AND SEVERITY OF SYMPTOMS FROM CHRONIC CONDITIONS. D.E. Arterburn[1]; M. McDonell[2]; S. Hedrick[2]; P.H. Diehr[3]; S.D. Fihn[2]. [1]University of Cincinnati, Cincinnati, OH; [2]University of Washington, Seattle, WA; [3]Fred Hutchinson Cancer Research Center, Seattle, WA. *(Tracking ID #116058)*

BACKGROUND: Obesity has important effects on health and health-care costs. There is also evidence to suggest that obesity may increase the severity of symptoms among patients with coronary heart disease (CHD), obstructive lung disease (OLD), and depression. We hypothesized that obese adults with CHD, OLD, or depression would report greater impairments in health-related quality of life (HRQOL) due to their angina, dyspnea, or depression symptoms than those with normal body mass index (BMI).
METHODS: We performed a cross-sectional analysis of data from 16,393 participants in the Ambulatory Care Quality Improvement Project (ACQUIP), a multicenter study of veterans enrolled in General Internal Medicine clinics. BMI was self-reported, and HRQOL was assessed using the SF-36 and condition-specific measures for symptomatic CHD, OLD, and depression. We used multiple linear and logistic regression to assess the associations between BMI and individual HRQOL domains. All analyses were statistically controlled for study site, sociodemographic characteristics (age, gender, race, income, education, marital status), health habits, obesity-associated chronic conditions (hypertension, diabetes mellitus, stroke, arthritis, and cancer), and 13 other chronic conditions.
RESULTS: Twenty-seven percent of patients had normal body weight (BMI 18.5 to 24.9); 42.7% were overweight (BMI 25 to 29.9); 28.7 % were obese (BMI 30 and over); and 1.6 percent of patients were underweight (BMI < 18.5). We found statistically significant inverse-U-shaped relationships between BMI and HRQOL scores in all 15 domains we examined. Underweight patients and those with class III obesity (BMI over 40) reported the worst HRQOL scores. Above a BMI of 25, we observed linear, inverse relationships between BMI and HRQOL scores; however, compared with normal weight patients, those who were overweight reported significantly better HRQOL scores in 10 out of 15 domains. Among patients with CHD and OLD, underweight patients and those with class III obesity reported the greatest limitations in physical function due to their angina and dyspnea.
CONCLUSION: Body mass index was strongly associated with perceived health and severity of symptoms from CHD, OLD, and depression. Our results suggest that, when considering HRQOL outcomes among veterans, the optimal BMI may be above the "normal" range. Further research is needed to test the validity of the 1998 NIH BMI categories as predictors of health outcomes among veterans.

ASSOCIATION OF INTENSITY OF HYPERTENSION THERAPY WITH PATIENT RACE AND ETHNICITY AND BLOOD PRESSURE CONTROL. L.S. Hicks[1]; M.S. Horng[2]; D. Fairchild[3]; E. Orav[2]; D.W. Bates[2]; J.Z. Ayanian[4]. [1]Brigham and Women's Hospital and Harvard Medical School, Boston, MA; [2]Brigham and Women's Hospital, Boston, MA; [3]New England Medical Center, Boston, MA; [4]Harvard University, Boston, MA. *(Tracking ID #116785)*

BACKGROUND: Numerous studies have examined potential biological mechanisms for racial and ethnic differences in blood pressure (BP) control. However, there has been little examination of racial and ethnic differences in intensity of hypertension (HTN) care and whether these differences are associated with differences in BP control.
METHODS: We examined the electronic medical records of hypertensive patients with more than one visit to 14 general internal medicine clinics during 7/1/01–6/30/02. For each visit, we collected the mean BP and determined whether HTN drug therapy was intensified (an increase in dose of medication or addition of new antihypertensive medication). We developed an algorithm to determine if each patient had a net increase in intensity of drug therapy (compared to no net increase) in response to repeatedly elevated BPs over the one-year study period. We compared the association of receiving a net increase in therapy with patient race/ethnicity by chi square tests. Using repeated measures logistic regression, we determined adjusted odds of obtaining BP control (mean BP <140/90) at a subsequent visit when therapy was intensified the visit before, and tested the interaction of intensification of therapy and patient race/ethnicity in predicting subsequent BP control.
RESULTS: Of the 850 patients examined, 671 (78.9%) had a net increase in their therapy during the study period. Net increases occurred more often for Black (81.5%) and White (80.9%) patients compared to Latino patients (70.8%) ($P = .02$). After adjustment for baseline systolic and diastolic BP, intensifying therapy was associated with a higher odds of obtaining subsequent BP control (OR 1.55, $P < .001$) compared to not intensifying therapy. Black (OR 0.78, $P = .03$) and Latino (OR 0.55, $P < .001$) patients were less likely to obtain subsequent BP control compared to White patients. There were no significant interactions between race/ethnicity and intensification in the multivariate model, suggesting that the association between intensification of therapy and improved blood pressure control did not differ by race/ethnicity.
CONCLUSION: We found that Latino patients with HTN were significantly less likely to have their antihypertensive drug therapy increased compared to other racial and ethnic groups and that intensification of therapy is associated with subsequent BP control similarly for all racial/ethnic groups. Equal treatment in terms of aggressiveness of drug therapy may reduce disparities in HTN and its related outcomes. Potential targets for intervention to reduce disparities in cardiovascular outcomes should focus on the need to intensify drug therapy more aggressively among high-risk populations.

ASSOCIATION OF NUTRIENT INTAKE AND ELEVATED C-REACTIVE PROTEIN IN U.S. ADULTS. J. Lee[1]; D. Mann[2]; S. Natarajan[2]. [1]Cornell University, New York, NY; [2]New York University, New York, NY. *(Tracking ID #116941)*

BACKGROUND: Elevated C-reactive protein (CRP) is considered an important marker for cardiovascular disease (CVD) risk. High body mass index (BMI), sedentary lifestyle, smoking, diabetes, hypertension and lipid abnormalities are related to elevated CRP. No clear associations between nutrient constituents and CRP levels have been established among the general population. We hypothesized that diets high in fruits, vegetables, fish, fiber, antioxidant vitamins, potassium, magnesium and calcium are inversely associated with elevated CRP. Conversely, we hypothesized that diets low in these nutrients and high in saturated fat would be directly associated with elevated CRP.
METHODS: The Third National Health and Nutrition Examination Survey (1988-1994), a complex, stratified sample of the US population was analyzed. Participants were interviewed, provided blood for analysis and completed a detailed food frequency questionnaire and 24-hour dietary recall. The association of the primary independent variables, macro- and micronutrient intake, with serum CRP levels was evaluated using SUDAAN to incorporate the complex sampling frame and control for known and potential confounders (age, race, education, employment, BMI, exercise, smoking, alcohol use, diabetes, hypertension, CVD, and supplement and vitamin use).
RESULTS: The analytic sample was 15,393 adults. The multivariate odds ratio (OR) [with 95% confidence intervals] for elevated CRP (dichotomized at <85% of sex specific distribution) was 0.97 [.94–1.00] for fish ingestion ($P < .05$) as a continuous variable (times/month). Adults ingesting the top quartile of fish (OR 0.71 [0.59–0.86]), fruits and vegetables (OR 0.79 [0.63–0.99]), and carotenoids (OR 0.76 [0.61–0.95]) had significant inverse associations (protective) with elevated CRP when compared to the remaining quartiles. Individuals reporting a diet profile of top quartile fish, fruits and vegetables, and carotenoids intake (5.1% of US adults) had an OR for elevated CRP of 0.54 [0.34–0.87]. We found no associations between elevated CRP and other nutrients of interest, including magnesium, sodium, potassium, folate, B vitamins, vitamin E, vitamin C, protein, carbohydrates, and saturated fat.
CONCLUSION: Individuals consuming diets high in fish, fruits and vegetables, and carotenoids had lower likelihood of elevated CRP. This supports current recommendations of `heart healthy' diets rich in fruits, vegetables, legumes and fish to reduce risk of cardiovascular disease and events. Whether or not dietary supplementation of fish, fruits and vegetables, and carotenoids lowers CRP and corresponding cardiovascular risk is a question proposed for further research.

ASSOCIATION OF THE `5TH VITAL SIGN' (PAIN) AND DEPRESSION IN PRIMARY CARE. M.J. Bair[1]; L.S. Williams[2]; K. Kroenke[3]. [1]Roudebush VAMC & Regenstrief Institute, Indianapolis, IN; [2]Roudebush VAMC/Indiana University School of Medicine, Indianapolis, IN; [3]Regenstrief Institute/Indiana University School of Medicine, Indianapolis, IN. *(Tracking ID #116406)*

BACKGROUND: The Veterans Health Affair's emphasis on pain assessment, operationalized as the "5th vital sign", and clinical reminders to screen for depression highlight the potential impact of these conditions on veterans' health. Since pain

and depressive symptoms often coexist we sought to better understand their relationship in the primary care setting.
METHODS: We conducted a cross-sectional survey of VA general medicine patients presenting for routine visits. Acute care visits were excluded. Depressive symptoms (primary outcome) were assessed by the Patient Health Questionnaire (PHQ-9). Patients with PHQ-9 scores >10 were identified as having significant depressive symptoms. Patients were routinely asked by clinic nurses, "How much pain do you have today?" on a 0 to 10 pain scale (PS) and then completed a self-administered questionnaire. We categorized pain (primary predictor variable) as none (PS 0), mild (PS 1–3), moderate (PS 4–6), or severe (PS 7–10). We used logistic regression to examine the association of pain with depressive symptoms, controlling for patient demographics.
RESULTS: Study participants (N = 301) had a mean age of 60 (range 26–86), 91% were male, and 85% were white. Mean PHQ-9 (depression) score was 6.6 (±6.3) and 28% (n = 83) had significant depressive symptoms (PHQ > 10). Pain was present in 74% (n = 221) of the sample: mild 21%, moderate 31% and severe 22%. All levels of pain severity were independently associated with significant depressive symptoms compared to those without pain: odds ratios of 2.2 (95% CI, 1.1–4.4) for mild pain, 5.2 (2.2–12.5) for moderate pain, and 12.0 (4.1–34.4) for severe pain.
CONCLUSION: Pain severity measured during routine vital sign assessment is strongly associated with significant depressive symptoms in VA general medicine patients. Routine pain assessment may be a useful indicator ("red flag") and simple tool to risk statify patients who should be assessed for depression.

ATRIAL FLUTTER AND THE RISK OF THROMBOEMBOLISM: A SYSTEMATIC REVIEW AND META-ANALYSIS. W.A. Ghali[1]; B. Wasil[1]; R.F. Brant[1]; D.V. Exner[1]; J. Cornuz[2]. [1]University of Calgary, Calgary, Alberta; [2]University Hospital of Lausanne, Lausanne, . *(Tracking ID #116179)*

BACKGROUND: There is considerable uncertainty and controversy surrounding the risk of thromboembolism associated with atrial flutter, with some suggesting that risk is not elevated while others consider risk similar to that for atrial fibrillation. We conducted a systematic review and meta-analysis of observational studies on this issue.
METHODS: A literature review was conducted using Medline, EMBASE, bibliographies, and clinical experts. Identified studies were classified into those that report on thromboembolism risk associated with attempted cardioversion vs. those that report on longer-term risk. The review process and data extraction were performed by two reviewers. Study event rates were assessed graphically, and a Chi-square test was used to assess heterogeneity across studies. Meta-regression with weighted logistic regression was used to assess the association between study-level clinical factors and reported thromboembolic event rates.
RESULTS: We found 13 studies reporting on the thromboembolism risk associated with attempted cardioversion of atrial flutter, and 3 studies reporting on longer-term risk from sustained atrial flutter. Reported event rates in the 13 studies on cardioversion risk ranged from a low of 0% (in 7 separate studies) to a high of 7.3%. However, 4 studies reported a thromboembolism risk above 2% around the time of cardioversion, and five studies notably yielded upper 95% confidence intervals exceeding 10%. The test for heterogeneity was highly significant ($P < .001$), so results were not pooled. Instead, a meta-regression analysis was performed, and this provided some explanation for the heterogeneity in results across studies. Studies were more likely to report high event rates after cardioversion when they included patients with a prior history of thromboembolism, and reported lower event rates when at least some patients were anticoagulated, or if patients underwent echocardiography before cardioversion. The 3 studies reporting on longer-term thromboembolism risk suggest a yearly event rate of approximately 3% with sustained atrial flutter—somewhat lower than for sustained atrial fibrillation, but higher than for sinus rhythm.
CONCLUSION: These findings suggest that atrial flutter is indeed associated with an increased risk of thromboembolism after cardioversion as well as in the longer-term. Anticoagulation is therefore warranted in patients undergoing cardioversion for atrial flutter. Meanwhile, patients with sustained atrial flutter should undergo a similar risk assessment to that recommended in current practice guidelines for atrial fibrillation, and higher-risk individuals should be considered for long-term anticoagulation.

ATTITUDES AND EXPERIENCE WITH HELP SEEKING AMONG WOMEN EXPERIENCING INTIMATE PARTNER VIOLENCE. J.M. McCauley[1]; J.C. Campbell[2]; L. McNutt[3]. [1]Johns Hopkins Community Physicians, Baltimore, MD; [2]Johns Hopkins University, Baltimore, MD; [3]University at Albany, SUNY, Albany, NY. *(Tracking ID #117031)*

BACKGROUND: Background. Intimate Partner Violence (IPV) is associated with many physical symptoms and psychological distress, but only one in three abused women reports discussing IPV with a health professional. Our objectives were to describe: 1) attitudes toward IPV disclosure 2)steps women have taken to get help for IPV.
METHODS: Methods: We used a cross-sectional design and surveyed women (ages 18–44) in a low-income clinic in Albany NY, using a computerized screening tool. Emotional, physical and sexual abuse was measured with a modified Composite Abuse Scale (CAS), with 0-3 response = no abuse, 4–10 score = moderate abuse and >11 = severe abuse. We developed an attitude scale from the literature and performed factor analysis. Frequencies and chi square analysis are reported.
RESULTS: Results: Of the 293 respondents, 53% were 18–29 years old, 65% had <12 years education; 63% were African Americans; 18% had experience moderate and 17%, severe abuse. Factor analysis of the questions identified 4 potential constructs related to disclosure: A) Relationship perceptions (Cronbach's alpha (CA) = .83) B) Fear/Shame (CA = .87) C) Staff Trust (CA = .72) D) Reliance (CA = .72). Emotional /Physical/Sexual Abuse Selected Characteristics (% who agree) None Mod High p A) Problems not that serious 72.1 42.5 18.0 0.000 A) Good outweighs the bad 74.3 60.5 47.4 0.004 B) I will get my partner in trouble 11.3 12.5 25.0 0.082 B) Ashamed to talk 10.7 17.1 25.0 0.060 B) I worried talking may affect my children 12.0 29.3 29.4 0.008 C) Don't think the staff will help 15.0 22.5 31.6 0.056 D) I can take care of myself 71.9 62.5 63.4 0.377 D) I would rather rely on my friends 48.6 36.6 34.2 0.162 D) I would rather rely on God 57.6 68.3 64.1 0.418 Of women with severe IPV, 45% had discussed it currently or in the past with PCP and/or a social worker; 61% had made safety plans; 52% had sought legal help; 45% had taken "a pill for stress."
CONCLUSION: Conclusions: Most women with severe abuse recognized that they had a serious problem. However almost half felt that the good still outweighed the bad in their relationship, even when the abuse was severe. Results demonstrated the importance of self reliance and reliance on God more than friends or clinic staff. These findings suggest that clinicians should explore not only the "good" aspects of a relationship that may present a barrier to asking for help for IPV, but also incorporate a women's spiritual and self-reliant feelings in offering help for IPV.

AVOIDING FREE CARE AT ALL COSTS: A SURVEY OF UNINSURED PATIENTS OPTING NOT TO SEEK CARE AT A COUNTY HOSPITAL. S.J. Weiner[1]; J. VanGeest[2]; R. Abrams[3]; A.H. Moswin[4]; R.B. Warnecke[1]. [1]University of Illinois at Chicago, Chicago, IL; [2]American Medical Association, Chicago, IL; [3]Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL; [4]Michael Reese Hospital, Chicago, IL. *(Tracking ID #103851)*

BACKGROUND: Core safety net providers, as defined by the Institute of Medicine (IOM), offer access to services "regardless of ability to pay." In assessing the ability of these institutions to serve medically indigent patients, the IOM focused on their financial viability and geographic distribution. Another critical dimension, however, is their capacity for serving the growing numbers of uninsured. Last year, uninsured patients made approximately 20,000 visits to three hospital ERs at non-core safety net providers that were sites for this study, all within four miles of a large county hospital. This study sought to determine whether these uninsured patients are opting out of a free service for one that is costly because they are in a relatively stable financial situation and can afford to self-pay, or because overcrowding is making access overly burdensome.
METHODS: A face-to-face survey was conducted in Spanish or English with 157 uninsured patients who presented in the emergency rooms at three medical centers, all within four miles of a county hospital. Demographic data was gathered along with information on health status, insurance, income, credit history, and experiences seeking care.
RESULTS: 65% of subjects were unemployed, 72% reported a household income of less than $20,000, 48% reported they were in "fair or poor health," 56% reported that they worry about their credit "alot," and 33% were were unable to pay a previous bill at the current site. 65% had prior experience seeking care at the county hospital. 64% of these individuals said they were "very satisfied" or "somewhat satisfied" with the quality of the care they had received, but 75% said they were "not at all" or "not too" satisfied with the wait time. Overall, 41% said they were "not at all" or "not too" likely to go back again. There was no relationship between willingness to return and any of the measures of income, health status and credit problems obtained. There was, however, strong correlation with wait time ($P = .007$, LR).
CONCLUSION: The high number of indigent patients in this study who have opted not to use the safety net even when its services are nearby and free, represent overflow from an overwhelmed provider not segmentation of the uninsured by those who are relatively well off. Those surveyed were predominantly very low income, in debt, and perceived themselves to be in relatively poor health—all characteristics of individuals who depend on the safety net. Access clearly involves more than geographic proximity and affordability. Excessive wait times can make medical care functionally inaccessible.

BABEL BABBLE: PHYSICIANS' USE OF JARGON WITH DIABETES PATIENTS. C.M. Castro[1]; C. Wilson[1]; D. Schillinger[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115435)*

BACKGROUND: Patients with limited health literacy not only experience problems reading medical materials, but are more likely to experience problems with verbal communication, such as understanding medical terminology. Little is known about primary care physicians' use and patients' comprehension of jargon, and whether patient comprehension varies with the communication context.
METHODS: We audiotaped outpatient encounters between 38 primary care physicians and 74 English-speaking patients with diabetes mellitus and limited health literacy and coded for jargon, defined as physicians' words or phrases with meanings specific to health and/or health care. We characterized each jargon term as technical ("hemoglobin A1c") vs. lay jargon ("your weight is stable"), and assigned use of each term to 1 of 4 possible functions in the visit (assessing symptoms, delivering test results, making recommendations, providing health education). We selected 19 diabetes-related jargon terms for a phone survey among a subset of 19 patients and measured comprehension of these terms. We first asked patients to self-report their comprehension using a 4-point Likert scale ranging from no understanding to total understanding and to define each term in their own words. We repeated these steps after presenting the sentence context as transcribed from audiotapes. We scored comprehension of open-ended questions through a consensus process. Finally, we examined differences in comprehension in relation to

communication variables (e.g. sentence context vs. no context; explanatory vs. non-explanatory context; jargon from patient's own visit vs. other patients' visit; lay jargon vs. technical jargon).
RESULTS: 60 of 74 encounters (81%) contained at least one jargon term (mean 3; range 0–14). 37% of jargon occurred as part of physicians' recommendations and 29% as part of health education. Among the subset of 19 patients, only 22% of self-reported and 18% of open-ended responses showed either "some" or "total" understanding. Open-ended comprehension was not affected by (a) providing sentence context (21% vs. 15%), even if explicitly clarifying (27% vs. 17%); (b) whether jargon was from the patients' own visit (26% vs. 17%); or (c) whether the jargon was lay or technical (16% vs. 18%).
CONCLUSION: Primary care physicians caring for diabetes patients with limited health literacy commonly employed clinical jargon during routine office visits, particularly when providing health education and recommendations. Patients tended to have poor comprehension of diabetes-related jargon terms, which did not improve as a function of physicians' clarification or the nature of the jargon. Future research should explore alternative means to convey clinical concepts such that patients can consistently understand.

BABY BEWARE: PATTERNS OF PRESCRIPTION OF TERATOGENIC MEDICATIONS. E.B. Schwarz[1]; J. Maselli[2]; R. Gonzales[2]. [1]University of California, San Francisco, San Francisco, CA; [2]Division of General Internal Medicine, UCSF, San Francisco, CA. *(Tracking ID #115289)*

BACKGROUND: One of every 28 babies born in the United States is born with a birth defect. In the majority of cases, the cause of the defect is unknown. Certain medications are known to increase the risk of birth defects, and are classified by the FDA as class D or X on the basis of the risk the drug poses to a fetus. The goal of this study is to identify the teratogenic medications most frequently prescribed to women of reproductive age and the providers who most frequently prescribe these medications. In addition, we explore awareness of the risks associated with these medications by assessing rates of concurrent contraceptive counseling.
METHODS: The 1998–2000 National Ambulatory Medical Care Surveys provide information on 12,681 visits made by women of reproductive age to a national sample of non-federally employed office-based physicians who are primarily engaged in direct patient care. By design, the stratified random sampling strategy allows extrapolation of results to the US population of ambulatory physicians and patients. The primary outcome was defined as an office visit associated with a prescription of a potentially teratogenic class D or X medication. A secondary outcome was visits with documentation of contraceptive counseling or prescription of a contraceptive method.
RESULTS: One of every twenty-five outpatient prescriptions written for women of reproductive age are for potentially teratogenic medications. Those most frequently prescribed to women of reproductive age, in descending order, were anxiolytics, antiseizure medications, antibiotics, and statins. Internists and family/general practitioners wrote ten times as many prescriptions for class D or X medications to women of reproductive age as gynecologists (4.0 million vs 0.4 million annual prescriptions; or 6.4% of visits to generalists vs 1.6% of visits to gynecologists). Gynecologists were twice as likely as generalists to document contraception at the same visit a potential teratogen was prescribed (13.5% vs. 6.7%, $P = .39$). Most visits in which a class D or X medication was prescribed had no documentation that contraception was discussed at the same visit. Visits with prescription of a class D or X medication were no more likely to have documentation of concurrent contraceptive counseling than visits with prescription of a class A or B medication (4.1% vs. 5.4%, $P = .24$).
CONCLUSION: Increased awareness of the teratogenic risk associated with certain medications and more frequent provision of contraceptive counseling, may decrease the number of children and families who suffer with birth defects. Ongoing collection of information about the provision of contraceptive and family planning services is essential to an accurate assessment of the risks associated with use of class D and X medications.

BARRIERS TO ACE INHIBITOR USE IN PATIENTS WITH TYPE 2 DIABETES. R.N. Sinha[1]; A. Ettipio[2]; C.O. Hershey[1]; N.M. Khan[1]. [1]SUNY at Buffalo, ECMC, Buffalo, NY; [2]SUNY at Buffalo, Buffalo, NY. *(Tracking ID #115349)*

BACKGROUND: Studies have shown ACE inhibitors (ACEI) provide cardioprotective benefits in patients over 55 years of age with Type 2 diabetes mellitus(DM). Renoprotective benefits have also been demonstrated and ACEI are recommended for treating hypertension in this population. We reviewed our patients with Type 2 DM to find out the barriers to ACEI use.
METHODS: We retrospectively reviewed clinic charts in our county teaching hospital clinic from Jun '02–Sept '03. The findings were discussed with the Attending Physicians(PMD) involved and their responses further clarified the reasons ACEI were not prescribed for their patients.
RESULTS: 275 Type 2 DM patients Male: Female ratio of 123:152;45%:55% were found. 199 patients were on an ACEI, 76(28%) were not. The 76 patients not on an ACEI were analyzed in detail. 55 patients (72%) were African-American & 17 (22%) were Caucasian. Fifty-five (68%) had prescription benefits through Medicaid, 20(26%) were self-paying & 4(5%) had commercial insurance. 63/76 (83%) had hypertension and 13/76 (17%) were normotensive. The median(range) age was 58.5(37–92) years. Mean(SD) duration of diabetes for the 76 patients was 8.39 (6.6)years, HbA1C 8.2% (1.98); Body Mass Index(BMI) 31.4 kg/m^2 (8.1); Serum Creatinine(SCr) 1.46 mg/dL (1.35); Mean Arterial Pressure(MAP) was 95.2 mmHg (9.85). 39 of the 76 were never on an ACEI while 37 had been prescribed an ACEI at least once. Analysis of the 37 patients previously on an ACEI revealed the following reasons for ACEI omission or discontinuation. 26 patients had an adverse reaction (cough-11; angioedema-7; increase in serum creatinine-3; rash-5). 6 patients were on dialysis, 2 were initially started on an Angiotensin receptor blocker (ARB), and there was unclear documentation for the remaining 3 patients. PMDs gave three main reasons for not using an ACE in the other 39/76 patients: 1) The UKPDS study revealed no difference in nephropathy outcomes if either a beta blocker or ACEI was used to control hypertension. 2) The patient was normotensive or well controlled on other medications. 3) Lack of appreciation of the possible benefit of ACEI usage in patients with diabetes in particular those without microalbuminuria.
CONCLUSION: The main barriers to ACEI use found in our study were adverse drug reactions, a lack of physician awareness of the data supporting ACEI (& ARB) use, and somewhat conflicting data between clinical trials. Further physician education and clarification with regards to the outcomes, risks and benfits of the ACEI class of drugs would be helpful.

BARRIERS TO THE TREATMENT OF HEPATITIS C INFECTION: PATIENT, PROVIDER, AND SYSTEM FACTORS. J.A. Morrill[1]; M. Shrestha[2]; R.W. Grant[3]. [1]Massachusetts General Hospital, Boston, MA; [2]M.G.H.-Revere HealthCare Center, Boston, MA; [3]Partners Healthcare, Boston, MA. *(Tracking ID #116825)*

BACKGROUND: Hepatitis C virus (HCV) infection affects over 4 million Americans (approximately 2% of the U.S. population). Although associated with side effects, antiviral therapy represents the only means of preventing the potentially devastating complications of chronic HCV infection. Despite this benefit of therapy, many (if not most) patients infected with HCV remain untreated.
METHODS: We identified a cohort of 275 patients with HCV infection followed at an urban community health center. We report here data for the first 155 patients reviewed to date. Demographic, laboratory, and encounter data were obtained from the electronic medical record. We used structured data abstraction forms to determine treatment status (treated or untreated) and to assess medical, psychiatric, and substance abuse history from 12/01 to 12/03. We also conducted structured interviews with each patient's primary care provider (PCP) to ascertain the PCP's rationale for referring (or not referring) the patient for HCV treatment. Chi-square testing (for categorical variables) and Student's t-test (for continuous variables) were used to compare the characteristics of treated vs. untreated patients.
RESULTS: Patients in our cohort were an average of 48.2 years of age, 49.7% were male, and most were unemployed (60.6%), unmarried (66.4%), and covered by "safety net" health insurance (i.e., Medicaid or Massachusetts Free Care; 62.6%). Most patients (79%) were white, 12% were Asian (most often Cambodian refugees), 3% were Hispanic, and 2% were Black. The mean HCV viral load among these patients was 310,739 IU/ml, and the mean ALT value was 61.3 U/L. Only 24% of the patients had ever received treatment. Compared with untreated patients, treated patients were more often married (53% vs. 27%, $P = .004$) and had lower rates of ongoing EtOH use (8% vs. 36%, $P = .001$), past drug use (37% vs. 57%, $P = .03$), referral to a substance abuse counselor (0% vs. 12%, $P = .03$), and major psychiatric disorders (38% vs. 61%, $P = .02$), as well as a lower ratio of missed clinic visits to total clinic visits (0.10 vs. 0.19, $P = .01$). There were no significant differences in age, gender, employment status, insurance coverage, or ethnicity between treated and untreated patients. According to their PCPs, the major reasons for not offering HCV treatment included: negative viral load (16.2%), psychiatric comorbidity (16.2%), current or past substance abuse (12.8% and 11.1%, respectively), and a history of poor clinic attendance (6%). In 6% of cases, no clear reason for not treating was identified.
CONCLUSION: We found low treatment rates in our cohort of urban HCV positive patients that were similar to the rates reported in other studies. Treated patients were more likely to be married and less likely to have problems with psychiatric disease, substance abuse, and compliance with clinic attendance. PCP-identified barriers to referral and treatment—particularly psychiatric and substance abuse comorbidity—highlight potential targets for interventions to improve the rate of appropriate treatment and thereby stem the predicted tide of future chronic liver complications in patients currently infected with HCV.

BEDSIDE INTERACTIONS FROM THE OTHER SIDE OF THE BEDRAIL: PATIENTS' PERSPECTIVES. K.E. Fletcher[1]; D. Rankey[2]; D.T. Stern[2]. [1]Medical College of Wisconsin/Milwaukee VAMC, Milwaukee, WI; [2]University of Michigan, Ann Arbor, MI. *(Tracking ID #115348)*

BACKGROUND: Bedside encounters between patients and physician teams hold potential. Students and residents benefit, but how are patients affected? In a pilot study, we interviewed patients to identify aspects of bedside interactions that were important to them. Based on that study, we designed a patient questionnaire to quantify the importance of these issues.
METHODS: The subjects were medical inpatients at a VAMC. Exclusion criteria were being non-English speaking, under 18 or unable to give consent. The team was contacted to ensure eligibility. Each day after collecting data, we destroyed the patient lists. Hence, the total number of available patients (461) contains overlap because some patients' names appeared on more than one day. Twenty-nine patients refused, and others were unavailable during times the survey was administered. We collected anonymous surveys from 97 patients who were eligible, available and willing to complete them. The survey consisted of 44 questions including short answer, multiple choice and Likert-type questions. Data analysis included descriptive statistics and factor analysis.
RESULTS: The sample was predominantly male and white. Mean age was 62, and 49% reported their health to be fair or worse. Overall satisfaction with the hospital

experience and with the team of doctors were both high (95% and 96% were very or mostly satisfied, respectively). Patients reported learning about several issues during interactions with the teams. The 3 most highly rated areas of learning (1–4 scale, 1 = very important) were new problems (1.10), tests to be done (1.14) and treatments to be done (1.16). Most patients (74%) felt that their teams cared about them very much, and 84% said that the team caring about them was very important. Patients were made comfortable when the team showed that they cared, listened and appeared relaxed (reported by 63, 57 and 54%, respectively). Patients were made uncomfortable when the team used language they did not understand (22%) and when several people examined them at once (13%). Many (58%) patients felt personally involved in teaching; only 6% did not like the teaching. The majority of patients liked having medical students and residents involved in their care (69% and 64%, respectively). Factor analysis resulted in 3 factors: an interactiveness factor (alpha = 0.65), a team-oriented factor (alpha = 0.63) and a satisfaction with understanding factor (alpha = 0.77).
CONCLUSION: Patients have much to teach us about team bedside interactions. Patients' reactions are generally positive, but patients are different with respect to what makes them comfortable and uncomfortable. Taking their preferences into account could improve the experience of being in a teaching hospital.

BELIEFS ABOUT SMOKING RISKS, INTENTIONS TO QUIT AND ENROLLMENT IN A SMOKING CESSATION PROGRAM. A. Gurmankin[1]; K. Volpp[2]. [1]Rutgers, The State University of New Jersey, New Brunswick, NJ; [2]Philadelphia VA Medical Center, Philadelphia, PA. *(Tracking ID #115522)*

BACKGROUND: Despite the well-known risks of smoking and the effectiveness of smoking cessation programs (SCPs), many smokers do not intend to quit and do not enroll in SCPs. According to the health belief model, feeling threatened by a risk strongly influences the adoption of the corresponding protective behavior. Thus, an improved understanding of the role of health concerns of smoking on quitting intentions is critical to developing strategies for clinicians to encourage patients to quit.
METHODS: 431 primary care patients at the Philadelphia Veteran's Affairs medical center (VA) completed a survey assessing their intention to quit smoking, reasons to quit, beliefs and worry about risks, and comparative risk perception. All items used a 1–5 response scale, except worry about risks, which used a 1–7 scale. Eligibility for an SCP was determined by contraindications for the nicotine patch. Eligible subjects (n = 179) were invited to participate in a free 4-session SCP at the VA.
RESULTS: Compared to those without an intention to quit in the next 6 months ("precontemplators") (n = 172), those with this intention ("contemplators") (n = 259) reported greater motivation to quit because of concern about serious illness if don't quit (4.2 vs. 3.4, $P < .0001$), knowledge of others who have died from serious illness caused by smoking (3.8 vs. 2.2, $P = .0002$), concern that smoking will shorten life (4.3 vs. 3.8, $P = .0002$), noticing physical symptoms that smoking is hurting health (4.0 vs. 3.5, $P = .0002$), and were more worried about the health risks of smoking (5.3 vs. 4.2, $P < .0001$). Compared to precontemplators, contemplators more strongly agreed that quitting smoking now can lower the chance of the risks of smoking (4.5 vs. 4.2, $P = .0033$), more strongly disagreed that doctors exaggerate the badness of the risks of smoking so that smokers will quit (2.3 vs. 2.8, $P = .0026$), and rated their chance of the risks of smoking compared to a same-sex/age nonsmoker as higher (heart disease: 4.1 vs. 3.7; lung cancer 4.2 vs. 3.8; bladder cancer: 3.8 vs. 3.5; emphysema: 4.3 vs. 4.0; bronchitis: 4.2 vs. 4.0, $P < .05$ for all). Among eligible subjects, contemplators were nonsignificantly more likely to enroll in the SCP compared to precontemplators (36% vs. 24%, $P = .109$).
CONCLUSION: Concerns and beliefs about the risks of smoking are associated with the intention to quit smoking, and those with an intention to quit are more likely to enroll in an SCP. These results suggest that educating smokers about the risks may motivate them to attempt to quit.

BEYOND ELECTROLYTES: EATING DISORDERS AND MEDICAL COMORBIDITY. C. Carney Doebbeling[1]; L.E. Jones[2]. [1]Indiana University School of Medicine & Regenstrief Institute, Indianapolis, IN; [2]University of Iowa College of Public Health, Iowa City, IA. *(Tracking ID #117218)*

BACKGROUND: Primary care physicians often provide first-line assessment and ongoing care of women with eating disorders (ED). The objective of this study is to characterize the medical conditions occurring in women with anorexia nervosa (AN), bulimia nervosa (BN), and Eating Disorder Not Otherwise Specified (ED NOS).
METHODS: The data source is a 100% sample of Wellmark Blue Cross Blue Shield claims data, 1996–2001. A subject was identified as having an ED if she had a hospitalization, psychiatrist visit, or two outpatient visits with a primary/secondary ICD-code for AN, BN, or ED NOS. Controls were randomly selected, age-matched women without claims for ED. A comorbidity was counted if it occurred during any hospitalization, or at least twice in outpatient claims for a period of greater than 30 days. Odds ratios with 95% confidence intervals were calculated.
RESULTS: 604 women (mean age = 23 yrs) met criteria for AN, 552 (mean age = 25 yrs) met criteria for BN, and 231 (mean age = 28 yrs) met criteria for ED NOS. The average number of comorbidities was higher among women with ED compared to controls: AN = 0.46 vs 0.14 ($P < .001$); BN = 0.42 vs. 0.17 ($P < .001$); and ED NOS = 0.65 vs. 0.22 ($P < .001$). Women with AN were significantly more likely to have arrhythmias (OR = 5.6), valvular disease (OR = 3.6), neurological disorders (OR = 3.6), chronic pulmonary disease (OR = 2.2), peptic ulcer disease (OR = 6.0), hypothyroidism (OR = 2.7), fluid/electrolyte disorders (OR = 14.4), blood loss anemia (OR = 15.1), and deficiency anemias (OR = 4.4). Women with BN were more likely to have chronic pulmonary disease (OR = 2.1), diabetes without complications (OR = 3.0), hypothyroidism (OR = 1.9), peptic ulcer disease (OR = 15.1), obesity (OR = 8.7), hypertension (OR = 2.4), fluid/electrolyte disorders (OR = 3.8), and deficiency anemias (OR = 2.2). Women with ED NOS were more likely than controls to have claims for arrhythmias (OR = 3.5), hypertension (OR = 2.9), hypothyroidism (OR = 2.7), rheumatoid arthritis (OR = 4.3), obesity (OR = 53.5), fluid/electrolyte disorders (OR = 3.1), and deficiency anemias (OR = 2.8).
CONCLUSION: Young women with ED have considerable medical comorbidity, well in excess of controls. Although an elevated risk for electrolyte disorders and arrhythmias has been reported, an increased likelihood for anemias, hypothyroidism, and chronic pulmonary conditions is not well described. These results substantiate the need for thorough medical assessments in ED patients, and support early intervention to prevent chronic medical complications. The data implicate that insurers be aware of the significant risk for medical comorbidity and provide for treatment programs that address the psychological and physical needs of these patients.

BODY-MASS INDEX IN RELATION TO OVARIAN CANCER RISK IN A POPULATION-BASED CASE-CONTROL STUDY. N.B. Peterson[1]; A. Trentham-Dietz[2]; P.A. Newcomb[3]; T. Gabretsadik[1]; K.M. Egan[1]. [1]Vanderbilt University, Nashville, TN; [2]University of Wisconsin-Madison, Madison, WI; [3]University of Washington, Seattle, WA. *(Tracking ID #115855)*

BACKGROUND: The relation of body weight to ovarian cancer risk is still uncertain. A few previous studies suggest that a heavier body weight is most related to ovarian cancer risk in premenopausal women.
METHODS: We analyzed data from a population-based study of 757 cases of ovarian cancer and 5943 controls from Massachusetts and Wisconsin conducted from 1992–2001. In a telephone interview, information was ascertained on height, weight, menopausal status, and other ovarian cancer risk factors. We categorized all women into one of 5 body-mass index (BMI) groups. Logistic regression was used to estimate multivariate-adjusted odds ratios and 95% confidence intervals.
RESULTS: The mean age for cases and controls was 57 and 60, respectively. Over 96% of the participants were white. 68% of the cases 71% of the controls were postmenopausal. The median BMI (kg/m^2) was 26 for cases and 25 for controls. There was a trend of increasing ovarian cancer risk with increasing BMI in premenopausal (p trend 0.04 for ordinal BMI groups) but not postmenopausal (p trend 0.97) women after adjusting for age, state, parity, duration of oral contraceptive use, family history of breast or ovarian cancer, history of tubal ligation, and education (see table).
CONCLUSION: Overall, body-mass index was unrelated to ovarian cancer risk in these data. However, BMI was positively related to ovarian cancer risk among premenopausal women, a result consistent with several previous studies. Further research is needed to determine the potential hormonal/endocrine mediators of the effect of premenopausal weight on ovarian cancer risk.

	Body Mass Index (kg/m^2)					Categorical
	<22	22-24.3	24.4-26.3	26.4-28.3	28.4+	p-trend
All Women						
Cases/Controls	152/1285	154/1275	122/963	114/893	215/1527	
OR	1.0 (ref)	1.10 (0.86-1.40)	1.13 (0.87-1.47)	1.12 (0.86-1.45)	1.18 (0.94-1.49)	0.17
Premenopausal						
Cases/Controls	55/367	37/344	30/191	26/197	68/336	
OR	1.0 (ref)	0.79 (0.49-1.25)	1.22 (0.73-2.01)	1.05 (0.62-1.78)	1.40 (0.93-2.11)	0.04
Postmenopausal						
Cases/Controls	93/860	111/880	89/730	84/655	140/1117	
OR	1.0 (ref)	1.21 (0.90-1.63)	1.07 (0.78-1.46)	1.12 (0.82–1.55)	1.05 (0.79-1.40)	0.97

BREAKING THROUGH THE IVORY WHITE TOWER: THE RACIAL INTEGRATION OF MEDICAL EDUCATION IN THE UNITED STATES, 1950–1970. P.P. Reynolds[1]. [1]National Library of Medicine—NIH, Bethesda, MD. *(Tracking ID #117010)*

BACKGROUND: Medical schools remained the last major medical institution in this country to racially integrate and thus, delayed the final steps in eliminating overt discrimination against minorities until the late-1960s, early-1970s. This paper explores strategies used by African American physicians to obtain faculty appointments at predominantly white medical schools and admitting privileges at hospitals in one northern and two southern communities.
METHODS: Primary research sources include manuscript collections of physicians and medical school and university administrators; medical school and university documents; oral history interviews; Federal documents and court cases; and articles from the Journal of the National Medical Association.
RESULTS: African American physicians and concerned colleagues pursued three strategies in the 1950s and 1960s to secure faculty appointments at predominantly white medical schools. These included: 1) legal action combined with local pressure; 2) legal action combined with Federal policy; and 3) Federal policy combined with quiet negotiation. The first model, legal action combined with local pressure, is exemplified in the racial integration of Chicago medical schools and teaching hospitals. Denied hospital staff privileges, the African American physicians in Chicago brought suit against all the non-profit hospitals for violation of city and state laws and discrimination under the United States Constitution. This action was followed by pressure applied through the Chicago Commission on Human Rights ultimately resulting in the racial integration of both the city's hospitals and medical schools. The second model, legal action combined with Federal policy, is illustrated by the experience of the University of Alabama in Birmingham. While DHEW officials praised UAB as a model of racial integration of clinical services, its black employees filed suit against the administration for violation of Title VI of the 1964 Civil Rights Act. Fearing loss of Federal funds, the administration moved quickly to admit an

African American physician onto the faculty and open education programs to minority applicants. The third model, Federal policy combined with negotiation, is described in the case of Duke University School of Medicine when the administration admitted the first group of African American physicians onto the faculty in 1969 primarily in reponse to Federal policy and pressure from the local Black leadership.
CONCLUSION: Federal policy combined with legal action and negotiation proved successful in the effort to racially integrate medical schools in the United States. Use of the court system by African American physicians and concerned citizens proved essential in the movement to eliminate race discrimination in medical education, and helped shape substantially Federal policy.

BRIEF INTERVENTION FOR THE SPECTRUM OF ALCOHOL PROBLEMS ON A HOSPITAL MEDICAL SERVICE: PRELIMINARY RESULTS FROM A RANDOMIZED TRIAL. R. Saitz[1]; T. Palfai[1]; N.J. Horton[2]; D.M. Cheng[1]; N. Freedner[3]; N. Tibbetts[4]; K.L. Kraemer[5]; M.S. Roberts[5]; J.H. Samet[1]. [1]Boston University, Boston, MA; [2]Smith College, Northampton, MA; [3]Boston Medical Center, Boston, MA; [4]DM-Stat, Medford, MA; [5]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115960)*

BACKGROUND: Brief counseling interventions are efficacious in outpatient settings for problem drinkers, but have not been tested in randomized trials for the spectrum of alcohol problems in hospitalized medical patients.
METHODS: Medical inpatients in an urban general hospital identified by alcohol screening were randomized (stratified by Alcohol Use Disorders Identification Test score ≥12) to a brief motivational intervention or to usual care. The main eligibility criterion was risky drinking amounts defined by age- and gender-specific quantities and frequencies. Mental status impairment and <2 contacts to assist with follow-up were exclusions; alcohol dependence was not. Primary outcomes were: 1) self-reported linkage with alcoholism treatment by 3 months for patients with alcohol dependence, and 2) changes in alcohol use at 12 months. Intention-to-treat analyses were multivariable logistic and linear regression models adjusting for imbalances in randomized groups.
RESULTS: We approached 10,273 hospital admissions representing 7,824 individuals, of whom 5,813 were screened for risky drinking; 986 (17%) were drinking risky amounts; 524 were eligible and 341 enrolled. For these interim analyses, 265 (78%) completed 3-month, and 202 (59%) 12-month follow-up. Most were men (71%), black (45%), with mean age 44 years. For those with alcohol dependence (77%) the effect of intervention on 3-month linkage differed by gender: Among women, but not men, those in the intervention group were more likely to link with alcoholism treatment (for women, adjusted odds ratio 11, 95% CI 1.6–78; for men AOR 0.6, 95% CI 0.2–1.4). There was no significant effect of the intervention on binges or drinks/day at 12 months for alcohol dependent patients (n = 163). The intervention did significantly influence drinking among non-dependent drinkers (n = 39): Intervention subjects reported a decrease in the number of binges and drinks/day from baseline to 12 months, while controls reported increases (adjusted mean change in binges –3.3 for intervention vs. +2.9 for controls, $P = .06$; adjusted mean change in drinks/day –1.8 for intervention vs. +1.5 for controls, $P = .02$).
CONCLUSION: In hospitalized patients, brief intervention shows some promise for linking alcohol dependent women with alcoholism treatment, and for decreasing drinking in non-dependent risky drinkers. The prevalence of risky drinking is high but unlike outpatient settings, the majority of patients detected in the hospital have alcohol dependence. The fact that the intervention was not equally effective across the spectrum of alcohol-involved patients suggests that hospital interventions may need to be tailored to the level of alcohol problem severity.

BRIEF SCREENS FOR DEPRESSION AND SUICIDALITY IN PRIMARY CARE: TWO ITEMS ARE BETTER THAN ONE. K. Corson[1]; M. Gerrity[1]; S. Dobscha[1]. [1]Portland VA Medical Center, Portland, OR. *(Tracking ID #115647)*

BACKGROUND: Background: Very brief measures of depression (e.g., 1 item assessing depressed mood over much of the past year, and 2 items assessing depressed mood and anhedonia over the past month) used for screening have been shown to have good sensitivity and fair specificity. In 1999, Portland Veterans Affairs Medical Center (PVAMC) primary care clinics initiated screening for depression using a 1-item measure. The primary objectives of this study were: 1) to compare the test characteristics of a 1-item measure currently used for annual depression screening to validated scoring algorithms of the Patient Health Questionnaire (PHQ) and 2) to estimate the proportion of primary care patients not currently receiving mental health therapy who screen positive for depression.
METHODS: Patients due to be seen in the PVAMC primary care clinics were identified using appointment recall lists. Of 1,447 patients who met inclusion criteria for a randomized trial, "Improving Outcomes of Depression in Primary Care," 1,226 completed the telephone screening. We administered the PVAMC 1-item depression screen ("Have you felt depressed or sad most of the time in the past year?"), the PHQ, and two items devised to follow-up a positive response to the PHQ item assessing thoughts of death/suicide. We compared scores based on the PHQ-9, which encompasses the DSM-IV criteria for major depression, the PHQ-8, which excludes the suicide item, and the PHQ-2, which includes only the anhedonia and depressed mood items.
RESULTS: Using the PHQ-9 cutpoint for moderate depression as the reference standard, the 1-item screen was specific (93%) but less sensitive (68%), whereas the PHQ-2 demonstrates specificity (88%) and sensitivity (95%). For case-finding, PHQ-8 was virtually equivalent to PHQ-9. Across methods, approximately 20% of patients had scores suggesting moderate or greater depression severity. Of 84 patients endorsing the PHQ-9 suicide item, 28 (33%) reported thoughts of harming themselves, and 16 (19%) had a specific plan.
CONCLUSION: The goal of screening places sensitivity at a premium. Administering two items rather than one improves performance with minimal added time investment. Assessing suicidal ideation as part of screening did not improve case-finding; however, 1/3 patients who endorsed this item reported recent active suicidal ideation. A substantial proportion of primary care patients experiences depressive symptoms that require further clinician assessment.

CAN BREAST AND CERVICAL CANCER SCREENING VISITS BE USED TO IMPROVE COLORECTAL CANCER SCREENING? R.C. Carlos[1]; A.M. Fendrick[1]; S.J. Bernstein[2]. [1]University of Michigan, Ann Arbor, MI; [2]Ann Arbor VA, Ann Arbor, MI. *(Tracking ID #116711)*

BACKGROUND: Despite high acceptance levels of mammography and cervical cancer screening by U.S. women, adherence with colorectal cancer (CRC) screening remains sub-optimal. A better understanding of the relationship among cancer screening behaviors by women may provide insight into interventions to enhance CRC screening.
METHODS: Women 50 years and older who participated in the 2001 Behavioral Risk Factors Surveillance Survey (BRFSS) were queried regarding cancer screening patterns. Predictors of CRC screening were determined using multivariate analysis from sociodemographic data and non-CRC screening adherence rates based on American Cancer Society guidelines.
RESULTS: Among the 52,478 CRC module respondents, cancer screening adherence was significantly less for CRC (46.1%) compared to cervical cancer (69.5%) or breast cancer (82.4%). In multivariate analysis, self-reported good health (adjusted OR 0.81, $P < .01$) and current smoking (adjusted OR 0.78, $P < .01$) independently predicted decreased CRC screening adherence; while increasing age (adjusted OR 1.03, $P < .01$), having health insurance (adjusted OR 1.59, $P < .01$), having a personal physician (adjusted OR 1.61, $P < .01$), adherence with cervical cancer screening (adjusted OR 1.85, $P < .01$) and adherence with breast cancer screening (adjusted OR 2.30, $P < .01$) were independent positive predictors of CRC screening adherence. Participants who adhered to both mammography and Pap smear guidelines were significantly more likely to adhere to CRC screening (51.5% CRC screening adherence) when compared to women who adhered to neither screening test (8.2% CRC screening adherence), with an adjusted OR 5.33 ($P < .001$). Participants who adhered to both mammography and Pap smear guidelines were significantly more likely to adhere to CRC screening compared to women who adhered to either screening test (38.0% CRC screening adherence) with an adjusted OR 2.00 ($P < .001$).
CONCLUSION: Women adherent with mammography and cervical cancer screening guidelines were significantly more likely to undergo CRC screening than those who were not adherent, although CRC acceptance in the adherent group was still sub-optimal. Non-colon cancer screening visits represent a "teachable moment" for education and behavior-related intervention aimed to reduce the burden of CRC.

CAN INTERVENING TO RAISE EXPECTATIONS FOR AGING CHANGE QUALITY OF LIFE AMONG OLDER ADULTS? C.A. Sarkisian[1]; C.L. Davis[2]; B. Weiner[1]. [1]University of California, Los Angeles, Los Angeles, CA; [2]W.A. MacColl Institute for Healthcare Innovation, Seattle, WA. *(Tracking ID #117006)*

BACKGROUND: Among older adults, attributing age-associated problems to "old age" is a common phenomenon. We set out to examine whether an intervention aimed at raising expectations for aging influences quality of life among older adults.
METHODS: We recruited 51 adults aged ≥65 years to participate in a pre-post trial at 3 senior centers. The intervention consisted of 4 weekly 2-hour group sessions of 8–14 participants. During the first hour of each session a trained facilitator applied "attribution retraining" using a standardized curriculum developed by our multidisciplinary team: facilitators taught that many age-associated health problems should be attributed to mutable causes rather than "old age." Each discussion session was followed by a 1-hour exercise class modeled after the Lifetime Fitness Program© during which the attribution retraining session principles were verbally reinforced. In-person interviews were conducted at baseline and 7-week follow-up. Quality of life was measured: 1) using the SF-12 to compute Physical (PCS-12) and Mental (MCS-12) Component Summary scores using standardized weights, with higher scores indicating better quality of life; and 2) by counting the #activities of daily living (ADLs, 13 total) participants could not do without difficulty. We measured expectations for aging using the ERA-38, a previously tested instrument in which higher scores indicate expecting higher functioning with aging. Change in scores from baseline to 7-week follow-up were examined using 2-sided t tests.
RESULTS: The study was completed by 46 seniors (90% of enrollees). Mean participant age was 77 years; 89% were female; 65% were Latino; 30% were non-Latino white. Results are shown in the table below. All completers reported improved mood; most reported decreased pain (61%), improved energy (85%); and improved sleep (54%).
CONCLUSION: In this small pre-post study, our attribution retraining intervention raised self-reported mental quality of life and decreased ADL impairment among older adults. Efficacy of this intervention should be tested in a randomized trial.

Effect of Attribution Retraining Intervention on Quality of Life and Expectations for Aging:

	Mean at Baseline	Mean at 7-weeks	Effect Size	p-value
MCS12 Score	52.1	55.3	11%	0.049
PCS12 Score	43.6	44.2	2%	0.671
ADL imprmnts	0.93	0.59	n/a	0.041
ERA-38 Score	30.8	40.1	30%	0.0003

CANCER RISK PERCEPTIONS AND SCREENING PRACTICES AMONG BLACK AND WHITE WOMEN. T.A. Battaglia[1]; K.S. Roloff[1]; J.L. Speckman[1]; F.A. Farraye[1]; K.M. Freund[1]. [1]Boston University, Boston, MA. *(Tracking ID #117187)*

BACKGROUND: Risk perceptions have been found to influence screening practices, but little is known about racial differences. We compare Black and White women on their perception of developing breast and colorectal cancer (CRC) and examine for an association with screening practices.
METHODS: We surveyed English speaking women, 40 years and older presenting to an inner-city, hospital-based primary care practice for women. A self-administered survey assessed demographics, screening practices and measures of breast and CRC risk perceptions: 1) Quantitative: "My chances of developing cancer in the next 20 years/lifetime is __in 1000"; 2) Categorical: "Compared to other women my age, my chances of developing cancer are: Above/Average/Below"; and 3) a validated susceptibility scale. Numeracy was assessed based on previous criteria, including a test question of number of heads with 1000 coin tosses. Age and race-specific cancer probabilities were calculated using the Modified Gail Model and Harvard Center for Cancer Prevention Model. Each woman was categorized as an under/correct/over-estimator based on this calculated probability compared with her categorical risk perception.
RESULTS: At interim 93 women completed the survey (76% response): 38% Black, 52% White; mean age 54; 67% had some college education; 31% received public assistance or insurance. 80% of women were up to date with mammography and 71% of women over age 50 were up-to-date with CRC screening. No racial differences were found in screening practices (breast $P = .80$, colorectal $P = .72$). Only 39% of women were considered numerate. Categorical risk perceptions correlated well with susceptibility scores (breast and colon both $P = .001$). Each woman was categorized on her ability to estimate her calculated cancer risk (see Table 1). There was no significant difference between black and white women in their ability to estimate categorical relative risk (breast $P = .11$, colon $P = .50$) (see Table 2). There was no significant difference between women by their screening status (up-to-date or not) (breast $P = .81$, colon $P = .54$), or by numeracy (numerate or not) (breast $P = .92$, colon $P = .67$) in their ability to estimate risk.
CONCLUSION: Even in this educated group of women with high screening rates, there was a low level of numeracy. Racial differences in risk perception and screening behavior were not identified. Greater education on risk assessment should concentrate on non-numeric categories.

Table 1: Ability to Estimate Calculated Risk

	Underestimate	Correct Estimate	Overestimate
Breast Cancer Risk	25 (30%)	34 (41%)	24 (29%)
Colorectal Cancer Risk	7 (8%	35 (41%)	44 (51%)

Table 2: Ability to Estimate Calculated Risk by Race

		Underestimate	Correct Estimate	Overestimate
Breast Cancer Risk	Black	10 (32%)	8 (26%)	13 (42%)
	White	13 (30%)	21 (49%)	9 (21%)
Colorectal Cancer Risk	Black	4 (13%)	14 (44%)	14 (44%)
	White	3 (7%)	17 (38%)	25 (55%)

CANCER SCREENING IN OLDER WOMEN: WHAT ARE WE DOING? R. Salazar[1]; G. Gildengorin[1]; E.J. Perez-Stable[1]; J.M. Walsh[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116154)*

BACKGROUND: The appropriate age at which screening for breast and cervical cancer should be discontinued is unclear although evidence and guidelines question routine screening after age 70.
METHODS: We performed a retrospective review of computerized medical records from primary care practices in an academic medical center to evaluate rates and predictors of cervical and breast cancer screening in women over age 69. Women with at least one visit between 1/1/01 and 1/1/03 were included. Women with a history of AIDS, dementia, hysterectomy, cervical cancer or breast cancer were excluded.
RESULTS: Data regarding cervical cancer screening was collected for 12,259 women age 18 including 1,150 (9.4%) women over age 69. 60.9% of women over age 69 received a Papinocolau smear (Pap) in the preceding 3 years compared with a rate of 88.6% ($P < .001$) in women age 18–69. Although the percentage of those women receiving a Pap decreased with increasing age, many women were still screened (age 70–79: 66.5%, 80–89: 52.3%, 90+: 39.4%; $P < .001$). More women over the age of 69 receiving their care in OB-Gyn had a Pap compared with women seen in an Internal Medicine (IM) or Family Practice (FP) setting (82.3% vs. 53.7% and 58.5%, respectively; $P < .001$). Receiving care in an Ob-Gyn clinic was associated with a greater likelihood of having a Pap (O.R. 5.3; 95% CI 3.42–8.26). Information regarding mammography was obtained for 6,000 women age 40 and older, including 1,236 (20.6%) women over age 69. 83.4% of women age 70 and older had a mammography in the preceding 2 years compared with 54.3 % of women age 40 to 49 and 84.0% of women age 50–69 ($P < .001$). Rates of mammography use decreased with increasing age (age 70–79: 86.2%, age 80–89: 79.0%, age 90+: 71.9%; $P < .001$). Older white women were screened less frequently than Asian, African American or Latina women (79.8% vs. 84.8%, 87.8% and 87.0%, respectively; $P = .01$). Older women with more than 5 visits per year to were more likely to have had mammography (O.R. 1.2; 95% CI 1.12–1.29).
CONCLUSION: A substantial number of older women continue to be screened for cervical cancer, especially in Ob-Gyn practices. Furthermore, a significant number of these women continue to receive mammograms despite unclear efficacy. Continued research is needed to futher understand patient and clinician factors that lead to these screening practices.

CARE OF PATIENTS UNDERGOING ANGIOPLASTY IN SPECIALTY AND NON-SPECIALTY HEART HOSPITALS: CHERRY PICKING AND/OR IMPROVED OUTCOMES? P. Cram[1]; G.E. Rosenthal[2]; M.V. Sarrazin[3]. [1]University of Iowa, Iowa City, IA; [2]None Given, Iowa City, IA; [3]VAMC Iowa City, Iowa City, IA. *(Tracking ID #116831)*

BACKGROUND: There has been little rigorous research addressing the issues of "cherry picking" and health outcomes among patients receiving care in specialty and non-specialty hospitals. We conducted a case-control study of patients who underwent percutaneous coronary interventions (PCI) in specialty and non-specialty heart hospitals to determine whether specialty hospitals cared for patients with greater socio-economic resources and/or delivered improved outcomes.
METHODS: MEDPAR Part A data was used to identify all patients admitted to specialty and non-specialty hospitals within the same hospital referral region (HRR) for PCI (via ICD-9CM code) during 2000-01. Specialty hospitals were defined as hospitals with ratios of Major Diagnostic Category 5 admissions (MDC 5: Diseases of the Circulatory System) to total admission exceeded 50%. Patients were linked to U.S. census data to obtain socio-economic measures. We compared demographics, socio-economic status, and 30-day mortality among patients admitted to specialty and non-specialty hospitals. Logistic regression was used first to compare mortality after adjusting for demographics and comorbidity alone; subsequently, adjustment was made for hospital PCI volume. Sensitivity analysis was performed using alternative thresholds for defining specialty and non-specialty hospitals.
RESULTS: There were 26,542 admissions to 28 specialty hospitals and 37,950 admissions to 133 non-specialty hospitals. Demographic characteristics were similar for specialty and non-specialty hospital admissions; likewise, mean per-capita income did not differ among patients admitted to specialty and non-specialty hospitals ($23,300 vs. $23,700) nor median home values ($145,000 vs. $149,000). Specialty hospitals had significantly higher PCI volume than their local competitors (477 vs. 162). Unadjusted mortality was lower for specialty than non-specialty hospital admissions (2.9% vs. 2.0%; $P < .001$). Logistic regression adjusting for demographics and comorbidity revealed lower mortality for patients who received care in specialty hospitals (OR: 0.74: 95% CI: 0.67–0.83); addition of hospital PCI volume to the model eliminated this difference (OR: 1.02: 95% CI: 0.90–1.16). Using alternative methods for defining specialty hospitals did not alter our findings.
CONCLUSION: Specialty hospitals do not appear to preferentially admit patients with greater economic resources. Specialty hospitals do have lower mortality rates, and this is largely a function of their higher PCI volume.

CAREGIVER CHARACTERISTICS ASSOCIATED WITH DEMENTIA-RELATED BEHAVIORS. K.M. Sink[1]; K.E. Covinsky[1]; R.J. Newcomer[1]; K. Yaffe[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116745)*

BACKGROUND: Among patients with dementia, dementia-related behaviors (DRB) are common and associated with negative outcomes for both patients and caregivers. Though it has been observed that some patient-caregiver interactions may increase DRB, few studies have examined the extent to which caregiver characteristics influence the report of DRB. Our objective was to determine if caregiver characteristics are independently associated with DRB after accounting for patient characteristics.
METHODS: We conducted a cross-sectional study of 5788 community dwelling patients with dementia and their informal caregivers enrolled in a case-management intervention at 8 sites across the U.S. Caregivers were asked about the presence of 12 DRB (for example: hallucinations, constantly restless, combative, wanders, and wakes caregiver). Predictors included caregiver characteristics such as demographics, relationship to the patient, hours/week spent caregiving, self-rated health, functional status, depression, and burden. We used multivariate linear regression to determine which caregiver characteristics were independently associated with higher numbers of DRB, controlling for patient age, gender, dementia severity, functional status, and dementia type.
RESULTS: The median age of patients was 79, 60% were female, and their mean MMSE = 14. Median caregiver age was 65, 72% were female, 49% were spouses, and 31% daughters. The median hrs/wk spent caregiving was 89.5 and 32% of caregivers were depressed. The mean number of DRB was 4.8. Bivariate results are presented in the table. After adjustment for patient characteristics, caregiver characteristics that remained independently associated with higher numbers of DRB were younger age, less education, being the daughter, more weekly hours caregiving, greater depression, and greater burden (all $P < .005$).
CONCLUSION: Caregiver characteristics are associated with increased reports of DRB in patients with dementia. Clinicians should consider the dynamic between patient and caregiver characteristics as a factor in the presence of DRB. Whether higher numbers of reported DRB represent actual greater DRB vs. differential reporting, needs to be examined.

Mean Number of DRB by Caregiver Characteristics (all $P < .001$ except education)

Age	Education	Relation to Patient	Hours/week	Depressed	Burden
<65: 5.1	<9yrs: 4.8	Dtr: 5.2	<89.5: 4.5	No: 4.5	<median: 4.1
65: 4.5	9yrs: 4.8	Other: 4.6	89.5: 5.2	Yes: 5.5	median: 5.6

CAREGIVING IN THE FINAL MONTH OF LIFE: ARE MEN LESS DISTRESSED OR DOING LESS? E.K. Fromme[1]; P. Ebert[1]; L.L. Drach[1]; V.P. Tilden[2]; S.W. Tolle[1]. [1]Oregon Health & Science University, Portland, OR; [2]University of Nebraska Medical Center, Omaha, NE. *(Tracking ID #117545)*

BACKGROUND: As more patients die in non-hospital settings, families bear greater responsibility for end-of-life caregiving. Gender and generation (i.e. spouse vs. adult child) issues are important in understanding the different challenges (e.g. employment) that caregivers must face. We investigated how gender and generation issues related to how caregivers perceived their own distress and that of their dying family members.
METHODS: Using a random sample of Oregon death certificates, we identified decedents who died between June 2000 to March 2002. We conducted a structured telephone interview with the decedent's main family caregiver. The caregivers reported their own distress (physical, emotional, sleep disruption, confinement) using 8 items from Robinson's Caregiver Strain Index. They also reported their perception of decedents' distress using the Family Memorial Global Distress Index (GDI), a 26-item validated inventory of 10 common end-of-life symptoms and symptom-related distress. We assessed univariate relationships using independent *t* tests, and constructed a stepwise linear regression with caregiver distress as the dependent variable.
RESULTS: 1,384 of 1,825 (76%) eligible caregivers who were located completed interviews. We excluded 298 caregivers who were not spouses or adult children, leaving n = 1086 (122 husbands, 274 wives, 203 sons, and 489 daughters). Decedent's mean age was 79 years, 83% were white, 67% were enrolled in hospice, 99% had health coverage, and 52% died at home. For caregivers' personal distress, husbands (μ = 5.31,SD = 4.2) and sons (μ = 5.29,SD = 3.9) were equivalent (P = .98). They reported less personal distress (P = .01) than wives (μ = 6.48, SD = 4.5) and daughters (μ = 7.56,SD = 4.3). GDI scores showed the same pattern: husbands (μ = .77, SD = .63) and sons (μ = .91,SD = .71) did not report significantly different levels of perceived decedent distress (P = .10), but reported lower levels (P = .001) than wives (μ = 1.02,SD = .8) or daughters (μ = 1.16,SD = .82). Daughters reported higher levels of distress than wives (and husbands and sons), both personally (P = .004) and for decedents (P = .01). In the regression model, the GDI was twice as powerful a predictor of caregiver distress (β = .31) as gender (β = .14), and 4 times as powerful as generation (β = .08). Many demographic variables were excluded because they did not contribute significantly to the predictive value of the model. (R^2 = .139 (F[3,820] = 45.8, P < .001).
CONCLUSION: Generation was important for women, but not men, while gender was important regardless of generation. Daughters reported the highest levels of both personal distress and perceived decedent distress. A more powerful predictor of caregiver distress, however, was the perception that the decedent was in distress due to symptoms.

CERVICAL CANCER SCREENING AMONG WOMEN IN CALIFORNIA: ARE WE CLOSING THE RACIAL/ETHNIC GAP? I. De Alba[1]; Q. Ngo-Metzger[1]; J. Sweningson[1]; F.A. Hubbell[1]. [1]University of California, Irvine, Irvine, CA. *(Tracking ID #117157)*

BACKGROUND: Nearly 14 percent of all new cases of cervical cancer nationwide are diagnosed in women residing in California. Minority population groups at high risk for cervical cancer may be failing to fully comply with screening recommendations.
METHODS: We analyzed data from the 2001 California Health Interview Survey (CHIS), a population based telephone survey. The outcome measure was having a recent Pap smear (in the past 3 years). We performed a main analysis that included all women age 18 or older without a hysterectomy and two sub-analyses that included Hispanic or Asian women only. Logistic regression was used to determine the predictors of recent Pap smear use in each group. The ethnic group with the lowest bivariate screening rate was used as the reference group in the models.
RESULTS: The mean age for all women was 41 years and 58% had more than a high school education, a usual source of health care (88%) and health insurance (84%). Half were White, 30% were Hispanic, 11% were Asian, 5% were Black and 4% were classified as other race. In the main analysis, Asians had the lowest unadjusted screening rates (70.9%) of all groups were subsequently selected as the reference group. In the adjusted model, Asians were the most disadvantaged with Blacks (aOR 4.28, 95% CI 2.96–6.18), Hispanics (aOR 4.30, 95% CI 3.47–5.31), Whites (aOR 3.02, 95% CI 2.59–3.52) and other races (aOR 2.17, 95% CI 1.43–3.28) all being significantly more likely to report having a recent Pap smear. In the Asian subanalysis, Vietnamese were the referent group due to having the lowest unadjusted screening rates (60.3%). In the adjusted model, Filipino, Korean, Japanese, Chinese and other Asians were not significantly different than Vietnamese. In the subanalysis of Hispanics, Mexicans had the lowest unadjusted screening rates (85.5%) and thus were selected as referent. Other Hispanics were just as likely as the Mexican group to report a recent screening; South Americans and Central American (aOR 1.59, 95% CI 1.05-2.43) were more likely although only the aOR for Central Americans was significant. Although the three models varied slightly, having a usual source of care, being insured, and higher SES were significant predictors of recent screening in all three models.
CONCLUSION: In California, Black and Hispanic women are the most likely to report a Pap smear in the past three years as compared to any other racial/ethnic group, including Whites. Asians were the least likely to report recent Pap smear despite a more favorable sociodemographic profile. The increasing use of Pap smears among Hispanics and Blacks is encouraging; however, increased efforts are needed to eliminate continuing racial/ethnic disparities in cervical cancer burden.

CHANGE IN CONDITION AND PROGNOSIS IN CHRONIC HEART FAILURE. S.E. Hardy[1]; P. Peduzzi[2]; H.M. Krumholz[1]. [1]Yale University, New Haven, CT; [2]Cooperative Studies Coordinating Center, VA Connecticut Healthcare System, West Haven, CT. *(Tracking ID #116956)*

BACKGROUND: Clinicians' ability to prognosticate for chronic conditions such as heart failure is poor. Change in condition over time is rarely considered in research on prognosis in heart failure. The objective of this case study is to determine whether adding change-in-state variables significantly improves the fit and discrimination of prognostic models for six-month all-cause mortality in chronic heart failure.
METHODS: This nested case-control study used data from the Veterans Affairs Vasodilators in Heart Failure Trial (VHeFT II), which included men with clinical heart failure and cardiac dysfunction confirmed by imaging. Cases were selected from those VHeFT II subjects who died during follow-up. Up to three matched controls were randomly selected for each case from those subjects who survived the six-month interval during which the case died. A set of candidate predictive factors was selected based on the literature, and the independent predictors of six-month mortality were identified using conditional logistic regression with backwards elimination. For each independent predictor that changed over time, the change in that factor over the prior six months was added to the model. The fit and discrimination of the models with and without change were calculated and compared.
RESULTS: 200 cases and 596 matched controls were identified from the 804 trial participants. Treatment group (enalapril versus hydralazine and isosorbide), New York Heart Association class, serum sodium, ejection fraction, and peak oxygen consumption were identified as independent predictors of six-month mortality. When the change in these factors was added to the model, change in serum sodium and change in ejection fraction were both independent predictors of mortality, with odds ratios (95% confidence interval) of 1.07 (1.01–1.14) per 1 mEq/L increase and 0.96 (0.93–0.99) per 1% increase, respectively. Inclusion of these two change variables increased the proportion of variance explained by 13%, and increased discrimination (measured by the c-statistic) from 0.646 to 0.768.
CONCLUSION: Considering change in clinical factors over time in addition to the current clinical state significantly improves a prognostic model for six-month all-cause mortality among men with chronic heart failure, suggesting that incorporation of change in condition over time into prognostic models would improve prognostication in heart failure, and perhaps in other chronic conditions as well.

CHANGES IN NATIONAL PATTERNS OF TREATMENT FOR DIABETES MELLITUS, 1992–2001. N.L. Sehgal[1]; J. Ma[1]; R.S. Stafford[1]. [1]Stanford Prevention Research Center, Stanford, CA. *(Tracking ID #116495)*

BACKGROUND: Diabetes mellitus (DM) is reported to affect 12 million Americans with an additional 12 million classified as having prediabetes. Medication treatment for DM accounts for $12 billion in annual expenditures. Using national data, we assessed the impact that newly expanded therapeutic options for DM have had on patterns of DM treatment.
METHODS: We used 1992–2001 National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS) to estimate patterns of DM medication use for patients visiting private physicians and hospital outpatient departments. These nationally representative surveys allow assessment of national practice patterns. The main outcome measures were trends in number of DM patient visits, the percentage of visits where any DM drug was prescribed, and the drugs and drug classes selected for treatment. Odds ratios for the reported use of DM medications by various predictors were obtained via multivariate logistic regression using SUDAAN.
RESULTS: Patient visits for DM increased significantly over the study period while a shift occurred in therapeutic choices. Patient visits increased by 73% from an estimated 27.7 million (M) in 1992 to 47.9 M in 2001. The proportion of patient visits where DM medication use was reported remained stable between 49–55%. Insulin use, however, declined by 38% from its peak use in 26% (99% CI: 20–31%) of patient visits in 1993 to 16% (12–20%) in 2001. In contrast, oral agents experienced a 72% increase in use from 30% (25–35%) of patient visits in 1992 to 43% (38–48%) in 2000. Among specific medications, metformin use increased significantly from 2% of patient visits in 1995 (year of FDA approval) to 16% in 2001. Similarly, thiazolidinedione use was 3% in 1997 (year of FDA approval) and increased to 13% in 2001. Overall, greater likelihood of DM medication use at visits was independently associated with younger patient age and private insurance coverage, but no associations were noted by gender, race, region of practice, or among primary care specialists. Greater insulin use was associated only with younger patient age and no significant associations were noted with respect to oral agent use.
CONCLUSION: At the same time that the volume of DM care has increased, the development of new therapies has contributed to a shift in DM management towards more expensive therapies. The continued introduction of new medications within existing classes and the growth of combination therapy will continue to impact treatment patterns and, by extension, treatment costs. Future clinical guidelines for DM should consider the cost effectiveness of these new medications in determining final recommendations to providers.

CHARACTERISTICS OF PRIMARY CARE PHYSICIANS WHO TREAT WHITES AND BLACKS IN THE UNITED STATES. P.B. Bach[1]; H.H. Pham[2]; D. Schrag[3]; R. Tate[1]; J. Hargraves[2]. [1]Memorial Sloan Kettering Cancer Center, New York, NY; [2]Center for Studying Health System Change, Washington, DC; [3]Sloan-Kettering Institute for Cancer Research, New York, NY. *(Tracking ID #101930)*

BACKGROUND: African Americans receive inferior quality healthcare compared to whites. One plausible explanation for this disparity is that African American

patients receive their care from a subset of US physicians who have inferior qualifications or resources than those of physicians who treat whites.
METHODS: Cross-sectional analysis of Medicare claims for 150,391 visits of African American and white beneficiaries aged 65 and older for "evaluation and management" with 4,355 United States primary care physicians who participated in the 2000–2001 Community Tracking Study, a survey of a nationally representative sample of physicians involved in direct patient care.
RESULTS: African American Medicare beneficiaries received primary care from a small group of physicians (80% of visits provided by 25% of physicians). Compared to their white counterparts, African American Medicare beneficiaries were more likely to have visits with physicians who were black (22.4% vs. 0.7%, $P < .001$), not board certified in their primary specialty (22.6% vs. 13.9%, $P = .02$), and who derived a greater percentage of their practice revenue from Medicaid (13.4% vs. 9.3% of practice revenue, $P < .001$). African American patients also had a higher proportion of visits with physicians who reported that they were not able to consistently provide high quality care (27.8% vs. 19.3%, $P = .005$), or secure access for their patients to high quality ancillary services (37.7% vs. 27.8%, $P = .02$), high quality diagnostic imaging (25.2% vs. 17.0%, $P = .01$), or elective admission to the hospital (47.8% vs. 36.1%, $P < .001$). These differences in qualifications and resources persisted in adjusted analyses controlling for the physician's practice setting and payment mix.
CONCLUSION: Primary care for African Americans is provided by an identifiable subset of physicians, who, relative to physicians involved in care of white patients, are less well credentialed and face greater obstacles to the delivery of high quality care. Interventions to reduce racial disparities should target the subset of providers who assume most responsibility for treating African Americans, and should be designed to address potential gaps in their training and access to resources.

CHIEF RESIDENTS' SKILLS WITH EVIDENCE-BASED MEDICINE: STILL HAZY AFTER ALL THESE YEARS. R. Watkins[1]; M.C. Wilson[2]; S. Richardson[3]. [1]Wake Forest University, Winston-Salem, NC; [2]University of Iowa Hospitals and Clinics, Iowa City, IA; [3]Wright State University, Dayton, OH. *(Tracking ID #117412)*

BACKGROUND: Chief Residents (CRs) represent the best outcomes of our residency programs, and they will serve in a variety of clinical and teaching settings. We wondered if educators have made progress in preparing these residents to practice and teach EBM.
METHODS: At the 1999 and 2003 National Chief Resident Workshop of the Association of Program Directors in Internal Medicine, we surveyed attendees at 2 EBM seminars about their skills and confidence to assume teaching responsibilities in this area. Participants (n = 288: 169 in 1999, 119 in 2003) completed a 2 page questionnaire composed of both open-ended and 5-point ordinal scale responses; 88% would serve as CR during the PGY-4 year, 61% were university-based, and 46% were female.
RESULTS: Although an increase had occurred, only 39% of 2003 respondents compared to one-quarter of the 1999 sample felt confident to use an evidence-based approach in their clinical practice. Little change had occurred in their confidence to teach others how to make evidence-based decisions (25% of the 2003 sample and 18% of the 1999 respondents). Small minorities of either sample (20% in 2003; 10% in 1999) felt that their programs had prepared them to teach EBM, and less than 21% of all respondents were comfortable applying JAMA Users' Guides to the literature they read. Less than 10% of our total sample felt comfortable teaching others to do so. When stratified by gender or training site (community vs. university-based), no significant differences emerged.
CONCLUSION: During this 5-year window, this large cross-sectional survey raises significant concerns that many rising CRs have not been adequately prepared by their residency programs to practice—much less teach—in an evidence-based fashion. Even more concerning is that this self-reported survey likely represents an overestimation of their actual skills, and we can only speculate as to where the EBM skills of all the other resident graduates would fall. Residency program directors should assess the state of their program's educational efforts to foster evidence-based practice and consider adopting multiple complementary opportunities for residents to hone and reinforce their EBM skills.

CHILDHOOD SOCIOECONOMIC STATUS PREDICTS HEALTH DECLINE IN OLDER ADULTS. S. Moody-Ayers[1]; K. Lindquist[1]; K. Covinsky[1]. [1]UCSF/VAMC, San Francisco, CA. *(Tracking ID #116567)*

BACKGROUND: Recent evidence indicates that childhood socioeconomic factors (SES) acting over a lifetime influence health outcomes in adults. However, few studies have examined the influence of these factors on the health status of older adults in the U.S. Our goal was to examine the influence of childhood SES (between birth and 16 yrs) on health status in later life.
METHODS: We studied 20,566 community-dwelling adults aged 50 and older from the 1998 Health and Retirement Survey, a national cohort study. Our outcome, health decline, was defined as the occurrence of any of the following at 2 yrs: increased difficulty in basic activities of daily living or mobility, nursing home placement, or death. Childhood SES measures consisted of family financial status (described as well off, average, or poor), absence of a father at home, family hardship (family needed financial help or had to move because of financial difficulty), and parental education. We used logistic regression to examine the impact of childhood SES after first adjusting for age, gender, and race; and then also adjusting for the subject's current SES (education, income, and net worth).
RESULTS: The mean age was 66.8 yrs; 57% were female; 70% were white, 14% black, and 8% Latino. 29.1% declined in health over 2 yrs. Rates of health decline were highest in those with poor childhood financial status (33.4% vs. 28.4%), family hardship (31.7% vs. 29.5%), absent father (34.4% vs. 29.2%), and low parental education (40.2% vs. 26%). As shown in the table, all measures of low childhood SES persisted after adjusting for age, gender, and race ($P < .05$ for all). After further adjusting for current SES, the association persisted only for family hardship.
CONCLUSION: Childhood SES, particularly family hardship, appears to have a lifelong impact on health outcomes even when age, gender and race are considered. However, our results indicate that family disadvantages during childhood may be overcome if future opportunities for educational and financial achievement are attained.

Childhood Family SES and Health Decline Over 2 Years, OR (Confidence Interval)

Childhood Family SES	Adjusted for Age, Gender, Race	Adjusted Also for Current SES
Poor Financial Status	1.23 (1.05–1.43)	0.92 (0.79–1.08)
Family Hardship	1.17 (1.08–1.27)	1.12 (1.03–1.22)
Absent Father	1.14 (1.01–1.29)	1.05 (0.93–1.19)
Parental Education: 7 yrs	1.48 (1.33–1.64)	1.10 (0.98–1.22)

CLINICAL UTILITY OF FOLIC ACID TESTING FOR ANEMIA AND DEMENTIA SCREEN. M.J. Ashraf[1]; M. Goyal[1]; K. Hinchey[2]; J.R. Cook[3]. [1]Baystate Medical Center/Tufts University, Springfield, MA; [2]Baystate Medical Center, Springfield, MA; [3]Tufts University, Springfield, MA. *(Tracking ID #116770)*

BACKGROUND: Folic acid tests are routinely ordered by physicians for the evaluation of anemia irrespective of MCV value. Folate testing is also considered as part of dementia screen and altered mental status. However, we feel that folic acid deficiency in Americans is extremely rare especially due to fortification of breakfast cereals and other dietary foods. HYPOTHESIS: Folic acid deficiency will not be a cause of anemia and dementia in USA population and there will be no correlation between folic acid testing and MCV values.
METHODS: We designed a retrospective study to review all the serum folic acid tests done at our laboratory during one year. So far we have reviewed 1007 tests done in four months. We determined the frequency of low folate levels. We also recorded mean corpuscular volume (MCV), hemoglobin and hematocrit of all patients. These values were collected from the complete blood count (CBC) performed immediately before ordering the folic acid test. We also recorded B12 and TSH if done at the same time of folic acid test. Cost of folic acid testing was also analyzed.
RESULTS: 1007 folic acid tests were done on 980 patients. 27 patients had more than one test. The average age was 63.80 years. 66% of the tests were from outpatient facilities including clinics and nursing homes. Out of total 1007 tests, only one folic acid level was low. Overall 58% patients were not anemic. 430 patients (43.4%) were over the age of 70. More than half of the older patients had hematocrit greater than 34%. All the patients without anemia had folic acid tests done as part of dementia screen or due to altered mental status. Folic acid level was normal in all these patients. MCV was normal in 80% of patients while 11.6% had MCV greater than 100FL. None of the patients with macrocytosis had low folate level. There was no correlation between MCV and folic acid or between anemia and folic acid level with coefficient values(r) 0.0060 and 0.1827 respectively. No association observed between dementia and low folic acid level.
CONCLUSION: Folic acid deficiency is extremely rare in Americans. There is no correlation between MCV and folic acid testing. Other causes of anemia and macrocytosis should be considered before ordering folic acid test. Folic acid deficiency does not appear to be a cause of dementia or altered mental status and routine ordering of folic acid test is not cost effective.

CLINICAL VIGNETTES TO EXAMINE THE EFFECT OF FATIGUE ON QUALITY OF CARE. J.B. Sussman[1]; S. Jain[1]; A.K. Jha[2]; J. Luck[3]; J.W. Peabody[1]. [1]University of California, San Francisco, San Francisco, CA; [2]Brigham and Women's Hospital, Boston, MA; [3]Veterans Affairs Greater Los Angeles Healthcare System, Los Angeles, CA. *(Tracking ID #116915)*

BACKGROUND: The exact effects of extended duty hours on medical residents and patients has gained new importance since the Accreditation Council on Graduate Medical Education's (ACGME) recent requirements limiting residents' work hours. In spite of the ACGME regulations, questions remain about the effect of fatigue on medical care. One piece of evidence that is lacking in the research is examination of the effect of overnight call on the quality of the patient encounters that constitute the daily practice of the resident physician. The goal of this study was to examine the effect of a single night of call on the quality of the medical encounter using computerized clinical vignettes. Vignettes have been well-validated in other research and shown to simulate doctor's performance.
METHODS: 17 randomly selected internal medicine residents at an academic Veterans Affairs Medical Center were provided with 4 different computer-based clinical vignettes at each of 2 sittings—once after a regular work-day (baseline) and another at the end of a complete work-day after a complete night on-call (post-call). The scorer was blinded to call status and participant identification. Participants were aware of the study design. All comparisons between post-call and non-call participants used paired *t* tests. All data was gathered before the new ACGME regulations went into effect.

RESULTS: Post-call residents reported significantly fewer hours of sleep the previous night than non-call residents (3.8 ± 1.6 hrs SD vs 7.3 ± 0.37 SD, $P < .001$) and more subjective fatigue (2.6 ± 0.87 vs 3.5 ± 1 $P < .01$ on a 5-pt scale). They expressed the same subjective mood (3.94 ± 0.23 SD vs. 3.71 ± 0.21, $P = .22$ on a 5-pt scale). Non-call and post-call scores were correlated with an r = 0.57. Call status did not predict overall performance on the vignettes (68.3 ± 1.7 baseline vs 67.3 ± 1.7 post-call, $P = .28$). Sub-analyses showed no effect of call status on test performance by case complexity, by specific medical skill domain (history, physical exam, lab ordering, diagnostic accuracy, treatment accuracy), or by self-reported amount of sleep either of the prior 2 nights. Residents' performances on the vignettes did not improve with level of training.
CONCLUSION: If a single night of call has an effect on the patient encounter, it is not very large. This study is one of the first to examine how fatigue affects the individual domains of medical practice and one of few studies to examine the effects of fatigue using methods that have been validated to approximate actual medical care. In this study, however, small sample size limits our ability to measure smaller night call effects. Future work, including longer-term studies, may be useful to see if our studies are robust.

CLUSTER-RANDOMIZED CONTROLLED TRIAL OF THREE DIFFERENT INTERVENTIONS TO IMPROVE ANTIHYPERTENSIVE PRESCRIBING IN PRIMARY CARE. S.R. Simon[1]; S.R. Majumdar[2]; K.P. Kleinman[1]; S. Salem-Schatz[3]; C. Warner[4]; L. Prosser[1]; I. Miroshnik[1]; S.B. Soumerai[1]. [1]Department of Ambulatory Care and Prevention, Harvard Medical School, Boston, MA; [2]University of Alberta, Edmonton, Alberta; [3]HealthCare Quality Initiatives, Newton, MA; [4]Harvard Vanguard Medical Associates, Medford, MA. *(Tracking ID #116957)*

BACKGROUND: Academic detailing, also called educational outreach, has been shown to improve individual physicians' prescribing practices but is perceived to be costly and labor-intensive and is therefore not widely used. Therefore, we compared traditional one-on-one individual academic detailing (IAD) with group academic detailing (GAD), and compared these strategies to a typical mailed guideline dissemination program (MG) within one large managed care organization to improve the use of antihypertensive medications in primary care.
METHODS: We conducted a cluster-randomized controlled trial, allocating 3 practice sites to IAD (N = 235 prescribers and 2478 patients), 3 to GAD (N = 227 and 2352), and 3 to MG (N = 319 and 3575). The goal of the intervention was to increase the use of diuretics and beta-blockers (DIUR-BB), the guideline-recommended first-line agents. The IAD intervention consisted of a single physician visit following established principles of academic detailing; the GAD intervention was a single group session incorporating those principles, also led by a trained physician. With an intention-to-treat analysis and the individual patient as the unit of analysis, we used generalized estimating equations (GEE) to account for clustering at the level of the prescriber.
RESULTS: At baseline, sociodemographic characteristics and rates of prescribing DIUR-BB among newly diagnosed and treated patients with hypertension were almost identical in the three experimental groups: IAD = 57.6%, GAD = 59.1%, and MG = 57.6%. In the 9-month period following the intervention, rates of DIUR-BB use increased by 12.5% in IAD, 13.2% in GAD, and 6.2% in MG. As compared with MG patients, DIUR-BB use among patients with newly diagnosed hypertension was more likely in both IAD (OR 1.40; 95% CI, 1.07–1.84) and GAD (OR 1.30; 95% CI, 0.89–1.90). The effects of IAD and GAD were of similar magnitude. There was no apparent effect of the intervention on rates of switching patients previously treated with medications other than DIUR-BB to the guideline-recommended agents.
CONCLUSION: Academic detailing, whether one-on-one or with small groups, improves antihypertensive prescribing over and above the creation and dissemination of guidelines. If GAD is found to be as effective and less expensive than IAD, it may represent a more attractive option for improving practice.

COMPARING PRIMARY CARE CLINICIAN AND PHYSICIAN MANAGERS USES AND VIEWS' OF EVIDENCE. K. Lorenz[1]; G. Ryan[2]; K. Chan[2]; S.C. Morton[3]; P.G. Shekelle[2]. [1]VA Greater Los Angeles Healthcare System, Los Angeles, CA; [2]RAND, Los Angeles, CA; [3]RAND, Santa Monica, CA. *(Tracking ID #115605)*

BACKGROUND: In light of the continuing gap between evidence and practice, we aimed to understand how clinicians and managers differ as information clients, and the implications for improving upon the EBM model focused on the clinician end user.
METHODS: 19 primary care physicians with >3 years experience and 16 physician managers within moderate to large organizations in Southern California participated in 2 clinician and 2 manager focus groups. Using examples as a realistic backdrop, the groups discussed 1) why physicians initiate information searches and 2) strategies for information search. Verbatim transcripts were reviewed for text that addressed the 2 major topic areas. Text segments were marked, extracted, and independently coded to identify themes using standard techniques. Team deliberation and consensus determined final theme lists.
RESULTS: Both groups mentioned common rationales for information search including unfamiliarity, treatment uncertainty, cost, need to justify decisions, desire to make programmatic changes, and personal interest. However, clinicians invoked "non-evidence-based common sense" in typical care decisions. In contrast, managers emphasized cost and a frequent need for information. A manager explained, "As a doctor for an individual patient, I can go to my colleagues and consultants and trust because of experience how to make decisions for that particular patient, but as a manager…Everything has to be verifiable in the literature to make broad decisions for a whole group of people." Both groups upheld trustworthiness as the most important attribute of information because neither group has time to adequately assess evidence nor do they trust themselves to make informed choices. A clinician explained, "The last thing you want me [to do] as a general internist [is] to have to review every little article on every little thing. I can't do that. I totally don't trust myself to do it. I absolutely don't." Of lesser importance, participants mentioned themes of statistical simplicity, consistency, accessibility, brevity, and practicality.
CONCLUSION: 1) EBM interventions that target managers and questions of cost are much more likely to effect health outcomes than targeting clinicians and individual patient treatment. 2) Neither group expressed comfort with basic evidence appraisal, and clinicians rarely search, so teaching clinicians to appraise the primary literature is unlikely to improve practice. 3) Both clinicians and managers need trusted, accessible advice. Physician managers are ideally poised to select and implement successful strategies (e.g. guidelines, reminders) because they represent both clinician and system values.

COMPLICATIONS AND PROCEDURES AFTER BILATERAL PROPHYLACTIC MASTECTOMY. C.N. West[1]; M.B. Barton[2]; A.I. Liu[1]; A.M. Geiger[1]. [1]Southern California Permanente Medical Group, Pasadena, CA; [2]Harvard University, Boston, MA. *(Tracking ID #117121)*

BACKGROUND: Bilateral prophylactic mastectomy is known to be highly efficacious but there is little known about the complications or subsequent procedures needed to rectify complications or cosmetic problems. We therefore studied the complications and procedures occurring after bilateral prophylactic mastectomy.
METHODS: Automated hospitalization and cancer registry records were used to identify women without breast cancer who underwent bilateral mastectomy at one of six health maintenance organizations between 1979 and 1999. Structured medical record reviews confirmed that bilateral mastectomies were done for prophylactic reasons, identified timing of initial reconstruction and ascertained complications and subsequent procedures.
RESULTS: During the 20 year study period 270 women underwent bilateral prophylactic mastectomy. The majority of the women (90%) were Caucasian and the median age at surgery was 44 years (range 23 to 74). Most women (179, 66%) had simultaneous reconstruction but 36 (13%) had delayed reconstruction and 55 (20%) had none. After bilateral prophylactic mastectomy 466 complications occurred in 171 (63%) women, with a median of two per woman (range 1 to 13). Over half (55%) required repair, including excessive scarring and implant leakage or rupture. About a third (167, 36%) were temporary, including hematoma, hemorrhage and infection. The remaining 42 (9%) of complications, including lymphedema and depression, were of a permanent or psychological nature. A total of 822 subsequent procedures were performed in 167 (62%) women, with a median of 4 per woman (range 1 to 22). Nearly all (766, 93%) were cosmetic in nature. Complications and subsequent procedures were less common in women with no reconstruction (chi square $P = .067$ and $P = < .001$ respectively) but occurred in nearly identical proportions among women with simultaneous or delayed reconstruction (chi square $P = .764$ and $P = .958$ respectively).
CONCLUSION: Women who choose to undergo bilateral prophylactic mastectomy may experience a range of complications and the potential for additional procedures after reconstruction increases. Women and their physicians need to weigh these risks with the potential benefits of bilateral prophylactic mastectomy.

COMPREHENSIVE CARE FOR WOMEN VETERANS: INDICATORS OF DUAL USE OF VA AND NON-VA PROVIDERS. B.A. Bean-Mayberry[1]; C.H. Chang[2]; M.A. McNeil[2]; P.M. Hayes[1]; S.H. Scholle[3]. [1]VA Center for Health Equity Research and Promotion, VA Pittsburgh Healthcare System, Pittsburgh, PA; [2]University of Pittsburgh, Pittsburgh, PA; [3]National Committee on Quality Assurance, Washington, DC. *(Tracking ID #117326)*

BACKGROUND: We initiated this Veterans' Administration (VA) study to identify the health care experience factors (e.g., provider gender, gynecological care by provider, overall satisfaction, and use of a VA women's clinic) that influence dual use of VA and non-VA regular providers among women veterans. We hypothesized that women who receive comprehensive (general and gender-specific) care in the VA would be less likely to demonstrate dual use and that lower overall patient satisfaction with primary care would positively influence dual use of VA and non-VA regular providers.
METHODS: An anonymous survey was mailed to a random sample of women veterans from a regional network of ten VA medical centers to evaluate satisfaction with primary care (Response Rate 61%, N = 1321). A secondary analysis of dual use of providers was performed with the subgroup of women (N = 1051) who identified their VA regular provider. Multiple logistic regression analyses were performed to determine the effect of each health care experience factor on use of a non-VA regular provider with adjustment for patient demographics, perceived health status, VA service connection, and clustering by site.
RESULTS: In multivariable analyses, provision of routine gynecological care by the VA provider (OR 0.37, 95% CI 0.22, 0.60) and use of VA women's clinics (OR 0.56, 95% CI 0.35, 0.90) were significantly associated with a lower likelihood of dual use. However, overall dissatisfaction (OR 1.88, 95% CI 1.04, 3.41) and income (OR 1.89, 95% CI 1.32, 2.71) were the characteristics significantly associated with an increased likelihood of dual use.
CONCLUSION: Women veteran's use of VA and non-VA regular providers is not associated with provider gender but is influenced by modifiable factors such as satisfaction or a broader scope of services from a provider or clinic setting. As a result, primary care settings should promote routine gynecological care within primary care or linked with specialized women's clinics to enhance coordination and comprehensiveness and, thus, reduce fragmentation of care or potential overuse of care across health systems.

COMPUTER-GENERATED DECISION SUPPORT CAN PROMOTE BEHAVIORAL CHANGE AND PREVENTIVE SCREENING. N.F. Col[1]; J.M. Fortin[1]; L. Ngo[2]; A.M. O'Connor[3]; R. Goldberg[4]. [1]Brigham and Women's Hospital, Boston, MA; [2]Harvard School of Public Health, Boston, MA; [3]University of Ottawa, Ottawa, Ontario; [4]University of Massachusetts Medical School (Worcester), Worcester, MA. *(Tracking ID #117489)*

BACKGROUND: Most North American women are overweight and sedentary, which increases their risks for many chronic diseases. Time pressures and inadequate training limit clinicians' ability to effectively counsel patients about behavioral change. We developed a personalized, computer-generated decision support aid (DSA) to help clinicians counsel their patients about behavioral change and appropriate screening. Our objective was to test the impact of the DSA on lifestyle and preventive screening behaviors.
METHODS: We developed decision support software that provides women with 1) personalized risk estimates for coronary heart disease, breast cancer, and osteoporotic hip fracture, 2) personalized information about their risk factors for common chronic conditions such as colorectal cancer; and 3) strategies for risk reduction and early detection. A randomized control trial was conducted among postmenopausal women in 4 clinical practices comparing a control group (ACP brochure) to receipt of the DSA. Healthy menopausal women between the ages of 45 and 65 were recruited through clinic rosters. Participants completed a questionnaire about their lifestyle and medical history; responses were entered into a software program that generates a 35+ page personalized health report (the DSA) for the patient and a summary page for her clinician. Lifestyle and screening behaviors were measured at baseline and 2 weeks after the clinic visit. Chi square analyses examined intent to change various lifestyle and screening behaviors among those at-risk (exhibiting the risky behavior or not presently undergoing the screening test).
RESULTS: Of the 145 women included in the trial, 99 had valid responses. The mean age was 52.3, 98% were white, and 58% had completed some college. No differences in intent to change behavior were present at baseline. At 2 weeks, women who received the intervention were more likely than controls to intend to decrease alcohol consumption (50% vs. 0%), eat a low fat diet (82% vs. 50%), eat more fruits and vegetables (87% vs. 62%), exercise more (100% vs. 80%), take daily calcium and vitamin D (60% vs. 19%), and undergo flexible sigmoidoscopy (83% vs. 13%) and fecal occult blood test (79% vs. 33%), although only the latter 3 were statistically significant.
CONCLUSION: Computer-generated personalized information can promote behavioral change and screening among women, presenting a novel approach to helping clinicians counsel their patients. More work is needed examining the impact of this approach on observed behaviors and on sustained behavior change.

COMPUTERS IN THE CLINIC: IMPACT ON THE DOCTOR-PATIENT RELATIONSHIP. E. Rouf[1]; K. Felix[2]; C. Okamora[2]; M.D. Schwartz[2]. [1]University of Kansas, Kansas City, KS; [2]New York University, New York, NY. *(Tracking ID #116991)*

BACKGROUND: Physicians are increasingly dependent on computers and Electronic Medical Records (EMR) for clinical care. Although EMR may improve accuracy and efficiency of care, its impact on the doctor-patient relationship as a "3rd entity" in the encounter remains unclear.
METHODS: This cross-sectional study at a VA Primary Care Clinic included a physician survey, post-visit exit surveys for physicians and patients, and chart reviews. Main measurements were satisfaction with the visit, value of the EMR, perceived time spent interacting with the computer, and computer interference with the doctor-patient relationship.
RESULTS: 23 physicians (13 male, 12 residents, and 11 attendings) and 155 of their patients enrolled in the study (mean 7/physician, range 6–10). Patients were 97% men, 10% Hispanic, 28% Black, mean age of 71 years, with 9 medical problems, and had seen their physician 7 times. Patients were more likely than physicians to rate satisfaction with the visit as excellent, 42.9% vs. 5.3%, $P < .001$. 84% of patients and 52% of physicians felt that computers improved the quality of care received and given, respectively, $P < .001$. However, patients, more than physicians, agreed that because of the computer, doctors spent less time than they liked looking at patients (34.4% patients vs. 22.2% physicians, $P = .3$), talking to patients (24.7% patients vs. 5.0% physicians, $P = .05$), and examining patients (22.2% patients vs. 0% physician, $P < .05$). More patients were concerned than physicians that the EMR made the visit less personal 12.3% vs. 0.0%, $P = .08$). Physicians felt they spent a higher proportion of the visit directly interacting with the computer than did their patients, 37.9% vs. 22.8% of the visit, $P = .003$. Patients were less satisfied and less likely to recommend the doctor to a friend the more time they thought the physician spent interacting with the computer.
CONCLUSION: Patient satisfaction was high and both patients and physicians felt the EMR improved quality of care. However, patients were more concerned than their physicians about the computer's negative impact on their relationship and the process of care. Educational interventions to improve communication skills in the EMR era are warranted.

CONCURRENT USE OF PRESCRIPTION DRUGS AND HERB/DIETARY SUPPLEMENTS IN AMBULATORY CARE: PREVALENCE, RISK FACTORS, AND ADVERSE DRUG EVENTS. R.E. Graham[1]; T.K. Gandhi[2]; J. Borus[2]; A. Seger[2]; E. Burdick[2]; D.W. Bates[2]; R.S. Phillips[1]; S.N. Weingart[1]. [1]Harvard Medical School, Boston, MA; [2]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116385)*

BACKGROUND: Despite concerns about possible harmful interactions between prescription drugs and herb/dietary supplements little is known about concurrent use in ambulatory patients. To estimate the potential risk, we determined the prevalence of herbs and dietary supplements use among ambulatory care patients on prescription medications, the factors associated with their use, and their association with adverse drug events (ADEs).
METHODS: We studied 661 patients who received prescription medications at four primary care practices in metropolitan Boston. Investigators interviewed patients by telephone and reviewed their medical records in order collect information about the use of herbs and dietary supplements, prescription medications, ADEs, and patients' clinical histories and sociodemographic characteristics. We used bivariable analysis and multivariable logistic regression models to examine factors associated with the use of herbs and supplements. A multivariable model was used to examine whether herb and dietary supplement use was an independent correlate of ADEs.
RESULTS: Of 661 patients enrolled, the mean age was 53 (range 19–100); 66% were female, 8% were non-English speaking, and 18% were non-white. 102 (15.4%) patients reported using herb and non-herb dietary supplements. The most commonly used herbs were: echinacea (21.7%), ginkgo (13.7%), and St. Johns Wort (6.8%). The most commonly used non-herb dietary supplements were: glucosamine (13.7%), omega-3 fatty acids (12.7%), and garlic (7.8%). Compared to non-users, herb and supplement users were more often white (88% vs. 79%, $P = .03$), college educated (90% vs. 80%, $P = .02$), English speaking (98% vs. 91%, $P = .02$), and had 3 or fewer years of continuous care at the practice site (44% vs. 34%, $P = .03$). In multivariable analyses adjusted for age, race, gender, and number of prescription medications, herb and supplement use was associated with college education (AOR 2.3, 95% CI [1.1, 4.6]), English speakers (AOR 4.3, 95% CI [1.1, 18.5]), and continuous care (AOR 0.8 for each additional year, 95% CI [0.7, 1.0]). Herb and dietary supplement use conferred no significant increased risk of ADEs in univariable or multivariable models.
CONCLUSION: Use of herbs and dietary supplements was common in this population, with certain groups being much more likely to use these agents. Although we observed no increased risk of ADEs among patients using herbs and dietary supplements, the possible risk of interaction between these agents with prescription medications merit further study.

CONSISTENCY OF PHYSICIAN DISABILITY ASSESSMENT. E.C. O'Fallon[1]; S. Hillson[2]. [1]Hennepin County Medical Center, Minneapolis, MN; [2]University of Minnesota, Minneapolis, MN. *(Tracking ID #117336)*

BACKGROUND: Completing a disability assessment is a common physician task. Our previous research has shown that many physicians find it a particularly uncomfortable responsibility. Interviews with physicians suggested that many felt ill prepared for assessing disability, and also concerned about the format of assessment documents. We hypothesize that these issues may lead to inconsistent disability assessments from physicians, further complicating the disability assessment process.
METHODS: We created two different hypothetical patient scenarios requesting disability assessment. The survey included a written description of each history and exam and asked participants to choose a level of disability assessment for each patient from four options. The two cases were similar in age, gender and normal physical exam, but differed in the duration of symptoms. Case 1 represents an acute injury to an otherwise healthy adult. Case 2 describes a patient with many years of pain with associated depression and unemployment. The assessment options we included were adapted from a commonly used county government assessment form. Options ranged from no disability to complete disability, and offered space to describe specific temporary or permanent limitations, and the anticipated duration of the disability. The survey was distributed to resident and staff physicians at a large urban county hospital where disability assessments are frequently performed. Surveys were collected anonymously, coded and scored by the research team.
RESULTS: 35 surveys were returned. 91% of respondents found Case 1 as qualified for limited employment, but varied widely on the types of limitations. Responses to Case 2 were divided, 36% found no disability, 39% allowed for limited employment, 25% chose full disability until a specified date or until reassessed.
CONCLUSION: Disability assessments are a challenging physician task. Although our survey used a written description of a patient scenario, rather than a real life assessment, our consistent results for Case 1 suggest a reliable physician response is possible. However, the variability in assessments of Case 2 reveals a wide discrepancy in physician opinions. These results may suggest increased physician variation in situations of more chronic disability. Alternatively the variability may stem from flaws in the currently used assessment forms, or in physician training for using them. Further research may help understand the variation in physician disability assessment and evaluate a potential underlying lack of validity in our current disability assessment system.

CONTENT OF PROSTATE CANCER SCREENING DISCUSSION AFFECTS PSA TESTING RATE IN A LOW-LITERACY POPULATION. J. Sharma[1]; E. Justice[1]; J. Justice[1]; S. Kripalani[1]; C.A. Spiker[2]; T. Jacobson[1]; L.E. Laufman[2]; A.D. Weinberg[2]. [1]Emory University, Atlanta, GA; [2]Baylor College of Medicine, Houston, TX. *(Tracking ID #115711)*

BACKGROUND: Experts recommend that physicians counsel patients on the risks and benefits of prostate cancer screening, so that patients may make an informed decision about testing. Men with limited literacy skills, who suffer a disproportionate burden of prostate cancer, may have difficulty with such complex decision-making.

This study examined the content of physician-patient discussions of prostate cancer screening and their relation with subsequent prostate-specific antigen (PSA) testing in an inner-city primary care clinic.
METHODS: Subjects were men, age 45–70, participating in a randomized controlled trial to increase physician-patient discussion of prostate cancer screening. The two study interventions (a patient education handout and a flyer instructing patients to talk to their doctor) were given to patients in the waiting room before the physician appointment. They did not advocate for or against screening. After the appointment, patients completed a brief interview and the Rapid Estimate of Adult Literacy in Medicine (REALM), and we reviewed the clinic chart.
RESULTS: Most of the 250 subjects (91%) were African-American, and 78.8% read below a 9th grade level by the REALM. Nearly half (48.4%, N = 121) reported discussing prostate cancer with their physician. Such conversations were more common among patients receiving either intervention (53.9% vs. 37.4% for control, $P < .05$), Black men (50.4% vs. 25.4% for White men, $P < .05$), men over age 60 (59.8% vs. 42.3%, $P < .01$), and patients with low health literacy (56.4% for reading level below 4th grade vs. 34.0% for high school reading level, $P < .05$). Of the 121 subjects who talked to their physician about prostate cancer, 47 (38.8%) reported discussing digital rectal examination (DRE), and 59 (48.8%) discussed the PSA test. Most patients who discussed PSA (88.5%) recalled that their physician said it was important to get the test, while few reported talking about the benefits and risks (29.5%) or that additional tests may be necessary (45.9%). There was a trend toward less PSA testing when the benefits and risks were discussed (11.1% vs. 25.6%). PSA testing was more common when the physician said it was important (24.5% vs. 0%).
CONCLUSION: Although experts recommend a process of informed decision-making for prostate cancer screening, this occurred infrequently in an inner-city clinic. Physicians appeared to influence their patients' PSA testing through the content of the discussions.

CONTINUED SUBOPTIMAL USE OF ASPIRIN IN PATIENTS AT HIGH AND MODERATE RISK FOR CHD EVENTS. R. Stafford[1]; J. Ma[1]. [1]Stanford Prevention Research Center, Program on Prevention Outcomes and Practices, Stanford, CA. *(Tracking ID #116585)*

BACKGROUND: Despite the benefits of aspirin therapy in the primary and secondary prevention of coronary heart disease (CHD) events, studies indicate that aspirin use falls short of current practice recommendations. To better understand these treatment gaps and identify patient and physician contributors to shortfalls in aspirin use, we studied national trends in aspirin use by CHD risk, focusing on moderate-to-high risk patients.
METHODS: We used 1992–2001 National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS) to estimate the likelihood of reported aspirin use by CHD risk in patients visits to private physicians and hospital outpatient departments. The presence of CHD or other atherosclerotic diseases defined high CHD risk. Moderate risk included two categories: 1) a diagnosis of diabetes mellitus and 2) 2 or more major CHD risk factors among men <45 and women <55 or 1 or more risk factors among men >45 and women >55. Independent predictors of aspirin use were evaluated via multivariate logistic regression analyses using SUDAAN.
RESULTS: Reported aspirin use grew only modestly from 21% (95% CI 18–23%) in 1992–93 to 24% (20–27%) in 2000–01 during visits by high-risk patients and from 4% (2%–5%) to 6% (4%–7%) among visits by patients with diabetes. Among moderate-risk patient visits defined by multiple risk factors, aspirin increased significantly from 3% (3%–4%) in 1992–93 to 7% (5%–8%) in 2000–01. Aspirin use was never higher than 2% among low risk patient visits. Furthermore, among visits where a statin was prescribed (an indicator of ongoing CHD risk reduction activity), aspirin use was reported in only 31% (26%–36%) of high-risk patients, 16% (9%–23%) of moderate-risk patients, and 11% (7%–14%) of low-risk patients. Higher CHD risk was independently predictive of aspirin use. In addition to CHD risk, greater aspirin use also was independently associated with advanced age (OR 3.3, 95% CI 2–5 for age 80+ yrs. vs. <45 yrs), male gender (OR 1.2, 1.1–1.3 vs. female) and cardiologist care (OR 3.2, 2–5 vs. internal medicine).
CONCLUSION: Improvements in reported aspirin use for cardiovascular prevention were modest in the past decade and substantial treatment gaps have persisted, particularly for moderate-risk patients, including individuals with diabetes. Marked changes in clinical practice are unlikely to occur unless more aggressive, innovative means are implemented to enhance physician and patient adherence to consensus guidelines on aspirin therapy to prevent new or recurrent CHD events. In particular, targeted interventions may be warranted in patients with diabetes and/or multiple major CHD risk factors, as well as in at-risk subpopulations where aspirin use is lower than average.

COST–EFFECTIVENESS ANALYSIS OF XIMELAGATRAN FOR THE PREVENTION OF STROKE IN ATRIAL FIBRILLATION. C. O'Brien[1]; B. Gage[1]. [1]Washington University in St. Louis, St. Louis, MO. *(Tracking ID #117544)*

BACKGROUND: Randomized controlled trials have found that ximelagatran is as effective as warfarin at preventing strokes in patients with atrial fibrillation (AF). Because ximelagatran can be taken in a fixed, oral dose without INR monitoring, it has the potential to improve quality-adjusted survival. We assessed the hypothesis that ximelagatran offers a cost-effective alternative to warfarin and aspirin for stroke prophylaxis in patients with AF.
METHODS: We designed a Markov decision model to simulate long-term health states, quality-adjusted survival, and economic outcomes in a hypothetical cohort of 70 year-old patients with AF, who had varying risk of stroke and were good candidates for anticoagulation. We compared ximelagatran, adjusted-dose warfarin, and aspirin therapy. Probabilities for stroke, hemorrhage, and death were obtained from meta-analysis of randomized controlled trials and observational studies. Quality-of-life estimates were obtained from previously published patient interviews. Costs were estimated from Medicare data and literature review. In the base case, the market price of ximelagatran was estimated at $1200 per year, based on the cost of clopidogrel.
RESULTS: In our meta-analysis of 4 randomized controlled trials, ximelagatran reduced the relative risk of major hemorrhage by 26%. For patients with AF and no additional risk factors for stroke, stroke rates were low (<2%/yr of aspirin) and either warfarin or ximelagatran would cost >$50,000 per QALY compared with aspirin. At typical stroke risks (4%/yr), warfarin would cost <$50,000 per QALY vs. aspirin therapy, but ximelagatran would cost $71,000 per QALY vs. warfarin. For ximelagatran to cost <$50,000 per QALY in a typical patient, it would have to sell for <$1,000 per year or be prescribed only in patients at high risk of bleeding (4%/yr warfarin). The annual price of ximelagatran that maximized sales for AF occurred at an annual price of $650/yr. Projected US sales at this price were $1.2 billion/yr.
CONCLUSION: At a price of $1,200 per year, ximelagatran would not be cost effective compared with warfarin except in patients at high risk of bleeding. At a market price of $650 per year, ximelagatran would be cost-effective for AF patients with additional risk factors for stroke.

COST-EFFECTIVENESS OF AUTOMATED EXTERNAL DEFIBRILLATORS: THERE'S NO PLACE LIKE HOME? P. Cram[1]; S. Vijan[2]; A.M. Fendrick[2]. [1]University of Iowa, Iowa City, IA; [2]University of Michigan, Ann Arbor, MI. *(Tracking ID #116493)*

BACKGROUND: A majority of out-of-hospital cardiac arrests occur at home in individuals who do not meet criteria for implantable defibrillators. In an effort to reduce mortality, the Federal Drug Administration recently approved the sale of automated external defibrillators (AEDs) for in-home use. We sought to evaluate the cost-effectiveness of in-home AED deployment for individuals with risk factors for cardiac arrest and explore the relationship between the probability of suffering an in-home cardiac arrest and the cost-effectiveness of AED deployment.
METHODS: A Markov Decision Model was created to evaluate the cost-effectiveness of two alternative strategies: Strategy 1-individuals experiencing in-home cardiac arrest are treated by Emergency Medical Services equipped with AEDs (EMS-D); Strategy 2- individuals are initially treated with their in-home AED followed immediately by EMS (AED). Strategies differ only in the initial availability of an AED and its impact on cardiac arrest survival (15% absolute increase in survival) and cost ($1,500). The base-case annual rate of cardiac arrest was assumed to be 1%, derived from the incidence of sudden cardiac death in adults with multiple risk factors for coronary disease. 50% of these arrests were estimated to occur at home and the AED was assumed to be used on 50% of the arrest victims. In sensitivity analysis, the annual incidence of cardiac arrest was varied from 0.1% (all adults) to 5% (adults with prior cardiac events) to reflect the probability of cardiac arrest among different patient populations.
RESULTS: Under the base-case assumption (1% annual risk of cardiac arrest) the cost per quality adjusted life-year (QALY) gained from in home AED was $320,000. As the annual probability of cardiac arrest increased from 0.1% to 5%, the cost per QALY gained declined from $3.2 million to $65,000 respectively. The cost-effectiveness of AED deployment was also sensitive to the impact of the AED on arrest survival, the probability that the AED was used on the arrest victim, and the likelihood that the AED was used on any person other than the individual for whom it was purchased.
CONCLUSION: Targeted deployment of in-home AEDs for individuals with multiple cardiac risk factors or prior cardiac events appears to be relatively cost-effective and should be considered for coverage by third-party payers. Alternatively, universal deployment of in-home AEDs is expensive relative to commonly accepted cost-effectiveness thresholds.

COST-RELATED MEDICATION UNDER-USE: AN ANALYSIS OF TOUGH CHOICES BY CHRONICALLY-ILL ADULTS. J.D. Piette[1]; M. Heisler[1]; T.H. Wagner[2]. [1]Ann Arbor VAMC and the University of Michigan, Ann Arbor, MI; [2]Palo Alto VAMC and Stanford University, Menlo Park, CA. *(Tracking ID #101798)*

BACKGROUND: Many chronically ill patients under-use prescription drugs due to out-of-pocket costs, yet little is known about the characteristics of medications that patients weigh when making these decisions. Using a survey of a nationwide sample of chronically-ill adults, we identified the extent to which patients are more likely to under-use symptom-relief medications (e.g., analgesics) versus "preventive" medications (e.g., antihypertensives) when facing similar cost pressures.
METHODS: 4,055 individuals 50 years or older and using prescription medication for at least one of five chronic health conditions were identified from a national community sample. Participants reported cost-related under-use for symptom-relief and preventive medications treating 16 chronic illnesses and the extent to which they cut-back on other basic necessities to pay medication costs. Prescription-level analyses were conducted controlling for patient-level covariates using hierarchical models.
RESULTS: Eighteen percent of respondents reported one or more episodes of cost-related medication under-use. Rates of cost-related under-use were higher for medications treating symptoms, such as back pain (23%) or migraine headaches (21%),

than for medications treating asymptomatic conditions such as hypertension (9%) or high cholesterol (12%). Controlling for out-of-pocket costs, income, and other sociodemographic and clinical characteristics, patients were more likely to restrict their use of symptom-relief than preventive medications due to cost (adjusted odds ratio or AOR: 1.6, 95% CI = 1.5–1.9). Patients using both medication types (N = 2,839) reported significantly higher odds of cost-related under-use for their symptom relief than preventive drugs (AOR = 1.5, CI = 1.4–1.7). Analyses indicate that patients taking both medication types not only were more likely to choose symptom-relief medications to forego, but often cut-back on food, heat, or other necessities before restricting their use of preventive treatments.
CONCLUSION: Medication characteristics beyond cost alone influence chronically ill patients' decisions to cut back on treatment in response to out-of-pocket medication costs. Contrary to many clinicians' expectations, patients may value preventive medications more highly than symptom-relief medications and often forego basic life necessities rather than cut-back on preventive medication use. Given the limited prospects for medication insurance reforms, physicians must explore more fully patients' medication choices and collaborate with them to develop effective regimens consistent with their preferences, ability-to-pay, and health needs.

COUNSELING OVERWEIGHT AND OBESE PATIENTS IN PRIMARY CARE: DESCRIPTION AND OUTCOME AT ONE YEAR OF FOLLOW-UP. N. Rodondi[1]; J. Humair[2]; W.A. Ghali[3]; C. Ruffieux[4]; R. Stoianov[5]; L. Seematter Bagnoud[6]; H. Stalder[7]; A. Pecoud[8]; J. Cornuz[9]. [1]Dpt of Epidemiology and Biostatistics, UCSF, San Francisco, CA; [2]Geneva University Hospital, Geneva, ; [3]University of Calgary, Calgary, Alberta; [4]University Institute of Social and Preventive Medicine, Lausanne, ; [5]University Hospital, Lausanne, ; [6]Lausanne University Hospital, Lausanne, ; [7]Medical school of Geneva, CH-1211 Geneve 14, ; [8]University Outpatient Clinic of Lausanne, Lausanne, ; [9]Department of Medicine, Lausanne University Hospital, Lausanne, . *(Tracking ID #116394)*

BACKGROUND: Primary care physicians are well placed to provide counseling for obese and overweight patients, but many believe that their counseling is not effective. No study has assessed counseling overweight and obese patients in current primary care practice with a prospective follow-up. We aimed to determine physician counseling received by those patients in primary care and to analyze the relationship between counseling and weight change over 1 year, as well as patients' behavior to control weight.
METHODS: Our prospective cohort study included 523 consecutive overweight and obese patients cared for by the 35 internal medicine physicians of two Swiss academic primary care clinics. The physicians were blinded to the study aims and did not receive specific training. We determined counseling received by patients based on 10 pre-defined counseling strategies for weight reduction and a score corresponding to the number of applied strategies. At one-year, we compared patients who received any form of weight counseling versus those who received no counseling. We used *t* test and multiple linear regression to compare weight change between groups, and chi-square tests to compare patients' behavior to control weight.
RESULTS: 35% of patients received no counseling at all and the mean overall counseling score was 2.6 (range: 0–10). After 1 year, patients who had any form of counseling achieved a mean ± SD weight reduction of –1.0 ± 5.0 kg while those who received no counseling had a mean weight increase of +0.3 ± 5.0 kg ($P = .02$). A multiple linear regression demonstrated a pattern of progressive decrease of 0.2 kg for every counseling strategy provided, after adjusting for potential confounders. Patients counseled by their physician were more likely than those who received no counseling to change their behavior to control weight, such as setting a target weight (56% vs. 36%, $P < .01$) or visiting a dietician (23% vs. 10%, $P < .01$).
CONCLUSION: Overweight and obese patients who received counseling from their primary care physicians had better weight outcomes at one year follow-up than did those who received no counseling. However, weight counseling by primary care physicians was sub-optimal.

CULTURAL COMPETENCE: A SYSTEMATIC REVIEW OF HEALTH CARE PROVIDER EDUCATIONAL INTERVENTIONS. M.C. Beach[1]; E.G. Price[1]; T.L. Gary[1]; K.A. Robinson[1]; A. Gozu[1]; A.M. Palacio[1]; C. Smarth[1]; M.W. Jenckes[1]; C. Feuerstein[1]; E.B. Bass[1]; N.R. Powe[1]; L.A. Cooper[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #117015)*

BACKGROUND: To reduce racial and ethnic disparities in care, efforts have been made to improve the cultural competence of health professionals. We synthesized the findings of studies evaluating interventions to improve cultural competence.
METHODS: We performed a systematic review of literature from 1980 through June 2003 using electronic and hand searches to identify studies that evaluated interventions designed to improve the cultural competence of health professionals. Eligible studies were in English, with original data, and described an intervention evaluated with a pre- and a post-test or by comparison to a control arm. Two reviewers abstracted data on the effectiveness and cost of cultural competence training, and graded the strength of the evidence as excellent, good, fair or poor using predetermined criteria.
RESULTS: Thirty-four studies were included in our review. Four studies were published between 1980–1989, 14 between 1990–1999, and 18 between 2000–2003. Targeted learners were most often nurses (n = 17) and physicians (n = 18). Most curricula focused on specific cultural content (n = 26), general concepts of culture (n = 19), language (n = 10), and patient-provider interaction (n = 8); fewer focused on health care access (n = 3), racism (n = 2), and socio-economic status (n = 2). Most curricular interventions used more than one training method. The most common training methods were group discussion (n = 17), lectures (n = 17), case scenarios (n = 12), clinical experiences (n = 10), presentations by members of another culture (n = 9), small group work (n = 9), and cultural immersion (n = 8). Evidence is excellent that training improves the knowledge of health professionals (17 of 19 studies demonstrated a beneficial effect). Evidence is good that training improves the attitudes and skills of health professionals (21 of 25 studies demonstrated a beneficial effect and 14 of 14 studies demonstrated a beneficial effect, respectively). Evidence is good that training impacts patient satisfaction (3 of 3 studies demonstrated a beneficial effect) and poor that training impacts patient adherence (although the one study designed to do this demonstrated a beneficial effect). No studies have evaluated patient health status outcomes. There is insufficient evidence to determine the costs of cultural competence training.
CONCLUSION: Cultural competence training shows promise as a strategy for improving the knowledge, attitudes and skills of health professionals. However, evidence is lacking that it improves patient adherence, health outcomes and equity of services across racial and ethnic groups. Future research should focus on these outcomes and determine which teaching methods and content are most effective.

CURRENT CONFLICT OF INTEREST DISCLOSURE POLICIES OF MAJOR MEDICAL JOURNALS. A. Riley[1]; E. Teeter[1]; P. Watson[2]; J. Musial[2]; A. Khandelwal[2]; J.D. Buckley[2]. [1]Henry Ford Hospital Detroit/Wayne State University, Detroit, MI; [2]Henry Ford Hospital Detroit, Detroit, MI. *(Tracking ID #117023)*

BACKGROUND: The influence of the pharmaceutical and medical device industry on scientific research and publications has been well documented. Conflict of interest disclosure in publications has been encouraged by the scientific community. It is unclear, however, what types of disclosure policies exist in major medical journals.
METHODS: In July 2003, the scientific journals of the Abridged Index Medicus (AIM) were evaluated for the presence and characteristics of their conflict of interest disclosure policies. Information was primarily collected through individual journal websites, by examining the actual journals, and when necessary, by directly contacting the journal editorial staff.
RESULTS: Of the 118 existing AIM journals, 108 (92%) had an identifiable disclosure policy. Ninety-two journals (78%) required disclosure of financial relationships related to the published subject matter, while only one journal asked that all financial relationships be disclosed, regardless of subject matter. Sixty-eight journals (58%) required the authors to disclose specific items that may pose a potential conflict of interest. Journals more commonly required authors to disclose consultant fees (53%) and stock ownership (47%), while reporting of honoraria (28%), and royalties (14%) were less frequent. However, nearly all the journals studied (96%) did not ask for an individual dollar amount of any of the disclosed items. Only 31 journals (26%) had policies requiring all financial relationships of the authors to be disclosed to the reader, while less than half of the journals (42%) had a policy specifically requiring disclosure information to be placed in the article.
CONCLUSION: While many major medical journals have some type of disclosure policy, there is considerable variability in what authors are asked to disclose and in what journals actually reveal to the reader. This may suggest that authors should be provided with more uniform and clearly defined standards to inform readers of potential conflicts of interest in published research.

D-DIMER AND INFLAMMATORY BLOOD MARKERS PREDICT FUNCTIONAL DECLINE IN MEN AND WOMEN WITH AND WITHOUT PERIPHERAL ARTERIAL DISEASE. M.M. McDermott[1]; L. Ferrucci[2]; K. Liu[1]; C. Chan[1]; P. Greenland[1]; W.H. Pearce[1]; M.H. Criqui[3]; G.J. Martin[1]. [1]Northwestern University's Feinberg School of Medicine, Chicago, IL; [2]National Institutes on Aging, Bethesda, MD; [3]University of California, San Diego, La Jolla, CA. *(Tracking ID #115920)*

BACKGROUND: We determined whether higher baseline levels of D-dimer and inflammatory factors predict greater functional decline at 2-year follow-up in patients with and without peripheral arterial disease (PAD).
METHODS: Participants were 552 men and women age 55 and older (336 with PAD). Measures of lower extremity functioning (six-minute walk distance and the summary performance score (SPS)) were assessed at baseline and annually for two years. The SPS, a comprehensive measure of functioning, combines performance for walking speed, standing balance, and time for five repeated chair rises into an ordinal score ranging from 0–12 (12 = best). Levels of D-dimer, high sensitivity C-reactive protein (hsCRP), serum amyloid A (SAA), and fibrinogen were obtained at baseline. Participants were categorized into one of three groups: Group 1: Three or more blood factors within the lowest tertile for each blood factor; Group 2: Fewer than three blood factor levels within either the highest or lowest tertiles, respectively; Group 3: Three or more blood factors within the highest tertile of each blood factor.
RESULTS: The table shows results adjusting for age, sex, race, the ankle brachial index, comorbidities, body mass index, cigarette smoking, and patterns of missing data.
CONCLUSION: Higher baseline levels of inflammatory markers and D-dimer are associated with significantly greater average annual decline in lower extremity

functioning, as measured by the SPS. Future study is needed to determine whether therapies that reduce inflammation and D-dimer levels are associated with lesser declines in functioning.

Adjusted associations between groups of inflammatory blood markers and D-dimer with functional decline at 2-year follow-up

	Group 1 (n = 69)	Group 2 (n = 401)	Group 3 (n = 82)	Trend *P* value
Summary Performance Score	−0.041/year	−0.272/year	−0.502/year	.014
Six-minute walk	−11.6 feet/year	−36.0 feet/year	−53.0 feet/year	.306

DEFICITS IN INFORMATION TRANSFER FROM INPATIENT TO OUTPATIENT PHYSICIANS AT HOSPITAL DISCHARGE: A SYSTEMATIC REVIEW. S. Kripalani[1]; C. Phillips[2]; P. Basaviah[3]; M.V. Williams[1]; S.K. Saint[4]; D. Baker[5]. [1]Emory University, Atlanta, GA; [2]Brigham and Women's Hospital, Boston, MA; [3]University of California, San Francisco, San Francisco, CA; [4]Ann Arbor VA Medical Center, Ann Arbor, MI; [5]Northwestern University, Chicago, IL. *(Tracking ID #115953)*

BACKGROUND: Transfer of patient care between hospital-based and primary care physicians is increasingly common. Recent evidence suggests that ineffective communication between physicians at hospital discharge is a leading contributor to adverse events in the post-discharge period. We performed a systematic review to determine the type and frequency of reported problems with information transfer from inpatient to outpatient physician at hospital discharge.

METHODS: We searched MEDLINE (1966-April 2003), the Cochrane Database of Systematic Reviews, abstracts from selected national meetings (2001–2003), and references of relevant articles. We included English language publications pertaining to the fields of adult primary care and hospital medicine (i.e., internal medicine, family medicine, and general practice).

RESULTS: Of a total of 111 articles retrieved and reviewed independently by 2 investigators, 35 articles met our pre-specified inclusion criteria. Discharge information was communicated via structured discharge summaries (most common), informal discharge letters, telephone contact, fax, and electronic mail. The likelihood of the primary care physician receiving a discharge communication ranged from 75% to 99%. Letters generally arrived within 5 days, while discharge summaries took 2 to 4 weeks on average. Many discharged patients (16–53%) contacted the primary physician before receipt of any discharge information such as a preliminary letter or phone call, and 66–92% of patients saw the physician before a complete discharge summary had arrived. Outpatient management was sometimes affected by delays in receipt of information (10%) or lack of appropriate detail (14%). Discharge summaries often did not identify the responsible hospital physician (16–27%), main diagnosis (2–27%), other diagnoses (7–87%), results of abnormal investigations (20–75%), hospital course (28–55%), discharge medications (2–41%), follow-up plans (6–92%), patient or family counseling (90–97%), and tests pending at discharge (12%). Outpatient physicians were more satisfied with summaries that arrived within 1 week of discharge and contained the above information in a structured, legible format.

CONCLUSION: Unfortunately, information transfer at hospital discharge is commonly delayed and incomplete. Hospitalists can enhance patient safety and outpatient physician satisfaction by providing structured discharge summaries which arrive within 1 week, and emphasize discharge medications, diagnoses, important test results, and follow-up needs.

DEFINING, NAVIGATING AND NEGOTIATING SUCCESS: WHAT MID-CAREER ROBERT WOOD JOHNSON CLINICAL SCHOLAR WOMEN SAY. A.L. Kalet[1]; K.E. Fletcher[2]; D. Ferdman[1]; N. Bickell[3]. [1]New York University, New York, NY; [2]Milwaukee VAMC, Milwaukee, WI; [3]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #116054)*

BACKGROUND: Over the past decade, others have identified specific institutional strategies to address gender inequity in career advancement that benefit both women and men academic medicine faculty. Despite this knowledge, there remains a dearth of mid-career women role models. In a 1989 survey of women 1984–89 Clinical Scholar Program graduates (response: 21/39 (54%) we received practical advice about the challenges that women face in negotiating professional and personal lives in academic medicine In 2003, we conducted a survey to follow-up on these now mid-career women to determine how they crafted their careers and viewed personal and professional success.

METHODS: We conducted a semi-structured survey of the 21 original respondents; obtained their Curricula Vitae (14) to quantify traditional academic productivity; and analyzed survey responses qualitatively. Specifically, we reviewed responses independently to identify themes then worked iteratively and collaboratively to refine the themes and compose a conceptual model which described the data. Inter-rater reliability for theme identification for a randomly selected 8 of the surveys, for rater pairs was 60%–100% (Kappa .35–1.0).

RESULTS: 16/21 (76%) responded. Average age was 48 (range: 45–56). Three were full professors, 10 associate professors, 2 left academic medicine and all of those who remained in academia were promoted. 11/16 women had children (average 2.4 children; range: 1–3), 3 chose to work part-time. Total grant funding obtained ranged from $120,000–2.2 million, number of first author papers 4–42. The conceptual model expands on the following 3 key themes: Defining, Navigating and Negotiating Success; Making Life Work; and Making Work Work. As a group the women who were satisfied with their careers since leaving fellowship, had clarity of values and goals, and a sense of control over their time. Those who were less satisfied with their careers described the personal cost of the struggle to balance their personal and professional lives with a few describing explicit institutional barriers to fulfillment of their potential and desires. Specific strategies employed and advice given were establishing oneself early, buying and creating flexibility with grants, and having help at home and work.

CONCLUSION: These highly motivated women, selected and trained to achieve academic success, have done so by explicitly creating a personal vision of work and home balance, making values-driven choices, and learning to recognize institutional values and culture as potentially unfriendly.

DEPARTMENT CHAIRS' PARTICIPATION IN THE INTERNAL MEDICINE CLERKSHIP—RESULTS OF A NATIONAL SURVEY. PA. Hemmer[1]; E.J. Alper[2]; R.Y. Wong[3]. [1]Uniformed Services University of the Health Sciences, Bethesda, MD; [2]University of Massachusetts Medical School (Worcester), Worcester, MA; [3]None Given, Loma Linda, CA. *(Tracking ID #117016)*

BACKGROUND: Medical students value the participation of Department Chairs in their clincal education. We sought to characterize the roles and extent to which U.S. Internal Medicine Department Chairs are involved in the education of medical students.

METHODS: In 2003, the Clerkship Directors in Internal Medicine (CDIM), the national organization of individuals responsible for teaching internal medicine to medical students, conducted a voluntary, confidential survey of its membership. Along with demographics, clerkship directors (CDs) were asked: if the Chair participated in the clerkship, and if so, in what capacities; how many hours per month the CD met with the Chair to discuss issues related to the clerkship; and if Expectations were discussed.

RESULTS: Overall survey response rate was 71% (87/123); 61% (75/123) responded to questions concerning the Chair. 81% (61/75) responded the Chair taught in the IM clerkship: 63% Ward Attending; 13% Ambulatory Attending; 57% Teaching Attending; 11% Other (Lectures, student rounds, Professor rounds, morning report). 43% of Chairs performed at least two activities; 11% three activities; 3% four activities. Only 36% of CDs explicitly discussed published Expectations with their Chair. CDs spent 1.6 hours per month with the Chair discussing issues related to the clerkship, but 21% reported spending zero hours per month. Chairs who teach in the clerkship spend more time with the CDs each month compared to Chairs who do not teach (2.1 vs. .93 hours, $P = .01$, Mann-Whitney). There was no association between the likelihood of the Chair teaching and the CD demographics of age, sex, academic rank, years as CD, percent of time CD devotes to the clerkship, or discussing Expectations.

CONCLUSION: In contrast to the assertion from the Association of American Medical Colleges that Department Chairs are "uninvolved in the clinical education of medical students", our findings suggest IM Chairs are deeply involved in student education. Chairs who teach are more likely to spend time with the CD each month, a reflection of their interest in students and education. Nevertheless, Chairs should discuss Expectations with CDs and spend time each month with the CD.

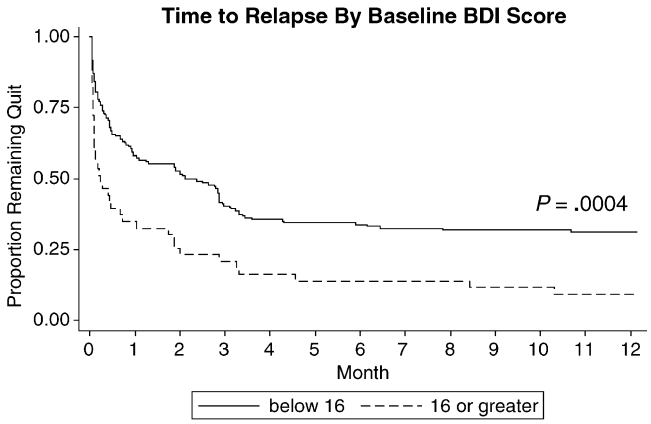
DEPRESSION AND RELAPSE TO SMOKING IN PATIENTS HOSPITALIZED WITH ACUTE CARDIOVASCULAR DISEASE. A.N. Thorndike[1]; N.A. Rigotti[1]; S. Regan[1]; S. Swartz[2]; R. Pasternak[1]; Y. Chang[1]; K.M. Emmons[3]; D.E. Singer[1]. [1]Massachusetts General Hospital, Boston, MA; [2]Maine Medical Center, Portland, ME; [3]Dana-Farber Cancer Institute, Boston, MA. *(Tracking ID #116668)*

BACKGROUND: Depressed smokers are less likely to quit smoking than non-depressed smokers in the outpatient setting. Depression is common among cardiac patients and increases their morbidity and mortality. We hypothesized that depression would increase relapse to smoking immediately after hospitalization for acute cardiovascular disease (CVD).

METHODS: We analyzed data from a randomized, double-blind, placebo-controlled trial of bupropion SR in adult smokers admitted to the hospital with CVD. We enrolled 248 smokers with acute myocardial infarction, unstable angina, or peripheral vascular disease. Patients started drug during hospitalization and continued for 12 weeks post-discharge. All smokers received intensive smoking counseling in the hospital and 5 follow up phone calls post-discharge. Patients were followed for one year. We used the Beck Depression Inventory (BDI) to assess depressive symptoms at baseline and considered a BDI score ≥16 to indicate current depression. We assessed abstinence at 3 and 12 months and verified with saliva cotinine. We used a chi-square test and logistic regression model to compare differences in quit rates. Time to relapse was determined by patient self-report of relapse and analyzed with survival analysis.

RESULTS: At baseline, 53 (21%) of smokers scored ≥16 on the BDI. Depressed smokers were less likely to quit at 3 months (17% vs. 35%, $P = .01$) and 12 months (8% vs. 27%, $P = .004$). These differences remained significant when controlling for study arm, race, sex, age, cigarettes/day, and nicotine dependence. Time to relapse

by baseline BDI is shown in the figure. For both depressed and non-depressed smokers, there was no difference in quit rates or days to relapse for drug vs. placebo group.
CONCLUSION: Baseline depressed mood is a strong predictor of relapse to smoking after hospitalization for acute CVD. The antidepressant bupropion does not appear to improve cessation rates among depressed smokers. Hospital clinicians should be alert to depressive symptoms among smokers admitted with CVD because relapse occurs early, often before follow-up as an outpatient.



DEPRESSION AND TREADMILL EXERCISE CAPACITY IN OLDER ADULTS: THE HEART AND SOUL STUDY. B. Ruo[1]; J. Rumsfeld[2]; S. Pipkin[1]; M.A. Whooley[1]. [1]University of California, San Francisco, San Francisco, CA; [2]University of Colorado at Denver, Denver, CO. *(Tracking ID #117450)*

BACKGROUND: Depressive symptoms are strongly associated with self-reported functional status in older patients, but the relation between depressive symptoms and objective measures of functional status is not known. We sought to examine the association between depressive symptoms and treadmill exercise capacity, an objective measure of functional status, in older patients with coronary artery disease.
METHODS: In a cross-sectional study of 944 older adults (mean age 66) with stable coronary disease, we measured depressive symptoms using the Patient Health Questionnaire (PHQ) and exercise capacity using total metabolic equivalent tasks (METS) achieved on treadmill testing. We evaluated the association between depressive symptoms and exercise capacity using logistic regression, adjusted for measures of cardiac disease severity (left ventricular ejection fraction, ischemia by stress echocardiography) and other patient characteristics.
RESULTS: A total of 172 participants (18%) had depressive symptoms (PHQ score ≥10). The proportion with poor exercise capacity (<5 METS) ranged from 21% in those with no or minimal depressive symptoms (PHQ score 0–3) to 34% in those with a depression score ≥10 (P <.001). In multivariable analyses adjusted for measures of cardiac disease severity and other patient characteristics, the presence of depressive symptoms (PHQ ≥10) remained independently associated with poor exercise capacity (OR 1.8, 95% CI 1.1–2.7; P = .01).
CONCLUSION: In older patients with coronary disease, depressive symptoms are independently associated with poor treadmill exercise capacity, an objective measure of functional status. Depression should be considered in the differential diagnosis of poor functional status.

DEPRESSION SCREENING AND SELF-RATED HEALTH AMONG POSTMENOPAUSAL WOMEN WITH HEART DISEASE: THE HERS TRIAL. B. Ruo[1]; D. Bertenthal[2]; V.A. Bittner[3]; M.A. Hlatky[4]. [1]University of California, San Francisco, San Francisco, CA; [2]VA San Francisco Healthcare System, San Francisco, CA; [3]University of Alabama at Birmingham, Birmingham, AL; [4]Stanford University, Stanford, CA. *(Tracking ID #102034)*

BACKGROUND: Self-rated health is a strong determinant of mortality. Prior studies have shown an association between depression and self-rated health among patients with coronary disease. However, it is unclear whether depression at baseline or the development of depressive symptoms over time affects these outcomes. The goal of this study was to clarify the association between depression and self-rated health using longitudinal data.
METHODS: We performed a prospective cohort study of 2194 postmenopausal women with stable coronary disease using data from the Heart & Estrogen-Progestin Replacement Study (HERS) trial. The primary predictor was presence of depression based on the Burnam depression screen at baseline and annually during 4.1 years of follow-up. The outcome was decline in overall health from baseline to year 4 of follow-up. Overall health was self-reported as "excellent", "very good", "good", "fair", or "poor" and worsening by one or more categories from baseline to follow-up was considered a decline. We used multivariable logistic regression to examine the relationship between depression and change in overall health.
RESULTS: The average age of participants was 66 ± 7 years. 11% had a depression at baseline and 9% had depression at follow-up. Among women who did not have depression at baseline, 131 (6%) developed depression during follow-up. After adjustment for age, comorbidities, baseline overall health, and interim events, baseline depression was associated with a decline in overall health (OR 2.1, 95% CI 1.2–3.6). Developing depression was associated with an approximately 4-fold increased odds of decline in overall health (OR 3.8, 95% CI 2.4–5.9). Individuals with an improvement in depressive symptoms were more likely to report improved overall health at follow-up.
CONCLUSION: Women with depression or who subsequently developed depression were more likely to report a decline in overall health. Because depression is a modifiable risk factor, efforts to improve overall health in postmenopausal women with heart disease should include interval screening for and treatment of depression.

Baseling->follow up depression screen		Odds of decline in overall health (95% CI)
– depression->	+ depression (N = 131)	3.8 (2.45.9)
+ depression->	+ depression (N = 85)	2.1 (1.23.6)
– depression->	– depression (N = 1785)	1.0 (reference)
+ depression->	– depression (N = 103)	0.87 (0.541.41)

DESCRIBING HIGH UTILIZING PATIENTS WITH MEDICALLY UNEXPLAINED SYMPTOMS. F.C. Dwamena[1]; R.C. Smith[1]; J.S. Lyles[1]. [1]Michigan State University, East Lansing, MI. *(Tracking ID #117268)*

BACKGROUND: Medically Unexplained Symptoms (MUS) are common in primary care and result in significant functional disability for many patients, excessive healthcare utilization, and physician frustration. We sought to describe the personal experiences, characteristics, and perceptions of a random sample of high utilizing patients with MUS.
METHODS: We randomly selected 19 patients from a group of MUS patients with an average of 14 clinic visits per year. We identified MUS patients from a large Health Maintenance Organization using a validated chart abstraction method. One of the authors (FCD) conducted open-ended semi structured interviews lasting from 60 to 90 minutes with each patient. We audiotaped and transcribed the interviews and were guided by grounded theory to identify and test major categories that characterize the patients' experiences and behaviors. All three authors iteratively identified relevant themes and then described each patient in terms of these themes. We then categorized patients based on these themes.
RESULTS: We identified 5 main themes – 1) Behavior/Action (pleasure in life, relationships and coping skills), 2) Mechanisms of illness (sense of self, personality structure, family history and patients' explanatory models), 3) Physical symptoms (fear of physical disease, and evidence of secondary gain), 4) Diagnosis (biomedical, psychological and MUS), and 5) Emotionality (expression of emotion and psychological insight). Three distinct groups of patients emerged from the analysis. Group 1 patients (3 out of 19) all had evidence of pleasure in life, were involved in positive relationships and were other-directed; they easily expressed emotion, exhibited self-awareness, and showed evidence of recent psychological growth. Group 2 (4 out of 19) had some evidence of pleasurable life activities and good relationships; they were able to express emotion but were less self-aware and had less psychological insight than Group 1. The most distinguishing feature of Group 2 was an unrecognized, pathological fear of physical disease. Group 3 (12 out of 19) had little pleasure in life, had poor relationships and coping skills, were self-centered, had little, if any, psychological insight, tended to focus on their symptoms, and frequently had evidence of secondary gain from their illness. Obesity and clinical characteristics of disordered personality were also common in this group. Group 3 did not express fear of physical disease, even though they focused on their symptoms.
CONCLUSION: Our qualitative study identified at least 3 groups of high utilizing patients with MUS differentiated by their ability to recognize and express emotion, presence of a pathological fear of physical disease, and the tendency to focus on physical symptoms. This may have significant implications for treating these types of patients, especially if quantitative measures of physical and mental dysfunction, psychosomatic symptoms and psychological disease such as depression and anxiety support our categorization.

DETERMINING THE FACTORS THAT ATTRACT AND DISSUADE CANADIAN MEDICAL STUDENTS FROM A CAREER IN INTERNAL MEDICINE. K. Tzanetos[1]; S. Straus[1]; L. Hicks[1]; K. Yeates[2]; N. Chahine-Malus[1]. [1]University of Toronto, Toronto, Ontario; [2]Queen's University, Kingston, Ontario. *(Tracking ID #117332)*

BACKGROUND: If medical educators are to ensure an adequate number of future internal medicine specialists to care for the aging Canadian population they need to influence medical students to pursue internal medicine residency training. Towards this end, this study explored the factors that attract and dissuade Canadian medical students from choosing a career in internal medicine.
METHODS: Senior medical choosing and rejecting internal medicine training were compared with respect to demographic characteristics and in terms of how much importance they placed on 34 non-demographic survey items (1 = not imoprtant,

5 = extremely important). The non-demographic items represented aspects of internal medicine training and a career in this field that are potential considerations to medical students making thier specialty decisions.The non-demographic survey items were grouped according to whether they tapped a similar underlying construct. A multivariable regression analysis was then carried out to model whether internal medicine is chosen, with the factors and demographics serving as explanatory variables.
RESULTS: 154 students from two (out of 16) Canadian universities responded to the survey. Students choosing internal medicine did not differ from those rejecting the specialty in terms of age (p-value 0.283), gender (p-value 0.877), total financial debt (p-value 0.577), involvement in a current relationship (p-value 0.205), or number of dependents (p-value 0.355). Having a career prior to medical school was negatively associated with choosing internal medicine (p-value 0.041). Those who chose internal medicine identified the following 5 factors as being most important to their decision: intellectual stimulation (mean 4.43), experiences with role models or mentors (mean 4.20), experiences with staff (mean 4.09), experiences with residents (mean 4.05), and experiences with patients (mean 3.82). Students who did not choose internal medicine did not place high importance on any of the items. In a regression analysis, the following factors were identified as being the most significant predictors of choosing internal medicine (descending magnitude of odds ratio): nature of the practice of internal medicine, geographic location of training program, past experiences in the area, and challenging academic work.
CONCLUSION: This study suggests that in order to attract students to internal medicine training medical educators should emphasize positive medical school experiences, the intellectual challenge, and the specialty's ability to foster close patient-doctor relationships. Further research should focus on collecting qualitative data to explore and confirm these findings and to more clearly delineate the aspects of the specialty that act as deterents.

DEVELOPING A PATIENT-DERIVED INTERVENTION TO INCREASE ADHERENCE TO EXERCISE: A CONCEPTUAL MODEL. T.C. Collins[1]; P. Krueger[1]; T. Kroll[2]; B. Sharf[2]. [1]Baylor College of Medicine, Houston, TX; [2]Texas A&M University System, College Station, TX. *(Tracking ID #115700)*

BACKGROUND: We explored patients' perceptions of the role of exercise for the treatment of peripheral arterial disease (PAD) in order to design a clinical intervention that emphasizes patient-physician communication.
METHODS: We conducted qualitative interviews (five focus groups and 13 one-on-one interviews) involving 36 patients with a documented ankle-brachial index of <.955 in at least one leg. Of the 36 patients interviewed, 20 were men and 16 were women. By race, we recruited 14 whites, 12 African Americans, and 10 Hispanics. Using Atlas TI software, we analyzed verbatim transcripts to identify significant dimensions of patients' perceptions of doctor-patient communication that would increase their use of exercise (i.e., walking).
RESULTS: Based on 30 emerging codes, we identified the main factors that summarized patients' perceptions of the causes and outcomes of PAD, the importance of doctor-patient communication, the impact of PAD on their lives, and the factors that would lead to their use of exercise to treat PAD. From this information, our conceptual model focuses on an intervention plan that includes addressing the known causes of PAD, a patient's behavior prior to the diagnosis of PAD, patient's perceptions of PAD, and those factors that shape a patient's overall assessment of the role of exercise for PAD. We also include the impact of the physician's perception of PAD coupled with the patient's perception to shape the intervention—a partnership between the clinician and patient—that we posit is likely to lead to behavior change. The impact of the intervention plan is expected to vary with time as a function of how each patient's life changes daily due to multiple internal (e.g., perceived disease severity, co-existing illnesses) and external influences (e.g., exercise barriers, family system, detailed advice).
CONCLUSION: Based on qualitative data analysis, we developed a patient derived model to influence the use of exercise for PAD. This model will be used to develop a communication primer for use within a randomized trial of unsupervised exercise therapy for patients with PAD. Ultimately, we anticipate the use of this primer within primer care clinics to increase the use of walking among patients with PAD.

DEVELOPING A STRUCTURED CLINICAL QUESTION RUBRIC (SCQR). M.A. Fischer[1]; M. Keough[1]; C. Stille[1]; J. Moldoff[1]; J.H. Gurwitz[1]. [1]University of Massachusetts Medical School (Worcester), Worcester, MA. *(Tracking ID #116245)*

BACKGROUND: Evidence Based Medicine (EBM) has been proposed as a means to improve quality of patient care and support lifelong learning by physicians. Its importance is reflected in several ACGME-required physician-training competencies. No existing research on teaching the practice of EBM has focused on the important first step of designing structured clinical questions (SCQ). Our objective was to develop, validate and evaluate a rubric (SCQR) for use in training residents to write SCQs.
METHODS: We developed the SCQR after identifying characteristics from the published EBM literature that improve the quality of SCQs. We used two techniques to assess the validity of the SCQR. First, two trained faculty independently evaluated 91 questions generated by housestaff. Reliability was measured by coefficient alpha scores. Next, three faculty rated the SCQs for clinical usefulness, and we evaluated the correlation between SCQR and effectiveness scores. To evaluate the SCQR, we compared 168 SCQR scores for 84 questions relating to treatment and diagnosis generated by 26 housestaff before and after an EBM training seminar.
RESULTS: We based the SCQR on four key categories: patient features, disease features, diagnostic test features and test characteristics or treatment and outcome features. Question evaluation resulted in a "total element" score of all pertinent elements included (1–29) and a "category" score (1–4). The SCQR's reliability values were 0.96 for total element score, and 0.90 for category score. Correlations between SCQR and effectiveness scores support scale validity. For instance, learners who included more key elements in their questions were more likely to receive a higher expert effectiveness rating. Preliminary implementation of the SCQR showed that after a three-hour training seminar, learners increased their inclusion of key elements in SCQs (mean elements included 6.01 vs. 4.58, $P < .005$), and included elements from more key categories in SCQs (mean categories included 3.2 vs. 2.7, $P < .005$).
CONCLUSION: The SCQR may serve as a viable instrument to rate SCQs. It can be used as a tool for evaluation of resident learning as well as to help self-directed learning. Ongoing projects use the SCQR in interactive online modules to help learners assess and improve their own development of SCQs, and formulate and answer SCQs during clinical encounters. This work can help to support residencies as they implement changes to address required ACGME competencies of patient care, medical knowledge and practice-based learning and improvement. Long-term goals include evaluating if better SCQs result in better patient care and deeper learning.

DEVELOPING A WEB-BASED "OSTEOPOROSIS CARE TOOLBOX": ELICITING INPUT FROM TARGET USERS. D.A. Levine[1]; K.G. Saag[1]; L.L. Casebeer[1]; C. Colon-Emeric[2]; K. Lyles[2]; R.M. Shewchuk[1]. [1]University of Alabama at Birmingham, Birmingham, AL; [2]Duke University, Durham, NC. *(Tracking ID #115679)*

BACKGROUND: Barriers prevent osteoporosis diagnosis and treatment in nursing home residents. Successful interventions benefit from target recipient input during development. We sought to determine whether a highly structured process based on the Nominal Group Technique (NGT) would elicit useful and practical suggestions from nursing home directors of nursing (DONs, n = 9) concerning the content of a "toolbox" being developed as a component of a multi-modal intervention to improve the care of nursing home residents with osteoporosis.
METHODS: We identified Alabama directors of nursing using data from the Alabama Quality Assurance Foundation. The first 15 respondents were recruited. 60% of these respondents participated. Information was elicited from participants in two phases. In the first phase, a conference call generated 42 possible elements for inclusion in the toolbox. Experienced moderators facilitated the discussion and utilized pre-formulated probes based on previous research identifying perceived barriers to osteoporosis care in nursing homes. These perceived barriers included reimbursement for bone mineral density testing and anti-osteoporotic therapies, facility staff osteoporosis knowledge and facility staffing availability for implementation of interventions. Then, a systematic distillation procedure combined substantive similar suggestions and discarded clearly idiosyncratic items resulting in the retention of 20 potential toolbox elements. In the second phase conducted by mail, the same DONs rated the 20 elements with respect to perceived practicality and feasibility for inclusion. Elements were grouped into tertiles based on the mean ratings of these attributes and cross-tabulated to obtain a feasibility versus practicality grid.
RESULTS: All DONs (n = 9) participants completed both phases. The most feasible, most practical elements included: 1) Assessment tools for osteoporosis, 2) Fall and fracture prevention information, 3) Osteoporosis treatment protocols, 4) Pain management protocols, 5) Reimbursement information for treatments, and 6) Osteoporosis educational programs for nurses and clinical nurse assistants. These elements were incorporated into the osteoporosis intervention toolbox in participant-recommended formats. The least feasible, least practical elements included: 1) Sources for authoritative osteoporosis treatment information, 2) Knowledge of fall prevention program implementation, 3) Information on better assistance devices for osteoporosis patients and 4) Osteoporosis educational conference call for directors of nursing. The described process achieved successful consensus among the participants.
CONCLUSION: A modified nominal group technique provided useful information from health care professionals for the purpose of barrier identification and intervention development. The technique proved efficient, facile and well-received by participants.

DEVELOPMENT AND INITIAL TESTING OF A COMPUTER-BASED PATIENT DECISION AID TO PROMOTE COLORECTAL CANCER SCREENING FOR PRIMARY CARE PRACTICE. J.A. Kim[1]; M. Pignone[1]; A. Whitney[1]; C. Lewis[1]. [1]University of North Carolina Division of General Medicine, Chapel Hill, NC. *(Tracking ID #115174)*

BACKGROUND: We have previously developed an effective videotape decision aid for CRC screening, but it did not include colonoscopy screening and could not be tailored to patients' information needs. To address these limitations, we developed and tested a novel computer-based patient decision aid for use in primary care practice.
METHODS: We recruited a convenience sample of adults 50–75 years of age who were attending a scheduled appointment at our university internal medicine clinic. Eligible patients had no personal or family history of colon cancer. Participants viewed a computer-based decision aid based on "stages of change" theory that included an introduction to colorectal cancer screening, video clips explaining different screening modalities (FOBT, sigmoidoscopy, colonoscopy, or barium enema), and comparative information about the tests. A physician and several patients provided narration. Subjects completed surveys before and after watching the decision

aid that included intent to ask one's provider for screening, measured on a 4-point Likert scale (4 = very likely to ask, 1 = very unlikely to ask); and stage of readiness to be screened (green = ready to be tested, yellow = need more information, and red = did not want to be tested). We performed chart audits to determine the proportion of patients with tests ordered and completed.
RESULTS: To date, 73 patients have participated. Mean age is 60 years; 69% are White, 21% African-American, and 64% have greater than a high school education. 45% were screened for colon cancer in the past and 62% had previously discussed screening with their provider; 90% preferred to play a major role in deciding how to be screened. At baseline, the mean intent to ask for screening was 2.8. After the decision aid, the mean intent increased to 3.2 ($P < .0001$, paired t test). 95% said the information increased their knowledge about colon cancer and 84% thought the information helped them decide whether to be screened. After viewing the decision aid, 62% were ready to be screened, 17% wanted more information but were considering screening, and 16% did not want to be screened. 38% of participants had a CRC screening test ordered and 29% of patients have completed their tests to date, with an additional 7% who are awaiting endoscopy.
CONCLUSION: A computer-based colorectal cancer decision aid improved patients' intent to ask for screening and subjectively improved patient knowledge about screening. Almost 2/3 of patients want to be screened, but actual screening rates are lower, suggesting the need for additional office systems support, such as standing orders.

DEVELOPMENT AND VALIDATION OF AN INDEX TO PREDICT ADL DEPENDENCE IN COMMUNITY LIVING ELDERS. K.E. Covinsky[1]; J.F. Hilton[1]; L. Karla[1]; R.A. Dudley[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117155)*

BACKGROUND: Maintaining independence in daily functioning is an important health outcome in older adults. A key measure of functional independence in elders is the ability to do activities of daily living (ADL) without the assistance of another person. However, few prognostic indices have been developed that stratify elders into groups at variable risk for developing ADL dependence.
METHODS: We studied subjects enrolled in AHEAD, a nationally representative cohort of elders over age 70. We included 5239 subjects (mean age 77) reporting that they could do each of 5 ADL (bathing, dressing, toileting, transferring, eating), without the assistance of another person at baseline. Our outcome was the need for help (dependence) with at least one ADL at 2 years. Predictor variables encompassed several domains: demographic characteristics, comorbid conditions, functional status, cognitive status, and general health indicators. After dividing subjects into development (n = 3,245) and validation cohorts (n = 1,994), we used logistic regression to determine independent predictors of 2 year ADL dependence in the development cohort. We then created a risk index, which we tested in the validation sample.
RESULTS: The 8 independent predictors of 2-year ADL dependence were age over 80, diabetes, difficulty walking 3 blocks, difficulty bathing or dressing, need for help with personal finances, difficulty lifting 10 pounds, inability to name the Vice-president, history of falling, and low BMI. We created a risk index by assigning 1 point to each risk factor. In the development sample, rates of 2-year ADL dependence in subjects with 0, 1, 2, 3, 4, and 5 or more risk factors were 1.3%, 2.8%, 3.8%, 10.1%, 21.6%, and 33.3% respectively ($P < .001$, roc area = .79). In the validation sample, the rates were 0.7%, 4.3%, 8.7%, 11.3%, 17.8%, and 39.5% ($P < .001$, roc area = .77).
CONCLUSION: Using data available from patient reports, we validated a risk index that accurately distinguished between subjects at variable risk of ADL dependence.

DEVELOPMENT AND VALIDATION OF AN INDEX TO PREDICT MORTALITY IN FRAIL ELDERS. E. Carey[1]; L. Lui[1]; L. Walter[1]; C. Eng[1]; K.E. Covinsky[1]. [1]UCSF, San Francisco, CA. *(Tracking ID #117365)*

BACKGROUND: Most prognostic indices for older people focus on specific diseases or hospitalized elders. However, the majority of elder deaths are associated with multiple chronic illnesses and frailty, the prognosis for which is notoriously difficult to determine. Our goal was to create a predictive index for mortality in frail older adults.
METHODS: We developed and validated a predictive index for mortality using a cohort of frail elders who receive care from the Program of All-Inclusive Care of the Elderly (PACE), a program which enables frail, nursing-home eligible elders to continue living at home. Participants were enrolled in PACE between 1988 and 1996. We developed the index in 2232 participants from 6 sites in the western U.S. (mean age 79, 68% female, 40% white, overall 1- and 3-year mortality 13% and 55% respectively), and validated it in 1667 participants from 5 sites in the eastern and midwestern U.S. (mean age 79, 76% female, 65% white, overall 1- and 3-year mortality 13% and 50% respectively). Participants were evaluated by the PACE multidisciplinary team at the time of PACE enrollment, and a full geriatric assessment was completed, including assessment of comorbid illnesses, personal care needs, caregiver support, and functional status.
RESULTS: In the development cohort, 10 independent predictors of mortality were identified and weighted, using Cox regression, to create a risk score: male sex, 2 points (pts); age [75–84, 2 pts; >84, 3 pts]; dependence (dep) in toileting, 1 pt; dep in dressing [partial dep, 1 pt; complete dep, 2 pts]; bowel incontinence, 1 pt; malignant neoplasm, 3 pts; diabetes mellitus, 1 pt; CHF, 3 pts; COPD, 1 pt; and renal failure or insufficiency, 3 pts. We calculated each subject's risk score by adding the points of each independent risk factor present. The 1- and 3-year mortality rates by risk score and C-statistic (ROC area) for both the development and validation cohorts are presented in the table.
CONCLUSION: Our prognostic index provides a simple and accurate method of stratifying frail elders into groups at varying risk of mortality.

1- and 3-Year Mortality Rates by Risk Score in the Development and Validation Cohorts

	1-Yr Mortality		3-Yr Mortality	
Risk Score	**Dev. Cohort**	**Val. Cohort**	**Dev. Cohort**	**Val. Cohort**
0–3 points	36/650 (6%)	30/477 (6%)	95/650 (18%)	82/477 (21%)
4–6 points	125/976 (13%)	73/707 (10%)	296/976 (37%)	198/707 (34%)
>6 points	129/606 (21%)	119/483 (25%)	286/606 (57%)	238/483 (58%)
C-statistic	0.66	0.69	0.70	0.70

DEVELOPMENT OF A MEASURE OF A PRACTITIONER'S ORIENTATION TOWARD INTEGRATIVE MEDICINE. A.F. Hsiao[1]; R.D. Hays[1]; G.W. Ryan[2]; R.M. Andersen[1]; M.L. Hardy[1]; D.L. Diehl[3]; N.S. Wenger[1]. [1]UCLA, Los Angeles, CA; [2]RAND, Santa Monica, CA; [3]NYU, New York, NY. *(Tracking ID #115677)*

BACKGROUND: Patients often turn to complementary and alternative medicine (CAM) and use it concurrently with conventional medicine to treat illnesses and promote wellness. Yet, some clinicians are not open to combinations of treatment paradigms. Because integration of CAM with conventional medicine may have outcome and economic implications for care, we developed a survey instrument to assess a practitioner's orientation toward integrative medicine.
METHODS: We used semi-structured interviews, cognitive interviews, and multitrait scaling analysis to develop and evaluate a 32-item survey to measure a practitioner's orientation toward integrative medicine (IM-32). The IM-32 assesses 6 domains of a practitioner's orientation toward integrative medicine: openness, readiness to refer, learning from alternate paradigms, spiritual orientation, patient-centered care, and safety of integration. We mailed the survey to a convenience sample of 294 acupuncturists, chiropractors, internists/family practitioners, and physician acupuncturists in academic and community settings in California.
RESULTS: Two hundred and two participants (75%) completed the survey. The mean age was 47 years; 68% were men. Seventy percent were white and 23% were Asian Americans. The 32-item scale had a mean score of 64.7 (0–100 possible range) and alpha internal consistency reliability = .90. All sub-scales except one had reliability of 0.70 or above (spiritual orientation, alpha = .66) and item discrimination successes of 80% or above (readiness to refer, item discrimination = 74%). Construct validity was supported by the association of the IM-32 total scale score with hypothesized constructs: physician acupuncturists vs. physicians (71.2 vs. 49.7, $P = .001$), dual-trained practitioners vs. single-trained practitioners (71.3 vs. 61.8, $P = .001$), and upper versus lower tertile of practitioners' self-perceived "integrativeness" (73.1 vs. 67.4, $P = .01$).
CONCLUSION: This study of conventional and CAM practitioners provides initial support for the reliability and validity of the IM-32. The IM-32 could be employed in measuring the relationship of integration with patient satisfaction, health outcomes, and cost-effectiveness of care.

DIABETES CASE MANAGEMENT: EFFECTS ON GLYCEMIC CONTROL. W.T. Shimeall[1]; E.S. Holmboe[2]; R. Escobedo[3]; B.M. Sylvia[1]; C. Clark[4]; P. Kelley[1]. [1]Uniformed Services University of the Health Sciences, Bethesda, MD; [2]Yale University, New Haven, CT; [3]Naval Hospital Jacksonville, Jacksonville, FL; [4]National Naval Medical Center, Bethesda, MD. *(Tracking ID #117546)*

BACKGROUND: Background: Diabetes is one of the most prevalent and costly chronic diseases in the U.S. The average HbA1c among diabetics is 9.2%, well above American Diabetes Association (ADA) goal of <7.0%. Eliminating barriers to glycemic control among individuals living with diabetes and their primary care providers remains a significant challenge. The purpose of this study is to investigate the effectiveness of a patient-centered hybrid case management intervention compared to usual diabetes care in a large military academic hospital.
METHODS: Methods: This is a one year randomized, controlled, longitudinal study. The hybrid case management program consists of an initial separate diabetes clinical assessment using multiple providers with subsequent nurse case management. The initial multidisciplinary visit is followed by ongoing contact either in person or via telephone on a regular basis with the nurse case manager who coordinated care with the patient's usual primary care physician. The program targeted higher risk diabetic patients with HbA1c > 8%. The primary outcomes for the study were change in HbA1c at 12 months and compliance with ADA recommended diabetes care process measures during this time, including quarterly HbA1c measurement when above target value, pneumococcal and influenza vaccination, microalbuminuria screening, and monofilament foot exams. Qualitative interviews with 20 participants were conducted after 12 months to assess perceptions of care. The constant comparative method of analysis was used to review interviews.
RESULTS: Results: 81 participants were enrolled, with 43 randomized to case management and 38 to usual care. The groups are statistically similar by age, gender,

co-morbidities and initial HbA1c. Four participants in the case management group and three in usual care withdrew early in the course of the study. The study is ongoing and 35/39 case managed and 35/35 usual care participants have completed 12 months since randomization. HbA1c screening compliance (>3 tests completed in study year to approximate quarterly screening) was significantly greater in the case management group (97.4% vs. 37.1%, $P < .001$). The case management group's mean HbA1c improved from 10.27 to 7.95 ($P < .001$), but the HbA1c screening noncompliance in the usual care group prevented a statistical comparison of final HbA1c changes between the groups. There were also clinically and statistically improved compliance measures in the case management group for pneumococcal vaccination (74.4% vs. 44.1%, $P < .008$), influenza vaccination (69.2% vs. 47.1%, $P < .05$), monofilament foot exams (71.8% vs. 45.5%, $P = .034$), and microalbuminuria screening (89.5% vs. 71.4%, $P = .05$). Ten participants from each group underwent the qualitative interview. The most common themes regarding the positive impact of the case management program from the patient perspective that emerged were 1) a greater sense of mastery of self-care, 2) the importance of having a nurse function like a coach, 3) a personal sense of feeling better, and 4) the importance of a partnership with providers to facilitate self-care.
CONCLUSION: Conclusion: In a large academic military hospital, a primary care-based nurse case management program following multidisciplinary assessment is effective in improving glycemic control and diabetes care process outcomes. This study extends earlier work by demonstrating the positive impact on participants' perceptions of care, well-being and engagement in the self-management of their chronic disease.

DIABETIC FOOT CARE IMPROVES BY PARTICIPATION IN ACGME RECOMMENDED PERFORMANCE IMPROVEMENT PROCESS. S. Kraemer[1]; L. Staton[1]; S.R. Patel[1]; C. Estrada[1]. [1]East Carolina University, Greenville, NC. *(Tracking ID #116623)*

BACKGROUND: A Performance Improvement (PI) Process is recommended by the AGGME. The PI activities must relate to the core competencies, involve residents and faculty, and produce measurable improvements in patient care or residency education. Although PI projects are utilized in health care, no data is available documenting the effectiveness of this ACGME requirement. We developed a PI project examining the impact of 2 sequential retrospective electronic medical record chart reviews using a Diabetes Quality Improvement Project (DQIP) guidelines-based questionnaire on diabetic foot care.
METHODS: Medical residents reviewed the electronic medical record twice to identify Internal Medicine continuity clinic visits of patients with diabetes mellitus (DM). Audit #1 reviewed patient encounters for the academic year 2002–2003 and Audit #2 July–Sept 2003. Residents reviewed 2–5 charts during each audit. The questionnaire required yes or no answers of diabetic foot history and review of systems. We also utilized DQIP guideline-based questions to review the foot examination (skin, vascular, neurologic) and if any interventions were performed.
RESULTS: Patients had an average of 3.9 visits during audit 1 (n = 105) and 3.4 visits for Audit #2 (n = 142). Any mention of feet in the review of systems was similar in both audits ($P < .20$). Audit #2 showed improved documentation of monofilament or fork test (23% vs. 13%; $P < .08$), pedal pulses (73% vs. 45%; $P < .01$), and skin exam (72% vs. 51%; $P < .001$). Audit #2 also showed improved documentation of a complete foot exam (18% vs. 6%; $P < .004$). No differences were found in the prevalence of foot abnormalities ($P = .18$) or frequency of interventions ($P = .76$)
CONCLUSION: The PI process improved documentation and performance of the DM foot exam by Internal Medicine residents. This study supports the ACGME recommendations for PI activities by internal medicine residency programs. Additionally the educational impact of this chart audit is highlighted by the absence of a coinciding didactic or formal educational instruction about diabetic foot care. The PI process we used incorporated four ACGME core competencies: effective patient care, application of medical knowledge to patient care, practice based learning and system-based practice. It is unknown if ACGME requirements for the PI process will lead to improved clinical outcomes.

DIAGNOSTIC TESTS FOR UROGENTIAL CHLAMYDIAL AND GONOCOCCAL INFECTIONS USING NON-INVASIVE SAMPLES: A META-ANALYSIS. R.L. Cook[1]; S.L. Hutchison[1]; L. Ostergaard[2]; R.S. Braithwaite[1]; R.B. Ness[1]. [1]University of Pittsburgh, Pittsburgh, PA; [2]Aarhus University Hospital, Aarhus. *(Tracking ID #117513)*

BACKGROUND: Nucleic acid amplification tests (NAATs) represent a new generation of test assays for chlamydial and gonococcal infections. They can be used on non-invasive samples such as urine and self-collected vaginal swabs. Yet, the majority of clinicians still obtain test samples for genital chlamydial and gonococcal infections using invasive methods such as swabs or speculums. The specific objectives of this study were to determine overall estimates of diagnostic accuracy for non-invasive tests for chlamydial and gonococcal infections, and to determine whether diagnostic accuracy varies according to test characteristics, population characteristics, or study quality.
METHODS: Articles were identified through a MEDLINE search, references of identified articles, and hand-searching of relevant journals. Articles were included if they presented sensitivity and specificity results for a non-invasive, commercially available nucleic-acid amplification test (NAAT); used an appropriate reference standard for comparison; and presented data separately for men and women. From 46 eligible studies, two authors independently abstracted data on type of test assay, test sensitivity and specificity, reference standard, population characteristics, funding source, and quality score (using a 7-item checklist). Summary estimates for males and females were calculated separately for chlamydial and gonococcal infections and were stratified for various patient and test-related subgroups.
RESULTS: For Chlamydia trachomatis, the overall sensitivity and specificity for women was 88.1 (95% CI 85.7–90.5) and 99.8 (95% CI 99.7–100) and for men was 89.3 (95% CI 86.9–91.8) and 99.4 (95% CI 99.1–99.7). For Neisseria gonorrhoeae, the overall sensitivity and specificity for women was 85.5 (95% CI 76.3–94.8) and 99.7 (95% CI 99.2–1.0), and for men was 91.4 (95% CI 83.4–99.5) and 99.4 (95% CI 98.8–1.0). There were minimal differences in sensitivity or specificity according to differences in population characteristics (e.g. presence of symptoms) or test characteristics (e.g. method of sample collection). The sensitivity of chlamydial assays tended to be higher in studies with better quality scores.
CONCLUSION: NAAT tests on non-invasive samples have excellent sensitivity and specificity, and the results are nearly identical to those obtained through more "invasive" sample collection directly from the cervix or urethra. Non-invasive test collection methods are preferred by patients, use fewer resources, and may increase acceptability of screening. Non-invasive testing should become the standard of care.

DIFFERENCES IN MEASURED QUALITY PERFORMANCE UTILIZING PATIENT PANEL COMPARED TO VISIT DATA. G.P. Barnas[1]; J. Kulp[2]; L. Voigt[2]; G. Schectman[1]. [1]Medical College of Wisconsin, Milwaukee, WI; [2]Milwaukee VA Medical Center, Milwaukee, WI. *(Tracking ID #115801)*

BACKGROUND: Physician profiling is increasingly being utilized by insurers, managed care organizations, corporations, and patients to help make decisions regarding provider selection or reimbursement. The use of visit-based (encounter or claims) data for performance monitoring has been the historical method used to assess clinical outcome measures. However, compared to sampling a provider's entire panel of patients independent of the patients' most recent clinic visit, the visit-based method is less likely to include patients of a provider, who for various reasons, are seen less frequently. In this study we assessed the impact on measured clinical outcomes utilizing visit-based data compared to enrollment (patient panel) data.
METHODS: All patients with outpatient clinic visits to a Primary Care provider (PCP) at the Milwaukee VAMC Apr–Jun 2003 were electronically sampled and compared to all patients that were assigned to a PCP during the same interval. Clinical outcome data for seven performance measures were assessed utilizing computerized clinical reminder data extracts.
RESULTS: 25,910 patients were assigned to a PCP and 14,401 patients had visits to a PCP within the study period. Measures of blood pressure (BP) control (<140/90) in hypertensive patients and diabetic (DM) control (HgbA1c < 9) were similar in both samples but the other measures such as diabetic BP control (DM-BP), diabetic foot exams (DM-Foot), colon cancer screening, and pneumococcal and influenza immunizations were all reported to have better outcomes in the visit group with the difference ranging from 1.6% to 19%.
CONCLUSION: Use of visit-based denominator data for quality performance measures may overestimate actual compliance compared with measures across all enrolled patients. Patient sampling methods selected for quality monitoring may affect the interpretation of performance data in the ambulatory clinic setting.

PCP	__BP	HgbA1c	DM-BP	DM-Foot	Colon Ca	Pneumovax	Fluvax
Visit:	67.7%	80.5%	70.7%	66.4%	87.6%	94.5%	90.6%
Panel:	67.3%	80.4%	68.8%	64.8%	80.8%	88.7%	71.5%
DIFF:	0.4%	0.1%	1.9%	1.6%	6.6%	5.8%	19.1%

DIFFERENTIATING WEAK AND STRONG EVIDENCE IN DECISION MAKING. C.S. Seibert[1]; L.J. Zakowski[1]; S. Vaneyck[1]; C.L. Gjerde[1]. [1]University of Wisconsin-Madison, Madison, WI. *(Tracking ID #115409)*

BACKGROUND: Medical students need to learn to assess the strength of medical evidence before they apply it to make clinical decisions. The purpose of this study was to assess the ability of second-year medical students to differentiate between weak and strong evidence before and after instruction in EBM.
METHODS: Students were instructed to read a clinical scenario and make a clinical decision about initiating a treatment or ordering a test. Then, they were given either strong or weak evidence related to the clinical scenario and were asked to reconsider their clinical decision based upon the evidence provided. Students were blinded as to whether they receive weak or strong evidence. Each student completed two clinical scenarios (one with weak, one with strong evidence) before and after EBM instruction. Comparisons were made between the percentage of students who made correct clinical decisions before and after EBM instruction.
RESULTS: Before EBM instruction, decision-making data was obtained from 87 of 143 students and after EBM instruction, data was obtained from 121 of 143 students. Before EBM instruction, initial responses to clinical scenarios were 47% correct. After reading strong evidence, there was a significant increase in correct

responses to 85% correct ($P = .000$). After reading weak evidence, there was a significant increase in correct responses to 81% correct ($P = .000$). There was no difference in the correctness of final answers achieved after considering weak versus strong evidence (chi-square = 0.3; $P = .56$.) After EBM instruction, initial responses to clinical scenarios were 50% correct. After reading strong evidence, there was a significant increase in correct responses to 88% correct ($P = .000$). After reading weak evidence, there was a significant increase in correct responses to 75% correct ($P = .000$). A significant difference was achieved in the correctness of final answers after considering weak versus strong evidence (chi-square = 7.0; $P = .008$).
CONCLUSION: While initial decisions were at the guess level (~50%), most students made the correct clinical decision after considering strong or weak evidence. After EBM instruction, students were better able to discriminate between strong and weak evidence by making significantly more correct decisions with strong evidence.

DIFFERING INTERPRETATIONS OF PRIMARY CARE RESIDENTS' PERSONAL STATEMENTS. D. Zipkin[1]; R.B. Baron[2]; T.E. Baudendistel[1]; R. Gonzales[2]. [1]California Pacific Medical Center, San Francisco, CA; [2]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115779)*

BACKGROUND: Primary care internal medicine residency training programs aim to select applicants committed to careers in primary care. Indeed, to maintain Health Resources and Services Administration support, a program must demonstrate that a high proportion of graduates pursue careers in primary care. To gauge their applicants' commitment to primary care, selection committees rely on information from multiple sources, particularly applicants' personal statements. We examined the level of agreement between experienced selection committee members in their interpretations of the personal statements of residents accepted into a well-established primary care internal medicine residency.
METHODS: A convenience sample of forty primary care residency application personal statements submitted between the years 1992 and 1999 were reviewed by two raters who were blinded to the other's assessments. The raters scored the statements for the presence of an interest in or acknowledgement of the following core primary care concepts, which had been established a priori by a consensus panel of five faculty members: continuity of care, primary care experience, access to care, preventative care, psychosocial medicine, international health, and clinical research. In addition, the raters graded the presence or absence of references to sub-specialty interests as potential negative predictors of a career in primary care. Interrater reliability for identifying these concepts was measured using the Kappa statistic.
RESULTS: Core concepts least frequently cited included sub-specialty interest (13%) and international health (21%), and concepts most frequently cited included access to care (76%) and psychosocial medicine (76%). The average number of concepts per statement was 3.7 (SD = 1.4). Reviewers agreed modestly in their ratings of access to care (kappa coefficient 0.52 [95% CI 0.22–0.83]), prevention (kappa 0.59 [0.34–0.84]), and continuity of care (kappa 0.60 [0.35–0.85]). Better correlation occurred with applicant's self-reported primary care experience (kappa 0.74 [0.52–0.95]), and the strongest correlation was seen with specialty interest (kappa 0.77 [0.47–1.07]). The weakest correlation was seen with interest in psychosocial medicine (kappa 0.29 [0.01–0.57]).
CONCLUSION: Experienced selection committee physicians reading primary care applicants' personal statements display a high degree of variability in identifying the presence of core primary care topics. How personal statements are evaluated in the resident selection process, and the role of the statement as a tool to predict an applicants' commitment to primary care should be further defined.

DISAGREEMENT IN PAIN ASESSMENT BETWEEN PATIENTS AND PHYSICIANS. DOES RACE PLAY A ROLE? L. Staton[1]; M. Panda[2]; I.A. Chen[3]; C. Sam[4]. [1]East Carolina University, Greenville, NC; [2]University of Tennessee at Chattanooga, Chattanooga, TN; [3]Eastern Virginia Medical School, Norfolk, VA; [4]University of North Carolina, Chapel Hill, NC. *(Tracking ID #116629)*

BACKGROUND: Physicians often understimate patients' pain. Agreement in pain assessment has been shown to be associated with improved quality of life and patient satisfaction. We explored patient factors associated with disagreement in pain assessment between physicians and their patients.
METHODS: The Patient and Physician Perception of Pain Study (4P) is a 12 center, cross sectional evaluation of chronic non-malignant pain patients and their physicians in a primary care setting. We recruited patients with greater than 3 months of chronic non-malignant pain. Patients completed a 160 item survey which included demographic factors, and attitudes regarding quality of life, self-efficacy, disability and satisfaction. To measure pain intensity, patients completed a 11-point numeric rating scale for which pain scores range from 0 (no pain) to 10 (unbearable pain). Physicians were given access to patients' self rating of pain and was asked to rate patients' pain on the same scale after the visit. Discordance was defined as underestimation of pain by 2 or more points, which is clinically relevant. Race was defined as black vs. other. We compiled descriptive data and performed bivariate analyses examining factors associated with discordance. We then performed logistic regression analysis to control for possible confounders (age, gender, education level, insurance status, degree of pain, marital status, depression, narcotic use and comorbid illnesses).
RESULTS: Of 601 patients evaluated, 463 (77%) patients completed the survey. Forty-eight percent were white, 39% were black and 67% were female. Mean age was 53 years, 34% were married, 35% admitted to being depressed and 36% reported using narcotics. Underestimation of pain level occurred 39% of the time and was significantly associated with black race ($P = .005$). After combining race in a regression model with demographics and other possible confounding variables, black patients remained signficantly more likely to have their pain underestimated by physicians, OR 1.9 (95% CI 1.2, 3.0).
CONCLUSION: We found that race is significantly related to discordance in pain assessment. This association may suggest other biases and inadequacies in pain treatment in African Americans. Further studies could address if efforts to improve awareness of disparities in health care and to enhance communication are possible ways to improve congruence in pain assessment.

DISCIPLINARY ACTION AGAINST PHYSICIANS: CHARACTERISTICS AND PREDICTORS. A.A. Khaliq[1]; L. Narine[2]; R.A. Smego[3]. [1]University of Oklahoma, Oklahoma City, OK; [2]University of North Carolina at Charlotte, Charlotte, NC; [3]University of North Dakota School of Medicine & Health Sciences, Fargo, ND. *(Tracking ID #116803)*

BACKGROUND: We sought to report the type, frequency, and severity of disciplinary actions against physicians (MDs), and to determine physician characteristics and disciplinary predictors.
METHODS: Descriptive and predictive analysis of publicly available data maintained by the Oklahoma State Board of Medical Licensure & Supervision (OSBMLS).
RESULTS: Among 14,314 currently or previously licensed MDs, 396 (2.8%) had been disciplined (515 disciplinary actions). Of these, 252 had one action, 95 had two actions, and 16 had three or more actions taken against them over time. For the year 2001, 543 complaints lodged by 371 complainants were registered by OSBMLS. The most frequent complaints against MDs involved quality of care issues (24.8%), incompetence (18.3%), negligence (16.7%), medication/prescription violations (19.6%), billing issues (9.4%), inadequate records (8.4%), fraud (6.7%), sexual misconduct (4.6%), substance abuse (3.8%), criminal activity (3.0%), application fraud (0.3%), and other (31.8%). Complaints against MDs originated from the public (66%), other MDs (5.3%), self-reporting (4.8%), and staff (4.0%). In contrast to 1.8% of MDs in all other primary specialties combined ($n = 8{,}705$), 4.6% of primary care MDs (includes Internal Medicine, Family Medicine, and General Practice) ($n = 4{,}163$), 4.0% of obstetricians/gynecologists ($n = 602$), and 3.5% of psychiatrists ($n = 687$) had been disciplined ($P < .001$). Logistic regression modeling revealed that older age (for those > 40 but < 55 yrs, OR = 6.03, 95% CI = 3.07–11.83; $P < .001$; for those > 55 yrs, OR = 9.37, 95% CI = 4.80–18.28; $P < .001$), lack of board certification (OR = 2.82, 95% CI 2.06–3.88; $P < .001$), and male gender (OR = 1.76, 95% CI 1.05–2.94; $P < .001$) were strong predictors of being disciplined. Race and foreign medical school training were not risk factors. Disciplinary actions against 189 actively licensed MDs included probation (52%), suspension (24%), reprimand (12%), and revocation (5%).
CONCLUSION: In order to optimize physician behavior, medical schools and residency training programs must continue to emphasize both patient care and medical professionalism as critical core competencies.

DISCLOSURE OF FINANCIAL CONFLICTS OF INTEREST AT FOOD AND DRUG ADMINISTRATION ADVISORY COMMITTEE MEETINGS. C. Almeida[1]; P. Lurie[1]; S.M. Wolfe[1]. [1]Public Citizen, Washington, DC. *(Tracking ID #117248)*

BACKGROUND: In response to public scrutiny of its conflict-of-interest procedures, the FDA drafted a guidance document, effective January 2002, requiring more explicit disclosure for Advisory Committee (AC) members and invited consultants for meetings in the FDA's Center for Drug Evaluation and Research (CDER) that considered specific products. The objectives of this study were to characterize disclosed conflicts, examine the extent of compliance with the guidance, and examine the guidance's impact.
METHODS: Data were extracted from the committee rosters, meeting agendas, and transcripts available on the FDA website for product-specific CDER meetings from January 2001 to June 2003. Details of the reported financial interests for all AC members and CDER consultants covered by the guidance were recorded and analyzed using Access.
RESULTS: A total of 81 meetings involving 1220 persons were covered by the guidance and hence included in the study. In 69 meetings (81%), at least one attendee disclosed a conflict. At the attendee level, 269 (22%) disclosed a conflict. The most common specified conflicts were consulting arrangements (41% of conflicts), investments (28%), and lecture honoraria and grants (13% each). Eighteen percent of these consulting arrangements involved over $10,000, 28% of individuals collected over $10,000 in lecture honoraria and 11% of grants exceeded $300,000, all generally within the last 12 months. Disclosure of the specific monetary value of a conflict increased from 15% before the guidance went into effect to 96% after, while disclosure of whether the conflict was with the sponsoring company or a competitor went from 27% to 96%.
CONCLUSION: Conflicts of interest at CDER AC meetings are common and often of considerable monetary value. More uniform disclosure of the conflict value and competitor status has occurred as a result of the FDA guidance. The FDA should ensure 100% compliance with the guidance as it is written and also expand the guidance to include non-product meetings and longer time periods.

DISCONNECT BETWEEN PERCEIVED AND TRUE RISK FOR CARDIAC DISEASE IN URBAN MINORITIES. K.B. Desalvo[1]; B. Pedersen[2]; M. Kleinpeter[2]; J.W. Peabody[3]. [1]Tulane University, New Orleans, LA; [2]Tulane School of Medicine, New Orleans, LA; [3]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116901)*

BACKGROUND: Socially and economically disadvantaged populations are disproportionately affected by cardiac risk factors (CRF) and heart disease. Because many of these risk factors can be modified, we need to understand patients perceptions of CRF. We studied the actual prevalence of CRF and perceptions of heart disease risk in an urban, disadvantaged clinic population.
METHODS: Trained interviewers surveyed 199 patients selected to participate in a future randomized, controlled educational trial. The survey instrument included questions about actual and self-perceived risk of heart disease, as well as novel CRF such as stress and socioeconomic status.
RESULTS: Most participants were female (92%) and black (89%). The mean age was 56 years [SD ± 9.9]. 39% of participants lacked a high school diploma, 64% earned less than $750/month, and 57% were unemployed. Traditional CRF were commonly found in this population: 81% had hypertension; 77% were obese; 55% had hyperlipidemia; 54% reported a family history of heart disease; 37% had diabetes; and 22% smoked. 93% of respondents had 2 or more CRF and 81% had 3 or more. The most common combination of risk factors was hypertension and obesity. Although 93% has 2 or more CRF, only 1/3 perceived themselves at high risk. When we compared perceived risk with actual risk, the patients' perceptions did not correlate with their actual risk factors (Pearson's r = .09, $P > .05$). Among those at high risk, 63% inappropriately perceived themselves to be at low risk for heart disease. The inability to recognize cardiac risk was predicted only by perceived stress (OR = 4.23, [95% CI 1.84, 9.68]) and the diagnosis of hyperlipidemia (OR = 2.35, [95% CI 1.05, 5.26]).
CONCLUSION: This urban, disadvantaged population carries a high burden of cardiac risk factors, yet, routinely underestimate their true risk of heart disease largely due to more immediate preoccupation with life stressors. Future heart disease risk reduction and educational programs in these populations need to consider incorporating stress coping modules.

DISEASE AND MEDICATION BELIEFS OF LATINOS AND AFRICAN AMERICANS WITH MODERATE AND SEVERE ASTHMA. A. Oster[1]; E.A. Halm[2]. [1]Mount Sinai School of Medicine, New York, NY; [2]Mount Sinai School of Medicine, Mamaroneck, NY. *(Tracking ID #116252)*

BACKGROUND: Latino and African American inner city residents have higher rates of asthma, higher rates of emergency department (ED) visits, hospitalizations, and asthma-related deaths. Although Latinos and African Americans differ in cultural and historical backgrounds, it is unknown whether these groups differ in adherence rates, asthma health beliefs, medication beliefs, or disease self-management practices.
METHODS: All adults hospitalized with a diagnosis of asthma at a large inner city teaching hospital during 12 consecutive months were interviewed to assess demographic data, access to primary care, asthma severity, adherence to treatment, asthma knowlege, disease beliefs, medication beliefs, and self-management practices. Chi-squared tests, *t* tests, or Mann-Whitney rank-sum tests were used as appropriate.
RESULTS: There were 335 hospitalizations by 218 individual patients. Of these, 49% self-identified as Latino, 21% as African-American, 14% as white, and 16% as other. There were no differences between Latinos and African Americans in age (mean 50.3 years, $P = .72$), or gender (79% female, $P = .94$). However, Latinos were more likely to have lower income ($P < .00$), live in public housing (60% vs. 38% $P = .02$) and rely on Medicaid (60% vs. 42%, $P = .03$). The two groups reported similar asthma histories: age of initial diagnosis, number of ED visits, number of hospitalizations, oral corticosteroid use (87% vs. 89% African-Americans), and history of intubations, did not differ. Similar percentages reported regular source care and ease in obtaining appointments. However, Latinos were twice as likely to report difficulty receiving telephone advice regarding their asthma (49% vs. 28% of African Americans, $P = .04$). Twice as many Latinos believed they could abort attacks with inhaled beta-agonists (30% vs. 16% African-Americans, $P = .03$). Latinos were more likely to be at moderately or very worried about side effects of both beta-agonists (39% vs. 13%, $P < .00$) and inhaled corticosteroids (ICS) (53% vs.25%, $P = .03$). However, the groups did not differ in actual ICS use: although 64% of both recalled having them prescribed, most used them only a few times a week, used them less often when without symptoms, and most thought using them when without symptoms, was only "a little important". More than half of both groups (55% of Latinos and 53% of African-Americans) believed their asthma was present only when they experienced symptoms. There were no differences between Latinos and African Americans in measures of participatory decision-making, satisfaction with health care, self-efficacy, disease self-managment, or awarenes of disease symptoms.
CONCLUSION: Latinos and African Americans with moderate and severe asthma have similar, though subopitmal health beliefs about their illness. Both have significant knowledge deficits regarding their illness. Latinos express greater concern regarding the negative effects of continuous medication use. Further research regarding the effects of this concern on adherence to treatment is warranted.Educational efforts to improve self-management skills need to be sensitive to cultural differences in perception of risks of medications if they are to be successful in improving adherence rates and imporving asthma control.

DISEASE MANAGEMENT FOR CONGESTIVE HEART FAILURE IS ASSOCIATED WITH INCREASED BETA BLOCKER USE AND LOWER INSURANCE CLAIMS. J.E. Sidorov[1]; P. Paulick[1]. [1]Geisinger Health Plan, Danville, PA. *(Tracking ID #117055)*

BACKGROUND: Prior reports of disease management (DM) for congestive heart failure (CHF) have shown improved outcomes, yet there are no reports examining health insurance claims in an HMO sponsored DM program. This study compared CHF outcomes and health care costs in an HMO setting for patients in DM versus those not in DM who were included in a Center for Medicare and Medicaid Services' (CMS') Quality Assessment and Performance Improvement (QAPI) program.
METHODS: We retrospectively examined QAPI-based outcomes and paid health care claims over 12 months among 272 continuously enrolled Geisinger Health Plan (GHP) Medicare+Choice (M+C) participants who were in a QAPI study of CHF. Two groups were compared: those who were enrolled in an "opt-in" CHF DM program vs. those who were not enrolled. We compared QAPI® data on cardiac imaging (CI), angiotensin converting enzyme inhibitor (ACEI) and beta-blocker (BB) use, as well as per member per month (PMPM) paid charges for total care, for CHF care, and for inpatient, outpatient and emergency room (ER) care. All QAPI® measures were independently obtained outside any DM data sources, using a "hybrid" method of claims and chart audits. The mean PMPMs were tested for statistical significance by excluding patients with outlier claims that were >3 standard deviations from the calculated mean.
RESULTS: Of 415 patients with CHF randomly selected for QAPI® measurement, 44 (10.6 %) were enrolled in DM ("program") vs. 228 (54.9%) who were not enrolled ("non-program"). 143 (34.5%) were excluded because of lack of continuous enrollment during the study period. Both program and non-program patients were similar in M/F ratio (52%/48% vs. 55%/45%, P = NS) and mean age (78.5 vs. 78.8 years, P = NS). There was no statistically significant difference between program vs. non-program patients in the number with CI (N = 42 or 95.5% vs. 202 or 88.5%, P = NS), or in the use of ACEI in the setting of reduced systolic function (N = 5 of 13 or 38.5% vs. 41 of 69 or 59.4%, P = NS). Use of BB was statistically significantly higher among program vs. non-program patients (N = 25 or 56.8% vs. 110 or 48.2%, $P < .05$). The PMPM for program patients was $1635 vs. $2415 in non-program patients ($P < .05$). This difference was accompanied by a statistically significant lower PMPM for CHF care ($1333 program vs. $2017 non-program patients, $P < .05$). Differences observed in total inpatient ($876 vs. $1612), outpatient ($309 vs. $385) and ER care ($81 vs. $54) were not statistically significant.
CONCLUSION: In this M+C HMO, opt-in CHF DM appeared to be associated with a significant reduction in health care costs and an improvement in the use of beta-blockers, supprting the contention that DM may be useful option in the care of patients with CHF.

DISPARITIES IN DIABETES OUTCOMES: IMPACT OF MENTAL ILLNESS. S.M. Frayne[1]; H. Lin[2]; J.H. Halanych[3]; F. Wang[2]; D.R. Berlowitz[2]; K.M. Skinner[2]; E.J. Sharkansky[4]; T. Keane[4]; L. Pogach[5]; D.R. Miller[2]. [1]VAMC, Palo Alto, CA; [2]CHQOER, VA Hospital, Bedford, MA; [3]U. Alabama, Birmingham, AL; [4]VAMC, Boston, MA; [5]VAMC, East Orange, NJ. *(Tracking ID #116994)*

BACKGROUND: There is emerging evidence that patients with mental health conditions (MHC) may receive less intensive care for medical conditions. We examined disparities in glycemic/lipemic control for diabetics with vs. without MHCs.
METHODS: In a national sample of all 339,559 Veterans Health Administration (VA) patients with diabetes (based on ICD9 codes and antiglycemic prescriptions) whose facility submitted lab data to a central registry, we identified MHC from ICD9 codes in VA administrative data. We compared diabetics with vs. without MHC on FY1999 Diabetes Quality Improvement Project measures (poor glycemic control i.e. HbA1c ≥9.5 or test not done; poor lipemic control i.e. LDL ≥ 130 or test not done) in univariate and multivariable analyses (adjusting for age, sex, race and physical comorbidities, in aggregate and in several major MHCs). Finally, we repeated analyses for those self-reporting VA as their exclusive care provider in the 1999 Large Survey of Veterans.
RESULTS: Comparing the 83,473 with MHC to the 256,086 without MHC, 29% vs. 24% had poor glycemic control ($P < .0001$), and 54% vs. 50% poor lipemic control ($P < .0001$). Increasing number of MHC diagnoses was associated with monotonic increases in poor glycemic and lipemic control. Disparities persisted after case mix adjustment, and were greater for certain MHCs (Table). In the 55,694 with care only in VA (i.e. with all care captured), magnitude and direction of disparities were confirmed.
CONCLUSION: Diabetics with MHC are more likely than those without MHC to have poor glycemic and lipemic control. National diabetes quality improvement efforts should pay special attention to the mentally ill, especially those with substance abuse, psychosis or personality disorders and those with more MHCs; potential patient-level, provider-level or system-level barriers should be explored. Optimizing care for patients with comorbid medical and mental illness may require paradigm shifts for general internists, such as a move toward integrated medical-mental health systems of care.

TABLE: Adjusted OR (95% CI) for diabetics with (vs. without) MHCs

	Any MHC	Depression	Substance abuse	Psychosis	Personality disorder
Poor glycemic control	1.19 (1.17,1.21)	1.19 (1.16,1.22)	1.37 (1.32,1.42)	1.26 (1.21,1.31)	1.38 (1.30,1.46)
Poor lipemic control	1.23 (1.21.1.26)	1.24 (1.21,1.26)	1.40 (1.35,1.45)	1.43 (1.38,1.48)	1.43 (1.35,1.52)

DIURETIC USE AND BONE MINERAL DENSITY IN OLDER MEN: THE OSTEOPOROTIC FRACTURES IN MEN STUDY. L.S. Lim[1]; H.A. Fink[2]; M.A. Kuskowski[3]; J.A. Cauley[4]; K.E. Ensrud[2]. [1]Mayo Clinic, Rochester, MN; [2]University of Minnesota, Minneapolis, MN; [3]GRECC, VA Medical Center, Minneapolis, MN; [4]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115089)*

BACKGROUND: Osteoporosis in men is a major health problem that has gained increasing recognition. As the size of the aging population increases, it is expected that the number of men developing osteoporosis and osteoporosis-related fractures will increase. Diuretics, including loop, potassium-sparing, and thiazide diuretics, are commonly used by older adults. They have the potential to affect renal calcium balance. Although much is known about thiazide effects on bone mineral density (BMD), data is lacking on the effects of nonthiazide (loop or potassium-sparing) diuretics on BMD. Previous epidemiologic studies have reported mixed results in the association between loop diuretics and BMD. Our aim is to investigate the association between thiazide and nonthiazide diuretics and BMD in a cohort of older, community-dwelling men.
METHODS: The study involved participants from the Osteoporotic Fractures in Men (MrOS) study. Cross sectional analysis was performed on 5,835 men aged 65 years and older (mean age 74 years) from 6 metropolitan sites in the United States. Participants were grouped according to diuretic usage into 4 groups: loop, potassium-sparing, thiazide diuretic users, and nonusers. BMD was assessed by dual X-ray absorptiometry at the total hip, femoral neck, trochanter, lumbar spine, and total body. ANCOVA was used to assess the age- and multivariate-adjusted associations between each group of diuretic use and BMD.
RESULTS: Loop diuretic users had a higher mean age-adjusted BMD that was 2.8 to 4.4 percent greater at the total hip, femoral neck, lumbar spine and total body compared to diuretic nonusers ($P < .01$). This difference was smaller in magnitude and not statistically significant after multivariate-adjustment. There were no differences in mean age- or multivariate-adjusted BMD between users of potassium-sparing diuretics and diuretic nonusers. Thiazide users had a 2 to 3.4 percent greater mean age-adjusted BMD at the total hip, femoral neck, trochanter, lumbar spine and total body compared to diuretic nonusers ($P < .01$). After multivariate-adjustment, this difference remained statistically significant only for the total body site (difference 1.3%, $P < .01$). There were no significant differences in mean age- or multivariate-adjusted BMD between categories of diuretic users.
CONCLUSION: Our results demonstrate that loop and potassium-sparing diuretic use in older men do not adversely influence BMD. Overall, the results suggest that diuretic use is not a major correlate of BMD in older, community-dwelling men.

DO BRIEF MEASURES OF READINESS TO CHANGE PREDICT ALCOHOL CONSUMPTION AND CONSEQUENCES IN PRIMARY CARE PATIENTS? R. Saitz[1]; N.J. Horton[2]; J.H. Samet[1]. [1]Boston University, Boston, MA; [2]Smith College, Northampton, MA. *(Tracking ID #115939)*

BACKGROUND: Measures of readiness to change drinking are recommended in clinical practice to help tailor interventions and predict outcomes, but their validity has not been well established. We hypothesized that readiness measures would predict alcohol consumption and consequences among hazardous drinkers in primary care.
METHODS: We studied a prospective cohort of adults in a randomized trial of providing alcohol screening results to physicians in an urban primary care practice. Subjects were current drinkers, of hazardous amounts or with a + CAGE alcohol screening question, who were followed-up 6 months later. Assessments of 6 predictors at study entry included: 1) readiness to change drinking; 2) importance of changing; 3) confidence in ability to change; 4) intention to cut down; 5) intention to abstain completely (single item measures); 6) stage of change using the validated multi-item Readiness to Change Questionnaire (RCQ). We fit multivariable regression models for all predictors and 6 outcomes: 1) abstinence; 2) binge drinking (>3 drinks for women or elderly, 4 for men); 3) hazardous drinking (binge or >7 drinks per week for women or elderly, 14 for men); 4) drinks/day; 5) drinks/drinking day; 6) consequences. Analyses adjusted for clustering within physician, physician training, randomization, sex, race, medical comorbidity, and education. Models predicting consequences or consumption also controlled for consequences or drinks/drinking day at study entry, respectively.
RESULTS: Of 312 hazardous drinkers enrolled, 235 completed follow-up and 228 had complete data; 33% were in Action and 31% the Contemplation stage of change (RCQ). Both confidence (scale from 1–10) and intention to abstain (5 point Likert scale) were associated with reduced consumption: less binge drinking (Adjusted Odds Ratio [AOR] for an additional point 0.88, 95% CI 0.80–0.98 for confidence, AOR 0.79, 95% CI 0.64–0.98 for intention); and hazardous drinking (AOR 0.89, 95% CI 0.79–1.00 for confidence; AOR 0.78, 95% CI 0.62–0.98 for intention). Intention to abstain was also associated with more abstinence (AOR 1.43, 95% CI 1.09–1.88). No other predictors were associated alcohol consumption. All predictors except intention to abstain were significantly associated with later alcohol consequences (more readiness, more consequences).
CONCLUSION: Only confidence to change drinking and intention to abstain are associated with later reductions in drinking. The association between readiness and consequences may seem counterintuitive but is likely explained by consequences serving as powerful motivators. Among hazardous drinkers in primary care, tools to assess readiness to change drinking can be valid but must be selected carefully because measures do not consistently predict changes.

DO BUSY AND TIRED RESIDENTS TEACH LESS? C.A. Feddock[1]; A.R. Hoellein[1]; J.P. Shah[1]; B.L. Houk[1]; J.F. Wilson[1]; T.S. Caudill[1]; C.H. Griffith[1]. [1]University of Kentucky, Lexington, KY. *(Tracking ID #116790)*

BACKGROUND: When third year medical students rotate on inpatient internal medicine services, resident physicians provide a substantial amount of clinical teaching. To our knowledge, no studies have examined the effect of patient care duties on the quality or quantity of resident teaching. The purpose of our study was to identify the physician factors which influence the amount of medical student teaching.
METHODS: Over a three month period, residents on our inpatient internal medicine ward services were approached daily by a research assistant and asked to complete a brief questionnaire. Residents were asked to subjectively rate their current workload (light, medium, heavy or extremely heavy) and to rate their last night's sleep (sufficient versus insufficient). Residents also completed a 5-item satisfaction questionnaire, which included rating the statement, "I spent enough time teaching students," on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). For the purposes of analysis, workload was subdivided into low (light or medium) and high (heavy or extremely heavy). Analysis included correlation and multiple regression approaches to assess the effect of workload and fatigue on adequacy of student teaching.
RESULTS: Forty-three different residents completed a total of 200 surveys. Nineteen percent of residents reported high workloads, 27% reported insufficient sleep, and 13% reported both a high workload and insufficient sleep. Overall, residents gave themselves low ratings for the adequacy of their time spent teaching (2.65 ± 1.09). Lower ratings correlated with higher resident workload ($r = -.20$, $P = .005$), with insufficient sleep ($r = -.16$, $P = .019$), and marginally with the resident being post-call ($r = -.14$, $P = .056$). In the regression analysis, independent predictors of inadequate student teaching were high workload, inadequate sleep and the interaction of workload and sleep. Student teaching was most significantly impacted by residents who had both high workload and insufficient sleep. For example, if residents had high workload and insufficient sleep, 45% rated their teaching as completely inadequate (1 on the 5-point scale) versus 15% if residents had either light workload or heavy workload with sufficient sleep ($P = .0006$).
CONCLUSION: High workloads and insufficient sleep dramatically decrease the adequacy of time residents spend teaching medical students. Further studies are needed to identify other factors which impact resident teaching of medical students. Academic medical centers should consider the effects that resident schedules and patient care duties may have on medical student education.

DO COLLABORATIVE QUALITY IMPROVEMENT PROGRAMS REDUCE CARDIOVASCULAR RISK FOR PERSONS WITH DIABETES? R.B. Vargas[1]; C.M. Mangione[1]; J. Keesey[2]; S. Asch[3]; M. Schonlau[2]; E. Keeler[2]. [1]University of California, Los Angeles, Los Angeles, CA; [2]RAND, Santa Monica, CA; [3]West Los Angeles Veteran's Administration, Los Angeles, CA. *(Tracking ID #117153)*

BACKGROUND: In patients with diabetes, cardiovascular morbidity and mortality is a significant and potentially preventable complication. There is a need to identify successful interventions to improve clinical outcomes for these patients that can be reproduced in real world settings. We aim to examine the impact of implementing the Chronic Care Model (CCM) through Breakthrough Series collaboratives on the reduction of cardiovascular disease risk in patients with diabetes.
METHODS: Representatives from 40 healthcare organizations participated in a collaborative instructing them on how to implement organizational changes to improve quality of care for diabetes in an intervention group of their patients. Of these, 17 organizations were large enough to provide matched diabetic patients from non-intervention clinical sites as controls, and 13 agreed to participate. We identified patients with diabetes by chart review from both intervention and within organization control sites and calculated the risk for fatal or non-fatal myocardial infarction or sudden death using a modified United Kingdom Prospective Diabetes Study (UKPDS) risk engine based on glycemia, blood pressure, and cholesterol level. The pre and post periods were one year before and after the intervention. Patients were eligible for inclusion if they were over 25 years old, had 5 out of the 6 variables needed to calculate UKPDS cardiovascular risk score (78 % of sample). We used hierarchical regression to compare the cardiovascular risk of patients from intervention and control sites pre and post participation in the collaborative. This model adjusted for patient level variation in age, medical co-morbidities, and severity of diabetes as well as clustering by health care organization site.
RESULTS: 564 patients from intervention sites and 606 patients from control sites met the inclusion criteria. The mean age was 64 years, 39% were female, and the mean 1 year risk of myocardial infarction or cardiovascular death as estimated by the UKPDS score pre-intervention was 3.1% for the intervention group and 3.0% for the control group. Although the UKPDS risk score improved in both groups, the intervention group had significantly greater risk reduction when compared to the control group ($P < .0001$).
CONCLUSION: Collaborative interventions to improve quality of care can be implemented in practice based settings. Over a one year interval, implementation of the CCM through the Breakthrough Series significantly lowered the cardiovascular risk of patients with diabetes who were cared for in the participating organization's settings.

DO DRUG PRICES REFLECT DEVELOPMENT TIME AND GOVERNMENT INVESTMENT? S. Keyhani[1]; M. Diener-West[1]; N.R. Powe[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #117156)*

BACKGROUND: Antiretroviral and cancer drugs are among the most highly priced medications. The pharmaceutical industry has cited lengthy development times as one reason for high drug prices. We compared the price of antiretroviral and cancer drugs to other drugs after adjusting for development time, government support and other characteristics.
METHODS: We conducted a retrospective study of 180 drugs. We assembled data on drug development times, drug characteristics, government support and prices. There were 168 drugs with development data available in the Government Printing Office (GPO) database approved between 1994–2002 by the Food and Drug Administration (FDA). We obtained data on 16 antiretrovirals developed between 1987 and 2002. Development data for antiretrovirals was obtained from multiple sources including the GPO database, new drug applications (NDA) filed with the FDA and newspaper reports. We obtained data on government support from the FDA, the NDA, and the US Patent and Trademark Office. Prices were obtained from the 2002 Redbook. Drugs were grouped into 7 classes. First, we compared the median development period and government support of drugs by class. Second, for oral drugs, we assessed the independent effect of drug class on price per day in a multivariable analysis, controlling for drug characteristics, government support and development time.
RESULTS: Thirty percent of antiretrovirals had government patents compared to 10% of antimicrobials, 3% of cardiovascular drugs and no cancer, neuropsychiatric, transplant and gastrointestinal drugs ($P < .002$). Fifty percent of all antiretrovirals had NIH trials listed in the NDA compared to 7% of cancer drugs, 7% of antimicrobials, 3% of cardiovascular and no other drug classes ($P < .001$). Thirty percent of antiretroviral drugs had regulatory support compared to 21% of cancer drugs, 3% of antimicrobials and no other drug classes ($P < .001$). The median development period of antiretrovirals (4.2 yrs) was lower than cancer drugs (5.6 yrs), antimicrobials (5.7 yrs), cardiovascular drugs (7.8 yrs), neuropsychiatric drugs (7.1 yrs), transplant drugs (6.7 yrs) and gastrointestinal drugs (7.8 yrs) (overall $P < .004$). By multivariable analysis antiretrovirals cost $8 per day more than the reference group (cardiovascular drugs) while cancer drugs cost $11 per day more after adjusting for development time, government support and drug characteristics ($P < .001$). The remaining drug classes did not differ in price from the reference category. Development time was not associated with drug price ($P = .18$).
CONCLUSION: Antiretroviral and cancer drugs even after accounting for development time and government support are among the most highly priced medications. Development time is not associated with drug price.

DO FACULTY AND STANDARDIZED PATIENT EVALUATIONS OF STUDENTS' CLINICAL SKILLS AGREE? IMPLICATIONS FOR THE USMLE CLINICAL SKILLS EXAM. M.A. Sostok[1]; A.T. Filak[1]; D. Brewer[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #116078)*

BACKGROUND: The National Board of Medical Examiners (NBME) will implement USMLE Step 2 Clinical Skills (CS) as a licensure requirement to practice medicine beginning in 2004. The exam will assess students' history, physical exam and communication skills using a series of standardized patient (SP) encounters. SP's will be primarily responsible for scoring student performance during the encounter. Physician evaluators will score post-encounter clinical notes and have a limited role in evaluating the clinical skills of the students. This format assumes that SP's and faculty scoring of an encounter during the exam would be similar. The purpose of our study was to determine the correlation between faculty and SP scores during the clinical competency exam (CCX) conducted at the University of Cincinnati College of Medcine (UCCOM) which is similar to the planned USMLE Step 2(CS).
METHODS: During academic years 2002 and 2003, the UCCOM conducted a CCX for all 4th year students. The CCX consisted of 7 SP-encounters. Faculty and SP's rated history, physical exam and communication skills of each student using checklist evaluations. Faculty and SP's participated in workshops to enhance their evaluation skills prior to the CCX. Mean scores and standard deviations were calculated for each skill for the two years the CCX has been administered. Pearson coefficients were used to determine the correlation between faculty and SP scores.
RESULTS: To date, 313 students have participated in the CCX. The table below shows strong agreement between faculty and SP scores of students' history and physical exam skills. A significantly weaker correlation existed between faculty and SP scores of students' communication skills.
CONCLUSION: Our results suggest that significant variation exists between faculty and SP's when evaluating communication skills of students. We recommend the NBME carefully monitor SP's evaluations of students' communication skills as USMLE Step-2(CS) begins this year.

Clinical Skill	Faculty Mean Score (sd)	SP Mean Score (sd)	r (p)
History	144.4 (15.7)	146.6 (17.1)	0.82 ($P < .0001$)
Physical Exam	53.9 (10.3)	53.9 (10.3)	0.90 ($P < .0001$)
Communication	100.3 (9.9)	95.3 (9.2)	0.41 ($P = .001$)

DO FACULTY-MEDIATED INTERN SUPPORT GROUPS REDUCE BURNOUT? R. Dillingham[1]; M.J. Goodman[1]; A.M. Wolf[1]; M.L. Plews-Ogan[1]; J.B. Schorling[1]. [1]University of Virginia, Charlottesville, VA. *(Tracking ID #116859)*

BACKGROUND: Burnout is common among internal medicine residents. In an attempt to reduce burnout among interns, we conducted support groups to provide a protected opportunity for housestaff to discuss their emotions relative to their professional role. The purpose of this study was to evaluate whether these faculty-mediated intern support groups could reduce the rate of burnout.
METHODS: All 32 PGY-1 internal medicine residents were assigned to support groups in June 2002. Three groups of 10–11 interns met for one hour every other week in the hospital starting in July, 2002 at times convenient to the group members. Each group was facilitated by both a general medicine faculty member and a clinical psychology graduate student. The groups were designed so that no facilitator had any formal supervisory or evaluative role realtive to the residents in his or her group. Residents were asked to write for 5–10 minutes on specific topics at the beginning of the session, and discussions centered on the writing topics. The support group program was mandatory for the interns from July to December except if they were on-call or post-call and voluntary thereafter. The primary outcome measure was the Maslach Burnout Inventory (MBI) scores of the intern group for whom the support groups were required. The MBI was administered in February 2003. Residents participating in the support groups also completed an anonymous survey with thirteen questions measured on a Likert scale to determine their satisfaction with the groups and to evaluate the functioning of the groups.
RESULTS: A total of 78% of all interns completed the two instruments. Of these, 84% met criteria for burnout. The criteria for identifying burnout were high scores on either the depersonalization or emotional exhaustion subscales of the MBI using the standards for health professionals. Eighty percent of the residents reported on the surveys that they valued the support groups, and 60% wished to continue meeting with their groups.
CONCLUSION: The faculty-mediated intern support groups did not seem to reduce the prevalence of burnout in February of the intern year. Although the MBI was only administered at one point in time, the high rate of burnout identified makes any effect of the support groups highly unlikely, and the rate we observed was similar to that reported by others for medical residents who were not participating in such groups. However, the interns valued the opportunity to share their feelings about the residency and their new professional role with other interns and faculty. It is likely that successful efforts to reduce burnout among residents will need to address the stuctural issues of residency and not just provide outlets for them to address the emotional consequences of their work.

"DOC, THE METHADONE EATS MY BONES!" BONE HEALTH IN CHRONIC METHADONE TREATMENT. T.W. Kim[1]; D.P. Alford[1]; A.O. Malabanan[1]; B. Batch[1]; J.H. Samet[1]. [1]Boston University, Boston, MA. *(Tracking ID #116879)*

BACKGROUND: While methadone maintenance treatment (MMT) is effective for opioid dependence with an excellent safety record, bone pain complaints have raised concerns about these patients' bone health. We assessed the prevalence of bone pain, vitamin D insufficiency and osteoporosis in persons receiving chronic methadone.
METHODS: Subjects recruited from an urban MMT program from 8/03 to 12/03 underwent the following: administered questionnaire (demographics, perceptions of methadone and bone health, bone pain), serum 25, hydroxyvitamin D (Vit D) and dual energy x-ray absorptiometry (DXA) for bone mineral density (BMD). Vitamin D insufficiency was defined as Vit D < 20 ug/ml, osteopenia as T score ≤ –1 and > –2.5 and osteoporosis as T score ≤ –2.5.
RESULTS: Study sample (n = 88) characteristics: median age 42 years (range 20–66); female 61%, of whom 34% post-menopausal; black 47%; HIV infection 27%; tobacco use 89%; median years illicit opioid use 12 (range 2–38); median years MMT 3 (range 0–25). Survey results: 43% (38/88) somewhat or very worried that methadone affects bone health; 20% (18/88) delayed initiation of MMT due to this worry; 33% (29/88) felt this worry would influence their MMT duration; 20% (18/88) had declined a recommended increase in methadone dose, with 41% (7/18) of those subjects citing concerns about bone health as reason for refusal; and 64% (56/88) reported bone pain. Serum analysis revealed 32% (19/59) had Vit D insufficiency. DXA results (n = 79) (see table below) revealed normal BMD in only 13% of men, 44% of postmenopausal women and 52% of premenopausal women.
CONCLUSION: Almost half of the MMT subjects in our sample believed that methadone adversely affects bone health. The prevalence of vitamin D insufficiency was substantial and a high prevalence of osteoporosis was demonstrated, especially among our male subjects. Since osteoporosis and osteomalacia are treatable bone diseases, further study is warranted to address the abnormal bone health of patients in MMT.

	Osteopenia	Osteoporosis
male	28% (9/32)	59% (19/32)
female, premenopause	32% (10/31)	16% (5/31)
female, postmenopause	31% (5/16)	25% (4/16)

DOES HERBAL PRODUCT USE AFFECT THE USE OF APPROPRIATE MEDICATIONS FOR SECONDARY PREVENTION OF CORONARY DISEASE? S.W. Bent[1]; J.A. Simon[1]; M. Shlipak[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116475)*

BACKGROUND: Herbal products are widely used in the United States, with recent estimates suggesting that approximately 25% of adults have used an herb to treat a medical illness within the past year. One great concern about the widespread use of herbs has been a possible "substitution effect," whereby herb users may be less likely to take prescription medications with established benefits for their condition. In a randomized controlled trial of post-menopausal women with known coronary heart disease (The Heart Estrogen Replacement Study; HERS), we sought to determine whether patients using herbal products at baseline were less likely

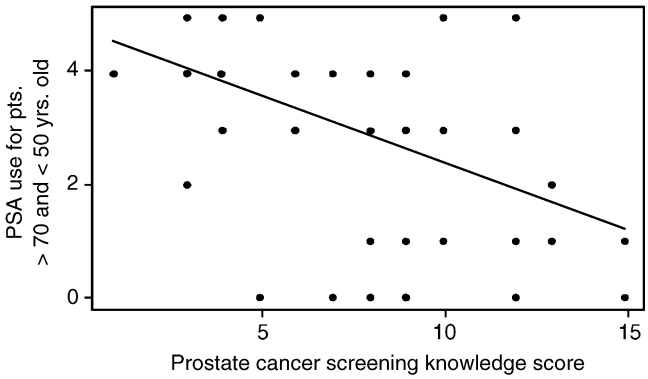
to use four medications with well-documented benefits: statins, beta-blockers, angiotensin-converting enzyme inhibitors (ACE-I), and aspirin.
METHODS: The HERS study included 2763 postmenopausal women less than 80 years of age who had not had a hysterectomy and had known coronary artery disease. Medication and supplement use, including herbal products, was assessed at baseline (1993) and every four months until study completion (1998) by phone interview. We manually searched the entire medication database for names of herbal products using the Natural Medicines Comprehensive Database as the reference standard. Participants were classified as users of any herbal product or non-users. Using a students *t* test, we then determined whether herb users had a different likelihood of taking the four medications known to be beneficial in patients with coronary heart disease.
RESULTS: The proportion of HERS participants using herbal products nearly doubled during the study period, from 6.1% of women at baseline (1993) to 11.0% of women at the final visit (1998). The most commonly used herbal products at baseline were Garlic (3.5%) and Ginkgo 0.3%. Herb users had similar likelihood of taking statins [OR = 1.26 (95% CI: 0.92 to 1.72)], beta-blockers [OR = 0.84; (95% CI: 0.59 to 1.18), ACE-I [OR = 0.94 (95% CI: 0.62 to 1.42], and aspirin [OR = 1.31 (95% CI: 0.87 to 1.97)] compared to non-users.
CONCLUSION: Although herb use increased steadily among women with CHD during the period of observation, herbal product use did not appear to interfere with the use of appropriate medications. While this finding is reassuring, we cannot determine whether it applies to other chronic disease populations among whom the prevalence of herb use is even higher, such as patients with cancer, HIV, depression, and chronic pain.

DOES INSURANCE STATUS AFFECT PHYSICIANS' PRESCRIBING FOR SEVERE, UNCONTROLLED HYPERTENSION? S.M. Dy[1]; J.H. Young[1]; K. Weeks[1]; R. Wongus[1]; M.J. Klag[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #115685)*

BACKGROUND: Physicians often underestimate medication costs and the impact of levels of insurance coverage on out-of-pocket costs. Our objective was to determine whether insurance status and pharmacy benefits influence physicians' prescribing of antihypertensive medications in persons admitted for severe, uncontrolled hypertension.
METHODS: We conducted a cross-sectional survey. We prospectively identified all African-American urban residents admitted to the internal medicine service at Johns Hopkins from 1999–2003 whose admission blood pressure was greater than 180/110 mmHg. We reviewed patients' medical records and interviewed patients about their history of hypertension, adherence, medications, and access to care. We excluded patients with a secondary cause of hypertension. We defined medication costs as the average cost to the patient for 30 days' treatment with the lowest dose, based on survey data from retail pharmacies nationwide.
RESULTS: We completed interviews with 159 patients; 87% were under 65 years of age. For the 77% of patients where we had information on prescribed medications before admission, the mean number of antihypertensive medications was 2.3 (range, 1–6), with an average cost of $53 (range, $6–$161). Patients were taking a mean of 2.3 non-antihypertensive prescription medications on admission. There were no significant differences in the number or cost of medications between the admission and discharge regimens. In regard to insurance, 33% had none, 14% had no medication coverage, and 29% had medication copays. The prevalence of reported difficulty affording medications in these insurance groups was 78%, 57%, and 38%, respectively. Of those who reported difficulty affording medications, 68% said that this sometimes resulted in nonadherence. Patients without insurance had lower discharge medication costs than those with insurance ($43 vs. $53, $P < .05$), but there were no significant differences in discharge costs among patients who reported difficulty affording medications, those without medication coverage, or those with medication copays. These same findings persisted in multivariate analyses adjusting for the cost of the medication regimen on admission, for those patients where we had information about prescribed medications on admission. In multivariate analysis, after adjusting for the number of discharge antihypertensives, the presence of an ACE inhibitor or calcium channel blocker in the discharge antihypertensive regimen significantly increased its cost ($P < .001$).
CONCLUSION: Insurance status, but not other important indicators of being able to afford antihypertensive medications, influenced physicians' prescribing patterns. When not medically contraindicated, physicians might decrease medication costs by substituting lower-cost medications for ACE inhibitors and calcium channel blockers.

DOES KNOWLEDGE ABOUT PROSTATE CANCER SCREENING INFLUENCE PHYSICIANS' SCREENING PRACTICES? D.S. Bell[1]; J. Hoffman[1]; M. Wilkes[2]. [1]University of California, Los Angeles, Los Angeles, CA; [2]University of California, Davis, Davis, CA. *(Tracking ID #116985)*

BACKGROUND: Professional education often has little effect on physicians' practices; thus, the influence of knowledge on practice behavior has been questioned. Many physicians routinely order PSA testing for men of all ages, despite the conclusions of multiple expert groups that routine screening is unlikely to benefit men outside of the 50–69 year-old age group. We report an interim analysis from a study relating physicians' knowledge about prostate cancer screening with their self-reported practices.
METHODS: We developed a multiple-choice knowledge test on based on the U.S. Preventive Services Task Force guideline on prostate cancer screening. Each question was reviewed and approved by a urologist expert and by the Task Force chairman. We also developed a survey to assess prostate cancer screening attitudes and practices. Using an online survey system, we administered these questions to a sample of general internists and family physicians listed in the AMA Physician Masterfile as practicing in Los Angeles. To be eligible, physicians were required to spend at least 1 day/week delivering primary care to men over age 40. Participants were paid $75. A single knowledge scale was constructed by including questions having an item-total correlation of 0.10 or greater. A PSA overuse scale was constructed by assigning points for the self-reported routine use of PSA screening in age groups under 50 and over 70. The overuse scale ranged from 0 to 5, with 5 points representing routine use of PSA screening in all age groups, including those over 80.
RESULTS: Of 364 physicians randomly sampled, 163 (45%) responded, either online or by telephone, to the eligibility question. Of these respondents, 40 (25%) were ineligible. Of those eligible, 52 (42%) have completed the study to date. The final knowledge scale included 22 questions, with Cronbach's $\alpha = 0.73$. The mean knowledge score among participants was 8.3 out of a possible 22 (SD = 3.6, range 0–15). The mean PSA overuse score was 2.8 out of 5 (SD = 1.6), with 12% having a score of 0 and 16% having a score of 5. Higher scores on the knowledge scale were associated with lower scores on the PSA overuse scale ($r = -0.53$, $P < .0001$).
CONCLUSION: Physicians with greater knowledge about prostate cancer screening reported performing significantly less PSA screening for men under age 50 and over age 70. Further studies are needed to determine whether education that changes knowledge about prostate cancer screening can reduce the use of PSA screening among men in these age groups, for whom the harms may outweigh the benefits.



DOES MANDATORY COMPUTERIZED PAIN ASSESSMENT IMPROVE PAIN DIAGNOSES IN AN URBAN HOSPITAL OUTPATIENT CLINIC? O. Saigh[1]; R.N. Link[1]. [1]New York University, New York, NY. *(Tracking ID #116555)*

BACKGROUND: Pain is the most common reason for medical encounters in the US, yet remains under-diagnosed and under-treated. To comply with pain management standards, Bellevue Hospital implemented a mandatory computerized pain assessment tool in its electronic medical record system for every outpatient encounter. Beginning in August 2002, each healthcare provider was required to ask patients whether they were experiencing any pain and to document the magnitude, quality, and location of the pain as well as causative and alleviating factors. We sought to evaluate whether this intervention led to an increase in the diagnosis of pain-related conditions.
METHODS: We conducted a chart review of all adult primary care patients seen on two randomly selected days six months prior to implementation of the computerized instrument (Pre-group) and six months after (Post-group). For all visits for which an electronic note was completed (68% before and 99% after August 2002) we determined if patients were asked or responded about pain as documented in the computerized note. All pain-related diagnoses in the notes and in the ICD-9 coding were assessed by two independent reviewers (kappa = 0.98). We also conducted an anonymous survey of the Medicine housestaff and faculty by mail to assess their usage and attitudes toward the computerized pain assessment tool.
RESULTS: Of the 264 patients in the Pre-group, 41% had a pain-related diagnosis compared with 37% of the 392 patients in the Post-group ($P > .05$). A pain inquiry by the physician was noted for 51% of patients before the mandated assessment tool vs. 44% after ($P > .05$). Of 144 patients in the Post-group with pain-related diagnoses, 95 (66%) had the presence of pain documented in the free text portion of the progress note. However, for 64 (67%) of these 95 cases, the physicians recorded a contradictory "no pain" response in the assessment tool, therefore bypassing the mandatory screens that would have followed a "yes" response. In the survey (response rate 42%, 85/201) 49% felt the computerized assessment tool was "somewhat difficult" or "very difficult" and 32 % felt it was "somewhat easy" or "very easy". While 30% never used the assessment tool, 47% used it sometimes, and 23% used it always. The majority of respondents felt that the tool did not change their pain assessment practice.
CONCLUSION: The mandatory computerized pain assessment tool did not lead to increased documentation of pain-related diagnoses and may have actually hindered the documentation of pain assessment because of the perceived burden of using

the application. Computerized documentation tools should be carefully assessed before they are integrated into an electronic medical record system.

DOES NIGHT FLOAT IMPACT THE QUALITY OF THE ADMIT HISTORY AND PHYSICAL?
H. Kaushal[1]; J. Fischer[1]; H. Khurana[2]; A. Reddy[2]. [1]University of Illinois, Peoria, IL; [2]University of Illinois at Peoria, Peoria, IL. *(Tracking ID #115869)*

BACKGROUND: The recent national mandate for an eighty-hour resident physician work week has required nearly all internal medicine training programs in this country to incorporate a "night float" system into their curriculum. Despite this widespread adoption of the "night float" system, little is known regarding its effects on important outcomes, most notably patient care. The objective of this study is to assess the difference, if any, in quality of the resident physician history and physical exam (H&P) write-up on night float (NF) versus non-night float (non-NF) patient service rotations.
METHODS: The study was conducted at a university-affiliated teaching hospital. Admission H&Ps eligible for review included all those with the principal discharge diagnosis of pneumonia or COPD (chronic obstructive pulmonary disease) that had been completed by an internal medicine resident between July 2002 and June 2003. A criteria checklist for each diagnosis that assessed H&P quality was created utilizing consensus opinion of five attending physicians (face validity). These checklists allowed comparison of five quality variables (history length, medication list completeness, history documentation, exam documentation, ancillary data documentation) between the H&Ps completed during NF vs. non-NF rotations. Reviewers blinded to both patient and physician identifiers utilized these checklists to score the H&Ps. Interrater reliability was assessed. All five quality variables studied were analyzed using a Mann-Whitney U test.
RESULTS: A total of 79 patient records (21 COPD, 58 pneumonia) were identified as eligible and all were reviewed. Fifty-two of these records reflected non-NF while 27 reflected NF duty. Kraskal-Wallis analysis showed excellent agreement amongst reviewers in the scoring of patient records ($P = .87$ to $P = .97$). No significant difference in H&P quality was found between NF and non-NF duty assignment for any of the five quality indicators studied. This held true when examining each diagnosis separately as well as when combined.
CONCLUSION: With the increase in "night float" utilization comes an increase in the transfer of patient care information between physicians. As such, the quality of the written H&P gains even greater importance in assuring a smooth transition of care from one provider to the next. Our finding that the quality of resident H&Ps did not differ between NF and non-NF services is encouraging and serves as an initial step prompting further research into this timely and nationally pertinent issue.

DOES PARITY INFLUENCE BONE DENSITY? RESULTS FROM THE CARDIA STUDY.
K.P. Palonen[1]; C.E. Lewis[1]; S. Sidney[2]; S.B. Hulley[3]; C.I. Kiefe[1]. [1]University of Alabama at Birmingham, Birmingham, AL; [2]University of California, Berkeley, Oakland, CA; [3]University of California, San Francisco, San Francisco, CA. (Tracking ID #115268)

BACKGROUND: Calcium metabolism changes during pregnancy and lactation. Bone density decreases transiently during lactation, before returning to baseline. The chronic effect of multiple pregnancies on bone density is less clear. The purpose of our study is to clarify this relationship further.
METHODS: We studied 545 women who had whole bone density measured with dual-energy x-ray absorptiometry (DXA) at year 10 (1995–96) of CARDIA, a cohort of African-American and Caucasian women aged 18–30 years at enrollment in 1985–1986. Of them, 302 had total hip and femoral neck bone density measured. We studied bone density in relation to number of live births and used linear regression analysis to control for possible confounders.
RESULTS: Women with whole body bone density measurement were on average 35.3 ± 3.6 years old, and 47% Caucasian; the table shows that unadjusted bone density increased with parity but this increase was not statistically significant after controlling for significant confounders (race, body weight, lean body mass, smoking, and level of education). Measurements of bone density of the total hip and femoral neck revealed similar findings.
CONCLUSION: Bone density does not appear to decrease with multiple births.

	0 live births	1–2 live births	>2 live births
N (%)	225 (47)	254 (47)	66 (12)
Bone density: mean (SD) g/cm2*	1.099 (0.087)	1.106 (0.100)	1.145 (0.097)
Adjusted bone density (SD)**	1.103 (0.085)	1.106 (0.083)	1.131 (0.084)

* P = *.003* ** P = *.058*

DOES PERSONALITY HARDINESS PROTECT AGAINST RESIDENT BURNOUT?
R. Gopal[1]; J.J. Glasheen[2]; T.J. Miyoshi[2]; A. Prochazka[3]. [1]Denver VAMC, Denver, CO; [2]University of Colorado Health Sciences Center, Denver, CO; [3]Denver VA, Denver, CO. *(Tracking ID #116107)*

BACKGROUND: Burnout is very common in internal medicine residents. The most common features are a combination of emotional exhaustion, depersonalization, and reduced personal accomplishment. Personality hardiness has been thought to buffer one from burnout.
METHODS: We administered a postal survey in May 2003 to first, second and third year internal medical residents, at the University of Colorado Health Science Center. The survey contained the Maslach Burnout Inventory, a 22-item questionnaire organized into three subscales: emotional exhaustion (EE, high score ≥ 27), depersonalization (DP, high score ≥ 10), and personal accomplishment (PA, high score ≤ 33), the thirty item Cognitive Hardiness Scale, the two question Primary Care Evaluation of Mental Disorders (PRIME-MD) Patient Health Questionnaire (PHQ). We used linear regression to examine predictors of Maslach subscale scores.
RESULTS: The response rate was 87% (121/139) (33% PGY1, 31% PGY2, 35% PGY3). Two-thirds of the respondents were in the 26 to 30 year old age group with 31% in the 31–35 year old group. The mean scores were EE (24.7, sd 9.0), DP (11.6, sd 5.7), and PA (39.1, sd 5.2). Fifty-one (52%) of the residents had high EE, 74 (61%) residents had high DP, and 19 (15.7%) residents had low PA. Defining burnout as high EE or high DP, 81 residents (67%) met criteria for burnout. Sixty-two (52.5%) residents met criteria for depression using the two-question PRIME-MD screener. Depressed residents had significantly higher levels of DP and EE ($P < .05$) but there was no significant relationship with PA ($P = .89$). The mean hardiness t-score was 54 (sd 7.8, range 38 to 69) that is above average compared to the general population (mean 50, sd 10, $P < .001$). Residents with high levels of DP had lower levels of hardiness (57.7 vs. 52.5, $P = .006$). Similarly, those with high levels of EE had lower levels of hardiness (58.4 vs. 51.5, $P < .001$), while those with high PA had low hardiness (50.2 vs. 57.4, $P < .001$). Hardiness remained associated with EE ($P = .001$), DP ($P = .001$) and PA ($P = .001$) after adjustment for age, gender, PGY level, and work hours.
CONCLUSION: Burnout continues to be a major problem in medical residency training programs and seems to be associated with depression. High levels of hardiness are associated with lower EE and DP and may protect the resident against the rigors of residency training and depression.

DOES POOR MEDICATION ADHERENCE PREDICT INCREASES IN ANTI-HYPERTENSIVE THERAPY?
R.W. Grant[1]; N. Wong[1]; D.E. Singer[1]. [1]Massachusetts General Hospital, Boston, MA. *(Tracking ID #116633)*

BACKGROUND: Despite the availability of potent anti-hypertensive (AH) medicines, most hypertensive Americans do not achieve optimal blood pressure control. We analyzed pharmacy claims records to test the hypothesis that inadequate adherence to prescribed AH therapy predicts the need for increases in therapy.
METHODS: We defined a cohort of patients enrolled in a single health insurance plan between 7/01/99 and 6/30/03 who were newly initiated on AH therapy. We used pharmacy claims data to calculate AH medication adherence. Overall adherence was determined by dividing the total number of pills dispensed by the total number of days from first to last prescription, and interval adherence was calculated by dividing the number of pills from a single prescription by number of days until the next prescription. We performed a cohort analysis of overall adherence to the initial AH medication by comparing patients remaining on a stable regimen to patients requiring an increased dose or addition of a second AH agent. We also performed a nested case-control analysis to determine whether AH adherence was lower in the interval preceding an increase in therapy among cases compared to a similar interval in randomly selected controls matched 1:1 by age, medication name, and elapsed time since first starting AH therapy.
RESULTS: There were 5089 patients newly started on AH therapy in our cohort. Mean age was 47.8 (± 13) years and 50.1% were women. Over a mean of 35 (± 11.3) months of observation, 935 patients required an increase in regimen. The mean time to increased regimen in these patients was 220 (± 222) days. Patients with increased AH regimens were older (50.8 vs. 47.1 years, $P < .001$) and had higher overall adherence to their first AH (92.5% vs. 80.7%, $P < .0001$). Adherence in patients with increased AH regimens remained significantly higher after controlling for age, gender, and treatment for diabetes or ischemic heart disease ($P < .0001$). In our nested case-control analysis, 750 cases were successfully matched to 750 controls. Adherence among cases in the interval preceding an increase in AH therapy was high and not significantly different compared to a matched interval in controls (97% vs. 100.1%, $P = .5$, median adherence interval 30 days).
CONCLUSION: Contrary to our expectations, we found that adherence to the first prescribed AH medicine was higher in patients requiring increases in AH therapy compared to patients remaining on the same dose of a single agent. Moreover, adherence in the period immediately preceding an increase in therapy was no lower than a matched adherence interval in similar control patients. These findings support the conclusion that elevated blood pressure in patients who require an increase in AH therapy is not primarily due to poor adherence to the initial AH regimen.

DOES PUBLICATON BIAS EXIST FOR CLINICAL TRIALS SUPPORTING NEW DRUG APPLICATIONS?
S. Jeng[1]; J. Hamrick[1]; I. Sim[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115104)*

BACKGROUND: The Food and Drug Administration (FDA) approves new molecular entities (NMEs) based on "pivotal" clinical trials submitted by pharmaceutical companies. "Pivotal" trials demonstrate the safety and efficacy of an NME for its indication. There is, however, no requirement that these trials be published. We determined the proportion of pivotal trials that are published and identified significant predictors of publication.
METHODS: We reviewed the FDA's statistical and medical reviews for all NMEs approved between January, 1998 and December, 2000. Based on the reviews, we identified the pivotal trials for each NME and abstracted the following characteristics of each trial: intervention details, investigator, sample size, primary outcome results, statistical significance, randomization, double-blinding status, and use of intention-to-treat analysis. We then tried to match each pivotal trial to publications in PubMed, the Cochrane Library or CINAHL on the basis of at least two of the following characteristics: sample size, number and location of centers, dosing

schedules and primary outcome results. If a pivotal trial was not matched in these databases, we reviewed the Medical Letter for potential references. We performed backward stepwise regression to determine which variables, if any, predicted publication status. Missing data was handled by regression imputation. For published trials, we recorded the journal's impact factor (a measure of a journal's citation frequency) and the length of time from FDA approval to publication.
RESULTS: Over the 3 year study period, 324 pivotal trials were submitted in support of 90 NMEs. 208 (64%) of the trials were found in the literature, with 1 trial published in a journal that was not indexed in PubMed. For 12 NMEs (13%), none of the pivotal trials were published. Trials with statistically significant primary outcome results were more likely to be published (OR: 3.1, 95% CI: 1.8–5.4). This association remained significant across assumptions about the values of missing data. Sample size, randomization, double blinding, and use of an intention-to-treat analysis did not predict publication status. 70% of the published trials (146/208) were published after FDA approval. Of these 146 trials, the mean time to publication was 14 months (range <1 to 47 months). Trials were published in journals with a median impact factor of 2.9 (range 0.2 to 31.7). 41% of the NMEs (37/90) had at least one trial published in a relatively high-impact journal (impact factor ≥5).
CONCLUSION: The publication of pivotal trials is incomplete. Over one third are unpublished within three years of FDA approval. Trials with statistically significant results are more likely to be published. Publication bias exists for clinical trials supporting the safety and efficacy of newly approved drugs in the United States.

DOES RACE, LANGUAGE, OR GENDER CONCORDANCE BETWEEN PROVIDER AND PATIENT AFFECT MISSED APPOINTMENT RATES IN PRIMARY CARE?. K.E. Lasser[1]; I.L. Mintzer[1]; A. Lambert[1]; H. Cabral[2]; D.H. Bor[1]. [1]Cambridge Health Alliance, Cambridge, MA; [2]Boston University School of Public Health, Boston, MA. *(Tracking ID #101786)*

BACKGROUND: When patients miss primary care appointments, practices function less efficiently. This problem is of particular concern to publicly-funded neighborhood health centers, which are often under serious financial strain. No previous study has simultaneously examined whether race, language, or gender concordance between patient and primary care provider (PCP) has an impact upon missed appointment rates in primary care settings.
METHODS: We surveyed 64 PCPs at 14 neighborhood health centers in Cambridge and Somerville, MA. We inquired about their self-identified race, language abilities, years in practice, and number of clinical sessions per week. Fifty out of 64 PCPs (78%) responded to the survey after receiving 2 e-mails. We then analyzed data on 56,870 adult primary care patient visits to these 50 PCPs during 2002. We defined a visit to be race concordant if the patient and PCP were of the same race, and to be gender concordant if the patient and PCP were of the same gender. If a PCP spoke a given language fluently, we defined visits with patients who spoke that language to be language concordant. We used chi-square tests to compare differences in groups in the proportion of missed appointments by patient, provider and visit characteristics. We then performed multiple logistic regression analyses of the dichotomous outcome (missed versus kept appointment) using generalized estimating equations.
RESULTS: Sixteen percent of patients did not attend their first scheduled visit in 2002. Young, publicly insured, and Haitian Creole-speaking patients were significantly more likely to miss appointments than were older, privately insured English-speaking patients after adjustment for age, insurance, language, individual PCP open access, years PCP in practice, and health center. Odds ratios for missing an appointment for patients who had language, race or gender concordance with their PCP were .87 (95% confidence interval [CI], .79–.96), .89 (95% CI, .84–.96) and 1.02 (95% CI, .96–1.09) respectively. Patients whose PCP was at open access were slightly less likely to miss appointments than were other patients (OR .79; 95% CI, .73–.85) Odds ratios for missing an appointment for patients seen at particular health centers varied nearly 3-fold.
CONCLUSION: Our study demonstrates the influence of the specific practice site on patients' adherence to appointments; this finding warrants further scrutiny. We provide evidence to support the continued use of open access systems to decrease missed appointments. Finally, we encourage continued efforts to recruit minority PCPs and those with non-English language fluency to practice in community health centers.

DOES REGULAR OUTPATIENT CARE PREVENT STROKE AND DEATH FOR HYPERTENSIVE ENROLLEES IN MEDICAID MANAGED CARE?. J. Bailey[1]; J.Y. Wan[1]; J. Tang[1]; G.W. Somes[1]. [1]University of Tennessee, Memphis, TN. *(Tracking ID #116404)*

BACKGROUND: Little community-based data exists demonstrating that outpatient (OP) health services exposures can prevent stroke or death for persons with hypertension. This study seeks to identify health services exposures' impact on stroke incidence and death for these patients.
METHODS: This retrospective study followed a cohort of hypertensive enrollees in Tennessee's statewide Medicaid managed care system (TennCare) for 3–7 years to determine which health services exposures are associated with beneficial outcomes. OP health services exposures (incl. overall OP visits and visit subtypes) and demographic factors were evaluated using administrative data, linked to vital records, to assess stroke incidence and death. Key independent variables were measured during a 2-year run-in period. Associations with stroke incidence and death were assessed using Cox Proportional Hazards modeling.
RESULTS: 49,520 subjects were followed 4.7 years (on average), with 619 incident strokes and 2,055 deaths. They were predominantly: female (67.7%), white (66.8%), disabled (36.9%), uninsured (38.9%), in statewide MCOs (64.9%), and for-profit MCOs (51.4%). Mean age was 48.5 yrs. Baseline diagnoses incl.: diabetes (21.9%), mental illness (24.5%), substance abuse (8.4%), obesity (6.2%). Patients averaged 5.2 OP visits and 1.0 hospitalization per year. For stroke, significant variables ($P < .05$) in univariate analyses incl.: age (RR = 1.06), black race (1.69), statewide MCOs (.67), regional MCOs (.61), ER visits (1.06), hospitalizations (1.26), length of stay (1.01), diabetes (2.42), and substance abuse (1.57). In multivariate analysis, age, black race and hospitalizations remained significant. For death, significant variables ($P < .05$) in univariate analysis incl.: age (1.06), male (1.61), black race (1.13), OP visits (1.02), ER visits (1.08), hospitalizations (1.36), length of stay (1.01), diabetes (2.44), mental illness (1.22), and substance abuse (2.50). In multivariate analysis, these variables remained significant, except for mental illness and ER visits. None of the OP visit subtypes studied were found to be protective, even after adjusting for confounding factors.
CONCLUSION: Administrative databases can be used to identify major health services exposures and cardiovascular risk factors that place hypertensive enrollees at increased risk of stroke and death. Outpatient physician visits do not protect hypertensive Medicaid managed care enrollees from stroke or death, but rather serve as a marker of increased comorbidity.

DOES THE ASSOCIATION BETWEEN SOCIOECONOMIC STATUS AND CAUSE-SPECIFIC MORTALITY VARY BY RACE? AN EXAMINATION OF CARDIOVASCULAR DISEASE AND BREAST CANCER MORTALITY AMONG AFRICAN-AMERICAN AND WHITE WOMEN. C. Kim[1]; E. Eby[1]; J. Piette[1]. [1]University of Michigan, Ann Arbor, MI. *(Tracking ID #115108)*

BACKGROUND: Low socioeconomic status (SES) appears to be associated with greater cardiovascular disease (CVD) mortality in women but may also be associated with lesser breast cancer mortality. In order to determine whether the relationship between SES and disease-specific mortality risks were similar across racial groups, we examined the association between SES and mortality from CVD and breast cancer among white and African-American women.
METHODS: Data were obtained from the National Longitudinal Mortality Study, a population-based dataset that links 10 Current Population Surveys conducted between 1978 and 1985 with National Death Index records between 1979 and 1989. Analysis included 21,303 African-American and 186,323 white women. Education (less than high school, high school, and some college or more) and annual household income (<$10,000, $10,000–$19,999, $20,000 or more) were used as markers of SES in separate models. Logistic regression models estimated the association between SES and breast cancer mortality and between SES and CVD mortality after adjustment for age (years), marital status (married/not-married), and rural/urban residence.
RESULTS: Unadjusted cumulative incidence of CVD mortality was 4.2 percent among African-American women and 2.3 percent among white women over a period of 8.7 years. Unadjusted cumulative incidence of breast cancer mortality was 0.3 percent among African-American women and 0.4 percent among white women. After adjustment for age, marital status, and residence, less education was still associated with greater CVD mortality among African-American (OR 1.8, 95% CI = 1.03, 3.0) and white women (OR 1.4, 95% CI = 1.3, 1.6). However, after adjustment for these variables, less than a high school education was associated with lower breast cancer mortality among white women (OR 0.73, 95% CI 0.6, 0.9) but not among African-American women (OR 1.1, 95% CI 0.5, 2.3). Similar odds ratios were obtained when income was used as the SES indicator.
CONCLUSION: The association between SES and cause-specific mortality may differ between white and African-American women for breast cancer but not CVD death. Better understanding of these interactions could guide the design of more effective interventions, particularly those aimed at improving breast cancer outcomes among women.

DOES TIME SPENT WITH THE PHYSICIAN AFFECT INPATIENT SATISFACTION?. A.R. Hoellein[1]; C.A. Feddock[1]; N.S. Becker[1]; J.L. Bowerman[1]; J.F. Wilson[1]; T.S. Caudill[1]; C.H. Griffith[1]. [1]University of Kentucky, Lexington, KY. *(Tracking ID #116798)*

BACKGROUND: The purpose of this study was to determine if the time spent in contact with the resident-physicians was reflected by their inpatients' satisfaction with the care received.
METHODS: Over a summer period, a convenience sample of inpatients on the internal medicine services at both the University and Veterans Affairs hospitals were surveyed by written questionnaire. The patients were asked to estimate the length of time spent with them by their doctor (resident) that day, if they were pleased with their doctor, whether they would recommend their doctor to friends and family, and overall satisfaction with the care received. Estimated time spent with doctor was categorized into 0–5, 5–15, 15–30, and over 30 minutes. Patient ratings for "I am pleased with my doctor", "I would recommend my doctor to friends and family", and "I was satisfied with my visit" were assessed on a 10-point, Likert-type scale. Pearson correlation matrices and multiple regression approaches were used to assess the association of these patient satisfaction domains with the time spent with the physician.
RESULTS: Three hundred and eight patient surveys were analyzed in this study. Generally, and similar to other studies, patients were pleased with their doctor (8.7 ± 1.4), would recommend their doctor to family and friends (8.8 ± 1.7), and satisfied with their care (8.9 ± 1.3). Time spent with the patient was an independent predictor of patient satisfaction [$F(3,304) = 14.3$, $P < .001$]. Overall patient satisfaction was significantly less when the physician spent 0–5 minutes with them (7.8 ± 1.9) than 5–15 minutes (8.9 ± 1.3) ($P < .05$), and further improved when they spent 15–30 minutes with them (9.3 ± 1.3) ($P < .05$). There was a plateau effect observed as 30 or more minutes spent with the patient did not supplement their satisfaction (9.2

± .8). Patient ratings of being pleased with their doctor and willing to recommend the physician to family and friends were similarly reduced if the physician spent 0–5 minutes (7.7 ± 2.0 and 7.1 ± 2.7), improved for 5–15 minutes (8.8 ± 1.2 and 8.9 ± 1.5), peaked for 15–30 minutes (9.2 ± 1.4 and 9.4 ± 1.3), and exhibited similar plateau effects for over 30 minutes (9.1 ± .9 and 9.5 ± .8) ($P < .05$).
CONCLUSION: Patients' perception of time spent with their resident-physician in the hospital is an important component of patient satisfaction, being pleased with the physician, and whether they would recommend the doctor to family and friends or not. Merely spending a few more minutes with the patient can increase a patient's satisfaction and may improve overall patient care.

DOES USING AN ELECTRONIC HEALTH RECORD REQUIRE MORE TIME FOR PRIMARY CARE PHYSICIANS?. L. Pizziferri[1]; A.F. Kittler[1]; M. Lippincott[1]; L.A. Volk[1]; M.M. Honour[2]; S. Gupta[1]; S.J. Wang[1]; T. Wang[1]; D.W. Bates[2]. [1]Partners HealthCare System, Inc., Wellesley, MA; [2]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116292)*

BACKGROUND: Electronic Health Records (EHRs) can improve quality, safety and efficiency, but they are not yet in widespread use in the U.S. A major barrier to EHR use is the concern that the EHR will take longer for physicians to use than paper-based systems. To address this issue we performed a time motion study to evaluate how physician time utilization differed before and after EHR implementation.
METHODS: This study was conducted in 5 urban and suburban outpatient clinics implementing an ambulatory EHR. We performed a time motion study in which trained observers directly noted and timed physician activities during a clinic session before and after implementation of the EHR. The activities were categorized and analyzed. Activity categories were divided into: Direct Patient Care (e.g., talking to or examining patient), Indirect Patient Care (e.g., recording or reviewing data in support of patient care), Administration (e.g., reviewing schedule) and Miscellaneous (e.g., idle, eating, walking).
RESULTS: Before EHR implementation, 26 physicians were observed for a total of 110.1 hours. After EHR implementation 20 physicians were observed for a total of 84.5 hours. Both before and after implementation the average observation length was 4.2 hours and the average number of patients seen during the observations was 9.6. Table 1 summarizes data collected during pre- and post-EHR implementation. Overall time spent per patient decreased 1.1 minutes post implementation. Both before and after implementation the majority of time was spent in Direct Patient Care. Using a paired T-test ($P < .05$), no significant change in time was found for any activity category post-EHR implementation.
CONCLUSION: Compared to a paper-based system, a well-designed EHR did not require more time during a primary care clinic session. Time spent with patients remained similar, and the distribution of time spent in major activities did not change.

Table 1: Time spent in analysis categories: pre and post-EHR

	Minutes per Patient: Mean Across Physicians			Percentage of Clinic Session: Mean Across Physicians		
Analysis Categories	Pre-EHR (N = 26)	Post-EHR (N = 20)	Difference	Pre-EHR (N = 26)	Post-EHR (N = 20)	Difference
Direct Patient Care	13.8	13.4	–0.4	50.0%	51.1%	1.1%
Indirect Patient Care:	2.0	2.6	0.6	7.2%	9.6%	2.4%
Indirect Patient Care:	5.8	5.9	0.1	21.2%	21.1%	–0.1%
Indirect Patient Care:	1.5	1.3	–0.2	4.8%	5.0%	0.2%
Administration	0.9	0.8	–0.1	3.3%	2.8%	–0.5%
Miscellaneous	4.0	2.8	–1.2	13.5%	10.5%	–3.0%
Total	27.9	26.8	–1.1	100.0%	100.0%	

EDUCATING THE NEXT GENERATION ON DIABETES CARE—HOW ARE WE DOING? : A REPORT ON QUALITY ASSESSEMENT OF DIABETES MELLITUS IN AN AMBULATORY PRACTICE OF A TEACHING HOSPITAL. V. Venkatachalam[1]; C. Vergara[1]; S.A. Wolf[1]; D. D'Agastino[1]. [1]Hartford Hospital, Hartford, CT. *(Tracking ID #99571)*

BACKGROUND: The American Diabetes Association has issued clinical practice guidelines to ensure optimal level of care for patients with Diabetes mellitus. Our hypothesis was that Attending Physicians and Advanced Practice Registered Nurses (APRNs) are more compliant with these guidelines than physicians in-training (Residents and Interns) . We wanted to test this hypothesis to assess the need for improvising on the education of physicians in-training.
METHODS: We did a retrospective study of patients who were seen at the Adult Ambulatory Practices of Hartford Hospital from 5/1999 to 5/2000 with an ICD diagnosis of Diabetes mellitus.Of the 1,015 patients in the database, we excluded multiple entries of patients resulting in 646 unique identities and analyzed them. We grouped the provider class as 'Professional' (APRN and Attending physicians) and 'Students' (Medical interns and residents).
RESULTS: We analysed the data by SPSS v.11.5 software. See Table 1 for results.
CONCLUSION: There were no significant differences between the groups with respect to HbA1c monitoring, urine microalbumin and lipid profile screening. However, the 'professional' group performed better with respect to patient education and in providing preventive care to these patients. On subset analysis, this difference persisted at all levels of training. We conclude that our initial hypothesis was correct and that we need to improvise on educating the physicians in-training, focussing on patient education and preventive care.

Table 1

Provider Class	Foot Exam	DM Education	Lifestyle changes	Pneumovax	Flu shots	HbA1C monitor	Microalb screening	Lipid profile
Professional	73.0%	43.6%	60.7%	59.9%	57.3%	78.0%	64.2%	79.7%
Students	64.4%	32.4%	54.9%	39.8%	41.1%	83.1%	61.9%	75.6%
P Value	<0.001	<0.005	<0.005	<0.005	<0.001	Not significant	Not significant	Not significant

EDUCATIONAL VALUE OF CLERKSHIP ACTIVITIES: STUDENT PERSPECTIVE. D.R. Calkins[1]; A.S. Peters[1]. [1]Harvard Medical School, Boston, MA. *(Tracking ID #117419)*

BACKGROUND: Despite many changes in clinical medicine in the past century, the pattern of clinical education, especially during the third year, has changed very little. There is now considerable interest in improving clinical education. To help inform this process, we surveyed third-year medical students regarding their clerkship activities and the perceived educational value of those activities.
METHODS: We asked students to report, for the previous 24 hours, how they had allocated their time among 24 common clerkship activities. This list was based on input from a student focus group. We also asked students to rate the educational value of these activities using a 5-point, Likert scale (very low-very high). For purposes of analysis, we grouped survey items into seven categories: patient work (7 items), patient care where the student had a secondary role (2 items), patient care where the student had a primary role (4 items), teaching where the student was a secondary focus (2 items), teaching where the student was a primary focus (4 items), teaching where the student was the teacher (2 items), and personal time (3 items).
RESULTS: We received completed surveys from 63 students. Students reported allocating their time (in hours) as follows: patient work (4.4), patient care: secondary role (3.2), patient care: primary role (2.5), teaching: secondary focus (1.2), teaching: primary focus (2.3), teaching: student as teacher (0.5), and personal time (6.0, including 3.9 hours of sleep). Few activities were judged to be of high (4.0) or very high (5.0) value. In general, the most highly rate activities were patient care: primary role (3.5–4.0), teaching: primary focus (4.1–4.5), and teaching: student as teacher (4.1–4.2). Overall, students spent only 4.4 hours in activities rated 4.0 or better.
CONCLUSION: Third-year medical students spend relatively little time in those activities that they value most: discussion of patients with a focus on decision making, teaching activities where students are the primary focus, and personal opportunities to teach. In revising the third-year curriculum, faculty should consider increasing the time allocated to these activities.

EFFECT OF ACTIVITY LIMITATIONS AND COMORBIDITY ON RACIAL/ETHNIC DIFFERENCES IN PHYSICAL ACTIVITY LEVELS. M. Poston[1]; L.E. Egede[1]. [1]Medical University of South Carolina, Charleston, SC. *(Tracking ID #116834)*

BACKGROUND: Sedentary lifestyle is strongly associated with increased morbidity and mortality, and increasing physical activity is a Healthy People 2,010 objective. African Americans and Hispanics are less likely to engage in recommended amounts of physical activity than whites, a finding not explained in previous studies by socioeconomic differences. Differences in activity limitations and comorbidity might explain the disparities in physical activity level.
METHODS: Data on 30,216 adults in the 1998 National Health Interview Survey (NHIS) was used to determine the effect of differences in activity limitation and comorbidity on racial differences in physical activity levels. Race/ethnicity was restricted to non Hispanic white (White), non Hispanic black (Black), and Hispanic (Hispanic). Physical activity levels were reported as kcal/kg/day and categorized as "sedentary" (0–1.4), "moderate" (1.5–2.9) or "very active" (3.0+). These were further collapsed to "sedentary" and moderate/very active, or "active". Activity limitation was defined as difficulty walking a quarter mile or up ten steps. Comorbidity was defined as having hypertension, heart disease, COPD, ESRD, or diabetes. Physical activity levels, activity limitation, and comorbidity were compared by race/ethnicity using χ^2 statistics. Multiple logistic regression was used to determine the independent association of physical activity and race/ethnicity, controlling for activity limitation, comorbidity and covariates (age, gender, education, income, employment, perceived health and body mass index). STATA (Version 8.0) was used for hypothesis testing to account for the complex survey design.
RESULTS: Blacks were most likely to report activity limitations (20%) compared to Hispanics (17%) or Whites (13%; $P < .0001$). Blacks were most likely to have chronic comorbid conditions (35%) compared to Hispanics (31%) or Whites (22%; $P < .0001$). Minorities were less likely to be physically active than non-minorities (Black 33%, Hispanic 32%, White 41%; $P < .0001$). Decreased odds of being physically active persisted for minorities when controlling for activity limitation, comorbidity, and other covariates (OR for Blacks 0.79 [95% CI 0.70–0.88]; Hispanics 0.75 [95% CI 0.68–0.82]).
CONCLUSION: Lower levels of physical activity among minorities are not explained by differences in activity limitations or comorbidity. Cultural factors associated with decreased physical activity need to be identified to develop successful, targeted interventions to increase physical activity in these patient populations.

EFFECT OF INSURANCE AND CHANGES IN INSURANCE ON STROKE AND DEATH. A. Fowler-Brown[1]; G.M. Corbie-Smith[1]; J.M. Garrett[1]; N. Lurie[2]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]RAND, Arlington, VA. *(Tracking ID #116667)*

BACKGROUND: Previous studies have established that the uninsured have reduced access to care. Few prospective studies have examined the effects of lack of coverage or changes in coverage on physiologic outcomes. We examined whether being uninsured or having intermittent insurance was associated with the likelihood of future stroke and death.
METHODS: We analyzed data from the Atherosclerosis and Risk in Communities (ARIC) study, a prospective cohort study of adult African American and White residents of four communities in the U.S. Participants' insurance status was assessed during visits every three years, for a total of 4 visits, between 1986 and 1998. Endpoints were ascertained until 2000. We used an adjusted Cox model with insurance status as a time varying variable to estimate the hazard ratios (HR) of being uninsured or having intermittent insurance on rates of stroke and death within 3 years

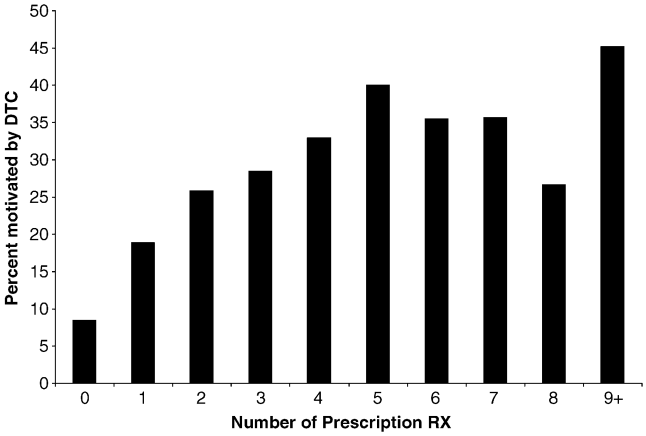
of each visit (adjusted for age, gender, race, income). In addition, we used logistic regression to determine the incremental effect of number of visits with insurance on stroke and death (adjusted for age, income).
RESULTS: Of the 13,540 participants included in the Cox model, those who reported being uninsured had 1.7 times the rate of stroke (HR 1.69, 95% CI 0.97–2.93) and 1.6 time the rate of death (HR 1.61, 95% CI 0.86–3.01) compared to those who were insured for the comparable period of time. Particpants who reported changes in insurance status suffered stroke at 1.7 time the rate (HR 1.73, 95% CI 1.17–2.59) and death at 2 times the rate (HR 1.97, 95% CI 1.32–2.95) as those who were insured. For the logistic regression model, we used the 11,003 participants with insurance status recorded at each of the four visits. Of these, 87% were insured at all 4 visits, and the remainder were uninsured during at least 1 visit. We found a dose response relationship with insurance status, those with fewer visits insured had a higher odds of stroke compared to persons who were insured at all 4 visits: reported insured at no visits-OR 3.00 (95% CI 1.34, 6.68), insured at 1 visit-OR 2.44 (95% CI 1.18, 5.04); insured at 2 visits-OR 1.77 (95% CI 0.96, 3.25), insured at 3 visits-OR 1.4 (95% CI 0.90, 2.20).
CONCLUSION: Persons with no insurance or intermittant insurance suffered strokes and death at a higher rate than those with stable insurance. In addition, there was a dose response relationship between insurance and stroke, with fewer visits insured associated with higher adjusted odds of stroke.

EFFECTIVE PRIMARY CARE TREATMENT FOR PATIENTS WITH MEDICALLY UNEXPLAINED SYMPTOMS—A CLINICAL TRIAL. R.C. Smith[1]; J. Lyles[1]; J.C. Gardiner[1]. [1]Michigan State University, East Lansing, MI. *(Tracking ID #116763)*

BACKGROUND: To treat patients with medically unexplained symptoms (MUS), data support only short-term specialty care. Primary care clinicians have no proven, long-term treatment. We hypothesized that an intensive 12-month intervention by primary care clinicians would produce improvement in the common, high-utilizing MUS patient.
METHODS: From a staff model HMO, we identified high-utilizing patients from the information system and, among these, we then identified primary MUS patients using a systematic chart rating procedure conducted by three blinded senior medical residents. Four nurse practitioners (NP) received 84 hours of initial training and then conducted the intervention as primary caretakers, receiving supervision individually and in groups. NPs primarily relied upon an evidence-based method for the provider-patient relationship, and they integrated it with cognitive-behavioral and pharmacological principles proven effective in specialty settings. Patients had 12 scheduled visits and phone calls as well as additional visits when necessary. Collected at baseline, 6, and 12 months, the primary endpoint was a ≥4-point improvement in the Mental Component Summary of the SF-36 at 12 months. This is a clinically significant psychological change and occurs, for example, following a successful aortic/mitral valve replacement. We also collected measures of physical function, depression, anxiety, and psychosomatic symptoms. Our evaluation used intent to treat and logistic regression; variables associated with a ≥4-point improvement in MCS in univariable testing ($P \leq .20$) were entered into a model in which we retained variables significant at $P \leq .10$.
RESULTS: Rater agreement with gold standard for entry into study (on primary MUS status) was 97.6%. Of 206 subjects entered, 200 completed the study (97% retention). Patients averaged 13.6 visits in the year preceding study, 79.1% were females, and the average age was 47.7 years. Forty-eight treatment and 34 control patients improved at 12 months (OR = 1.92, 95% CI: 1.08–3.40; $P = .025$). The relative benefit was 1.47 (CI: 1.05 to 2.07), and the number needed to treat was 6.4 (95% CI: 0.89 to 11.89). In addition to treatment ($P = .019$), the following baseline measures predicted improvement: severe mental dysfunction ($P < .001$), severe body pain ($P = .039$), non-severe physical dysfunction ($P = .003$), and advanced education ($P = .022$); c-statistic = 0.76. There were no adverse effects of treatment.
CONCLUSION: A long-term, relationship-based intervention by primary care clinicians led to clinically significant improvement in MUS patients. To our knowledge, it provides the first evidence-based treatment guidelines for primary care clinicians.

EFFECTIVENESS OF DIRECT TO CONSUMER ADVERTISING AMONG THE ALREADY MEDICATED. N. Dieringer[1]; R.I. Shorr[2]. [1]Methodist Healthcare, Memphis, TN; [2]University of Tennessee, Memphis, TN. *(Tracking ID #117439)*

BACKGROUND: Direct to consumer (DTC) marketing of pharmaceuticals is controversial, yet effective. Although previous surveys have identified demographic characteristics associated with responsiveness to DTC, little is known relating patterns of medication use to patient receptiveness to DTC.
METHODS: We conducted a secondary analysis of data collected in national telephone survey on knowledge of and attitudes toward DTC advertisements. The survey of 1,081 U.S. adults (response rate = 65%) was conducted by the Food and Drug Administration (FDA). Our primary question of interest was the response to the item: "Has an advertisement for a prescription drug ever caused you to ask a doctor about a medical condition or illness of your own that you had not talked to a doctor about before?" Patients reported number of prescribed medicines taken as well as demographic and personal health information.
RESULTS: 771 (71%) respondents reported exposure, primarily through television, to at least one DTC prescription drug advertisement in the three months prior to the survey. Of these 688 (89%) had seen in a physician in the three months prior to the survey and 195 (25%) stated that DTC motivated them to ask their physicians about a health problem. Only 7% respondents taking no prescription medications reported that DTC advertisements motivated them, whereas 45% of respondents taking 9 or more prescription medications were motivated by DTC to discuss health problems with their doctors (p trend <.0001), see figure. This trend remained significant (p trend .003) even when controlling for age, gender, race, educational attainment, income, and self-reported health status. There was no relationship between the number of over the counter (OTC) medications taken and the propensity to discuss health related problems in response to DTC advertisements ($P = .4$).
CONCLUSION: There is a strong linear relationship between the number of prescribed medications taken and the influence of DTC advertisements to prompt discussions with physicians. Whether this results in improved health outcomes is unknown.



EFFECTS OF DUCTAL CARCINOMA IN SITU ON QUALITY OF LIFE: RESULTS FROM THE NURSES HEALTH STUDY. L. Nekhlyudov[1]; C.H. Kroenke[2]; M.D. Holmes[2]; G.A. Colditz[2]. [1]Harvard Medical School/Harvard Pilgrim Health Care, Boston, MA; [2]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116806)*

BACKGROUND: The incidence of ductal carcinoma in situ (DCIS) of the breast has been rising, attributable mostly to screening mammography, and now accounts for about 20% of breast cancer diagnoses. Some have expressed concern with the possibility of overdiagnosis and the subsequent adverse effects on quality of life. However, the effect of DCIS on a woman's quality of life is not known. We therefore undertook a study to determine the quality of life in women before and after a diagnosis of DCIS.
METHODS: The study included 149,398 women from the Nurses Health Study I (recruited in 1976) and Nurses Health Study II (recruited in 1989) who completed the Short Form 36 (SF-36), a health-related quality of life (HRQoL) assessment, in 1992–3 and 1996–7. All women were free of cancer at the time of entry; 433 cases of DCIS were diagnosed between 1992 and 1997. Analyses were conducted using PROC GLM linear regression, adjusting for age, treatment type and/or patient characteristics.
RESULTS: HRQoL scores at baseline and 4-year follow-up were similar among women with and without DCIS. However, women who completed the SF-36 surveys within 6 months of diagnosis of DCIS experienced clinically (though not statistically) significant declines (~5 points) in four HRQoL domains including role limitations due to physical problems, bodily pain, vitality and social functioning but not in physical functioning or mental health. Declines in HRQoL disappeared within one year of diagnosis. There were no differences in HRQoL by type of treatment received.
CONCLUSION: Women diagnosed with DCIS may experience clinically significant declines in health-related quality of life shortly after diagnosis but rebound quickly and experience no long-term effects. This information may be useful to primary care providers counseling women about DCIS prior to screening mammography.

EFFECTS OF LEGCROSSING AND SKELETAL MUSCLE TENSING IN PATIENTS WITH VASOVAGAL SYNCOPE. N. Van Dijk[1]; I.J. De Bruin[1]; M. Linzer[2]; J. Van Lieshout[1]; W. Wieling[1]. [1]Academic Medical Center, Amsterdam, ; [2]University of Wisconsin-Madison, Madison, WI. *(Tracking ID #116375)*

BACKGROUND: Physical countermaneuvers can be applied to abort or delay an impending vasovagal faint. This easy, non-invasive and cheap method would however be more beneficial as a preventive measure or to combat pre-syncope. We hypothesized that in patients with recurrent vasovagal syncope, legcrossing produces a rise in cardiac output (CO) and thereby in blood pressure (BP) with an additional rise in BP by skeletal muscle tensing.
METHODS: Eighty-eight patients applied legcrossing after a 5 minute free standing period. Fifty-four of these patients also applied tensing of leg- and abdominal muscles. Hemodynamic effects were monitored using a non-invasive bloodpressure monitor (Finapres (R)).
RESULTS: Legcrossing produced a significant rise in CO (+9.5%; $P < .01$) and thereby in mean arterial pressure (MAP) (+3.3 %; $P < .01$). Skeletal muscle tensing produced an additional increase in CO (+8.3 %; $P < .01$) and MAP (+7.8%; $P < .01$). These effects were larger in the elderly. The relative changes in hemodynamic variables due to legcrossing and muscle tensing from the standing position are displayed in the table below.

CONCLUSION: Legcrossing and skeletal muscle tensing produce a rise in BP in patients prone to vasovagal syncope. Leg-crossing, as an easy, non-invasive and cheap method could be advised for all patients prone to vasovagal syncope as a preventive measure. Additional muscle tensing could be used to combat syncopal symptoms.

Hemodynamic effects of legcrossing and muscle tensing

n = 54	Standing	Legcrossing (% change from baseline)	Muscle tensing (% change from baseline)
SBP	126.1 (15.9)	104.8%*	112.8%*
MAP	90.8 (11.4)	103.5%*	111.3%*
DBP	74.9 (10.6)	101.6%*	109.2%*
PP	51.2 (10.8)	109.4%*	118.0%*
HR	86.3 (15.7)	99.0%	104.3%*
SV	100%	112.7%*	114.0%*
CO	100%	111.3%*	119.6%*

EFFECTS OF LOSING PRESCRIPTION DRUG COVERAGE: THE DEMISE OF THE OREGON HEALTH PLAN MEDICALLY NEEDY PROGRAM. J. Zerzan[1]. [1]Oregon Health & Science University, Portland, OR. *(Tracking ID #116880)*

BACKGROUND: In January 2003, people covered by the Oregon Health Plan's (OHP) Medically Needy (MN) program lost their benefits due to state budget shortfalls. The MN program is a federally-matched optional Medicaid program in which states may chose to provide Medicaid coverage and/or Medicare premium assistance to certain groups with significant health care needs not otherwise eligible for Medicaid. This population is not well characterized either nationally or locally. In Oregon the MN program mainly provided prescription drug benefits. The primary objective was to determine how the loss of benefits has affected this population's health. Secondary objectives include investigating how this population is getting their prescription medications and changes in use of prescriptions and health care.
METHODS: A 49-question survey instrument was created to collect information about this population including demographic information, health insurance coverage, health conditions, access to care, prescription drug use and utilization of health care. A data collection contractor telephoned a statewide, random sample of 1,500 people who were enrolled in the MN program. Medication use during the MN program was obtained from administrative data and current medication use was obtained from the interview. Results of this survey were compared to the Medicare Health Outcomes Survey and the National Health Interview Survey.
RESULTS: The 439 completed surveys included 36% men and 64% women from age 21–91 with 70–75% at less than 133% of the federal poverty level. 2/3 of respondents rate their current health as poor or fair and compared to last year 44% rate their health as worse and 39% about the same. In the six months since the MN program ended 61% have skipped doses of a medication and 64% have gone without filling a prescription. In order to pay for medications 60% of respondents have cut back on their food budget, 49% have skipped paying other bills and 47% have borrowed money. Overall, there was no significant difference in ER visits or hospitalizations by self-report comparing the six months before losing the MN program and the six months after.
CONCLUSION: The MN program provided coverage for a low-income, chronically ill population. Since its termination, there have been significant changes in prescription drug use and financial impact in their daily lives. This population is sicker with worse perceived health status than the general population over 65 and people eligible for both Medicare and Medicaid. As states make program changes, especially to prescription drug benefits, the effects on vulnerable populations must be considered.

EFFICACY OF BILATERAL PROPHYLACTIC MASTECTOMY IN WOMEN AT MODERATE RISK FOR BREAST CANCER. A.M. Geiger[1]; M.B. Barton[2]; O. Yu[3]; L.J. Herrinton[4]; W.E. Barlow[5]; E.L. Harris[6]; J.G. Elmore[5]; S. Rolnick[7]; S.W. Fletcher[2]. [1]Southern California Permanente Medical Group, Pasadena, CA; [2]Harvard University, Boston, MA; [3]Group Health Cooperative, Seattle, WA; [4]Permanente Medical Group, Oakland, CA; [5]University of Washington, Seattle, WA; [6]Kaiser Permanente Northwest, Portland, OR; [7]Health Partners Research Foundation, Minneapolis, MN. *(Tracking ID #116410)*

BACKGROUND: Reports from referral clinics suggest bilateral prophylactic mastectomy reduces breast cancer incidence by 90% or more in women at high risk for breast cancer (those with a family history of breast cancer and/or a deleterious BRCA mutation) but whether this is true in community practices is unknown. We determined the efficacy of bilateral prophylactic mastectomy in reducing breast cancer incidence among women at moderate risk for breast cancer in community-based practices.
METHODS: Eligible women were aged 18 to 80 years; enrolled in one of six health maintenance organizations during 1979 to 1998; and had one or more breast cancer risk factors (family history of breast cancer, history of atypical hyperplasia, or at least one benign breast biopsy). Using automated data and medical records we identified 276 women with bilateral prophylactic mastectomy and a random comparison sample of 196 women representing an underlying cohort of 666,800 women with one or more breast cancer risk factors, and without prophylactic mastectomy. Breast cancer outcomes were determined from cancer registries and ambulatory medical record data. Death information was obtained from medical records and state death records.
RESULTS: Breast cancer developed in one woman (0.4%) after bilateral prophylactic mastectomy compared to an estimated 26,800 (4%) breast cancer diagnoses among women without prophylactic mastectomy. Stratifying by birth year and organization the hazard ratio for breast cancer occurrence after bilateral prophylactic mastectomy was 0.005 (95% confidence interval 0.001 to 0.044). No woman with bilateral prophylactic mastectomy died of breast cancer compared to an estimated 0.2% of the women without prophylactic mastectomy.
CONCLUSION: Bilateral prophylactic mastectomy substantially reduces breast cancer incidence in women at moderate risk for breast cancer in community-based practices, but the absolute risk of breast cancer incidence and death in women at this risk level was found to be low.

EMERGENCY CONTRACEPTION: THE IMPACT OF A SINGLE EDUCATIONAL INTERVENTION ON PRIMARY CARE PROVIDERS. C.H. Chuang[1]; K.M. Freund[1]. [1]Boston University, Boston, MA. *(Tracking ID #116554)*

BACKGROUND: Emergency contraception can prevent unintended pregnancies. We studied the effect of a single educational intervention on emergency contraception knowledge, attitudes, and practice patterns of primary care providers.
METHODS: Prior to attending one of 7 lectures on emergency contraception at different locations in Massachusetts between August and December 2002, primary care providers completed a 38-item questionnaire assessing emergency contraception knowledge, attitudes, and practice patterns. A follow-up survey was mailed to the participants 6 months following the lecture program. Knowledge, attitudes, and practice patterns regarding emergency contraception were compared before and after the intervention.
RESULTS: Fifty-six follow-up surveys were returned from the 72 eligible participants (response rate = 78%). There were 50 physicians, 4 advanced practice nurses, and 2 physician assistants (48% General Internal Medicine, 34% Family Medicine, 9% Obstetrics Gynecology, and 9% Pediatrics/Adolescent Medicine). Baseline knowledge about emergency contraception was high, and remained high at 6-month follow-up. Compared with baseline, providers were more likely to agree that advance prescriptions should be given ($P = .0006$), disagree that the number of times emergency contraception is dispensed to a patient should be restricted ($P = .04$), and disagree that repeated use poses health risks ($P < .0001$). The proportion of providers who initiated counseling about emergency contraception at least sometimes during routine visits increased from 36% to 54% ($P = .057$) and the proportion of providers who had ever written an advance prescription for emergency contraception increased from 18% to 41% ($P = .007$).
CONCLUSION: We found that a single educational lecture to primary care providers was associated with increased counseling frequency and writing of advance prescriptions for emergency contraception. Such inexpensive educational interventions can be easily instituted to primary care providers in order to increase access to this effective contraceptive method.

EMERGENCY PREPAREDNESS ON U.S. COLLEGE AND UNIVERSITY CAMPUSES. B.A. Johnson[1]; V.R. Koppaka[2]; C.S. Cors[1]. [1]Virginia Commonwealth University, Richmond, VA; [2]Centers for Disease Control and Prevention (CDC), Atlanta, GA. *(Tracking ID #117064)*

BACKGROUND: Every year, more than 500,000 students enter the US to study on college and university campuses. In 2002, a worldwide outbreak of Severe Acute Respiratory Syndrome (SARS) heightened concerns about the preparedness of US campuses to deal with a deadly communicable disease outbreak.
METHODS: To assess level of preparedness, a stratified random sample of the 3,664 US 2-year and 4-year colleges and universities was surveyed in the latter half of 2002.
RESULTS: Of the 1000 schools surveyed, 474 (47.4%) responded to the self-administered questionnaire. Of those that responded, 302/474 (63.7%) of schools had a plan for handling an outbreak of a deadly communicable disease among students. Institutions that were more likely to have an emergency preparedness plan were those that offered a 4-year curriculum ($P < .001$), were affiliated with the American College Health Association (ACHA) ($P < .001$), had a Student Health Service (SHS) ($P < .001$), and offered on-campus housing ($P < .001$). Of schools with emergency preparedness plans, 73.5% (222/302) were actively collaborating with their local health departments. Collaboration with local health departments was more likely to involve planning for a SARS outbreak than a smallpox outbreak (47% vs. 30.1%, $P < .001$). Of schools actively involved in emergency planning, 158/302 (52.3%) had SARS protocols in place in the SHS, 115/302 (38.1%) had N-95 respirator masks available in the SHS, and 24/302 (7.9%) had had experience with evaluating a SARS suspect. Only 201/474 (42.4%) of campuses that responded could identify a non-hospital site for isolation of a student with a communicable disease. Among those with an emergency plan, only 154/302 (51%) had an identified site for isolation. Among the schools that responded, 267 (56.3%) planned to use an email network to quickly communicate a disease alert to students, faculty, and staff.
CONCLUSION: While many US colleges and universities have been actively engaged in planning, additional efforts are required to prepare them to respond to an outbreak of a deadly communicable disease.

EMOTIONAL AND PAINFUL PHYSICAL SYMPTOMS ASSOCIATED WITH DEPRESSION RESPOND TO DULOXETINE, A DUAL ACTION SEROTONIN AND NOREPINEPHRINE REUPTAKE INHIBITOR. A.C. Andorn[1]; C. Mallinckrodt[1]; M. Wohlreich[1]; J.S. Gonzales[1]; V. Whitmyer[1]; M. Detke[1]. [1]Eli Lilly and Company, Indianapolis, IN. *(Tracking ID #115136)*

BACKGROUND: Major depressive disorder (MDD) is still a significant cause of morbidity and mortality despite treatment advances. Existing therapies are limited in

providing full remission. While emotional symptoms such as depressed mood and loss of interest are traditionally considered to constitute the core of depression, the importance of resolving painful physical symptoms such as back pain, abdominal pain, and musculoskeletal pain in patients with MDD is becoming increasingly appreciated. We report the efficacy, tolerability, and safety of duloxetine, a balanced and potent dual reuptake inhibitor of both serotonin and norepinephrine, in the treatment of MDD and associated physical symptoms.
METHODS: Efficacy data were pooled from 2 identical, 9-week randomized, double-blind trials of duloxetine 60 mg QD (N = 244) and placebo (N = 251) in the treatment of MDD. Patients were not required to meet a minimum pain threshold at baseline, and the studies were not specifically powered for pain outcomes. The primary efficacy measure was HAMD17 total score. Painful physical symptoms were assessed using visual analog scales (VAS). The average baseline score for overall pain was 26 on the 0 (no pain) to 100 (as severe as I can imagine) VAS scale. Safety and tolerability were determined by monitoring discontinuation rates, spontaneous and solicited [Somatic Symptom Inventory (SSI)] adverse events and vital signs.
RESULTS: Duloxetine was significantly superior to placebo ($P < .001$) in reducing HAMD17 total scores, starting at Week 2. The estimated probability of response and remission were 63% and 43%, respectively, for duloxetine-treated patients compared with 35% and 21% for placebo-treated patients ($P < .001$). Duloxetine-treated patients demonstrated significantly greater improvement in overall pain severity ($P = .016$) at Week 9 compared with patients receiving placebo. Discontinuation due to adverse events for duloxetine-treated patients (13.1%) was significantly higher than placebo-treated patients (13.1%, 2.5%; $P = .002$) in this study but comparable with the rates reported for SSRIs in other studies. Nausea, dry mouth, and headache were the most common spontaneously reported adverse events; no significant incidence of hypertension was seen. Duloxetine produced significantly greater gastrointestinal distress compared to placebo within the first week of treatment, returned to baseline by Week 2, and was not significantly different than placebo for the rest of the study.
CONCLUSION: In these studies, duloxetine at 60 mg once daily, the expected starting and therapeutic dose, demonstrated robust efficacy and was well-tolerated in treating both the emotional and painful physical symptoms in depressed patients.

END-OF-LIFE CARE EXPERIENCES AND ATTITUDES DURING THE FIRST TWO YEARS OF MEDICAL SCHOOL. M.W. Rabow[1]; C.S. Hodgson[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117343)*

BACKGROUND: Inadequate medical school end-of-life care (EOLC) education has been identified as one of the causes of poor EOLC in the United States. While some curricula are being improved, the EOLC experiences and attitudes of early medical students are not well known. This study describes student EOLC attitudes and experiences prior to beginning clinical clerkships.
METHODS: At the end of their 2nd year, the UCSF Class of 2005 was given a confidential, self-administered questionnaire about their EOLC attitudes and experiences. Response options included 1–5 Likert scale and yes/no responses. The questionnaire was distributed by faculty at the end of a required small group session. Questionnaire responses were double-entered into an Excel database and analyzed using SAS statistical software. Simple frequencies and Chi-square statistics were calculated, with significance taken as $P < .05$. The study received Institutional Review Board approval.
RESULTS: Completed surveys were returned by 127 of 141 students (response rate = 90.1%). Mean age of students was 25.5 years, with 56.7% female, 51.2% white, 28.3% Asian, 8.7% Hispanic, and 1.6% African-American. There were significant relationships between student gender and the belief that all physicians should become competent in EOLC ($P = .038$), between ethnicity and belief in the importance of EOLC ($P < .001$), and between student religiosity and worry about what medical school was doing to their humanity ($P = .05$). Fifty-three students (41.7%) reported having no medical school experiences with EOLC. An additional 27 students (21.3%) had only 1 experience. Ninety-seven students (76.4%) reported having experienced the death of someone close to them personally and 27 (28.1%) provided direct care to that loved one. Less than one-half of students observed supervisors break bad news (48%), manage physical symptoms at the EOL (44%), manage emotional suffering at the EOL (28%), or lead an advance directive discussion (22%). Less than 7% of students actually helped do any of these EOLC tasks. When a patient was dying or had died, clinical preceptors only sometimes discussed it with students. In these discussions, medical details were discussed 82.4% of the time; the preceptor's emotions 29.6%. Students reported that faculty response to student EOLC emotions usually involved being supportive (64.5%) but also included noticing but avoiding (16.1%), seeming oblivious (12.9%) or being critical (1.6%).
CONCLUSION: Early medical students have relatively few medical school experiences with end-of-life care. These experiences are almost entirely observational. The frequency of discussion about emotions around EOLC is limited and faculty response to student emotions can be negative.

EPIDEMIOLOGY OF ANEMIA IN THE ELDERLY. R.S. Eisenstaedt[1]; R.C. Woodman[2]; H.G. Klein[3]; L. Ferrucci[4]; J.M. Guralnik[4]. [1]Temple University, Philadelphia, PA; [2]Ortho Biotech, L.P., Bridgewater, NJ; [3]National Institutes of Health, Bethesda, MD; [4]National Institute on Aging, Bethesda, MD. *(Tracking ID #115914)*

BACKGROUND: While anemia seems common in the elderly and is reported to be an independent predictor of functional decline and increased mortality, prior epidemiological studies have been biased. We examined a nationally representative database of community dwelling persons with no upper age limit and adequate sample size of the oldest subset (>85); additional interview data and lab testing helped classify the etiology of anemia.
METHODS: Data were obtained from phase 1 & 2 of the 3rd National Health and Nutrition Examination Survey (NHANES III), conducted 1988–94. Participants were sampled using a stratified, multistage probability design. Anemia and nutritional deficiencies (NutDef) were defined by WHO criteria. Creatinine clearance (CC) was calcuated, and anemia of chronic kidney disease (CKD) defined by CC < 30ml/min. Anemia of chronic disease (ACD) was defined as low serum iron without iron deficiency; unexplained anemia (UA) was anemia excluded by the above. Prevalence and distribution was estimated by appropriate sampling weights, and small subgroups were compared directly using logistic models adjusted for age, race, and ethnicity.
RESULTS: 5,252 persons age >65 were interviewed, 86% examined; blood was obtained from 85% of 2,096 persons in phase 2. The prevalence of anemia = 10.6% (11% men, 10.2% women) and approximately doubles for each decade > age 65. The prevalence among blacks, 27.8%, was 3x that in whites. Most anemia was mild, with Hgb below 10 gm in <1%. 1/3 of anemia was from NutDef, 1/3 due to CKD &/or ACD, the remaining 1/3 classisifed as UA. The cause of anemia among blacks was similar, though, among the 1/3 with NutDef, the prevalence of folate, iron and B12 deficiency was 4x, 2x, and no different, respectively, from that in whites.
CONCLUSION: Anemia in the community based elderly was common, albeit mild, with 1/3 caused by NutDef, easily diagnosed, safely and inexpensively treated. As iron deficiency in this population is often associated with GI bleeding, additional w/u may reveal important pathology, such as polyps or cancer. 1/3 of anemia is caused by CKD or ACD, conditions of absoulute or relative erythropoieitin (Epo) deficiency, though the value of Epo therapy in the elderly with mild anemia remains uncertain. The final 1/3 of anemia is unexplained, though anemia oriented exam and lab evaluation may reveal myelodysplasia or other defined causes, and a portion of anemia may be self-limited. The higher prevalence of anemia in blacks is partly from underlying co-morbidity, such as CKD, known to be increased in that population, but also from NutDef that needs recognition as a public health concern.

ETHNIC AND GENDER VARIATION IN DIABETIC LIPID AND BLOOD PRESSURE CONTROL IN AN URBAN ACADEMIC PRIMARY-CARE PRACTICE. A.M. Davis[1]; S.E. Fedson[1]; M. Hill[1]. [1]University of Chicago, Chicago, IL. *(Tracking ID #116918)*

BACKGROUND: Cardiovascular disease is the leading cause of mortality in diabetics. Diabetic mortality rates are higher among African Americans compared to whites, and this disparity has increased in the past decade. Recent evidence suggests that differences in medical care may contribute to ethnic differences in health outcomes.
METHODS: We conducted an electronic medical record review of 724 diabetic patients cared for in the academic primary-care practice at the University of Chicago in the period January 2000 through June 2003. Medications, comorbidities, lab results, clinic visits and referrals, and demographic data were retrieved.
RESULTS: Compared to white (W) diabetic patients (n = 86, median age 64), African American (AA) diabetic patients (n = 585, median age 65), had significantly higher rates of documented hypertension, and of therapy with diuretics and calcium blockers. Rates for Hispanic (H) patients (n = 31, median age 67) were generally intermediate between those of AA and W patients. While about 90% of the 3 groups had lipid testing in the prior 2 years, and rates of cholesterol > 240 and LDL > 100 were similar in groups, a documented diagnosis of hyperlipidemia was found in only 40% of AA vs. 57% of W pts ($P = .003$). Moreover, of patients treated with a statin, only 47% of AA pts achieved an LDL < 100, compared to 71% of W pts ($P = .008$). Smoking was documented more frequently among AA pts (25 vs.14%) ($P = .03$). To further explore factors associated with LDL control, the charts of 35 patients with the best LDL values (mean LDL 45) and 35 patients with the highest LDL values (mean 196) were reviewed. Age, weight, race, #of chronic medications, clinic visits, and rates of missed appointments were very similar. About 95% of both groups were prescribed atorvastatin or simvastatin, and duration of therapy and dose intensity were similar. Low LDL patients were more likely to be male (40% vs 6%, $P < .01$) and to have been referred to cardiology (56% vs. 12%, $P < .001$), with trends toward less tobacco use, more frequent CAD diagnosis (47 vs. 37%, P = NS), as well as greater and more sustained LDL response to statin therapy.
CONCLUSION: Despite higher rates of hypertension, tobacco use, and equal ascertainment of lipid values, AA patients were significantly less likely to be diagnosed with a lipid disorder, or to receive adequate statin therapy. Male gender and referral to cardiology are associated with better LDL control. Further efforts are needed to assess medication barriers and adherence, and to learn how to better characterize and reduce cardiac risk in all diabetics.

ETHNIC DIFFERENCES IN GLYCEMIC AND CARDIOVASCULAR RISK FACTOR LEVELS IN US ADULTS WITH DIABETES. L.H. Miller[1]; S.R. Lipsitz[2]; S. Natarajan[1]. [1]New York University, New York, NY; [2]Medical University of South Carolina, Charleston, SC. *(Tracking ID #116924)*

BACKGROUND: Effective management of cardiovascular risk factors and hyperglycemia in patients with diabetes reduces macrovascular and microvascular disease. Lowering cardiovascular risk factors and hyperglycemia is therefore crucial to achieve better outcomes. Despite extensive effort, a large proportion of adults with diabetes do not have risk factors at therapeutic goals. While ethnic differences in risk factor levels have been described, little is known about whether these differences persist.
METHODS: We analyzed the 1999–2000 National Health and Nutrition Examination Survey to evaluate if ethnic differences in cardiovascular risk factor levels persist

in US adults with diabetes (n = 608, population estimate = 14,905,890). Ethnic categories of interest were non-Hispanic whites (NHW), non-Hispanic blacks (NHB) and Mexican-Americans (MA). Outcome measures were hemoglobin A1c (HbA1c) %, systolic and diastolic blood pressure, total cholesterol, LDL cholesterol, HDL cholesterol, triglycerides, body-mass index (BMI) and smoking status. New putative risk factors (C-reactive protein, homocysteine and fibrinogen)were also evaluated. Multivariate logistic and linear regression were performed using SUDAAN to evaluate if significant ($P < .05$) ethnic differences in risk factor levels exist while adjusting for age, sex and accounting for the complex sample design.
RESULTS: The likelihood of having HbA1c levels ≥7% was higher in NHB (odds ratio [OR] 2.11, 95% confidence interval [CI] 1.08–4.14) and MA (OR 2.33, CI 1.24–4.38) than NHW. The mean HbA1c among NHW (7.48%) was significantly lower than the mean values in NHB (8.31%) or MA (8.26%). The mean systolic blood pressure (mmHg) was not significantly different in NHW (132.5) compared to NHB (137.1, $P = .1$) or MA (137.6, $P = .08$). HDL (in mg/dl) was significantly higher in NHB (50.5) than in NHW (42.4), or MA (43.6). Triglycerides were higher in MA (307.4 mg/dl) than NHB (177.9 mg/dl). C-reactive protein (in mg/dl) was also significantly higher in NHB (1.09), MA (0.81), than in NHW (0.59). Fibrinogen was significantly higher in NHB (424.5 mg/dl) than NHW (382.3 mg/dl). Diastolic blood pressure, total cholesterol, LDL, BMI and smoking status were not significantly different between racial and ethnic groups.
CONCLUSION: Ethnic differences persist in US adults with diabetes, with NHW generally having better risk factor profiles than NHB or MA. Because achieving better risk factor control may eliminate ethnic disparities in cardiovascular outcomes, more effort should be focused on elucidating the reasons for such ethnic disparities and developing interventions to correct them.

EVALUATION OF AN INFORMATION-TECHNOLOGY INTERVENTION TO PROMOTE DIETARY BEHAVIOR CHANGE IN DYSLIPIDEMIA PATIENTS. R.H. Friedman[1]; K. Glanz[2]; H. Tim[3]; K. Heather[3]; M. Barbara[3]; D.C. Mitchell[4]; S. Charlie[3]; T. Sharon[5]. [1]Boston University/Boston Medical Center, Boston, MA; [2]University of Hawaii, Honolulu, HI; [3]Boston University, Boston, MA; [4]Pennsylvania State University, University Park, PA; [5]New England Research Institute, Inc., Boston, MA. *(Tracking ID #117128)*

BACKGROUND: There has been insufficient use of labor saving information technical (IT)-based aides in primary care practice other than the use of electronic medical records. We developed and evaluated an automated, telephone-based, multicontact, patient self-care management program for decreasing saturated fat intake and increasing fruits and vegetable consumption in patients being treated for hypercholesterolemia in a primary care setting.
METHODS: We randomized 228 primary care hypercholesterolemia patients (total cholesterol ≥240 mg/dl) to an automated intervention (n = 121) consisting of weekly automated telephone education and counseling sessions over six months versus an attention placebo control condition (n = 107) that provided weekly general health information on selected topics for six months using the same technology. We measured dietary behavior and nutrient intake by three 24-hour diet recalls at baseline and six months using the University of Minnesota Nutrition Data System. For each dietary behavior (e.g., consumption of fruits, etc.) and each nutrient (% calories from saturated fat, etc.), we compared the adjusted least square mean at six months using ANCOVA controlling for gender and baseline value of the variable. Blood samples for serum lipids where drawn at the two timepoints and where processed together and statistically analyzed using the ANCOVA method.
RESULTS: The subjects were 58.0 ± 13.2 years of age, 68% female, 23% minority, and BMI 27.2 ± 3.6. At follow-up, intervention group subjects had higher fruit intake (1.7 v. 1.3 servings/d, $P = .003$), no difference in vegetable intake, less red meat consumption (0.3 v. 0.5 servings/d, $P < .0001$), and less use of oils/fats (3.6 v. 4.6 servings/d, $P = .02$). Nutrient intake was lower in the intervention for total fat (54 v. 66 g/d, $P = .0005$), percent calories from saturated fat (8.9 v. 10.9, $P < .0001$), and total calories (1625 v. 1785 kal/d, $P = .01$). There were no significant differences in the serum lipid values.
CONCLUSION: A totally automated telephone-based intervention significantly improved dietary behavior and nutrient intake in primary care patients with hypercholesterolemia, however, there was no effect on serum lipids, a result that was possibly due to insufficient time to observe a dietary effect on serum lipids and/or the use of lipid-lowering medications by the physicians. These findings, nevertheless, demonstrate the efficacy of an automated program for changing important dietary behaviors in a primary care practice setting.

EVIDENCE REVIEW: DIAGNOSIS AND MANAGEMENT OF SUBCLINICAL THYROID DISEASE. E. Ortiz[1]; M. Surks[2]; G. Daniels[3]; C. Sawin[4]; N. Col[5]. [1]AHRQ, Rockville, MD; [2]Montefiore Med Ctr and Albert Einstein Coll of Med, Bronx, NY; [3]Massachusetts General Hospital, Boston, MA; [4]Veterans Administration, Washington, DC; [5]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116724)*

BACKGROUND: Subclinical hypo- and hyperthyroidism are common conditions, with prevalences of 4–8.5% and 2%, respectively. Improvements in thyroid-stimulating hormone (TSH) assays have resulted in increased detection of subclinical disease, and controversy surrounds the definition, clinical importance, and necessity of prompt diagnosis and treatment. Our objective was to develop evidence-based recommendations for diagnosing and managing subclinical thyroid disease.
METHODS: Representatives from 3 endocrinology organizations planned a consensus development conference and convened a panel of 13 experts in thyroid diseases, primary care, epidemiology, evidence-based medicine, cardiology, and other clinical and research domains. A systematic literature review was conducted on all English language articles from 1995–2002; seminal articles published before 1995 were also included. 195 articles were reviewed. Panel members also attended a 3-day conference, where 12 invited experts presented on various issues relating to subclinical thyroid disease. Panelists then sequestered themselves to sort through the evidence and develop recommendations.
RESULTS: There is insufficient evidence to recommend population-based screening for subclinical hypo- or hyperthyroidism. Among patients with subclinical hypothyroidism, there is no single TSH level at which clinical action is always indicated or contraindicated. The evidence does not support routine treatment when serum TSH is <10 mU/L. As the TSH concentration rises above 10 mU/L, the rate of progression to overt hypothyroidism is increased, and treatment may prevent the manifestations of hypothyroidism and ameliorate increases in cholesterol. Levothyroxine therapy is a reasonable consideration for these patients, although evidence that therapy will reduce symptoms or improve outcomes is inconclusive. For patients with subclinical hyperthyroidism whose TSH is 0.1–0.45 mU/L, the panel recommends against routine treatment as there is insufficient evidence to establish a clear association between this degree of hyperthyroidism and adverse clinical outcomes, including atrial fibrillation. If the TSH concentration is <0.1 mU/L, treatment should be considered for patients with Graves' or nodular thyroid disease; over age 60; with symptoms suggestive of hyperthyroidism; or at risk for heart disease, osteopenia, or osteoporosis.
CONCLUSION: There is insufficient evidence to recommend routine screening or treatment for subclinical thyroid disease. Given the paucity of evidence, clinicians are encouraged to use the evidence, together with clinical judgment and patient preferences, to make informed and shared decisions together with their patients.

EVOLVING CONCEPTIONS OF INDIVIDUALIZATION OF CARE IN OLDER TYPE 2 DIABETES PATIENTS. E.S. Huang[1]; G. Sachs[1]; M.H. Chin[1]. [1]University of Chicago, Chicago, IL. *(Tracking ID #116084)*

BACKGROUND: The care of type 2 diabetes patients over 65 years of age is controversial, with some guidelines recommending that older patients be treated by general population standards, while others recommend that risk factor goals be individualized. We examine the policy and clinical implications of diabetes practice guidelines emphasizing individualization for a cohort of older patients.
METHODS: From 12/2000–1/2003, we recruited patients, at least 65 years of age, living with type 2 diabetes, attending the University of Chicago clinics. Patients were asked about their preferences regarding complications and treatments of diabetes, as well as health status (e.g. self-care behaviors and functional status). Physicians of patients were asked to provide an assessment of health status (e.g. life expectancy(LE)). Medical records were abstracted for comorbidities, risk factor control, and medications. Outcomes of interest included the proportion of patients with ideal risk factor control under general population and individualized guidelines. We also compared current intensity of care for patients with and without different indicators of frailty: LE ≤ 5 years, age ≤ 85, 4–6 activities of daily living requirements, modified Charlson Comorbidity Index Score ≥ 5, and 3 microvascular complications.
RESULTS: The mean age was 74 and the mean duration of diabetes was 13.4 years (N = 556). The majority were female (62%) and African-American (79%). Under general population guidelines, only 24–42% had adequate glucose control (glycosylated hemoglobin (HbA1C) ≤ 6.5% or <7%). Under individualized guidelines, less intense targets would be applied to frail patients (e.g. HbA1C ≤ 8%). For each frailty definition, guidelines emphasizing individualization increased the proportion of frail patients with adequate control (50–84%). For example, in patients with LE ≤ 5 years, the proportion with ideal glucose control shifted from 35% to 70%. Frail and nonfrail patients had similar risk factor levels, except in the case of microvascular complications where glucose control was worse in patients with complications than in those without. Frail patients were generally treated with a larger number of diabetes-related medications. They were more likely to receive insulin (e.g. 40% in LE ≤ 5 years vs. 21% in LE >10 years, $P < .05$) and aspirin (e.g. 61% in LE ≤ 5 years vs. 41% in LE >10 years, $P < .05$).
CONCLUSION: Guidelines advocating individualization of care dramatically alter the definition of quality of care for frail older diabetes patients. Current patterns of risk factor levels and medication use indicate that physicians and patients may be defining treatment plans by responding to risk factor levels or the presence of complications rather than actively predetermining the goals of care. Future efforts are needed to help physicians identify frail older diabetes patients and tailor preventive therapies.

EXERCISE COUNSELING AMONG U.S.- AND FOREIGN-BORN ADULTS. M.S. Goel[1]; E.P. McCarthy[1]; R.S. Phillips[1]; C.C. Wee[1]. [1]Beth Israel Deaconess Medical Center, Boston, MA. *(Tracking ID #116503)*

BACKGROUND: Guidelines recommend physicians counsel all patients about exercise. The foreign-born are the fastest growing population in the U.S. and have substantial rates of obesity, yet little is known about the influence of birthplace on exercise counseling.
METHODS: We examined 25,365 respondents from the 2000 National Health Interview Survey reporting a provider visit in the past year. We compared exercise counseling among U.S.-born whites (n = 17,010), blacks (n = 3,369), Hispanics (n = 1,642), and Asians (n = 129), and foreign-born (FB) whites (n = 801), blacks (n = 326), Hispanics (n = 2,128), and Asians (n = 514). Multivariable logistic regression models adjusted for demographic factors, smoking, self-reported health, comorbid illnesses, body mass index (BMI), physical activity, hospital stays in past year, and access to care.

All analyses used SUDAAN and results were weighted to reflect national population estimates.
RESULTS: Overall, the mean age was 46 years, 12% were foreign-born, 22% obese (BMI 30+ kg/m2), and 40% sedentary. Compared with the U.S.-born, foreign-born adults were less likely to be obese (17% vs. 23%) and generally more likely to be sedentary. U.S.- and foreign-born blacks were less likely to be counseled after adjustment (Table).
CONCLUSION: Rates of exercise counseling are low, but blacks, regardless of birthplace, are less likely to receive exercise counseling. Given the high prevalence of obesity and sedentary behavior among blacks, interventions to improve exercise counseling are needed.

Obesity, Activity Level, and Exercise Counseling By Race/Ethnicity and Birthplace

	Obesity (%)	Sedentary (%)	Counseled (%)	Odds Ratio (95%CI)
US White	21	36	23	Reference
US Black	33	53	22	0.8 (0.7–0.9)
US Hispanic	32	45	24	1.0 (0.9–1.2)
US Asian	13	26	25	1.1 (0.6–2.1)
FB White	18	43	22	1.0 (0.8–1.2)
FB Black	22	40	17	0.7 (0.5–0.9)
FB Hispanic	21	59	17	0.9 (0.7–1.0)
FB Asian	7	38	20	1.1 (0.8–1.4)

EXPECTATIONS AND OUTCOMES OF GASTRIC FEEDING TUBES. T.S. Carey[1]; L.C. Hanson[1]; J.M. Garrett[1]; C. Lewis[1]; N. Phifer[2]; C.E. Cox[3]; A.M. Jackman[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]Moses Cone Hosptial, Greensboro, NC; [3]Duke University, Durham, NC. *(Tracking ID #116139)*

BACKGROUND: Background: The use of gastric feeding tubes has increased over the past decade. Substantial doubt remains regarding the efficacy of the procedure in patients with serious illnesses. We compared expected outcomes by patients' decision-making surrogates with actual outcomes.
METHODS: Methods: Prospective cohort study. We enrolled consecutive patients > 17 yrs of age who had received placement of an initial gastric feeding tube at one university and one community North Carolina hospitals, excluding those with metastatic non-ENT cancer or trauma. Surrogate (generally spouse or adult child) respondents were used since almost all patients were either incompetent or unable to verbalize. We assessed ADL's ; expectations of benefit from the feeding tube such as decreased risk of pneumonia; complications; and expectations for recovery. Follow-up surveys were conducted at 3 months and at 6 months for patients who were alive and still had a feeding tube in place. Death certificate review was used to ascertain cause of death.
RESULTS: Results: 288 patients were enrolled. Mean age was 65 yrs, 54% male, and 61% white. The patients were generally poor, with 50% of incomes < $10,000/year, 36% had resided in a nursing home prior to the procedure. 30% had a primary diagnosis of stroke, 16% neurodegenerative disorder, 20% head and neck cancer, and 34% other. Surrogate expectations for patient improvement were very high at baseline: 95% expected improvement in nutrition; 87% a better quality of life; 66% decreased risk of pneumonia; 90% to live longer; 56% greater independence; 64% less pain; 79% more comfortable. Expectations remained essentially unchanged when re-queried at 3 and 6 months as to whether expectations were fulfilled. Patient outcomes demonstrated that 30% of patients died by 6 months. At 3 months, 38% were residing in a nursing home and 27% had the gastrostomy removed. Perceived global quality of life was poor at 4.6(0–10 scale). Patients were impaired in most ADLs with little change over time. Medical complications were common: 25% suffered from decubiti at 3 months, 24% had at least one additional episode of treatment for pneumonia since tube feeding initiation.
CONCLUSION: Conclusion: Surrogates currently have unrealistically high expectations of benefit from gastric tube feeding. Mortality is high while functional status and perceived quality of life is poor and improves little over time. Providers and families need better information about the outcomes of this common procedure to educate them regarding the likelihood of functional improvement.

FACTORS ASSOCIATED WITH BLOOD PRESSURE CONTROL AMONG ADHERENT PATIENTS K. Taneda[1]; C.L. Bryson[1]; M.B. McDonell[1]; S.D. Fihn[1]. [1]HSR&D VA Puget Sound Health Care System, Seattle, WA. *(Tracking ID #116318)*

BACKGROUND: Hypertension control is often inadequate even among patients that are adherent to their drug therapy. The characteristics of patients with poor hypertension control who are adherent are not well described. We assessed associations between hypertension control and provider and patient characteristics among "adherent" patients.
METHODS: As part of the Ambulatory Care Quality Improvement Project involving 7 VA general internal medicine clinics, we collected medication data and self-reported comorbidities during a 2-year study period. We defined adherence according to self-report and a pharmacy record-based measure (ReComp). Blood pressure (BP) was measured at clinic visits within 90 days of the self-report. Among those adherent patients, we assessed association between BP control (<140/90) and characteristics of providers and patients.
RESULTS: 6,768 patients who completed questionnaires and had corresponding BP records were analyzed. 4,950 cases (73%) were found to be adherent. Of these, 39.3% had controlled BP (under 140/90). The relative odds of having controlled BP were associated with patients' age in decade (OR 0.80, 95% CI 0.75 to 0.86). The variables not associated with BP control were: geographic distance from a clinic, provider's sex, type of provider, the number of hypertensive patients in a provider's panel, duration of care by the same provider, patients' sex and ethnicity, marital status, education, income, or work status.
CONCLUSION: BP was not well controlled even among adherent patients. Poor control was associated with older age but not with other characteristics of patients or providers. BP should be controlled more aggressively, particularly among older patients.

FACTORS ASSOCIATED WITH DEPRESSIVE SYMPTOMS IN PATIENTS WITH HIV/AIDS. M.S. Yi[1]; J.M. Mrus[2]; T.J. Wade[3]; M.L. Ho[1]; R.W. Hornung[1]; A.H. Peterman[4]; C.M. Puchalski[5]; J. Tsevat[2]. [1]University of Cincinnati Medical Center, Cincinnati, OH; [2]University of Cincinnati and Veterans Affairs Medical Centers, Cincinnati, OH; [3]Brock University, St. Catharines, Ontario; [4]Northwestern University, Evanston, IL; [5]George Washington University, Washington, DC. *(Tracking ID #116651)*

BACKGROUND: Depression has been linked to health status, immune suppression, and mortality in patients with chronic illness. Since depression appears to be a marker for poorer health outcomes among patients with chronic illness, we sought to determine which factors may relate to depressive symptoms in patients with HIV/AIDS.
METHODS: Patients were recruited from 4 medical centers in 2002, and trained interviewers administered the questionnaires. The level of depressive symptoms was measured with the Center for Epidemiologic Studies Depression Scale-10 (range 0–30; a score of ≥10 indicates significant depressive symptoms [SDS]). Predictor variables included patient socio-demographics, clinical characteristics, risk attitudes, health status (HAT-QoL; HIV Symptom Index), social support, self-esteem, optimism, spirituality (FACIT-SpEx), religiosity (Duke Religion Index), and religious coping (Brief RCOPE). We performed univariate analyses and used logistic regression for multivariable analyses.
RESULTS: We collected data from 450 subjects. Their mean (SD) age was 43.3 (8.4) years; 86% were male; 45% were white; and their mean CD4 count was 420 (301). Two hundred forty-one (54%) met criteria for SDS. In univariate analyses, having SDS was associated ($P < .05$) with site of care, being unemployed (66% having SDS if unemployed vs. 42% if employed), being single (58% vs. 43%), not having stable housing (77% vs. 52%), having a high school education or less (63% vs. 47%), having no health insurance (62% vs. 51%), feeling that life was not better since HIV diagnosis (64% vs. 30%), having lower CD4 counts (379 if having SDS vs. 468 if not having SDS), having poorer health status, having more somatic HIV-related symptoms, having less social support, participating less frequently in organized religion, having lower spiritual well-being, coping through religion poorly, having lower self-esteem, being less optimistic, and being less risk-seeking. In multivariable analyses, having SDS was associated with having lower life satisfaction, greater health worries, more somatic HIV-related symptoms, less social support, being less optimistic, and lower spiritual well-being (c statistic = 0.92).
CONCLUSION: A majority of patients with HIV/AIDS reported SDS. Less social support and optimism, poorer health status, and poorer spiritual well-being were related to SDS in patients with HIV/AIDS. Because patients with HIV/AIDS have a high rate of SDS, and because depression has been linked to negative health outcomes, unhealthy behaviors, and non-adherence to medical regimens, further study of the determinants of SDS and ways to optimize mental health is essential for patients living with HIV/AIDS.

FACTORS ASSOCIATED WITH RECEIPT AND ADHERENCE TO LIFESTYLE RECOMMENDATIONS AND IMPACT ON HYPERTENSION CONTROL. M.S. Horng[1]; L.S. Hicks[1]; E.F. Cook[1]. [1]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #115538)*

BACKGROUND: To date, there has been little examination of how frequently providers prescribe lifestyle modifications to manage hypertension (HTN) and subsequent patient adherence rates to these recommendations. We examined rates of adherence to suggested lifestyle modifications for HTN management and of associated blood pressure control.
METHODS: Using data from the NHANES 1999–2000 survey, we examined participants aged 20 or older who were told they had HTN at least twice by a doctor or other health professional to assess whether their provider had recommended lifestyle modification only, medication only or both to manage their HTN. Using logistic regression model we determined the odds ratio (OR) of receiving and adhering to each therapy adjusting for each participant's demographic and clinical characteristics. Confidence interval (CI) adjusted for clustering and weights were obtained using jackknife-1 procedure in SUDAAN statistical software. In a secondary analysis, we examined rates of hypertension control (<140/90 and <130/85 for diabetics) among adherent patients in each arm.
RESULTS: Of aware hypertensive individuals (n = 1244), 146 (13.1%) were only advised to take medications and 81 (7.3%) to alter lifestyles, while 846 (76.0%) were advised to do both. Patients advised to take medication only had higher adherence rates (84.2%), than those advised to modify their lifestyle only (54.3%), or advised to do both (53.9%). Hypertension is controlled in 36.6% of those taking medications, 56.8% of those following lifestyle changes, and 46.1% doing both. Individuals are less likely to receive lifestyle recommendations if they are aged 60 or greater (OR 0.25; CI 0.13–0.48), are white (OR 0.46; CI [0.23–0.89]), or have completed high school (OR 0.39; CI [0.19–0.81). Individuals who are obese (BMI > 30) (OR 0.25; CI [0.15–0.42]), diabetic (OR 0.42; CI [0.20–0.89]), or hypercholesterolemic (OR 0.49; CI [0.30–0.80]), have lower odds of adhering to lifestyle recommendations, while higher odds of adhering to lifestyle recommendations were associated with being white (OR 1.76; CI [1.04–2.96]) or age 60 or older (OR 2.29; CI [1.33–3.96]).

CONCLUSION: Despite higher adherence rates, prescribing medications alone has lower rates of hypertension control combined to prescribing both medications and lifestyle modification. Clinicians should recommend and encourage adherence to both medications and lifestyle changes for optimal management of hypertension, and future research examining patterns of care for hypertension should examine rates of advising lifestyle modification as well as medication prescribing.

FACTORS INFLUENCING SAFER SEX PRACTICES IN OLDER URBAN WOMEN. A. Paranjape[1]; L. Bernstein[1]; D. St. George[2]; J. Doyle[1]; S. Henderson[1]; G.M. Corbie-Smith[3]. [1]Emory University, Atlanta, GA; [2]Walden University, Minneapolis, MN; [3]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #117147)*

BACKGROUND: Infection with the human immunodeficiency virus (HIV) is an important health issue for older urban women, with most women in this population contracting the virus through heterosexual transmission. Primary prevention of HIV depends on safer sex practices, such as abstinence, consistent condom use or monogamy, however little is known about the factors that influence these practices in older women. Appropriate condom use not only depends on knowledge of condom efficacy, but also on relationship dynamics such as ability to negotiate condom use, dependence on one's partner for condoms, taking personal responsibility for obtaining condoms and trusting one's partner to disclose HIV sero-positivity. Therefore, we sought to determine the effect of relationship factors on older urban women's safer sex practices.
METHODS: We conducted a cross-sectional study in 514 women, age 50 and older, attending an ambulatory medicine clinic of a large urban hospital located in a region with a high HIV incidence. Using face-to-face interviews, we assessed knowledge of condom efficacy by responses to the question 'How effective do you think using a condom during sex is at preventing someone from getting HIV or AIDS?' Partner trust, obtaining condoms and dependence on partner were assessed by affirmative responses to the questions: 'Do you believe your current partner would tell you if he had HIV or AIDS?', 'In your current relationship have you ever bought or obtained condoms?' and 'Do you rely on your sexual partner to provide condoms?' respectively. Safer sex, was defined as frequent condom use or abstinence. We conducted bivariate analyses using the chi-square test and the *t* test and used logistic regression modeling to estimate the effect of individual relationship factors on safer sex; 95% confidence intervals (CI) were calculated for all odds ratios.
RESULTS: Of the 514 women, 155 (30%) were in a relationship at the time of the interview. Of those currently in a relationship, 81% were sexually active and only 13% used condoms frequently. There were no significant differences between those who did and did not practice safer sex by age, ethnicity, employment status and marital status. Trust in one's partner was associated with lower odds of safer sex (OR 0.3, CI 0.08–1.06) while obtaining condoms (OR 9.2, CI 1.9–44.2) and dependence on partner (OR 12.3, CI 3.0–50.3) were associated with higher odds of safer sex. Knowledge of condom efficacy was not associated with safer sex decisions.
CONCLUSION: Despite the increase in HIV infections in older women, alarmingly few of these women practice safer sex. Safer sex practices in these women were not associated with knowledge of condom efficacy, but rather with relationship factors such as trust in one's partner, obtaining condoms and dependence on partner for condoms. Therefore, HIV prevention messages to older urban women should include references to these relationship factors and the role they may play in safer sex practices.

FEASIBILITY AND POTENTIAL EFFECTIVENESS OF A RESIDENT INITIATED WEIGHT MANAGEMENT CLINIC. D.M. Mann[1]; M. Jay[1]; S. Natarajan[1]. [1]New York University, New York, NY. *(Tracking ID #116541)*

BACKGROUND: Obesity is increasing among US adults with a disproportionate effect on minorities and underserved populations. There are few multi-disciplinary obesity programs in urban public hospitals serving these vulnerable populations. In order to meet this need and demonstrate its feasibility and effectiveness, a group of primary care residents with expertise in obesity management created a group-based, multi-disciplinary weight management clinic within a large urban public hospital serving primarily underserved and minority patients.
METHODS: Due to treatment requirements eligibility was restricted to literate patients who had a BMI ≥30 and <50, were capable of mild exercise (>2 METs), and were without untreated psychiatric conditions. Patients were individually screened for eligibility by residents. Consenting patients were enrolled in a 16 week group with weekly group sessions and home assignments. Each session was conducted by the residents, a behavioral psychologist, and a nutritionist. The program focused on lifestyle change using established cognitive behavior techniques, nutrition and exercise counseling along with problem solving sessions.
RESULTS: Residents screened 34 patients and 14 were enrolled (50% of ineligible patients were excluded due to a BMI ≥50). The mean age (standard deviation (SD)) was 53 (9) with 3 males and 11 females. The group was 36% Hispanic, 36% white, 14% African American, and 7% other ethnicities. Approximately 36% had less than a high school education. Among participants, 11 had Medicaid (71%), 3 had no insurance (21%) and 1 had private health insurance (8%). The mean BMI was 38 (SD = 6). Coexistent comorbidities were diabetes (29%), hypertension (29%), hyperlipidemia (36%), osteoarthritis (28%), depression (29%) and symptoms of obstructive sleep apnea (21%). At baseline 21% were smokers and 36% were taking aspirin. Patient adherence varied with 20% patients completing 0 visits, 20% completing 1–7 visits and 60% completing 8 or more visits. The median number of visits was 9. The mean weight loss (SD) among the group completing 8 or more visits was 5 kg (12) while those completing <8 visits gained 0.5 kg (2).
CONCLUSION: This resident initiated weight management clinic in an urban public hospital provides a way for underserved adults with obesity to obtain comprehensive obesity treatment. We found that patients completing ≥8 sessions had significant weight loss. Such a multi-disciplinary group-based model may be an effective means for reducing obesity in vulnerable populations. However, non-adherence is a continuing challenge and methods for improving adherence to obesity programs must be developed and implemented in order achieve optimal results.

FINDING RESEARCH SUBJECTS IN THE AGE OF HIPPA. R. Hess[1]; M.A. McNeil[1]; C.J. Chang[1]; C.L. Bryce[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116077)*

BACKGROUND: Privacy regulations associated with the Health Insurance Portability and Accountability Act (HIPAA) have complicated the conduct of outcomes research. To facilitate such research, we created the Functional Assessment System Tablet (FAST), a computerized touch-screen form that collects general patient information, facilitates longitudinal follow-up, and systematically queries all patients regarding willingness to be: 1) included in the research registry project (RRP) and 2) contacted about future research studies (the prospective subject list (PSL)). Within our implementation cohort, we investigated systematic bias in RRP and PSL participation.
METHODS: All patients presenting to our outpatient practice self-complete the FAST. Real time information is provided to clinicians and placed in a de-identified research database. Upon completion, the computer asks patients to participate in the RRP and PSL. The RRP identifiably links the FAST with patients' complete medical records for use in research. Using the PSL, researchers of IRB approved studies may query the RRP, identify study eligible patients, and approach them regarding participation. We examined the impact of clinical variables (i.e., gender, age, marital status, educational attainment, hazardous drinking, social support, self-reported disease, and health related quality of life via RAND-36) on RRP and PSL participation using Fisher's exact and Student's *t* tests.
RESULTS: 54 sequential patients completed the FAST; none refused. These patients included: 93% women; average age of 48 years (range 19–76); 53% married or in a committed relationship; 58% with at least a college degree; 7% hazardous drinkers; RAND-36 mental health composite (MHC) of 43 ± 12.7 and physical health composite (PHC) of 45±12.6. The most common self reported diseases included: hypertension (45%); arthritis (32%); and depression (38%). 31 patients (57%) participated in the RRP. We were unable to detect any significant association between RRP participation and clinical characteristics (p-values: 0.13–0.86). 87% of RRP subjects also consented to the PSL. We examined association between PSL consent and: age; educational attainment; arthritis; and depression and detected no significant differences (p-values: 0.16–0.67).
CONCLUSION: In our preliminary sample, over half of sequential patients seen in a University based outpatient practice consented to participate in a research registry. We were unable to detect any systematic difference in this novel cohort inception method between those who participated and those who did not, suggesting that participants were representative of the overall patient population. Use of a computerized data collection instrument, such as the FAST, along with a research registry and PSL, represents a promising mechanism for facilitating both outcomes research and enrollment in clinical trials while adhering to current privacy regulations.

FIREARM SAFETY SCREENING AND COUNSELING IN PRIMARY CARE: A SURVEY OF RESIDENTS. J. Kahn[1]; M.M. Davis[1]. [1]University of Michigan, Ann Arbor, MI. *(Tracking ID #115808)*

BACKGROUND: Morbidity and mortality from firearms are a significant public health issue affecting adults and their children. In an attempt to lessen the toll of firearm-related injuries, several medical professional organizations including the ACP recommend physician screening and counseling regarding firearms in the primary care setting. To date, there are no data on the firearm screening and counseling practices of internal medicine residents. The objective of this study was to determine and compare the beliefs, attitudes and practices of house officers in different specialties with regard to firearm safety screening and counseling.
METHODS: House officers in the Departments of Internal Medicine, Pediatrics and Family Practice at the University of Michigan were sent an anonymous, web based survey via e-mail. The survey included questions regarding firearm screening and counseling behavior in the residents' primary care clinics, personal experience with firearms, attitudes about firearms and screening practices, and demographic information. Responses to 5-point-scale Likert-type items were dichotomized and analyzed using chi-square tests. The study protocol was approved by the University of Michigan Medical School Institutional Review Board.
RESULTS: 145 of 216 residents completed the survey (response rate=67%). Respondents were split among internal medicine (IM; 52%), med-peds (MP; 15%), pediatrics (PD; 22%), and family medicine (FM; 11%) programs, with variable response rates by specialty (PD 76%, MP 75%, IM 64%, FM 57%). Most residents (90%) believe that firearm-related violence is an important public health issue. 81% believe that physicians should be involved in firearm injury prevention, however this belief differed by specialty (IM 72% vs all others 90%; $P < .01$). By contrast only 56% of residents overall reported that they routinely screen their patients for firearm ownership, with IM residents less likely to screen (25%) than residents in other specialties (90%; $P < .001$). Firearm screening behavior was strongly associated with perceived clinic preceptors' expectation regarding screening. 77% of IM residents perceived no expectation to screen from their clinic preceptor compared with 6% for other residents ($P < .001$). Firearm screening behavior was also associated with prior medical school training regarding screening (78% screening rate with training vs. 46% without; $P < .001$).

CONCLUSION: Residents' stated beliefs do not match their reported behaviors regarding screening for firearms, especially among internal medicine residents. Further training of medical students and of clinic preceptors may increase the number of residents who screen their patients for firearm ownership.

FOLLOW-UP OF ABNORMAL SCREENING MAMMOGRAMS AMONG WOMEN UTILIZING A COUNTY-SPONSORED MOBILE MAMMOGRAPHY VAN. M. Peek[1]; J. Han[2]. [1]Rush University / Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL; [2]Rush Medical College, Chicago, IL. *(Tracking ID #117385)*

BACKGROUND: Mobile mammogram vans have been successfully utilized to increase access to screening mammography for medically underserved women. However, there is often difficulty with tracking results and arranging for patient follow-up of abnormal mammograms. We sought to characterize the follow-up patterns for abnormal screening mammograms in a cohort of women utilizing a public county-sponsored mobile van.
METHODS: We prospectively studied women aged 40 years and older presenting for screening mammography on mobile units from 1/1/01–7/01/02. Using electronic records and medical chart review, demographic, radiological and clinical variables were collected; women with abnormal mammogram results were followed for 12–24 months for evidence of diagnostic imaging within the city's public hospitals. We then surveyed those patients without documented follow-up to determine whether they had received follow-up outside of the safety net system and assess reasons for lack of diagnostic evaluation. Three rounds of mailed letters and telephone calls were conducted in an attempt to reach women with no documented follow-up.
RESULTS: During the study period, 659 women had abnormal screening mammograms on the mobile van; 63.5% had BIRADS 3 mammograms, 31.4% BIRADS 0, and 5% BIRADS 4 or 5. The mean age was 54.5 years and patients were ethnically diverse: 54.8% African American, 18.6% Hispanic, 12% Caucasian, and 11% Asian. Only 20.2% of the screened women had documented diagnostic imaging within the public healthcare system. The mean follow-up interval was 152.1 days. We determined the follow-up status of 55.6% (n = 366) of the initial sample, of whom 76.2% received subsequent evaluation (either imaging or physician follow-up) after their abnormal mammograms, 153 within the safety net system and 126 outside of the system. Reported reasons for lack of follow-up included fear of more tests (10.1%), concerns of cost (6.7%), misunderstanding the report letter (9.0%), having forgotten (6.7%), other illnesses (5.6%), being too busy (6.7%), being unaware that the mammogram was abnormal (46.1%) or other reasons (22.5%). Race was not associated with inadequate diagnostic follow-up ($P = .78$), but younger women (less than 47 y/o) were less likely to have further evaluation ($P = .0006$), a factor not accounted for by BIRADS category.
CONCLUSION: Successful follow-up of women screened in mobile mammography units is difficult, particularly when patients belong to multiple healthcare systems. One-fourth of women whose follow-up status was determined had no diagnostic follow-up. The most common reason was the lack of knowledge about the abnormal results, making aggressive tracking by experienced staff a crucial component of such outreach programs.

FOURTH YEAR MEDICAL STUDENTS' STANDARDIZED PATIENT EXAMINATION PERFORMANCE AND SPECIALTY CHOICE. K.E. Hauer[1]; C. Hodgson[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115716)*

BACKGROUND: National Residency Match data demonstrate a trend in medical students' career choice away from specialties focused on patient interactions toward technology-based specialties. Few studies have examined the relationship between medical school clinical performance and specialty choice.
METHODS: We analyzed scores from a 7-station comprehensive standardized patient examination for 124 beginning fourth-year medical students to determine whether there are differences in clinical performance based on intended specialty type: personal care (family practice, internal medicine, obstetrics and gynecology, neurology, pediatrics, psychiatry, dermatology) versus technology-oriented (anesthesiology, radiology, emergency medicine, pathology, radiation oncology, general surgery, surgical subspecialties). We used *t* tests to characterize differences in MCAT total scores, USMLE Step 1 scores, and CPX scores based on specialty. MCAT and USMLE scores were included as measures of baseline academic performance. Correlations between MCAT scores, USMLE scores and the dependent variables (History, Physical Exam, Physician-patient Interaction, and case total scores) were performed controlling for specialty. A maximum score of 100% was possible in each skill domain assessed in the exam. We performed Multiple Analyses of Variance (MANOVAs) with specialty and gender as the independent variables and MCAT and USMLE scores as covariates. The institutional review board approved the study.
RESULTS: Among personal care students, 48 (79%) applied in primary care specialties (internal medicine, pediatrics, or family practice). Students anticipating careers in personal-care specialties versus technology-oriented specialties performed better in History Taking [67.9% (Standard deviation 7.08) vs. 64.3% (SD 7.12), $P = .01$] and Physical Examination [52.2% (SD 10.6) vs. 48.2% (SD 9.3), $P = .02$], although there were no differences in Physician–patient Interaction [68.6% (SD 6.8) vs. 67.2% (SD 7.4), $P = .24$]. Physician-patient Interaction scores were significantly higher for women than men [69.3% vs. 66.2% $P = .05$]. There was no indication of case specificity.
CONCLUSION: The higher scores among students pursuing primary care and other personal-care specialties may reflect differential acquisition of clinical skills in the core clerkships. Alternatively, students with stronger clinical skills may gravitate toward personal-care specialties. These findings have implications for fourth-year curricula and for students' preparation for the USMLE Step 2 Clinical Skills Examination to ensure that all graduates have achieved similar clinical proficiency.

GENDER AND ETHNIC DIFFERENCES IN OVERNIGHT URINARY STRESS HORMONES. C. Masi[1]; E. Rickett[1]; L. Hawkley[1]; J. Cacioppo[1]. [1]University of Chicago, Chicago, IL. *(Tracking ID #115602)*

BACKGROUND: Heart disease mortality varies by gender and ethnicity in the United States. In 2001, the age-adjusted death rate for heart disease was 50% higher among males compared to females and 30% higher among blacks compared to whites. Differences in stress hormone response may contribute to higher rates of cardiovascular disease among men and blacks. Spot testing of overnight urinary epinephrine (E), norepinephrine (NE), and cortisol (Cort) permits a time-integrated assessment of the stress response system.
METHODS: Overnight specimens were obtained from a population based sample of 230 adults aged 50 to 65. Specimens were assayed for E, NE, and Cort and corrected for creatinine concentration and fat free mass. ANOVA was used to assess raw and corrected hormone differences by demographic variables.
RESULTS: Significant gender differences were noted in raw E, NE, Cort, and creatinine concentrations, with males displaying higher levels of each. When corrected for creatinine excretion and fat free mass, males demonstrated higher levels of E and NE but not Cort. Blacks had significantly higher raw values for urinary creatinine, E, and NE compared to whites and Hispanics. When corrected for creatinine excretion and fat free mass, the hormone differences remained but were no longer statistically significant.
CONCLUSION: Higher overnight E and NE may be a risk factor or marker for cardiovascular disease among men and blacks. To account for differences in urine concentration and muscle mass, spot urine assessment of stress hormones should include correction for creatinine excretion and fat free mass.

Urinary Creatinine (Cr), Fat Free Mass (FFM), and Corrected E,NE, & Cort (ng/mg creat/kg) (*$P < .05$ for male-female) ($P < .05$ for white-black)**

	Male (n = 109)	Female (n = 121)	White (n = 83)	Black (n = 81)	Hispanic (n = 66)
Cr (mg/dL)	112.73	68.72*	82.05	103.65**	84.05
FFM (kg)	69.57	44.13*	56.86	57.17	54.21
E	94.58	68.76*	77.46	82.35	78.03
NE	1,792.28	1,397.28*	1,593.58	1,645.38	1,520.08
Cort	840.32	711.02	809.04	692.50	809.18

GENDER DIFFERENCES IN PRIMARY CARE PHYSICIANS' SELF-ASSESSMENT OF TEACHING AND EVIDENCE-BASED MEDICINE SKILLS. S.G. Chheda[1]; C. Gjerde[1]; K.M. Hla[1]; P. Kokotailo[1]; B. Anderson[1]. [1]University of Wisconsin-Madison, Madison, WI. *(Tracking ID #116942)*

BACKGROUND: Recent studies have shown gender differences in physician-scientists' self-assessed abilities to perform clinical research. Self-assessment of abilities is a measure of self-efficacy, an individual's belief in their ability to accomplish tasks and reach goals. Self-efficacy is an important variable in learning and career outcomes. It is unknown if such gender differences in self-assessed skills exist in physicians in other academic areas. The purpose of this study was to examine gender differences in the self-assessed skills of primary care physicians participating in a year-long faculty development program focusing on enhancement of clinical teaching and evidence-based medicine (EBM)skills.
METHODS: Participants' in the HRSA supported University of Wisconsin Primary Care Faculty Development Program (PCFDP) attended five weekend sessions over a one-year period. Program content included skills in teaching and EBM. Participants completed a self-assessment of their skills using a 6 point scale (0 = no skills, 5 = high level skills) at the start (pre-assessment) and conclusion (post-assessment) of the program. Statistical analysis was completed using the two-sample *t* test.
RESULTS: Between 1999 and 2003, all 38 female and 34 male participants completed pre-assessment, and 32 female (84%) and 31 male (91%) participants completed the post-assessment. On pre-assessment women ranked themselves lower than men rated themselves on all seven teaching assessment items, with four of these reaching statistical significance. Similarly, women ranked themselves lower than men rated themselves on all five EBM pre-assessment items, with four of these reaching statistical significance. Though both men and women collectively ranked themselves higher at post-assessment compared with pre-assessment, and women tended to have larger gains than men, women rated themselves lower than men rated themselves on all items. These differences reached statistical significance ($P < .05$) for all five EBM items (use EBM concepts in clinical practice use likelihood ratios, use terms like AAR, RRR and NNT, critically appraise trials, use pre-appraised EBM resources); and three of seven teaching items (use adult education principles, give feedback to learners and solicit feedback on teaching).
CONCLUSION: Female primary care physicians consistently rated their teaching and EBM skills lower than male participants both before and after participation in a faculty development program focused on enhancing these skills. Decreased self-efficacy may indicate a barrier in women's participation in academic roles requiring these skills. Attending to these gender differences may enable faculty development programs to better meet the needs of all participants.

GETTING PHYSICIANS TO MAKE "THE SWITCH": THE ROLE OF CLINICAL GUIDELINES IN THE MANAGEMENT OF COMMUNITY-ACQUIRED PNEUMONIA. J.T. Hagaman[1]; G. Rouan[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #115198)*

BACKGROUND: Community-acquired pneumonia (CAP) results in expenditures of over $9 billion yearly. Such is primarily due to the need for inpatient, parental

antibiotic therapy. In an effort to decrease length of stay (LOS) in patients with CAP while maintaining quality, the American Thoracic Society (ATS) guidelines for CAP management include criteria for early intravenous-to-oral switch therapy. We hypothesized that knowledge of and adherence to the ATS guidelines for switch therapy was low at our institution, resulting in unnecessarily long hospitalizations.
METHODS: University Hospital (UH) adopted a CAP clinical guideline and preprinted an order set with recommendations similar to the ATS guidelines for switch therapy. Prior to implementation of the UH CAP guideline, 130 patients admitted with CAP were retrospectively identified to determine if "switch therapy" was initiated in an appropriate fashion as indicated in the ATS guidelines. Additionally, physicians were surveyed on ATS guideline awareness before and subsequent to adoption of the UH CAP clinical guideline.
RESULTS: Of 130 patients reviewed, 71 were excluded because of comorbidities that extended hospitalization. Seventy-six percent of the remaining candidates were eligible for switch therapy. Fewer than 60% were indeed switched when deemed appropriate by ATS guidelines. When patients were treated in accordance to ATS guidelines, LOS was one day less (2.4 vs. 3.6, $P < .05$). Of physicians surveyed, just 5% were aware of guidelines for switch before adoption of the UH guidelines, versus over 40% after guideline adoption.
CONCLUSION: Early-switch therapy for CAP had not been utilized adequately prior to implementation of the UH CAP guideline. Such utilization is apt due in part to a lack of awareness. Adoption of guidelines by UH increased guideline awareness and thereby may also reduce LOS for patients with CAP.

GLYCEMIC AND LIPEMIC TESTING AND CONTROL IN ETHNIC MINORITIES WITH DIABETES. J.H. Halanych[1]; H. Lin[2]; F. Wang[2]; D.R. Miller[2]; D.R. Berlowitz[2]; K.M. Skinner[2]; L. Pogach[3]; S.M. Frayne[4]. [1]University of Alabama at Birmingham, Birmingham, AL; [2]CHQOER, VA Hospital, Bedford, MA; [3]VA New Jersey Health Care System, East Orange, NJ; [4]VA Palo Alto Health Care System, Menlo Park, CA. *(Tracking ID #116135)*

BACKGROUND: Ethnic minorities have higher rates of diabetes and its complications. Differences between ethnic minorities and whites in medical care processes and outcomes are not fully described. We examined disparities in glycemic and lipemic testing and control in a large national sample of African American, Hispanic and white diabetics.
METHODS: Our study included non-institutionalized patients with diabetes from Veterans Health Administration (VA) facilities that submitted lab data and procedure codes to central VA databases in 1999. We compared African American and Hispanic to white veterans on 4 of the national Diabetes Quality Improvement Project measures: annual glycosylated hemoglobin (HbA1c) testing, annual low density lipoprotein (LDL) testing, poor glycemic control (HbA1c9.5), and poor lipemic control (LDL130). Logistic regression was used to adjust for age, gender, and comorbidity, and random effects modeling accounted for facility-level clustering.
RESULTS: Of 322,215 diabetics, 4% were Hispanic, 17% African American, and 79% white. In adjusted analyses, fewer minorities received annual lipemic testing and more had poor lipemic control than whites (Table). African Americans had similar annual glycemic testing, but more had poor glycemic control. Hispanics had more annual glycemic tests, and still had more individuals with poor glycemic control.
CONCLUSION: Ethnic disparities still exist, especially in outcomes. While there is room for improvement in rates of lipid testing, more notable are the increased rates of poor glycemic and lipemic control. Thus, quality improvement efforts for minorities should emphasize better outcomes (rather than processes) of care, for example through treatment intensification and prioritization of clinical goals to maximize cardiovascular risk reduction.

Odds Ratios (95% C.I.) in minorities vs whites (adj. for age, sex, comorbidity, & facility effects)

	Hispanic	African American
Received glycemic testing	1.14 (1.09, 1.20)	0.99 (0.97, 1.02)
Received lipemic testing	0.89 (0.85, 0.93)	0.74 (0.73, 0.76)
Poor glycemic control	1.14 (1.09, 1.19)	1.35 (1.32, 1.39)
Poor lipemic control	1.13 (1.08, 1.17)	1.49 (1.46, 1.53)

GRADUATES' PERCERPTIONS OF THE VALUE OF AN "EDUCATION FOR LIFE" REQUIREMENT IN AN INTERNAL MEDICINE RESIDENCY. M. Panda[1]; T. Ball[1]; N. Desbiens[1]. [1]University of Tennessee, Chattanooga, Chattanooga, TN. *(Tracking ID #115732)*

BACKGROUND: The ACGME defines Internal Medicine as a discipline requiring evidence-based (EB) decision making and commitment to lifelong learning. Literature on life-long learning recommends that it should form a part of the curriculum of every profession and EB practice implies life-long learning. To our knowledge, there is little literature about specific curricula that promote life-long learning during internal medicine residency. The Chattanooga Unit of the University of Tennessee, College of Medicine has required third year residents to submit a report on their plans for keeping up with their medical education ("Education for Life") as a requirement for graduation since 1999. We have done a follow-up survey of the first three graduating classes that completed this requirement. We hypothesized that graduates would find the requirement useful, and that graduates who sought further specialization would use more modalities to remain current with advances than generalists.
METHODS: A survey containing questions regarding modalities used by the graduates to keep up with their education, their current careers and demographics was sent to 27 graduates 2 to 4 years after graduation. These were compared with the "Education for Life" reports they had submitted prior to graduation.
RESULTS: Twenty-four surveys were returned giving a response rate of 89%. The current age of the graduates ranged from 29–42 years with a mean of 33 years. Sixty-seven percent were male, and 83% were married at the time of graduation. Twenty-nine percent had pursued fellowship training; 71% practiced as internists. All but one respondent remembered the "Education for Life" requirement; 57% thought it beneficial. Though the graduates intended to keep up with a mean of 3.4 methods, they reported keeping up with a mean of 4.2 methods. Residents usually kept up with one or two more modalities than they originally estimated (fig). In the multivariable analysis we found that the number of modalities graduates used was significantly associated with the number they planned to use before graduation ($P = .04$) but not with the choice of subspecialty versus generalism as a career.
CONCLUSION: As hypothesized, graduates find an "Education for Life" requirement useful. Graduates, regardless of specialty orientation, used more modalities for continuing medical education than they thought they would, perhaps reflecting a void they felt after their departure from a structured education during their residency training. Though a larger multi-institutional study is needed, our study helps identify one method of promoting life-long learning.

GUIDELINE ADHERENCE AND BLOOD PRESSURE CONTROL AMONG SPECIAL POPULATIONS. L.S. Hicks[1]; D. Fairchild[2]; E. Orav[3]; D.W. Bates[3]; J.Z. Ayanian[4]. [1]Brigham and Women's Hospital and Harvard Medical School, Boston, MA; [2]New England Medical Center, Boston, MA; [3]Brigham and Women's Hospital, Boston, MA; [4]Harvard University, Boston, MA. *(Tracking ID #116764)*

BACKGROUND: There has been little examination of adherence rates to the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC) special populations guidelines and whether adherence to these guidelines is associated with improved blood pressure (BP) control among these high-risk patients.
METHODS: We reviewed 15,768 visits to 14 general internal medicine clinics between 7/1/01–6/30/02. We classified each visit as adherent or non-adherent by identifying medications selected for therapy for HTN and comparing them with JNC VI racial/ethnic-specific and disease-specific guidelines. We also classified each visit as BP controlled (BP of <130/85 for patients with diabetes or renal failure or <140/90 for other patients) or not. We compared adherent and BP controlled visit rates by patient demographic and clinical characteristics using chi-square tests. Logistic regression was used to determine adjusted odds of JNC adherence and BP control by patient race/ethnicity and clinical characteristics.
RESULTS: Adherent visits more frequent among Black (83.4%) and Latino (83.0%) patients, compared to Whites (78.4%) ($P < .001$). Adherent visits was also more frequent among women (79.0% for men, 82.2% for women, $P = .02$). After adjustment for demographic characteristics and comorbid disease, adherent visits remained more common among Blacks (O.R. 1.36[1.14–1.64]) compared to Whites, and less common among men (O.R. 0.80 [0.68–0.95]) compared to women. BP was controlled more often among White patients (41.6% compared to 35.3% for Black and 20.1% for Latino, $P = .05$), and among the privately insured (42.3% compared to 13.7% for Medicaid and 35.9% for Medicare, $P = .006$). After adjustment for demographic characteristics, JNC adherence, and comorbid diseases, diabetic patients were less likely to have BP control (O.R. 0.45 [0.40–0.51]) than non-diabetics, and patients with coronary artery disease (CAD) more likely to have BP control (O.R. 1.28 [1.07–1.53]) compared to those without CAD. JNC adherence was not associated with BP control.
CONCLUSION: We found high rates of physician adherence to JNC guidelines among special populations, however blood pressure control rates were low, particularly among diabetics. The drug class prescribed may be less predictive of obtaining BP control than other processes of care such as intensity of therapy. Providers should focus their efforts on more aggressively managing HTN among diabetics.

GUIDELINE ADHERENCE TO DIURETIC USE IN MULTI-DRUG ANTIHYPERTENSIVE REGIMENS. H. Singh[1]; M.L. Johnson[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #116542)*

BACKGROUND: Recent hypertension guidelines acknowledge that majority require two or more agents to achieve target blood pressure (BP). The Joint National Committee. Sixth Report (JNC VI, 1997) states the need to use a diuretic as a first or second line agent in absence of compelling indications for other drugs or contraindications, and emphasized need for a diuretic based regimen when using three or more drugs to avoid resistance in control. Inadequate use of diuretics as first line agents occurs despite evidence of high level of patient tolerability at lower doses. Data about use in multi-drug regimens is limited but of critical value. The objective of our study was to assess adherence to JNC VI guidelines in use of diuretics in multi-drug regimens for hypertension.
METHODS: A retrospective design was used to collect computerized data from all patients seen for any reason (N = 84,369) at a tertiary care Veterans Affairs hospital longitudinally from October 1, 1998 to March 1, 2001.Patients with hypertension were identified for inclusion based on a combination of : 1) diagnostic information from ICD-9-CM codes 2) prescription drug use from pharmacy dispensing records, and 3) clinical parameters from vital signs. Any patients with diagnosis of chronic heart failure (CHF) and diabetes were excluded. Prescriptions of seven classes of anti-hypertensive drugs were identified from the computerized pharmacy records and the number being prescribed was tabulated.The proportion of patients with any thiazide or loop diuretic use among patients with two, three, or four or more drugs was tabulated.

RESULTS: A total of 25,052 patients (29.7%) were studied. Average age(sd) was 59.8(13.2) years; 96% of patients were male, and 31.5% were ethnic/racial minorities. About 44% (n = 11,049) of patients were receiving two or more antihypertensive drug classes. Among patients on two drug regimens (n = 5,717) 50% were on a diuretic. Among patients on three drug regimens (n = 3,327) where diuretic use according to guidelines is almost mandatory, 73% of patients were on diuretics, increasing to 89% in regimens of 4 or more drugs (n = 2,005). Therefore, over one-third of all patients on multi-drug regimens (n = 3,970 or 35.9%) were not receiving diuretics even when compelling indications for other drugs (CHF and diabetes) were excluded.
CONCLUSION: Our study found substantial non-use of low dose diuretics in multi-drug regimens to control blood pressure. Even though the medical literature has been propagating diuretic use for several years, better strategies to educate practitioners about increasing their use in multi-drug regimens and dispelling some of the myths about diuretic adverse effects may still be needed. Further research is needed to qualify how these rates of use compare outside the VA setting, and to determine patient and provider factors associated with variation in diuretic use.

HEALTH CARE COSTS BEFORE AND AFTER ANTIDEPRESSANT INITIATION: DOES ADEQUATE TREATMENT REDUCE COSTS? R.S. Stafford[1]; K.M. O'Leary[2]; S.N. Finkelstein[3]; J.B. Weilburg[2]. [1]Stanford Prevention Research Center, Program on Prevention Outcomes and Practices, Stanford, CA; [2]Massachusetts General Hospital, Boston, MA; [3]Massachusetts Institute of Technology, Cambridge, MA. *(Tracking ID #116279)*

BACKGROUND: Health care costs are known to be higher in patients with depression. We sought to evaluate whether the adequacy of newly initiated antidepressant (AD) treatment affected health care costs. We hypothesized that in those patients receiving adequate AD trials increased AD pharmacy costs would be offset by a reduction in other health care costs.
METHODS: Data from a large HMO plan in Massachusetts were used to identify a cohort of 4,407 patients where health care costs could be followed for 9 months before and 9 months after the initiation of ADs. Using pharmacy claims data, we defined an adequate AD trial as involving at least 6 months of continuous therapy at an average daily dose of at least 20 mg of fluoxetine or the drug-specific equivalent. We tracked health care costs by quarter using medical and pharmacy claims data.
RESULTS: Of the 4,407 patients initiated on ADs, average health care costs were $910 per person per quarter over the 18 months of follow-up, compared to typical mean quarterly costs of $400 per member. Only 38% of the patients initiated on ADs had an adequate AD trial. Costs per patient rose in the 9 months prior to AD initiation ($660 per quarter 6–9 months before vs. $730 3–6 months before vs. $990 1–3 months before). There were no differences in pre-treatment costs between patients later treated adequately vs. inadequately. Costs peaked in the quarter following initiation ($1,230) with adequately treated patients having greater costs ($1,340) compared to inadequately treated patients ($1,160). In subsequent quarters, health care costs continued to differ depending on AD trial adequacy. For adequately treated patients, costs did not decrease considerably over the ensuing quarters ($1,190 per quarter 6–9 months after initiation), contrary to our hypothesis. Patients lacking adequate treatment, however, had a significant ($P < .01$) reduction in their health care costs to $790 per quarter at 6–9 months after initiation. Of this mean $400 difference between adequate and inadequately treated patients, antidepressant pharmacy costs accounted for $160, other medications for $70, outpatient costs for $90, and inpatient costs for $80 per quarter.
CONCLUSION: Patients ultimately prescribed ADs had higher health care costs that were observed even prior to AD initiation. Although we found no evidence of a cost-offset associated with adequate treatment among the patients we studied, such an effect cannot be excluded. The observation of higher costs incurred by adequately treated patients could potentially be explained by a greater severity of illness among these patients.

HEALTH CARE WORKERS' EXPECTATIONS OF & EMPATHY TOWARD PATIENTS IN ABUSIVE RELATIONSHIPS. C. Nicolaidis[1]; M.A. Curry[1]; M. Gerrity[1]. [1]Oregon Health & Science University, Portland, OR. *(Tracking ID #116528)*

BACKGROUND: Most surveys of health care workers' attitudes about domestic violence (DV) have focused on screening rates and barriers to screening, but primary care providers must often continue to care for patients in abusive relationships long after the initial screening or disclosure takes place. Less is known about attitudes that may affect a provider's ability to provide appropriate long-term care or to empathize with patients who choose to remain in abusive relationships.
METHODS: We surveyed 235 healthcare workers in 25 community-based primary care practices prior to their participating in an educational intervention. Associations were assessed by Chi2 tests, Pearson's correlations, and *t* tests using STATA Software.
RESULTS: A majority (56–61%) agreed with statements regarding a provider's responsibility to screen for DV in a a variety of situtions where DV screening would be recommended, though fewer (11–35%) stated they always or nearly always screened for DV in such situations. Participants' sense of responsibility regarding screening correlated with their self-reported screening practices ($P < .0001$). A majority (57–59%) agreed with statements meant to assess unreasonable expectations or overly controlling behavior. (Eg. "A provider's responsibility includes making sure a patient gets to a shelter right away if he or she discloses abuse.") Most participants (50–58%) found it easy to empathize with a patient who decided to stay in an abusive relationship in situations where the patient was described as poor or disabled, regardless of patient gender. Few (24–38%) could empathize with a patient who made such a decision in situations where the patient was described as educated or financially secure. Participants who agreed with statements meant to assess unreasonable expectations or overly controlling behavior had more difficulty empathizing with patients who decided to remain in abusive relationships ($P = .01$). Those who stated that they, a close friend, or relative had experienced DV (64%) found it easier to empathize with patients who chose to remain in abusive relationships than those who had not had personal experience with DV ($P = .009$). Gender, prior DV training, sense of responsibility regarding screening, and screening practices did not correlate with unreasonable expectations or with ability to empathize with patients who choose to remain in abusive relationships.
CONCLUSION: Domestic violence training efforts must not only focus on increasing screening rates, but also on helping providers have more reasonable expectations about the natural history of abusive relationships. Health care workers need to better understand why patients may choose to remain in abusive relationships, even in the absence of economic or health limitations.

HEALTH INSURANCE COVERAGE, RACE, AND MORTALITY AMONG NEAR-ELDERLY ADULTS. J.M. McWilliams[1]; A.M. Zaslavsky[2]; E. Meara[2]; J.Z. Ayanian[2]. [1]Brigham and Women's Hospital, Boston, MA; [2]Harvard University, Boston, MA. *(Tracking ID #115752)*

BACKGROUND: Uninsured near-elderly adults may be particularly at risk of adverse health outcomes, including premature mortality, due to insufficient treatment of chronic illness and modifiable risk factors. Therefore, we compared mortality of insured and uninsured near-elderly adults with stratification by race, income, and the presence of diabetes, hypertension or heart disease.
METHODS: Among 8,736 adults age 50–61 in the nationally representative Health and Retirement Study, we assessed the relation between insurance coverage in 1992 and subsequent mortality through 2000. Employing rigorous propensity-score methods to adjust for numerous sociodemographic, health, and behavioral characteristics, we used Cox proportional hazards models to compare mortality between privately insured and uninsured adults weighted according to their propensity to be insured.
RESULTS: Adjusted mortality was significantly greater among uninsured adults than privately insured adults (8-year rates: 10.5% vs. 7.5%; hazard ratio: 1.43 (95% C.I.: 1.10,1.85)). This finding was evident among white adults (11.2% vs. 7.3%; 1.57 (1.16,2.12)) but not among black adults (11.3% vs. 10.4%; 1.08 (0.67,1.75)) or Hispanic adults (2.7% vs. 7.5%; 0.35 (0.13,0.96)). Additionally, being uninsured was associated with greater adjusted mortality among adults who reported low incomes (14.1% vs. 9.4%; 1.53 (1.11,2.12)) or diabetes, hypertension, or heart disease in 1992 (18.8% vs. 12.5%; 1.56 (1.15,2.10)), but not among those with moderate to higher incomes (8.1% vs. 6.4%; 1.27 (0.78,2.06)) or without these conditions (5.4% vs. 4.5%; 1.22 (0.82,1.80)), respectively.
CONCLUSION: Lacking health insurance was associated with substantially higher mortality among near-elderly adults who were white, had low incomes, or had diabetes, hypertension or heart disease. Increased mortality among both insured and uninsured black adults may indicate that health insurance is insufficient to overcome lifelong risk factors for ill health or that insured black adults face greater barriers to care and receive lower quality health care than insured white adults. Unexpectedly lower mortality among uninsured Hispanic adults may reflect unmeasured differences in acculturation between insured and uninsured Hispanic adults that affect health outcomes. Expanding coverage to uninsured near-elderly adults may improve health outcomes for some vulnerable groups but be insufficient to reduce the increased mortality experienced by near-elderly black adults.

HEALTH LITERACY IN THE SOUTH BRONX: PREVALENCE AND PICTORIAL PRESCRIPTION INTERVENTION. S. Nasr[1]; C. Napier[2]; I. Sharif[1]; G. Sacajiu[2]; S. Villanueva[1]. [1]Montefiore Medical Center, Bronx, NY; [2]Albert Einstein College of Medicine, Bronx, NY. *(Tracking ID #116755)*

BACKGROUND: More than 40 million Americans are functionally illiterate. Functional health literacy (FHL) is a set of skills required to operate in a health care environment. Low literacy has been documented in urban settings and studies have found it to be related to poor health outcomes. However, no studies have measured health literacy in the South Bronx, containing the poorest congressional district in the nation. Furthermore, pictorial prescriptions have been proposed as a way to improve FHL. No studies have evaluated the effectiveness of pictorial prescriptions. The objectives of this study were 1) to measure FHL in a South Bronx population and 2) to test the feasibility of pictorial prescription labels as an intervention in that population.
METHODS: We conducted a cross-sectional survey of randomly selected adult patients presenting for routine appointments at an urban clinic from February to August 2003. All patients received the Short Test of Functional Heath Literacy in Adults to measure FHL. Depending on the patient's primary language the test was given in English or Spanish. Next, patients completed a questionnaire evaluating the understanding of pictorial versus written prescription labels.
RESULTS: Of 148 approached, 114 patients completed the survey. FHL was found to be inadequate or marginal in 31.6%. Of Spanish speakers (n = 26), 53.8% had inadequate or marginal FHL. Of English speakers (n = 88), 25% had inadequate or marginal FHL. The overall prevalence of health illiteracy found in our random sample is comparable to that found in other urban communities (Power = 93%). Overall, pictorial prescription labels were understood by 35 % of patients; written prescriptions were understood by 93%. Amongst those with inadequate or marginal FHL, only 12.9% understood the pictorial prescriptions versus 76.7% of the written prescriptions.

CONCLUSION: We found the level of inadequate FHL in this poor urban population substantial. This proportion of health illiteracy is likely to have a significant impact on patients' well being. While our intervention does not appear to significantly improve health literacy, we should continue to look for patient-centered solutions to better the understanding of health information.

HEALTH LITERACY OF PATIENTS ENROLLED IN DIABETES EDUCATION. S. Kim[1]; F. Love[1]; D. Quistberg[1]; J.A. Shea[1]. [1]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #115361)*

BACKGROUND: Poor health literacy, common in patients with diabetes, has been associated with worse health outcomes. Diabetes education can improve health outcomes by teaching patients self-management skills. However, little is known about health literacy levels of patients that receive diabetes education. The objectives of our study were to assess the correlates of health literacy in patients receiving diabetes education and examine the association of literacy with diabetes knowledge, glycemic control, and self-management behaviors.
METHODS: In 2003, all patients enrolled monthly in multiple session diabetes education classes at the Hospital of the University of Pennsylvania were recruited. At the first class health literacy was measured by the short-form Test of Functional Health Literacy in Adults (s-TOFHLA). Diabetes knowledge and self-management behaviors were assessed using previously published instruments. Glycemic control was assessed by obtaining most recent hemoglobin A1C (HbA1C) levels from medical records.
RESULTS: Fifty eight percent (N = 92) of patients participated. There were no differences between participants and non-participants in age, sex, race, education, and HbA1C. Overall, 77% had adequate and 23% had marginal or inadequate health literacy skills. Lower literacy was associated with being older (mean 67 vs 58 years, $P = .001$), having less education (mean 10 vs 14 years, $P < .001$), lower annual income ($P = .001$), no commercial insurance ($P = .002$), and more diabetes complications ($P = .042$). There were no differences in years with diabetes ($P = .59$). Patients with adequate health literacy skills had better knowledge of diabetes (mean out of 24, 17 vs 14, $P = .014$), but health literacy was not associated with HbA1C (8.4 vs 8.2, $P = .68$) or self-management behaviors (mean days of adherence out of the last seven) such as diet (4.3 vs 4.7, $P = .47$), exercise (2.7 vs 2.3, $P = .52$), and medication adherence (6.0 vs 6.6, $P = .24$).
CONCLUSION: In this select sample of diabetic patients enrolled in diabetes education, the prevalence of low health literacy was lower than that reported among diabetics in primary care settings. Low health literacy was associated with less diabetes knowledge, but was not associated with worse glycemic control or self-management behaviors. Regardless of literacy level, all patients had room to improve on self-management behaviors. Efforts should focus on improving educational outreach for patients with low literacy skills.

HEALTHCARE UTILIZATION AND EXPENDITURES ASSOCIATED WITH TRANSITIONS ADULTS' TRANSITIONS IN HEALTH INSURANCE STATUS. M.M. Davis[1]; A. Gebremariam[1]. [1]University of Michigan, Ann Arbor, MI. *(Tracking ID #117518)*

BACKGROUND: Although insurance status is often measured as a static condition, individuals may transition from insured to uninsured status and vice-versa. The prevalence of such transitions for nonelderly adults and corresponding patterns of healthcare utilization and expenditures have not been well characterized.
METHODS: We analyzed the 1998 Medical Expenditure Panel Survey to characterize the insurance status and insurance transitions for individuals aged 19–64 years old (unweighted n = 12,856). We used multivariate negative binomial regression to examine the association of insurance transitions with measures of healthcare utilization, and used 2-step logistic-linear multiple regression to analyze patterns of expenditures related to transitions. All models were adjusted for age, gender, race/ethnicity, presence of chronic condition(s), receipt of SSI due to disability, household income, marital status, education, employment status, region of residence, and presence of child dependents. Analyses accounted for the complex sampling design of MEPS.
RESULTS: In 1998, 24.34 million adults (15%) were continuously uninsured, compared to 118.54 million (73.1%) who were continuously insured through private or public sources. Over 19 million adults experienced 1 or more transitions in insurance status that involved a period of uninsurance: 8.36 million (5.2%) experienced uninsured-to-insured (U-I) transitions, while 10.98 million (6.8%) experienced insured-to-uninsured (I-U) transitions. In multivariate models, utilization of emergency visits was significantly higher among adults with U-I transitions than among those continuously uninsured (incidence rate ratio = 1.51; 95% CI 1.11, 2.04); emergency visit patterns did not otherwise differ by insurance status. Compared to continuously uninsured persons, adults who were continuously insured or had I-U or U-I transitions had significantly more frequent inpatient discharges and office-based provider visits. Adjusted mean annual healthcare expenditures per person were only slightly higher for continuously insured adults ($2,013; 95% CI $1,882, $2,144) than for adults with U-I transitions ($1,870; $1,475, $2,266) and I-U transitions ($1,861; $1,437, $2,286), all of whom had significantly higher mean total expenditures than continuously uninsured adults ($1,147; $922, $1,372). Prescription medication expenditures revealed a similar pattern.
CONCLUSION: Our findings suggest that classification of health insurance based on current status alone may obscure distinct patterns of health services use among adults with insurance transitions. Moreover, examination of the effects of transitions may inform evaluations of programs designed to facilitate and maintain insurance coverage for US adults.

HEPATITIS C PATIENTS: WHAT DO THEY REALLY MEAN WHEN THEY SAY, "I QUIT DRINKING"? S.W. Kanuch[1]; N.V. Dawson[2]; R.C. McCormick[2]; E.P. Stoller[2]; C.E. Blixen[3]; A.T. Perzynski[2]; J.J. Terchek[2]. [1]MetroHealth Medical Center, Cleveland, OH; [2]Case Western Reserve University, Cleveland, OH; [3]Cleveland Clinic Foundation, Cleveland, OH. *(Tracking ID #115979)*

BACKGROUND: Greatly reducing or eliminating alcohol use may importantly enhance the prognoses of patients with Chronic Hepatitis C virus (HCV), even if they are not candidates for HCV treatments. Little is known about factors related to alcohol use among patients who are not dependent on alcohol and who have a disease or receive medication for which alcohol is contraindicated. To gain insight into these factors, we asked alcohol non-dependent patients who are positive for HCV about their alcohol use and found that there is considerable variability in what a patient may mean when he says, "I quit".
METHODS: Subjects (N = 30) were black (16), white (10), and Hispanic (4) males (17) and females (13) aged 18 years or older, who were diagnosed with HCV at an urban teaching hospital. To be eligible for the study, patients had to be non-dependent drinkers, determined by having an AUDIT (Alcohol Use Disorders Identification Test) score less than 11. Patients were given a pencil-and-paper questionnaire with the question, "Did you stop drinking due to your diagnosis?" and with the AUDIT questions. Eligible patients who consented were interviewed using a semi-structured, open-ended format. Interviews were audiotape recorded, transcribed, and coded. Transcript-based techniques were used to analyze the findings.
RESULTS: During the interview 20 patients said that they quit drinking or referred to themselves as a non-drinker. During the course of the interview, 6 of these respondents reported drinking on "special occasions" and 5 of them revealed that they had merely changed their drinking pattern to reduce the amount and/or type of alcohol consumed. 8 respondents indicated on the questionnaire that they had quit drinking with diagnosis. 2 of these respondents revealed during the interview that they had reduced their alcohol intake rather than remaining abstinent. In all, 12 of the 30 respondents indicated in some format that they quit, yet continued to consume some alcohol.
CONCLUSION: These findings suggest that the lay definition of "quitting" is variable. Quitting may imply a reduced pattern of drinking behavior. The sample size reported here is not sufficiently large to generalize about the prevalence of these findings to the general HCV population. Studies with larger samples are being carried out to further examine alcohol use behaviors in the face of an HCV diagnosis.

HEPATITIS C PREVALENCE AND RISK FACTORS IN AN URBAN PRIMARY CARE PRACTICE. T.M. Sturm[1]; A. Federman[1]; J. Wisnivesky[1]; N. O'Connor[1]; D. Gardenier[1]; T. McGinn[1]. [1]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #117559)*

BACKGROUND: Hepatitis C virus (HCV) prevalence has been estimated at 1.8 % nationwide, and 3–5% in primary care settings. It is estimated that half of patients with HCV have not been identified. Since routine screening for HCV has not shown to be cost effective, it is essential to be able to identify high-risk patients in primary care settings and initiate effective screening practices. Our goals are to determine the prevalence of HCV antibody among adults in an East Harlem hospital-based primary care practice, and to identify risk factors for infection.
METHODS: A 27-item risk questionnaire was developed to identify potential risk factors, and was divided into 5 exposure domains: occupational, medical, general exposure, personal care, and risk behavior situations. Adult patients waiting to be seen by a provider in a hospital-based primary care practice were randomly recruited to complete the questionnaire and have blood tested for HCV antibody.
RESULTS: A total of 1,000 patients were recruited, with a 33% refusal rate. Those who refused participation were older (mean age 58 vs. 51, $P < .05$), more likely to be African-American (48% vs. 34%, $P = .000$) and have Medicare (38% vs. 17%, $P = .000$). Patients agreeing to participate were more likely to have Medicaid (55% vs. 45%, $P < .001$) or private insurance (18% vs. 12%, $P = .004$) and be Hispanic (53% vs. 40%, $P = .000$). There was no difference between participants and non-participants in gender or type of appointment. Among study participants the mean age was 51, 74% were female, 55% self-reported Hispanic ethnicity, 34% African-American, and 55% had Medicaid insurance. HCV prevalence was 8.3%, with 30% of those being a new diagnosis. Stepwise logistic regression identified six variables significantly associated with HCV positivity: puncture/injection with a needle that may have been used before [OR 13.7, 95% CI (5.2 to 36.6)], work as police/fire/EMS/correction officer [OR 9.0, CI (1.9 to 42.5)], history of abnormal liver blood tests [OR 6.2, CI (2.9 to 13.3)], cocaine use ever [OR 3.6, CI (1.8 to 7.3)], history of a positive test for HIV or hepatitis B [OR 3.8, CI (1.5 to 9.4)], and Medicaid insurance [OR 2.4, CI (1.2 to 4.8)]. Individuals under age 40 had a lower odds of infection [OR 0.1, CI (0.03 to 0.54)].
CONCLUSION: HCV prevalence in this largely Hispanic and African-American urban primary care practice is 8.3%, significantly higher than reported in other primary care settings. Among patients with HCV, 30% were unaware of their infection. The patient characteristics identified here can be used to derive an instrument to guide screening practices in similar primary care environments.

HEPATITIS C SEROPREVALENCE IN GENERAL MEDICINE AND TRAUMA SERVICES. B.J. Turner[1]; K. Brady[1]. [1]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #117433)*

BACKGROUND: Hepatitis C virus (HCV) infection warrants efforts to screen patients in high prevalence settings for both primary and secondary prevention purposes. We conducted an anonymous seroprevalence study in inpatients in two urban hospitals to determine the frequency and predictors of undiagnosed HCV in general internal medicine (GIM) and trauma services.

METHODS: From 8/02–10/02, we obtained 789 left over sera for 998 unique patients (79%) who were aged 17–65 and admitted to 2 GIM services (university hospital (UH) and affiliated hospital (AH)) or the trauma service at the UH. We obtained demographics and clinical histories from in- and out-patient administrative files for up to two years before admission. After removing all identifiers, an outside lab performed anti-HCV EIA and, among those with a positive test, HIV EIA with Western Blot confirmation. We estimated a logistic regression model to identify predictors of undiagnosed HCV.
RESULTS: Of the 789 tested, 65 (8.2%) had known HCV and, of those with HCV, 8 were HIV+ (12.3%). Of the remaining 724 patients without known HCV, the demographics were: mean age 44, 65% Black, 35% White, 50% male, 25% married, 63% single, and 20% trauma. Of these 724 patients, 63 (8.7%, 95% CI 6.7, 11%) had undiagnosed HCV. Of the 63 with undiagnosed HCV, 7 were HIV+ (11.1%). Among the 724 patients without a prior HCV diagnosis, the adjusted odds ratio (AOR) of undiagnosed HCV was increased for: single vs married [2.24, CI 1.05, 4.81] and trauma vs AH GIM service [2.84, CI 1.04, 8.40]. A trend was observed for a greater AOR of HCV for UH GIM vs AH GIM service [2.18, CI 0.96, 5.63]. The AORs of unknown HCV were lower for age 17–39 vs >50 [0.27, CI 0.12, 0.57] and tended to be lower for women vs men [AOR 0.60, CI 0.34, 1.06]. Race was not associated. Of 2,850 persons admitted yearly to GIM and trauma without known anti-HCV+, we estimate that 250 are anti-HCV+ but are likely to be unaware of this infection.
CONCLUSION: Roughly equal numbers of admissions to the study services had diagnosed HCV and apparently undiagnosed HCV. Undiagnosed HCV was more likely in older, single, male patients who were admitted to the university hospital's trauma and GIM service. Since nearly 10% of admissions had apparently undiagnosed HCV, these data support focused efforts to screen patients for HCV risk and offer testing to those with HCV risk factors.

HEPATITIS C VIRUS KNOWLEDGE AND PRACTICE PATTERNS AMONG PHYSICIANS WHO TREAT DRUG USERS: A NATIONWIDE SURVEY. A.H. Litwin[1]; H. Kunins[1]; K. Berg[1]; J. Arnsten[1]; I. Soloway[1]; A.D. Federman[2]; M.N. Gourevitch[1]. [1]Albert Einstein College of Medicine / Montefiore Medical Center, Bronx, NY; [2]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #116977)*

BACKGROUND: Screening for and management of hepatitis C virus (HCV) infection are critical for the health of patients with substance use disorders, yet little is known about HCV-related knowledge or practice patterns among physicians who care for drug users.
METHODS: From 6/03–9/03 we conducted a survey of substance abuse treatment physicians currently providing care to drug users. The survey was mailed to a random national sample of members of the American Society of Addiction Medicine (N = 810), and to all physicians listed as addiction specialists on the rosters of the New York State Office of Alcoholism and Substance Abuse Services and the Medical Society of the State of New York (N = 123).
RESULTS: The response rate was 54% (N = 506), of whom 375 reported currently providing care to substance users. Of these, 25% were internists, 24% were family practitioners, and 80% were board-certified in their specialty. Respondents reported a mean HCV prevalence of 32% among their patients. Physician knowledge of treatment eligibility criteria and efficacy was poor when compared to the recently revised National Institutes of Health 2002 recommendations. Sixty-five percent believed that patients actively using illicit drugs were not eligible for treatment, 56% believed that patients with normal LFTs were not eligible for treatment, and 84% did not understand that HCV genotypes 2 and 3 were associated with sustained viral response rates of over 75%. Physician knowledge of the natural history of HCV was also inaccurate; only 38% understood that a minority (fewer than 30%) of chronically infected patients develops cirrhosis after 20 years of infection. Despite these gaps in knowledge, physicians reported screening 75% of injection drug users for HCV antibodies, and counseling 92% of HCV-infected patients about alcohol consumption. Hepatitis A and B vaccinations were recommended to 53% and 59% of non-immune HCV-infected patients, respectively. Eighty-three percent of physicians reported referring at least one patient to a HCV specialist over the last 12 months, with a median of 10 referrals per physician.
CONCLUSION: Although physicians who treat drug users report performing HCV-related screening, secondary prevention of liver disease and referral to treatment, we identified substantial gaps in knowledge regarding eligibility for and assessment of HCV treatment. To improve the health of HCV-infected persons, active efforts to improve HCV-related knowledge among physicians providing care to drug users are urgently needed.

HIGH PREVALENCE OF OSTEOPENIA IN OLDER MEN IS NOT ASSOCIATED WITH HIV INFECTION OR PROTEASE INHIBITOR USE. J.H. Arnsten[1]; R. Freeman[1]; A.A. Howard[1]; M. Floris-Moore[1]; R.S. Klein[1]. [1]Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY. *(Tracking ID #115973)*

BACKGROUND: Osteopenia is a recently described adverse event in HIV-infected patients and a sequela of normal aging in both men and women. In men, aging accelerates bone loss, with a prevalence of osteoporosis in men older than 50 of 19%, approximately half that of women in the same age group. To date, no studies have described the prevalence of reduced bone mineral density (BMD) in older, HIV-infected men.
METHODS: We analyzed BMD of the lumbar spine, hip, and total body in 343 older (age > 50) men, including 219 HIV-infected and 124 HIV-uninfected men. We also analyzed the impact of protease-inhibitor (PI) use on BMD.
RESULTS: The median age of subjects was 54 y (range 50–81). 53% were Black, 27% were Hispanic, and 16% were white. 88% were unemployed, and 71% had graduated high school. Mean body weight was 79.6 kg (range 45–135) and mean BMI was 26.7 (range 18–55); only 31% reported strenuous exercise at least once per week. 90% of subjects had ever smoked cigarettes, and 70% were current smokers. 67% had a history of injection drug use, and this proportion did not differ by HIV status. Among HIV-infected men, 94% had taken antiretroviral therapy (ART) and 77% had taken PIs. The median duration of NRTI use was 36 months, and the median duration of PI use was 24 months (range 0–216 for both). Median CD4 count was 390 cells/mm3. The prevalence of osteopenia (lumbar spine, femoral neck, or total body T-score less than –1.0) among all men was 56% (n = 184), and the prevalence of osteoporosis (T-score less than –2.5) was 16% (n = 53). In univariate analysis, factors associated with osteopenia included lower weight (OR = 1.02, 95% CI = 1.00, 1.03, per kg decrease) and non-Black race (OR = 2.5, 95% CI = 1.6, 3.9). In addition, osteoporosis was associated with BMI (OR = 1.11, 95% CI = 1.03, 1.19 per kg/m^2 decrease) and ever use of prednisone (OR = 4.0, 95% CI = 1.2, 13.3). In a linear regression model, non-Black race, lower BMI, and ever use of prednisone remained associated with reduced BMD of the spine after controlling for age, HIV infection, and smoking. We further found that neither HIV infection nor PI use was significantly associated with reduced BMD at any site.
CONCLUSION: Osteopenia is highly prevalent among older men with or at risk for HIV infection, but is not associated with HIV infection or protease inhibitor use.

HIV PATIENT WORRIES AND SOURCES OF INFLUENCES ON INTENT TO TAKE NEWLY PRESCRIBED MEDICATIONS: ANALYSIS BY AGE. P.G. Clay[1]; R. Campo[2]; J. DeHovitz[3]; D. Johnson[4]; K. Squires[4]; W. Jordan[5]; S. Sajjan[6]; S. Narayanan[6]. [1]University of Missouri-Kansas City, Kansas City, MO; [2]University of Miami School of Medicine, Miami, FL; [3]SUNY Health Science Center, Brooklyn, NY; [4]USC, Los Angeles, CA; [5]Drew University / Oasis Clinic, Los Angeles, CA; [6]Merck & Co., Inc., West point, PA. *(Tracking ID #115246)*

BACKGROUND: Recent data has been published demonstrating the increased likelihood for regimen failure due to non-adherence as age increases. As the population of new and established HIV infected persons continues to age with 21% of all new AIDS cases being age 45 or greater at year-end 2001, it is critical to better understand the influences and critical issues impacting the aging population's willingness to adhere to antiretrovirals.
METHODS: HIV~PRACTICE Cooperative is a multi-center observational study of 304 adult HIV patients (pts) considered for a change in antiretroviral therapy. Pts completed a questionnaire on: worries about treatment, HIV disease knowledge, medication (med) adherence (missing at most one dose within the last three days), provider relationship, and influences on intent to take new meds. Pts were stratified by age <50 & ≥50. Demographic characteristics were examined using Chi-square tests, and differences in worries and sources of influences were ascertained using individual regression models, controlling for demographics, risk behavior, knowledge and physician effects.
RESULTS: Forty five pts (15%, out of 298 pts with eligible data) were of age ≥50 yrs: 18% female; 51% self-identified as African-Americans; 27% Hispanics; and 18% as Caucasians. Fifty nine percent of these older pts reported annual income <$15000 and 37% reported not finishing high school. Compared to pts of age < 50 years, older pts were more likely to: report injection drug risk behavior (12% vs. 27%, $P = .01$), live alone (30% vs. 44%, $P = .049$) and lack adequate HIV knowledge (60% vs. 78%, $P = .02$). There were no significant differences in other pt demographics. In the regression models, older patients were more likely to report higher HIV disease related worries ($P = .003$), and less likely to be influenced by provider on their intent to take new meds ($P = .04$). There were no statistically significant differences observed in med worries, past med adherence and level of influence from media and family/friends on their intent to take new meds.
CONCLUSION: Older patients reported higher HIV related health worries and lower influence of provider on intent to take newly prescribed medications. HIV providers may need to communicate more with these patients—focusing on disease knowledge and establishing a trusting relationship if maximal adherence to antiretrovirals is to be achieved.

HORMONE THERAPY USE AMONG INNER CITY WOMEN AFTER THE WHI. I.M. Helenius[1]; D. Korenstein[1]; E.A. Halm[1]. [1]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #116680)*

BACKGROUND: In 7/02, the Women's Health Initiative (WHI) showed that long term risks of combination hormone therapy outweigh benefits. Preliminary work by others demonstrates a major shift in the use of hormone therapy (HT) among majority women since then. Less is known about how the WHI results have affected minority populations. This study measures patterns of HT use after the WHI among inner city women.
METHODS: We conducted a cross-sectional survey of women in an inner city primary care clinic in New York City. All women who were taking HT (estrogen alone or in combination with progesterone) at the time of the release of the results of the WHI were eligible to participate. Subjects were identified by chart review and approached during regularly scheduled appointments. The survey was administered by trained interviewers, and designed to describe factors involved in the decision to continue or discontinue HT and to explore the experience of women who attempted to discontinue HT.
RESULTS: Between 8/03 and 12/03, 53 of 75 approached patients agreed to participate (75%). Patients' mean age was 59 years (range 45–73), 45% were Hispanic, 45% were African American, 43% had less than a high school education, 77% were unemployed, 17% lived with a partner. 83% had used estrogen therapy (ET) and 32% used combined estrogen-progesterone therapy (EPT). The mean duration of

HT use was 10 years (range 2–31). Two-thirds said they had heard new information about the risks of HT. Sources of information were: television 41%, friends and family 24%, newspaper or magazine 23%, doctor 20%, internet 6%. Since the WHI, 83% patients attempted to stop HT (88% in the ET group and 80% in the EPT group) and 17% continued without attempting to stop. 64% of those who attempted to stop were successful and 36% restarted HT. Patterns were similar among ET and EPT users ($P = .6$). Among patients who attempted to stop, 48% said stopping was their doctor's idea and 41% said that it was their own idea. Three-fourths of those who attempted to stop, did so by stopping "cold turkey," and one-fourth cut down over time. Increased symptoms were common after stopping: hot flashes 71%, fatigue 52%, insomnia 50%, memory loss 39%, mood swings 36%, depression 34%, vaginal dryness 32% and decreased libido 16%. Of those who attempted to stop, 23% used another prescription medication (primarily SSRIs), and 16% used a complementary or alternative medicine (soy products, black cohosh, and combination products) to relieve symptoms. 60% of successful stoppers wished they could continue HT.
CONCLUSION: Since the WHI, the rate of discontinuation of ET and EPT has been high among minority women. However, one-third of women who attempted to stop HT restarted, due primarily to hot flashes. Use of alternative medications for symptom relief was low.

HOSPICE USE AMONG ASIAN AMERICANS DYING WITH CANCER. Q. Ngo-Metzger[1]; R.S. Phillips[2]; E.P. McCarthy[2]. [1]University of California Irvine, Irvine, CA; [2]Beth Israel Deaconess Medical Center, Boston, MA. *(Tracking ID #116733)*

BACKGROUND: Our previous work showed that Asian Americans and Pacific Islanders (AAPI), especially the foreign-born, are less likely to use hospice than white patients, but little is known about hospice use among different AAPI ethnic groups.
METHODS: We used the SEER-Medicare database to study white and AAPI patients diagnosed with cancer at age 66 or older in the Surveillance, Epidemiology, and End Results (SEER) program who died between Jan 1, 1988 and Dec 31, 1998. We linked demographic and cancer characteristics to hospice claims for patients diagnosed with lung, colorectal, prostate, breast, gastric, and liver cancer. Our sample consisted of 175,467 white, 2,145 Chinese, 3,510 Japanese, 1,781 Filipino, 856 Hawaiian, and 322 other Asian patients. We used proportional hazards regression to examine the relation between hospice enrollment and ethnicity after adjusting for patient demographics, place of birth, managed care insurance, year of diagnosis, type of cancer, stage at diagnosis, and tumor registry.
RESULTS: Overall, 20% of patients enrolled in hospice, and use varied by race/ethnicity. The following table shows unadjusted enrollment rates and adjusted hazard ratio (aHR) and 95% confidence intervals for rates of hospice enrollment, comparing whites and AAPIs. aHRs <1.00 indicate lower rates of hospice enrollment among AAPIs, adjusting for demographic and clinical factors.
CONCLUSION: Compared to white patients, AAPI subgroups have substantially lower rates of hospice enrollment.

Hospice Use Comparing AAPI and White Patients

Race/Ethnicity	Hospice Enrollment (%)	aHR (95% CI)
Caucasian	20%	1.00
Chinese	18%	0.62 (0.55–0.69)
Japanese	20%	0.67 (0.60–0.73)
Filipino	15%	0.61 (0.54–0.70)
Hawaiian	24%	0.78 (0.67–0.91)
Other Asian	21%	0.70 (0.55–0.90)
Birthplace		
U.S.-Born	21%	1.00
Foreign-Born	16%	0.97 (0.93–1.01)

HOSPITAL DISCHARGE TO A HOMELESS MEDICAL RESPITE PROGRAM PREVENTS EARLY READMISSION. S.G. Kertesz[1]; S. Swain[2]; M. Posner[3]; J. O'Connell[2]; M. Shwartz[3]; A. Ash[3]. [1]University of Alabama at Birmingham, Birmingham, AL; [2]Boston Health Care for the Homeless Program, Boston, MA; [3]Boston University, Boston, MA. *(Tracking ID #115295)*

BACKGROUND: Clinicians and care managers are often stymied by discharge planning for hospitalized homeless persons. In many cities, a medical respite program (unrecognized by most payors) receives the homeless who no longer need hospital care, but are not ready for the streets or shelters. We used data from the largest U.S. respite program to test whether discharge to respite was associated with reduced odds of early Readmission or Death (R/D), inpatient charges and inpatient days for the hospitalized homeless.
METHODS: We examined R/D occurring within 90 days of discharge from a medical/surgical hospitalization 7/98–6/01, for 784 homeless adults. The predictor of interest was discharge destination, in 4 categories: Respite, Own Care (shelters/streets), Other Care (e.g. nursing home), and Left Against Medical Advice (AMA). We assessed the effect of discharge destination on R/D using logistic regression, and on inpatient days and charges with multiple linear regression. We adjusted for confounders including: comorbidity using Diagnostic Cost Groups (DCG), index hospitalization length of stay (LOS), alcohol and drug abuse, & sociodemographics. Data came from crosslinking 7 administrative sources.
RESULTS: 15% of Respite subjects experienced R/D within 90 days, versus 19% of those discharged to Own Care, 20% of those who Left Against Advice and 22% of those discharged to Other Care ($P = .60$). However, Respite subjects had longer index hospital LOS than Own Care subjects (mean = 6 vs. 3.5 days), and longer LOS predicted greater odds of early R/D. Risk-adjusted results are:

Compared to Own Care, Respite patients had 50% lower odds of early R/D ($P = .03$), 1 less inpatient day ($P = .008$), and $1,740 less inpatient charges ($P = .03$).
CONCLUSION: For acutely hospitalized homeless persons, discharge to a homeless medical respite unit was associated with reduced odds of early readmission or death and reductions in inpatient days and charges. This homeless-customized service model may reduce utilization after discharge, and payors should consider reimbursing for it.

	Respite	*Own Care*	*Other Care*	*AMA*
N (Patients)	136	433	174	41
OR, Early R/D	0.5 (0.3–0.9)	REF	0.9 (0.6–1.4)	1.2 (0.5–2.8)

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	Respite	*Own Care*	*Other Care*	*AMA*
N (Patients)	136	433	174	41
OR, Early R/D	0.50	REF	0.86	1.13
95% Confidence Interval	(0.28,0.89)	REF	(0.54,1.35)	(0.49,2.63)

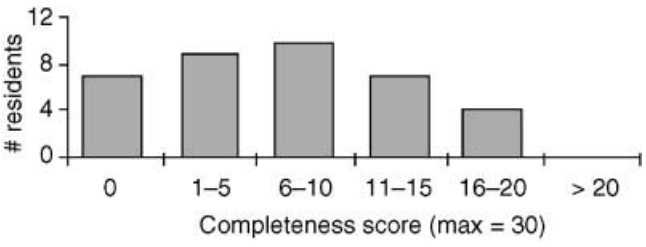
HOSPITALIZED PATIENTS' COMFORT WITH AND PARTICIPATION IN MEDICAL ERROR PREVENTION. A.D. Waterman[1]; T.E. Burroughs[2]; J. Garbutt[1]; V.J. Fraser[1]; W.C. Dunagan[1]; B.M. Waterman[3]; W. Levinson[4]; T.H. Gallagher[5]. [1]Washington University in St. Louis, St. Louis, MO; [2]Saint Louis University, St. Louis, MO; [3]Waterman Research Solutions, St. Louis, MO; [4]University of Toronto, Toronto, Ontario; [5]University of Washington, Seattle, WA. *(Tracking ID #117091)*

BACKGROUND: Although published guidelines recommend that patients participate in medical error prevention, it is unknown whether patients are comfortable with and willing to take error prevention actions while hospitalized.
METHODS: Two weeks after discharge, we conducted a telephone survey asking patients how comfortable they were taking 8 error prevention actions and whether they took these actions during their last hospitalization. We surveyed a random sample of 2,346 patients admitted to a Midwestern hospital system from August–November, 2003. Patients were predominately Caucasian (78%), between 40–79 years (63%), and female (58%), with non-emergency room hospitalizations (91%) requiring a 1–4 day hospital stay (62%).
RESULTS: 90% of patients agreed that they could help prevent errors and most were very comfortable asking what a medication is (91%), asking general medical questions (89%), asking staff to confirm their identity (84%), bringing someone to watch for errors (76%), telling staff that an error happened (74%), and helping staff mark the location of a surgical procedure (71%). Patients were not as comfortable asking a doctor or nurse to wash their hands (51% and 57% very comfortable, respectively). During their hospitalization, of the 161 patients who reported that a medical error occurred, 79% reported it to medical staff. For the other behaviors, 75% of patients (N = 2,346) asked general medical questions or what a medication was, but less than 38% took any of the other error prevention behaviors. Only 4% of patients asked doctors or nurses if they washed their hands. In a multivariate model, patients who were not Caucasian ($P = .003$) and patients who were in the hospital longer than 11 days ($P = .04$) were more likely to ask doctors if they had washed their hands than other patients.
CONCLUSION: Hospitalized patients' interest in and comfort with taking error prevention actions currently does not translate into action. Interventions to increase patient comfort with specific behaviors, particularly those that may seem rude to medical staff, are needed.

HOW "COMPLETE" ARE MEDICINE RESIDENTS' EFFORTS AT INFORMED CONSENT FOR PROSTATE-SPECIFIC ANTIGEN SCREENING? M.H. Farrell[1]; J.M. Stein[1]; L.K. Ladouceur[1]; E.C. Chan[2]. [1]Yale University, Waterbury, CT; [2]University of Texas Health Science Center at Houston, Houston, TX. *(Tracking ID #116573)*

BACKGROUND: Cancer screening with prostate-specific antigen (PSA) is controversial. Professional guidelines recommend informed consent before screening, but are unclear what to include in counseling. Chan et al. (***Am J Med*** 1998;105:266–274) used experts and couples to define the "reasonable person" standard of consent for PSA screening to include 3 ***bare-minimum***, 7 ***conversation*** and 7 ***brochure*** facts. We adapted this list into a 34-item structured implicit tool to assess "completeness" of counseling.
METHODS: As part of a project to develop communication quality assessment tools, we taped visits between 39 internal medicine residents and 5 male 50-yo standardized patients trained to ask about PSA. Interviews were done without any preceeding teaching. We reviewed PSA transcripts using the structured implicit tool derived from the Chan study. To assess reliability, 2 authors reviewed 55% of transcripts and 3 authors reviewed 24%. We constructed a "completeness" score with weighted points as shown in figure 1.
RESULTS: The 3 most common facts included were: ***an elevated PSA result may lead to other tests to see if cancer is present*** (61% residents), the bare-minimum fact ***false positive PSA result can occur*** (53%), and ***PSA screening is controversial*** (47%). The other 2 bare-minimum facts (false negative results and uncertainty about mortality benefit) were included by <20% of residents. The mean completeness score (reflecting all 3 categories) was 7.2 (SD 5.7) with a peak of 19.

Of the 39 PSA transcripts, only 2 included all 3 bare-minimum facts; 57% included at least one. The mean numbers of conversation and brochure facts cited were 1.8 (SD 1.5) and 1.0 (SD 0.9) respectively, but 46% of residents cited at least one conversation fact and 59% at least one brochure fact.
CONCLUSION: Completeness of PSA counseling varied in this resident sample, but did not consistently cover content considered bare-minimum for the reasonable person standard for informed consent. Educational programs and quality assessment tools may be needed to improve the way residents counsel patients about PSA screening.



HOW GOOD IS THE AGREEMENT BETWEEN PROSPECTIVELY AND RETROSPECTIVELY COLLECTED DATA COMPRISING THE PNEUMONIA SEVERITY INDEX? D.A. Aujesky[1]; R.A. Stone[1]; D.S. Obrosky[1]; D.M. Yealy[1]; T.E. Auble[1]; M.J. Fine[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115790)*

BACKGROUND: Although the Pneumonia Severity Index (PSI) is a validated prediction rule used prospectively to guide the admission decision and retrospectively for risk stratification, no prior studies have compared the prospective to the retrospective application of the PSI. We sought to compare the agreement for individual prognostic variables and PSI risk class using data collected prospectively and by retrospective chart review in a large cohort of patients (pts) with community-acquired pneumonia.
METHODS: We analyzed data from a randomized clinical trial to compare 3 PSI implementation strategies of low [LOW], moderate [MOD], and high [HIGH] intensity in 32 hospital emergency departments (EDs), to assess the agreement between data collected prospectively by ED personnel and retrospectively by trained chart abstractors in the same patients. Within each implementation arm, we examined the agreement for the 20 variables that comprise the PSI: 3 demographics, 10 history and physical examination findings, and 7 laboratory and radiographic variables. We also assessed the agreement for the 5 PSI risk classes into which pts were classified and whether pts were defined as low-risk (classes I-III) versus high-risk (classes IV and V). Concordance was measured using total percent agreement (% agree) and the unweighted kappa statistic for dichotomous variables. For comparison of PSI risk classes, we used the weighted kappa statistic.
RESULTS: A total of 744, 1,171, and 1,305 pts were in the LOW, MOD, and HIGH intervention arms, respectively. The mean difference in prospectively and retrospectively collected pt age was 0 years (95% CI: –3 to 3 years). For all other prognostic variables, the % agree ranged from 84.8% to 100% and kappa ranged from 0.31 to 1.0 for the LOW arm; the corresponding ranges were 86.1% to 100% (% agree) and 0.36 to 1.0 (kappa) for the MOD arm, and 84.7% to 100% (% agree) and 0.21 to 1.0 (kappa) for the HIGH arm. For the 5 PSI risk classes, % agree was 92.3% (LOW), 93.7% (MOD), and 92.0% (HIGH) and the weighted kappa was 0.78 (LOW), 0.82 (MOD), and 0.78 (HIGH). In classifying pts as low versus high-risk, % agree was 86.6%, 89.3%, and 88.4%, and kappa was 0.70, 0.73, and 0.75 for the LOW, MOD, and HIGH arms, respectively.
CONCLUSION: Individual variables comprising the PSI exhibit fair to substantial agreement between prospectively and retrospectively collected data. More importantly, there is a substantial agreement for assignment to the 5 PSI risk classes and classification as low versus high-risk, methodologically validating both prospective and retrospective application of the PSI.

HOW MANY REVIEWS DO YOU NEED? MEASURING THE QUALITY OF CARE AT CLINIC SITES WITH IMPLICIT PHYSICIAN REVIEW. T.P. Hofer[1]; S. Asch[2]; R.A. Hayward[1]; M.M. Hogan[3]; L.V. Rubenstein[4]; J.L. Adams[5]; E.M. Kerr[1]. [1]University of Michigan, Ann Arbor, MI; [2]West Los Angeles Veteran's Administration, Los Angeles, CA; [3]Ann Arbor VAMC Center for Practice Management and Outcomes Research, Ann Arbor, MI; [4]RAND, Sepulveda, CA; [5]RAND, Santa Monica, CA. *(Tracking ID #117044)*

BACKGROUND: We sought to develop a more reliable structured implicit chart review instrument for use in assessing the quality of care for chronic disease and to estimate how many reviews would be needed to provide a reliable estimate of quality of care for a clinic site.
METHODS: We conducted a reliability study with records of both outpatient and inpatient care as the objects of measurement. 12 reviewers conducted a total of 1,666 reviews of 621 patient records selected from 26 VA clincal sites in in two regions of the country. Each patient had between one and four conditions specified as having a highly developed evidence base (diabetes and hypertension) or a less developed evidence base (chronic obstructive pulmonary disease or a collection of acute conditions). Multilevel analysis that accounts for the nested and cross-classified structure of the data was used to estimate the signal and noise components of the measurement of quality and the reliability of implicit review.
RESULTS: For COPD and a collection of acute conditions the reliability of a single physician review was low (intra-class correlation = .16–.26) but comparable to most previously published estimates for the use of this method. For diabetes and hypertension the reliability is significantly higher at 0.46. The higher reliability is a result of the reviewers collectively being able to distinguish more differences in the quality of care between patients ($P < .007$) and not due to less random noise or individual reviewer bias in the measurement. The variance at the level of the clinical site was one third of that at the patient level within site and implicit reviews of between 24 and 33 records would give a quality rating with a reliablity of 0.8 at the level of the clinical site.
CONCLUSION: For conditions with a well-developed quality of care evidence base, such as hypertension and diabetes, structured implicit review to assess the quality of care over a period of time could reliably detect differences in quality across practice settings with as few as 25 reviews per site of care and could be a reasonable complement or alternative to explicit indicator approaches for assessing and comparing quality of care. Structured implicit review, as well as explicit quality measures, must be used more cautiously for illnesses for which the evidence base is less well developed, such as COPD and acute, short-course illnesses.

HOW MUCH SHOULD CONVENIENCE COST?: A COST-EFFECTIVENESS ANALYSIS OF XIMELAGATRAN ANTICOAGULANT THERAPY. A.D. Auerbach[1]; M.C. Fang[1]; T. Minichiello[1]; G. Sanders[2]. [1]University of California, San Francisco, San Francisco, CA; [2]Duke University, Durham, NC. *(Tracking ID #117140)*

BACKGROUND: Aside from pharmacodynamic advantages, new oral thrombin inhibitors such as ximelagatran have substantial proposed benefits for patients in that they will not require frequent monitoring of International Normalized Ratios (INR's), thereby potentially improving patient quality of life and reducing laboratory costs. For the prevention of atrial fibrillation-related stroke and prevention of recurrent DVT, data suggest that ximelagatran may be as effective as warfarin without additional bleeding risk. However, ximelagatran will likely be considerably more expensive than warfarin.
METHODS: We performed a cost-effectiveness analysis by developing 2 separate but similar state-transition Markov models; one posited a hypothetical cohort who required lifelong anticoagulation for atrial fibrillation (AF) and the other studied a cohort who required lifelong anticoagulation after recurrent deep vein thrombosis (DVT). In each model, patients received either warfarin or ximelagatran. Our base case assumed that these agents were similar in terms of efficacy and risk for bleeding, but patients receiving ximelagatran were assumed to require less frequent lab testing, and to have a normal quality of life while anticoagulated. We then modeled what level of incremental annual cost or potential efficacy differences would support widespread use of these agents in terms of quality adjusted life expectancy (QALY) and marginal cost-effectiveness ratios (MCER).
RESULTS: Using base-case assumptions of an annual drug cost of $1,440 ($4/day) for ximelagatran and $237 ($0.65/d) for coumadin, use of ximelagatran in patients with AF produced longer quality-adjusted life expectancy (0.21 QALY), but at substantial marginal cost ($113,600/QALY); similar findings were observed in patients with DVT ($109,400/QALY). Assuming equal efficacy, MCER's for ximelegatran were less than $100K/QALY when the agent's annual costs were less than $1,300/yr (approximately $3.60/d) in both models; MCER's for ximelagatran were below $50K/QALY when drug costs were less than $900/yr. For every 1% relative improvement in efficacy or bleeding risk there was a drop of $5–7,000/QALY in marginal cost-effectiveness of ximelagatran for AF and DVT patients, giving MCER's < $50K/QALY if new agents were at least 14% more effective or safe than warfarin.
CONCLUSION: Quality of life improvements and cost reductions related to less frequent INR monitoring may not make ximelagatran a cost-effective alternative to warfarin if ximelagatran costs substantially more than current therapy. Clinicians should feel comfortable prescribing these agents at higher cost, however, if ximelagatran is proven to be even moderately more effective or safe than warfarin.

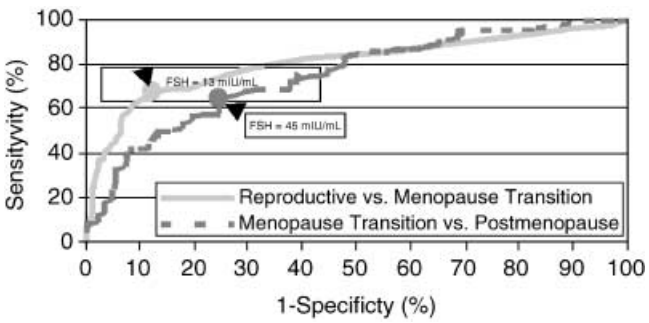
HOW PRIMARY CARE PROVIDERS TALK TO PATIENTS ABOUT ALCOHOL: A QUALITATIVE STUDY. K. McCormick[1]; K.A. Bradley[1]; N.E. Cochran[2]; A.L. Back[1]; J.O. Merrill[1]; E. Williams[1]. [1]University of Washington, Seattle, WA; [2]Dartmouth College, White River Junction, VT. *(Tracking ID #116949)*

BACKGROUND: Hazardous and problem drinkers have been shown to benefit from alcohol counseling by a primary care provider. However, most at-risk drinkers do not receive such counseling, and little is known about alcohol-related discussions that do occur. The purpose of this study was to describe the style and content of alcohol-related discussions between at-risk drinkers and their providers in order to inform future educational efforts.
METHODS: We conducted qualitative analyses of 39 audiotaped visits to a VA General Medicine Clinic by patients who screened positive for at-risk drinking and discussed alcohol use with their providers. Both patients (N = 29) and providers (N = 14) were unaware of the study's focus. One investigator coded all audiotapes, and two others coded a subset of the tapes. To enhance trustworthiness, 4 other general internists evaluated the thematic coding scheme as it was developed, and reviewed the coding periodically.
RESULTS: Three major themes have emerged. First, providers did not have a consistent method for assessing patients' drinking practices, providing feedback, or offering advice. A second overarching theme was awkwardness on the part of the provider, as suggested by vague, fractured language, unclear advice, and abrupt, premature closure. Finally, differences between smoking- and alcohol-related discussions were observed. When addressing smoking, providers elicited specific information, and provided explicit feedback and advice. The smoking-related discussions also lacked the awkward elements that were noted during discussions about alcohol.

CONCLUSION: Our findings suggest that providers are uncomfortable during alcohol-related discussions, and lack a standardized approach to address at-risk alcohol use. Smoking-related discussions differ in both regards, as providers appear better prepared to discuss smoking in a coherent and comfortable manner. This study highlights important elements to address in educational interventions that seek to increase rates of evidence-based alcohol-related counseling.

HOW USEFUL IS FOLLICLE STIMULATING HORMONE IN ASSESSING MENOPAUSAL STATUS? J.B. Henrich[1]; J. Hughes[2]; S. Kaufman[3]; D. Brody[4]. [1]Yale University, Hamden, CT; [2]The Orkand Coporation, Falls Church, VA; [3]The National Institute of Child Health and Human Dev., Bethesda, MD; [4]National Center for Health Statistics, Bethesda, MD. *(Tracking ID #116807)*

BACKGROUND: Follicle stimulating hormone (FSH) is the most commonly used marker of the menopause; however, its usefulness has been questioned. We used data from the National Health and Nutrition Examination Survey (NHANES 1999–2000) to identify factors associated with FSH levels, and to assess the efficacy of FSH in distinguishing between women in the reproductive, menopausal transition and postmenopause stages.
METHODS: NHANES measures the health and nutritional status of the civilian, non-institutionalized U.S. population using a stratified, multistage sampling procedure. Data are collected through a standardized in-person household interview, and physical and laboratory examinations. Participants eligible for our study were non-pregnant, non-lactating women aged 35 to 60 years without surgical menopause. Standard staging criteria were used to classify women into reproductive stages based on self-reported menstrual history. Independent variables included demographic data, Body Mass Index, cigarette smoking, alcohol use, physical activity, and menopausal hormone use. Outcome measures were: 1) factors associated with FSH in multivariable analysis; and 2) Receiver Operator Characteristic (ROC) curve-derived FSH cutoff points between stages.
RESULTS: 609 women comprised the study sample. Age, reproductive stage, BMI and menopausal hormone use were significantly associated with FSH in multivariable analysis. ROC curves identified optimal FSH cutoff points between the reproductive and menopausal transition stages [FSH = 13 mIU/mL, Likelihood ratio (LR) + = 5.8], and between the menopausal transition and postmenopause stages (FSH = 45 mIU/mL, LR + = 2.6); the former value was a better indicator of the distinction between stages.
CONCLUSION: When combined with the menstrual history, an FSH of 13 mIU/mL may be useful in distinguishing between women in the reproductive and menopausal transition stages; an FSH of 45 mIU/mL is less useful in separating the menopausal transition and postmenopause stages. Clinicians should consider age, menstrual history and FSH collectively when assessing a woman's reproductive stage.



HOW WELL DO CLINIC-BASED BLOOD PRESSURE MEASUREMENTS AGREE WITH RIGOROUS STANDARDS? J. Kim[1]; H.B. Bosworth[2]; C. Voils[2]; M.K. Olsen[3]; T.K. Dudley[3]; M. Gribbin[3]; E.Z. Oddone[2]. [1]Duke University School of Medicine, Durham, NC; [2]Duke University Medical Center, Durham, NC; [3]Durham VA Medical Center, Durham, NC. *(Tracking ID #116445)*

BACKGROUND: There is variability in blood pressure measurements. To optimize the accuracy of blood pressure readings, clinical trials implement a rigorous protocol to reduce measurement bias. However, for outcome studies that evaluate effectiveness of interventions and for physicians who make hypertensive treatment decisions, the blood pressure readings are clinic-based, with less rigorous standards. This study was designed to compare three methods of blood pressure measurements: random-zero sphygmomanometer, digital oscillometric device, and clinic-based methods.
METHODS: Prospective study of 100 patients with an ICD-9 diagnosis of hypertension and an upcoming appointment with their Duke primary care physician. Patients were screened over the phone and scheduled to meet with a research assistant 60 minutes before their doctor visit, or if unable to meet before, directly after their doctor visit. Following strict protocol, four blood pressure measurements were obtained: two with the Hawksley Random Zero (RZ) sphygmomanometer and two with the BPM-100 digital device in an order that was randomized. The clinic-based blood pressure was taken by the clinic RN and entered into the Duke computerized medical record system during the same doctor visit within an hour of the standard assessments.
RESULTS: The patients were 77% female, 78% White, 20% Black, 2% Asian, with a mean age of 64. There was excellent agreement between the RZ readings and the digital readings: the intra-class coefficient (ICC) for systolic blood pressures (SBP) = 0.974 (95% confidence interval: 0.965–0.982), diastolic blood pressures (DBP) = 0.947 (0.923–0.964). There was also excellent agreement between the RZ readings and the clinic-based readings for SBP, ICC = 0.906 (95% CI: 0.832–0.944), but less so for DBP, ICC = 0.774 (0.619–0.860). Clinic-based readings overestimated RZ readings, with a mean overestimation of 8.3 mm Hg for SBP and 7.1 mm Hg for DBP.
CONCLUSION: The RZ and digital devices showed excellent agreement for both systolic and diastolic blood pressures. However, the agreement between the RZ and clinic-based measures was not as good, particularly for DBP. Measurement differences of this magnitude may have implications for outcomes research and quality of care studies that generally rely on clinic-based measurements.

HUNGER AND FOOD INSECURITY IN A VETERAN PATIENT POPULATION. R. Bobba[1]; E.L. Arsura[2]. [1]Salem VAMC, University of Virginia, School of Medicine, Salem, VA; [2]Salem VAMC, Salem, VA. *(Tracking ID #116726)*

BACKGROUND: Although previous clinical observations suggest that some patients in an urban setting experience hunger and food insecurity, there are limited data on the prevalence of hunger in a veteran patient population.
METHODS: To determine the prevalence of hunger and food insecurity in an ambulatory veteran patient population we performed a cross-sectional survey. We surveyed a sample of patients who were seen in either ambulatory general medicine or medical subspecialty clinics over a four week period. Main outcome measures were rates of hunger, food insecurity and associated factors.
RESULTS: Of 400 interviewed patients, 301 (participation rate, 75%) completed the survey either in general medical clinics (n = 145) or in medical subspecialty clinics (n = 156). Of the patients surveyed 49 (16.3%) respondents reported some measure of hunger or food insecurity. 24 (7.9%) reported hunger and missing a meal or abstaining for a whole day or longer. 11 (3.6%) reported not eating because they could not afford food. 15 (4.9%) cut down the size of meals in the previous 12 months and 17 (5.6%) did not have the kind of food they wanted. 16 (5.3%) either worried about whether food would run out before they obtained money to replenish food supplies or put off paying other bills so they would have money for food. 9 (2.9%) used emergency services to obtain food. The population of individuals who suffered from hunger or food insecurity were on average younger than those without hunger (61.8 ± 10.2 years vs. 68.8 ± 10.1 years $P < .008$) and had a lower mean income ($11,000 vs $13,800 $P < .05$). There was no difference in other assessed parameters between the 2 groups including race, sex, home owner ship or level of education attained.
CONCLUSION: Hunger and food insecurity are common among patients seeking care at our veterans facility. Affected individuals are younger and have a lower mean income. There are mental health implications and it needs to be seen if hunger and food insecurity impact physical health.

IDENTIFICATION OF INDIVIDUALS AT HIGH-RISK FOR INHERITED COLON OR BREAST CANCER SYNDROMES IN PRIMARY CARE: IMPLICATIONS OF AN INADEQUATE FAMILY HISTORY ASSESSMENT FOR EARLY SCREENING AND GENETIC TESTING. H. Murff[1]; S. Syngal[2]. [1]Department of Veterans Affairs, Tennessee Valley Healthcare System, Nashville, TN; [2]Dana Farber Cancer Institute, Boston, MA. *(Tracking ID #115389)*

BACKGROUND: To identify individuals who are at high-risk for colon and breast cancer, an adequate and complete family history assessment is required. Guidelines for mammogram and colon cancer screening specify initiating screening at younger ages for individuals with a positive family history; and criteria for genetic testing for both hereditary nonpolyposis colon cancer (HNPCC) and hereditary breast-ovarian cancer (HBOC) syndromes rely almost exclusively on family history information. Little data exists evaluating the adequacy of the family history interview in primary care for these purposes.
METHODS: A retrospective chart review of 995 consecutive new patient visits to 28 primary care physicians. Visits were identified by CPT codes and 93% of visits included family history information. Data was abstracted from chart review regarding the family cancer history information obtained for colon, breast, ovarian, or any HNPCC cancer (endometrial, stomach, small bowel, hepato-biliary, renal-pelvis, ureter, brain).
RESULTS: Family history information on cancer diagnoses was collected on 68% (679/995) of the patients. Four hundred and twelve individuals identified 679 affected first- or second-degree relatives. Age at diagnosis was documented for first and second-degree relatives in only 51% of relatives affected with colon cancer, 38% of relatives affected with breast cancer, 26% of relatives affected with ovarian cancer, and 5% of relatives affected with a HNPCC-associated cancer. No patients (ages 40–49 years with a high-risk family history for colon cancer) were identified whom might be candidates for initiating colonoscopy screening before age 50. Nine women who were ages 30 to 39 years with a high-risk family history for breast cancer were identified as candidates for initiation of mammography screening before age 40. Fifty-six percent were recommended for mammography screening. No patients fulfilled Amsterdam II criteria for genetic testing in HNPCC, although two patients had pedigrees that were suggestive yet lacked data on age at diagnosis. Six women had pedigrees that met published criteria for referral for BRCA1 testing and one patient (17%) was referred.

CONCLUSION: Age at cancer diagnosis was frequently missing from family history assessments, which could have a potential impact on identification of high-risk individuals. When pedigree information does identify high-risk individuals, slightly more than half of high-risk women eligible for early mammography screening undergo screening and few patients are referred for genetic testing.

IDENTIFYING LEARNER NEEDS IN GERIATRIC PRESCRIBING. A.M. Wolf[1]; N.B. May[1]; B.R. Huot[1]; J.M. Schectman[1]; J.D. Voss[1]; M.L. Plews-Ogan[1]; J.M. Evans[1]. [1]University of Virginia, Charlottesville, VA. *(Tracking ID #116849)*

BACKGROUND: The high incidence of adverse drug events (ADEs) in the elderly, together with the burgeoning geriatric population, highlights the importance of assuring that internists are competent in geriatric prescribing. To date no geriatric prescribing needs assessment has been nationally disseminated to inform internal medicine educators.
METHODS: A focus group of internal medicine residents (PGY1–3) was assembled to address the topic of geriatric prescribing. Results of the focus group were used to develop a survey, distributed to all categorical and primary care track residents in a university residency program. Survey questions measured level of preparedness to prescribe for the elderly in 7 domains (5-point scale, 1 = unprepared, 5 = very prepared), and asked residents to rate their agreement (5-point scale) with statements about prescribing confidence, concern regarding missing ADEs, and polypharmacy.
RESULTS: Nine residents participated in the focus group and 65 (79%) responded to the survey. The focus group identified several major areas of perceived need: (1) strategies to reduce polypharmacy ("we're taught how to add, not subtract") (2) how to incorporate metabolic changes of aging into prescribing (3) psychotropic drug prescribing in the elderly, especially Alzheimer's medications (4) better utilization of outpatient pharmacists for both education and quality assurance (5) access to geriatricians in residents' primary care training setting (6) strategies to better detect ADEs. Survey respondents reported the following levels of preparedness (from least to most prepared): prescribing dementia medications (mean response 2.7); integrating age-related changes into prescribing (3.0); prescribing pain medications (3.3); prescribing antidepressants (3.5); reducing polypharmacy (3.6), and awareness of high-risk drugs (3.7). Thirty-six percent of residents were concerned they were missing serious ADEs in their elderly patients. Most (74%) felt that polypharmacy was a significant problem among their patients. Only 3% of residents felt very confident in their overall geriatric prescribing ability. Prescribing confidence improved significantly with level of training in all domains except analgesic and antidepressant prescribing. Concern regarding missing serious ADEs declined with training level ($P = .04$), but concern regarding polypharmacy did not vary by training level (= .5). Residents who felt that there is little difference between caring for elderly and non-elderly patients were less likely to identify polypharmacy as a significant problem in their elderly patients ($P = .02$).
CONCLUSION: Curricular efforts in the domain of geriatric prescribing should focus on prescribing dementia and pain medications, adjusting prescribing to age-related metabolic changes, reducing polypharmacy, and detecting ADEs. Geriatricians and pharmacists should be better integrated into residents' usual practice settings.

IMPACT OF A MASS MEDIA CAMPAIGN TO IMPROVE ANTIBIOTIC USE. R. Gonzales[1]; K. Corbett[2]; S. Wong[3]; A. Deas[2]; B. Leeman-Castillo[2]; J. Maselli[1]; A. Sebert-Kuhmann[2]; J. Glazner[4]; R.S. Wigton[5]. [1]University of California, San Francisco, San Francisco, CA; [2]University of Colorado, Denver, Denver, CO; [3]Denver Health and Hospital Authority, Denver, CO; [4]University of Colorado Health Sciences Center, Denver, CO; [5]University of Nebraska System, Omaha, NE. *(Tracking ID #116754)*

BACKGROUND: Office-based educational interventions are effective, but costly, strategies for reducing unnecessary antibiotic use in community practices. We evaluated the impact of a low-cost ($88,628 for media placement) mass media campaign—"Get Smart: Use Antibiotics Wisely"—on office visits and antibiotic prescriptions for acute respiratory tract infections (ARIs).
METHODS: The campaign was launched Nov 1, 2002, and included billboards (n = 5), bus tails (n = 40), bus stop posters (n = 20), interior bus signs (n = 150), National Public Radio spots (n = 60), and airing (n = 112) of a Spanish language public service announcement. Office visit and pharmacy claims data were provided by 4 large managed care organizations (MCOs) prior to (Nov 01–Feb 02) and following (Nov 02–Feb 03) the intervention. Office visits for ARIs were based on ICD-9 codes for nonspecific URI, pharyngitis, sinusitis, bronchitis, otitis media and pneumonia. Separate sample, random-digit-dialed telephone surveys asked respondents (in English or Spanish) if they had made a medical office visit for any reason during the past 3 months. Tests of significance included mixed-effects models for comparing office visit and antibiotic prescription rates, and multivariable logistic regression for comparing proportions of telephone survey respondents with a recent office visit before and after the campaign.
RESULTS: Following the campaign, pediatric office visits for ARIs declined to a greater extent in the intervention area (–28%) compared with the control area (–17%) ($P = .002$) (intervention-attributable MCO visits avoided = 2,594). Conversely, adult office visit for ARIs declined the same amount in the intervention area (–22%) compared with the control area (–24%) ($P = .61$). A similar pattern was detected by telephone survey. Among parents of young children (age < 6 yrs), there was a decrease in office visits reported by respondents residing in the intervention area (–9%) compared with the control area (+21%) ($P = .04$; adjusting for age, gender, Spanish language and insurance status). There was no significant difference between groups in office visit rates reported by respondents who were not parents of young children (+5% vs. +9%) ($P = .64$). Pediatric and adult antibiotic prescription rates for ARIs ranged between 37% and 45%, and did not differ significantly between areas.
CONCLUSION: A low-cost mass media campaign reduced pediatric office visits for ARIs—the primary target of the campaign—but not antibiotic prescribing behavior. Analysis of pharmacy-level antibiotic dispensing data is needed to confirm that the decrease in office visits corresponds to a decrease in community-level antibiotic use.

IMPACT OF A TEACHING TOOL: A STRUCTURED DEBATE ABOUT SCREENING MAMMOGRAPHY FOR WOMEN IN THEIR FORTIES. I.M. Helenius[1]; C.E. Goldstein[2]; D. Korenstein[1]. [1]Mount Sinai School of Medicine, New York, NY; [2]University of Calgary, Calgary, Alberta. *(Tracking ID #115584)*

BACKGROUND: In order to effectively counsel women in their 40's about the decision to undergo screening mammography, physicians must be able to discuss the potential risks and benefits of the test. We designed and implemented an evidence based educational program using structured debate to 1) improve residents' ability and willingness to discuss controversial issues regarding mammography with their patients, and 2) increase residents' confidence in clinical decision making regarding screening mammography.
METHODS: We conducted a prospective cohort study on the effect of a teaching intervention during ambulatory block month on 2nd year medical residents between 1/2003 and 9/2003. The intervention consisted of a 3-hour structured debate on the merits of mammography for women in their 40's. Six debates were held over the course of 6 months, with approximately 6 residents participating in each debate. Each debate was structured around three questions: 1) What does the data show? 2) What are the properties of the test and the disease that impact screening? 3) What do patients expect and prefer? Questionnaires utilizing 4- and 5-point Likert scales were administered 2 weeks prior to and 3 months after each debate. Pre- and post-debate answers were compared using the Wilcoxon paired rank test using each resident as his/her own control.
RESULTS: Thirty-three of 36 residents participated in the debates. Of those, 100% completed the pre- and post- questionnaires. 97% agreed that the debate was an effective teaching tool. Almost all reported routinely recommending screening mammography to women in their 50's before and after the debate (100% pre-debate, 94% post-debate, $P = .67$). They were divided on the question of whether they routinely recommend screening mammography to average risk women in their 40's both before and after. (56% agreed and 44% disagreed pre-debate, 51% agreed and 49% disagreed post-debate, $P = .19$). After the debate, 18 residents (54%) became more confident that their practices regarding screening mammography for women in their 40's were supported by the literature, and only 5 (15%) became less confident ($P = .03$). When asked about their comfort discussing mammography screening with their patients 16 (48%) reported an increase, 14 (42%) no change, and 3 (9%) a decrease ($P = .02$). 25 (76%) became more likely to discuss screening mammography with their patients ($P < .001$).
CONCLUSION: An evidence based, structured debate on the pros and cons of screening mammography for women in their 40's effectively improves residents' attitudes about discussing this controversial topic with their patients.

IMPACT OF ADHERENCE, KNOWLEDGE, AND QUALITY OF LIFE ON ANTICOAGULATION CONTROL N.J. Davis[1]; H.H. Billett[1]; H.W. Cohen[2]; J.H. Arnsten[1]. [1]Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY; [2]Albert Einstein College of Medicine, Bronx, NY. *(Tracking ID #115048)*

BACKGROUND: An estimated one-third of patients attending anticoagulation clinics are poorly controlled and at risk for thromboembolic events. However, it is unknown how adherence to warfarin, patient knowledge about warfarin therapy, and perceived impact of warfarin therapy on quality of life affect anticoagulation control.
METHODS: We conducted a cross-sectional survey of patients attending two anticoagulation clinics serving inner city communities in the Bronx, NY. Adherence to and knowledge about warfarin therapy were assessed using multi-item scales, and scale responses were dichotomized to create categories of good and poor. Good knowledge of anticoagulation was defined as ≥70% of correct responses on an 18-item knowledge questionnaire, and good adherence was defined as 100% of adherent responses on a 4-item scale. Good anticoagulation control was defined as having ≥70% of INR values (obtained within 60 days of survey completion) in therapeutic range. Associations of anticoagulation control with adherence, knowledge and quality of life were tested using chi square analyses.
RESULTS: Among 52 respondents, mean age was 50.9; (SD = 16.9) and 64% were female. Only 14% had good anticoagulation control. Mean number of INR values obtained within 60 days was 4.9 (SD = 2.1), and the mean percentage of INR values within therapeutic range was 42% (SD = 27). Good adherence was reported by 50% of participants and was significantly associated with good anticoagulation control (OR = 9.6, 95% CI = 1.1, 84.5, $P = .01$). 37% of participants had good knowledge of anticoagulation. 19% of participants responded that warfarin therapy had a negative impact on their quality of life. Knowledge and quality of life were not significantly associated with good anticoagulation control.
CONCLUSION: The percentage of patients with good anticoagulation control in this inner city anticoagulation clinic was lower than that reported in the general population. Patients who self-reported good adherence were more likely to have good anticoagulation control. Using a simple self-report measure may assist in identifying patients at risk for poor anticoagulation control, and should lead to closer follow-up of non-adherent patients. Patient knowledge of therapy and perceived impact on quality of life were not associated with good anticoagulation control. Interventions to increase adherence are needed to improve anticoagulation control and better realize the benefits of warfarin therapy among inner city, indigent patients.

IMPACT OF ENGLISH LANGUAGE PROFICIENCY ON USE OF CERVICAL CANCER SCREENING AND PHYSICIAN RECOMMENDATION OF PAP SMEARS AMONG HISPANICS. I. De Alba[1]; J.M. Sweningson[1]; A. Hubbell[1]. [1]University of California, Irvine, Irvine, CA. *(Tracking ID #116380)*

BACKGROUND: Although the incidence of invasive cervical cancer decreased in past years in the United States, cervical cancer continues to disproportionately affect Hispanic women. Hispanic women have one of the lowest Papanicolaou (Pap) smear screening rates. Low English proficiency among Hispanics may impose additional barriers, like poor communication and time constraints, on health care providers to recommend screening.
METHODS: We analyzed data from the 2000 National Health Interview Survey. We performed two separate analyses. Our first analysis assessed the impact of English language proficiency on Pap smear use; we included Hispanic women age 18 or older and excluded women who have had a hysterectomy. Our second analysis assessed the impact of patients' English language proficiency on physician recommendation of Pap smears. We limited this sample to Hispanic women, age 18 or older, without a Pap smear in the past three years and excluded women who have had a hysterectomy and those who had not seen a physician in the past year since they could not have possibly received a recommendation by the health care provider during that period.
RESULTS: Our analysis of Pap smear use in the past three years included 2,337 women; 55.9% were highly proficient English speakers. In a logistic regression model, highly English proficient Hispanics were more likely to report having a Pap smear in the past three years (OR = 1.52, 95% CI 1.10–2.10) as compared to the low proficient. Other factors significantly associated with having a Pap smear were household income of $20,000 or higher (OR = 1.50, 95% CI 1.15–1.95), having a usual source of care (OR = 1.92, 95% CI 1.38–2.63), and having health insurance (OR = 1.72, 95% CI 1.25–2.38). A total of 314 Hispanic women were included in the analysis of health care provider recommendation for Pap smear in the past year. In the adjusted analysis, highly English proficient Hispanics were more than two times more likely to receive a recommendation for a Pap smear during the past year as compared to less proficient Hispanics (OR = 2.08, 95% CI 1.01–4.27).
CONCLUSION: Low English language proficiency is a barrier to receive cervical cancer screening and physician recommendation for Pap smears among Hispanics. Intervention aimed at health care providers such as cultural sensitivity training, educational campaigns identifying populations at greater risk of no recommendation and remainder systems prompted by low proficiency patients may increase Pap smear recommendation in Hispanic women.

IMPACT OF FALSE POSITIVE MAMMOGRAMS ON HEALTH CARE UTILIZATION UNRELATED TO BREAST DISEASE: A NOVEL USE OF THE MEDICAL EXPENDITURE-SPANEL SURVEY G.C. Lamb[1]; R. Sparapani[1]; J. Yauck[1]; P. Laud[1]; A.B. Nattinger[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #116580)*

BACKGROUND: Healthy people given a new diagnosis may develop a "labeling" phenomenon, manifested by increased anxiety, disability and doctor visits despite being no more ill than their peers. Such behavior has been documented in women following a false positive mammogram (FP). We sought to determine if this phenomenon is generalizable to the US population at large by employing a novel use of the Medical Expenditures Panel Survey (MEPS).
METHODS: MEPS is a nationally representative survey of health care use and expenditures. Information available includes demographics, diagnoses, health status, use of medical services, charges and payments. All women who received a bilateral screening mammogram in 1996–98 were identified. Those with breast cancer and those with records that did not extend at least 6 mo prior to and 12 mo after the index mammogram were excluded. A FP was defined as any mammogram followed by a breast related procedure within 3 mos or a repeat mammogram within 9 mo. All others were defined as a true negative (TN). Non breast related office visits and charges for the 6 mo preceding and two 6 mo periods following the index mammogram were tallied and compared using a multiple regression model adjusting for visit rate prior to the index mammogram, age, race, perceived health status, census region and income.
RESULTS: 1828 individuals met the inclusion criteria of whom 206 (11.3%) met the definition for a FP. Average age for the group was 55 (range 17–90) and 86% were white. Prior to the index mammogram, the visit rate for both the FP and TN groups was 3.25 visits/yr. Following the mammogram, the mean visit rate for the FP group was 4.50 and for the TN group was 3.49. ($P < .0001$ in the adjusted model). Median charges for the FP and TN groups prior to the index mammogram were $219 and $240. Following the mammogram, charges for the FP group were $540 versus $390 in the TN group. ($P < .017$).
CONCLUSION: In this nationally representative sample, women who had a FP were substantially more likely to visit their physicians in the year following the test than women with a negative test, above and beyond the need to evaluate the abnormal test. This is consistent with the hypothesis that false positive tests can lead to a labeling phenomenon and that this can have significant clinical impact. This phenomenon should be recognized by clinicians and potentially play a role in physician-patient interactions before and after a screening mammogram.

IMPACT OF LOW NUMERACY ON PATIENTS WITH HUMAN IMMUNODEFICIENY VIRUS INFECTION. E. McNeill[1]; C.A. Estrada[1]; C. Ransdell[1]; J.M. Spillane[1]; J.C. Byrd[1]. [1]East Carolina University, Greenville, NC. *(Tracking ID #116108)*

BACKGROUND: Numeracy, the ability to use basic probability and mathematical concepts, has not been studied in patients with human immunodeficiency virus infection (HIV). We assessed numeracy skills in patients with HIV infection and explored the relationships between numeracy, patients' general knowledge of HIV infection, and ability to accurately recall their own CD4 counts and viral loads.
METHODS: In a cross-sectional study of 101 patients with HIV infection, we measured numeracy using a modified Schwartz questionnaire (6 questions) and knowledge of HIV infection with the HIV KQ-18 (a validated questionnaire). The numeracy and the knowledge questionnaires were verbally administered. We used the kappa statistic to compare reported CD4 counts and viral loads with chart abstracted values.
RESULTS: Eighty-one percent of the patients were African American, and 51% were women. Twenty-four percent were employed, and 79% had incomes less than $15,000 per year. Most patients had a low numeracy score, Table. Patients with lower numeracy scores had lower scores of HIV knowledge ($P < .0001$) and a trend towards decreased ability to accurately recall their own CD4 counts and viral loads (lower concordance, kappa).
CONCLUSION: Low numeracy is prevalent in patients with HIV infection. Patients with lower numeracy scores had poorer understanding of their disease process and a trend towards poorer recall of their CD4 counts and viral loads.

Table

Numeracy Score	Patients N (%)	HIV Knowledge, KQ-18	CD4 Kappa	Viral Load Kappa
Low 0–2	52 (51.5)	11.8	0.43	0.22
Medium 3–4	40 (39.6)	15.0	0.58	0.63
High 5–6	9 (8.9)	15.4	0.56	—

IMPACT OF MULTIDISCIPLINARY CASE MANAGEMENT ROUNDS ON INPATIENT COST OF CARE. D.G. Bell[1]; R. Stroebel[1]; E. Tangalos[1]; P. Targonski[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #117193)*

BACKGROUND: Effective health care team communication and care plan management are critical to providing optimal care for hospitalized patients. We expanded our multidisciplinary approach to care by formally instituting case management "rounds" on a daily basis for patients admitted to an academic primary care internal medicine (PCIM) hospital service. Goals were to improve clinical outcomes by enhancing communication and coordination of care by members of the multidisciplinary team. Participants in the case management rounds included attending physicians and unit nurses, physical therapists, social workers, and the consulting pharmacist. Brief case management rounds were conducted daily on the patient unit to discuss each patient's current and expected plan of care and potential barriers affecting that plan, including dismissal planning issues. The objective of this study is to assess the effect of this strategy on length of stay and cost of care.
METHODS: A retrospective analysis was performed utilizing hospitalization data on all 2,486 admissions to the PCIM hospital service during the year 2002. 1,492 patients (60%) were admitted to nursing units utilizing the multidisciplinary case management strategy (CMS). 994 patients (40%) were admitted to other general internal medicine nursing units which were equivalent in staffing and structure, but did not utilize the CMS. These admissions were designated as controls. The same physician teams attended patients across all nursing units, and all other elements of care were uniform between units. Outcomes including length of hospital stay (LOS) and cost of care (net operating income, NOI) were assessed for each management group and controlled for diagnosis related group (DRG) utilizing weighted 2-sample t tests.
RESULTS: After adjusting for admission diagnosis, weighted mean LOS was 0.51 days shorter (SE = 0.5, t = 9.2, $P < .0001$) and NOI was $445 greater (SE = $54.13, t = 8.2, $P < .0001$) for nursing units utilizing the multidisciplinary CMS. The greatest LOS decreases and NOI gains were seen for congestive heart failure, stroke, COPD, and musculoskeletal related DRGs.
CONCLUSION: This study demonstrates the positive financial impact of a strategy utilizing daily multidisciplinary case management rounds on a general internal medicine teaching service at a major academic medical center. Results suggest that optimizing communication and coordination of care reduces length of stay and leads to improvement in cost of care. Future studies will assess the effect of this strategy on quality of care.

IMPACT OF ORGANIZATIONAL CLIMATE AND HECTIC OFFICE ENVIRONMENT ON PHYSICIAN STRESS AND ERROR IN PRIMARY CARE. M. Linzer[1]; L. Baier Manwell[1]; J. Bobula[1]; M. Mundt[1]; E. Williams[2]; B. Horner-Ibler[1]; A. Maguire[3]; J. McMurray[1]; B. Man[4]; M. Plane[1]; M. Schwartz[5]; A. Varkey[4]. [1]Univ of Wisconsin, Madison, WI; [2]Univ of Alabama, Tuscaloosa, AL; [3]Medical College of Wisconsin, Milwaukee, WI; [4]Rush Univ, Chicago, IL; [5]New York Univ, New York, NY. *(Tracking ID #117240)*

BACKGROUND: The impact of organizational climate on medical outcomes is not well understood. The MEMO study (Minimizing Error, Maximizing Outcome) investigates this question through a conceptual model relating working conditions to quality of care.
METHODS: MEMO is a longitudinal study of physicians and patients from NYC, Chicago, Milwaukee, Madison and rural Wisconsin. Physicians completed a survey with: 1) scales measuring stress, satisfaction, and mental health; 2) scales modified from those of Kralewski to assess organizational climate (OC); 3) questions on past errors; and 4) the OSPRE (Occupational Stress and PReventable Error) measure to assess likelihood of future error. Clinic managers provided data on office structure. We used split sample exploratory and confirmatory factor analyses to identify OC domains, and regression analysis to determine predictors of stress, past errors, and

future error. Simple correlation analyses assessed association of key structural variables with physicians' perception of office environment.
RESULTS: Of 420 physicians from general medicine and family medicine, 38% described their office environment as busy tending toward chaotic, and another 10% as hectic or chaotic. Although 79% indicated job satisfaction, 61% agreed work was stressful, 27% noted burnout symptoms, and 31% were moderately or more likely to leave their jobs within 2 years. Domains of OC included leadership values (alpha = .86), quality emphasis (.86), organizational trust (.79), information/communication (.68) and cohesiveness (.66). Chaotic atmosphere predicted stress, dissatisfaction, and poorer mental health (all $P = .001$). Lack of quality emphasis was linked to past errors ($P < .005$). Likelihood of future error (OSPRE alpha = .87) was higher in practices with less emphasis on information ($P < .02$). Physician outcomes were also associated with age, gender, ethnicity, work hours, work control, inadequate resources, and a lesser emphasis on diversity. Strong correlates of a hectic or chaotic office included larger numbers of vulnerable (uninsured and Medicaid) patients ($r = .41$, $P < .001$) and fewer exam rooms ($r = 39$, $P < .001$), but not lower staffing ratios ($r = -0.18$, $P = .12$).
CONCLUSION: Physician stress is prevalent in primary care and is increased in offices with hectic environments. Additional exam rooms may improve hectic offices. Safety and quality in primary care could also be enhanced by emphasizing quality over quantity of care, and with improved communication and information systems.

IMPACT OF PAST PHYSICAL ACTIVITY ON CURRENT PHYSICAL ACTIVITY AND RISK OF CORONARY HEART DISEASE. M. Conroy[1]; N. Cook[2]; J.E. Buring[3]; I. Lee[3]. [1]Massachusetts General Hospital, Boston, MA; [2]Harvard University, Boston, MA; [3]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #115049)*

BACKGROUND: Middle-aged and older women who are physically active have decreased risk of coronary heart disease (CHD). However, little is known about how physical activity during youth influences physical activity and CHD risk later in life.
METHODS: We addressed these questions using data from the Women's Health Study, which comprises 39,876 healthy US health professionals, age ≥ 45 years. At baseline, women reported their physical activity and other variables influencing physical activity or CHD risk. At 24 months, they also reported their physical activity in high school and age 18–22 years. During follow-up over 9 years, 477 women developed CHD. We used multivariable logistic regression to determine the association between physical activity in young adulthood and meeting physical activity recommendations (i.e., 30 minutes of moderate activity on most days of the week) at middle-age. We used proportional hazard regression to estimate the multivariate-adjusted relative risks of CHD according to physical activity during: 1) middle-age; 2) young adulthood; and 3) both middle-age and young adulthood.
RESULTS: Among 37,169 eligible participants, the most active women (vigorous physical activity 10–12 months/year) during young adulthood were more than twice as likely to meet physical activity recommendations at middle-age than the least active (no vigorous activity) (multivariate-adjusted OR = 2.43; 95% C.I. 2.24, 2.63). At baseline, the most active women (≥1,500 kcal/week) had a 39% lower risk of CHD than the least active (<200 kcal/week) (multivariate-adjusted RR = .61; 95% C.I. 0.46, 0.81). However, the most active women during young adulthood did not have a lower risk of CHD occurring during middle-age and older when compared to women who were the least active during young adulthood (multivariate-adjusted RR = 0.81; 95% C.I. 0.58, 1.14). A combined measure of young adulthood and middle-aged physical activity showed no additive effect.
CONCLUSION: Women who are physically active during young adulthood are more likely to be active when middle-aged and older. Physical activity during middle-age predicts lower risk of CHD. Public health initiatives and health care providers should encourage women at all ages to become more physically active to establish healthy habits in younger women and reduce risk of CHD in middle-aged and older women.

IMPACT OF PERCEIVED DISCRIMINATION ON USE OF PREVENTIVE SERVICES. A.N. Trivedi[1]; J.Z. Ayanian[1]. [1]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116120)*

BACKGROUND: Prior research has documented disparities in the use of health services based on race, gender, and insurance status. We examined the frequency of perceived discrimination in the health care system, and the relation between perceived discrimination and the receipt of preventive services.
METHODS: We analyzed the 2001 California Health Interview Survey, a random–digit telephone survey, to assess the relation between the perception of having been discriminated against in a health care setting over the past 12 months and receipt of the following preventive health services over this time period: aspirin use and cholesterol testing among people with heart disease or hypertension, foot examination and HbA1C testing among people with diabetes, colon cancer screening for adults >age 50, PSA testing among men >age 50 , flu vaccination among adults >age 65, mammography among women age 50–79, and Pap testing among women age 18–65. We used multivariate logistic regression to control for multiple demographic and clinical characteristics with SUDAAN software.
RESULTS: Of the 54,968 subjects, 2,830 (4.7%) reported experiencing discrimination in a health care setting over the past 12 months, most frequently related to insurance type (27.4), race (13.7%), or income (6.6%). Female gender, non-white race, lack of insurance, rural residence, low income, lack of high school education, limited English proficiency, presence of comorbid medical conditions, increasing number of physician visits, fair or poor health status, current tobacco use, unmarried status, and high BMI were significantly associated with reporting discrimination (all $P < .05$). Persons who reported discrimination were less likely than those not reporting discrimination to have had HbAIC testing (78.5% vs. 86.1% $P = .035$), cholesterol testing (71.0% vs. 79.2% $P < .01$), mammography (78.4% vs. 83.6% $P = .03$) and PSA testing (37.1% vs. 45.7% $P = .03$.) There was no significant difference in aspirin use (33.4 vs. 35.2% $P = .38$), foot examination (60.8% vs. 67.6% $P = .12$), colon cancer screening (41.8% vs. 44.0% $P = .26$), flu vaccination (62.5% vs. 67.5% $P = .10$) and Pap testing (87.7% vs. 87.1% $P = .61$). After adjustment, there was no significant relation between perceived discrimination and use of preventive services except for cholesterol testing (OR 0.69 (0.55–0.88), $P < .01$).
CONCLUSION: The adjusted association between perceived discrimination and decreased use of preventive health services was relatively small in magnitude and significant only for cholesterol testing. Given the low prevalence of reported discrimination, this factor is unlikely to account for a large portion of observed disparities in receipt of appropriate preventive services.

IMPACT OF REDUCED DUTY HOURS ON EDUCATIONAL SATISFACTION OF INTERNAL MEDICINE HOUSESTAFF. A.R. Vidyarthi[1]; P. Katz[1]; R.M. Wachter[1]; A.D. Auerbach[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117371)*

BACKGROUND: In July 2003, the Accreditation Council for Graduate Medical Education (ACGME) limited resident duty hours to 80 per week. The impact of these duty hour restrictions on educational satisfaction of housestaff is unknown.
METHODS: This cross-sectional study surveyed 125 Internal Medicine Residents rotating through the three hospitals affiliated with the University of California, San Francisco. The main outcome measures included: self report of perceived value of educational activities, frequency of administrative/clerical tasks interfering with educational activities, and educational satisfaction after the implementation of duty hour reduction.
RESULTS: Overall response rate was 76%. Residents rated educational activities such as Morning Report, teaching others, work rounds and attending rounds most highly. Answering pages, paperwork, waiting on hold on the telephone, and scheduling tests and appointments were the most frequent barriers to engaging in the educational activities. After restriction of duty hours, the amount of time spent in educational and administrative activities did not change. Sixty-eight percent of residents stated that decreased duty hours had no impact or a negative impact on education. In multivariable models, residents with the lowest overall work satisfaction were PGY-1s ($P = .007$), those who reported feeling overwhelmed at work ($P < .0001$), and those who reported working more than 80 hours per week ($P = .015$). However, only PGY-1 residents ($P < .05$) and those who felt overwhelmed with work ($P = .01$) were less satisfied with education.
CONCLUSION: In this academic internal medicine training program, we found that duty hour reduction did not improve educational satisfaction or time spent in educational activities. This may be due, in part, to the unchanged burdens of administrative tasks that compromise residents' ability to engage in educational activities. Systematic changes to resident work-life will be needed if duty hour reductions are to improve educational satisfaction.

IMPACT OF RELIANCE ON HELICAL CT ON THE DIAGNOSIS OF PULMONARY EMBOLISM: A BAYESIAN ANALYSIS. S.R. Ranji[1]; K.G. Shojania[1]; R.L. Trowbridge[2]; A.D. Auerbach[1]. [1]University of California, San Francisco, San Francisco, CA; [2]Maine Medical Center, Portland, ME. *(Tracking ID #116774)*

BACKGROUND: Helical CT scan has become the primary test used to investigate pulmonary embolism at many institutions, despite limited evidence to support its use in this fashion. We sought to determine the probability of false-negative and false-positive diagnoses of pulmonary embolism by comparing clinicians' decisions to withhold or institute anticoagulation to the calculated post-test probability of pulmonary embolism.
METHODS: We reviewed the charts of 322 adult patients who underwent helical CT as the initial diagnostic test for suspected PE between 1998 and 2000 at two affiliated teaching hospitals. Pre-test probability of PE was calculated using a validated clinical prediction rule. Post-test probabilities were calculated using published estimates of CT test characteristics and pre-test probabilities; sensitivity analyses within ranges of these estimates were also performed. The post-test probabilities were then compared to clinicians' treatment decisions.
RESULTS: 66 patients were treated for PE (20.5%). Most patients had either a low (n = 184, 57.1%) or moderate (n = 101, 31.4%) pre-test probability of pulmonary embolism. 96.5% of patients who had a positive CT scan were treated for PE, and 95.4% with a negative scan were not treated. Using published estimates of CT test characteristics, only 0.4–3.9% of patients with a negative CT scan likely had an untreated pulmonary embolism (i.e. a false-negative scan). However, approximately 28% of patients with a CT scan read as positive for PE may have been unnecessarily anticoagulated due to a false-positive scan.
CONCLUSION: Clinicians at our institution regarded helical CT results as definitive, anticoagulating virtually all patients with a positive CT scan and withholding anticoagulation in virtually all patients with a negative CT. Our analysis reveals that such reliance on helical CT results may lead to an acceptable false-negative rate, but an unacceptably high false-positive rate. Failure to appropriately apply Bayesian reasoning when interpreting helical CT results may lead to unnecessary anticoagulation of a substantial proportion of patients.

IMPACT OF RESIDENT DUTY HOUR REFORM IN A MEDICINE CORE CLERKSHIP: A WORK-SAMPLING STUDY J.R. Kogan[1]; L.M. Bellini[1]; J.A. Shea[1]. [1]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #116223)*

BACKGROUND: In July 2003, residency programs were required to make significant structural changes to comply with the ACGME's resident duty hour regulations. While

the impact most effects residents, it is important to know the impact on medical students' educational experiences. This study's purpose was to determine, using random work sampling, if there are differences in medicine core clerkship students' daily activities, who they interact with, and the perceived educational value of their experiences before and after implementation of resident duty hour regulations.
METHODS: Almost all students enrolled in our inpatient medicine core clerkship pre (n = 38, 93%) (3/31–6/20/03) and post (n = 37, 95%) (9/29 -12/19/03) duty hour reform agreed to participate. Participants wore a random reminder pager in the hospital, set to signal approximately every 90 minutes for one week. For each signal, students completed a survey asking their activity (direct patient care, indirect patient care, education, other), who they were with and the activity's educational value (1 = low; 5 = high). Students recorded the times they arrived to and left the hospital daily. The proportion of events spent in each activity (event proportion) was calculated and then averaged across all students pre and post reform. Analysis of variance was used to assess group differences.
RESULTS: Sixty-nine students (92%) returned surveys. 804 and 912 surveys were completed pre and post reform respectively. The mean number of surveys completed per student per week was 24.9 (s.d. 7.6); the mean number per day was 4 (s.d. 2.5). No significant differences existed pre and post reform in event proportions for direct patient care (.13 vs .15, $P = .15$), indirect patient care (.35 vs .32, $P = .13$), and education (.38 vs .36, $P = .47$). Students pre and post reform were equally likely to be alone (.38 vs .34, $P = .12$), with their resident (.31 vs .32, $P = .72$), their attending (.14 vs .16, $P = .34$), another resident (.11 vs .12, $P = .83$) and another intern (.16 vs .15, $P = .81$), but more likely to be with their own intern post reform (.33 vs .39, $P = .01$). No differences between groups existed in the perceived educational value of direct patient care activities (3.7 vs. 3.8, $P = 42$), education activities (4.0 vs. 4.1, $P = .16$), or time in the hospital (9.4 vs 9.1 hours/day; $P > .05$) pre and post reform. Indirect patient care activities were more valued pre reform (3.4 vs. 3.2, $P = .03$).
CONCLUSION: Despite significant changes in the structure of our residency program in the post work hour reform era, there were few differences, as assessed by random time sampling, in the time students spent in the hospital, who they interacted with, the proportion of events spent in various activities and their perceived educational value. Generalizability of these findings requires further study.

IMPACT OF THE WOMEN´S HEALTH INITIATIVE RESULTS ON PATIENT´S TRUST IN MEDICAL RECOMMENDATIONS. M.A. Schonberg[1]; R.B. Davis[1]; C.C. Wee[1]. [1]Beth Israel Deaconess Medical Center, Boston, MA. *(Tracking ID #116696)*

BACKGROUND: Contrary to prior evidence, the Women's Health Initiative (WHI), published in 7/02, found that the overall health risks of hormone replacement therapy (HRT) exceeded the benefits. We examined how women on HRT felt about the WHI results and whether it affected their trust in medical recommendations.
METHODS: From 7/03 to 9/03, we perfomed a telephone survey of women randomly selected from a large academic practice who were >50 years and taking HRT as of 7/09/02. We obtained data on sociodemographics, HRT use, WHI awareness, beliefs and emotions about its findings, and confidence in medical advice before and after the WHI. To assess trust, we asked how the HRT experience affected women's willingness to take a new drug recommended by their doctor for prevention of heart disease, osteoporosis, and disease in general, and whether women were more likely to ask about side effects of medications. Using bivariable and multivariable analyses, we identified whether factors such as age, race, education, stopping HRT, or WHI awareness, were associated with being less likely to take a new drug and more likely to ask about the side effects of drugs.
RESULTS: Of 315 eligible women, we interviewed 204 pts (response rate 65%). The mean age of the 204 pts was 61 years, 70% were white, 56% had at least a college degree, 75% had been on HRT for >5 years, 47% were on estrogen alone, and 70% stopped using HRT. Almost all were aware of the WHI (94%), primarily through the media (86%); 82% believed the results of the study. Although 27% reported experiencing a negative emotion such as disappointment or anger after learning the trial's results, 88% remained confident in medical advice. While considering their HRT experience, 31% of pts were less likely to take a new drug to prevent heart disease, 28% were less likely to take one to prevent osteoporosis, and 15% were less likely to take one to prevent disease in general; 45% were more likely to ask about drug side effects than before. After adjustment, having stopped HRT was significantly associated with being less likely to take a new drug to prevent heart disease (aOR 3.1, 95% CI [1.4–6.6]) and to prevent disease in general (4.2 [1.2–14.7]). Pts with at least a college degree were more likely to ask about drug side effects than less educated pts (2.0 [1.1–3.5]). We did not identify any factors associated with being less likely to take a new drug to prevent osteoporosis.
CONCLUSION: Although the WHI reversed recommendations regarding HRT use in postmenopausal women, most women believed the results, were not upset by its findings, and remained confident in medical advice. However, stopping HRT was associated with being less likely to take a new drug to prevent heart disease or disease in general. For these women, their experience with HRT may have affected their trust in medical recommendations for the use of preventive medications.

IMPACT OF VIDEOCONFERENCING ON NIGHTTIME, ON-CALL MEDICAL DECISION-MAKING IN THE NURSING HOME. M. Weiner[1]; G. Schadow[2]; D. Lindbergh[2]; J. Warvel[2]; G. Abernathy[2]; S. Perkins[2]; J. Daggy[2]; P. Dexter[2]; C. McDonald[2]. [1]Indiana University Center for Aging Research, Indianapolis, IN; [2]Regenstrief Institute, Inc., Indianapolis, IN. *(Tracking ID #117387)*

BACKGROUND: Nursing-home residents with medical problems at night often have no direct access to physicians. Off-site physicians order needless tests or referrals based on limited information relayed via telephone by nurses. We developed a videoconferencing system for physicians to evaluate directly residents with acute incidents. We assessed physicians' ratings of decision-making and satisfaction with videoconferencing and determined medical conditions conducive to videoconferencing in the nursing home. We have reported preliminary findings and now report final results. We hypothesized that physicians would rate decision-making as easier in most of the video encounters.
METHODS: Residents of a county-managed nursing home were enrolled and studied between June 2001 and June 2003. We assembled a portable videoconferencing workstation for use in the nursing home and provided 7 attending physicians with home workstations and commercial broadband Internet service. We assessed reasons for calls from the nursing home to on-call physicians between 05:00 PM and 01:00 AM, when a research assistant was available. Physicians received automated prompts to conduct videoconferencing, which they could decline when they felt certain it would not aid clinical management (e.g., simple clarification about an order). Following each video, physicians rated technical difficulties, ease of medical decision-making, and overall satisfaction with the video (scale of 1 to 5, 5 = very satisfied).
RESULTS: We studied 461 video-eligible participants (59% female, 55% African-American, mean age 61 years), 386 of whom generated 1,399 calls from nursing staff to physicians after business hours. Physicians judged 87 of 99 video encounters. Using a scale of 1 to 5, physicians rated videos with a 3 or greater in 75% of cases; the most common rating was 4 (49%). Calls most often occurred for questions about orders (25%), the laboratory's report of abnormal lab values (22%), admission to the facility (14%), or nurse's or aide's note of worrisome examination findings (11%). Lab values and questions about orders accounted for only 8% (each) of videos. Falls or injuries accounted for 3.9% of calls but 11% of videos, and pain or dyspnea accounted for 4.4% of calls but 16% of videos. Technical difficulties were noted in 42% of cases, but physicians indicated that decisions were easier with videos in 71%.
CONCLUSION: Despite technical difficulties, nighttime videoconferencing between nursing-home residents and physicians leads to easier medical decision-making when the alternative is no direct contact with residents. In this setting, videoconferencing is useful to evaluate falls, injuries, pain, and dyspnea. More reliable and portable technology is now available and may provide even greater usefulness of this application.

IMPAIRED HEALTH FUNCTION AMONG WOMEN EXPERIENCING CURRENT INTIMATE PARTNER VIOLENCE. J.M. McCauley[1]; J.C. Campbell[2]; H. Abushomar[3]; L. McNutt[4]; D.E. Ford[2]. [1]Johns Hopkins Community Physicians, Baltimore, MD; [2]Johns Hopkins University, Baltimore, MD; [3]University of Albany (State University of New York), Albany, NY; [4]University at Albany, SUNY, Albany, NY. *(Tracking ID #117320)*

BACKGROUND: Though Intimate Partner Violence (IPV) is experienced by 2–4 million US women a year, it is unclear how IPV affects health function. Our objectives were to compare currently abused to non-abused young women to determine: 1) health outcome score differences 2) dose response relationship between severity of abuse and health function.
METHODS: A representative sample of women (ages 18–44) attending a primary care, community health center in Albany NY completed a computer-administered survey. Emotional, physical and sexual abuse was measured with a modified Composite Abuse Scale (CAS), with 0–3 response = no abuse, 4–10 score = moderate abuse and > 11 = severe abuse. Physical and mental health functions were measured with the SF12. We analyzed this cross-sectional data using frequencies and chi square analyses.
RESULTS: Of the 293 respondents, 53% were 18–29, 65% had <12 years education; 63% were African Americans; 18% had experienced moderate, 17% had severe abuse. Of the 12 SF items, 10 showed significant differences. EMOTIONAL/PHYSICAL/SEXUAL ABUSE SELECTED SF12 ITEMS (*% in each) None Mod High p Self rated health (good/fair/poor) 57.6* 68.3 65.8 0.369 Climbing stairs (limited a little or lot) 36.7 51.3 63.4 0.003 Accomplished: less due to physical health (yes) 21.1 47.5 55.3 0.000 less due to emotional problem (yes) 26.8 43.6 50.0 0.008 Pain interfered with work (little to lot) 42.8 69.1 85.7 0.000 Lots of energy (little to none of the time) 94.9 88.1 88.1 0.118 Physical/Emotional health interfere with social life (little-lot) 51.6 73.8 92.7 0.000
CONCLUSION: There was a dose-response relationship for IPV and both physical and mental function. Young women with low levels of function should have an assessment for IPV.

IMPROVING ANTIBIOTIC PRESCRIBING FOR AMBULATORY PATIENTS WITH SINUSITIS. S.J. Bernstein[1]; M. Daoud[1]; R.V. Harrison[1]; C. Standiford[1]. [1]University of Michigan, Ann Arbor, MI. *(Tracking ID #117330)*

BACKGROUND: Acute sinusitis can range from acute viral rhinitis to acute bacterial sinusitis. Symptoms resolve within 2 weeks without antibiotics in 70% of cases and with antibiotics in 85% of cases. Trimethoprim/sulfamethoxazole (TMP/SMX) and amoxicillin have been shown to be superior to placebo in treating patients with acute bacterial sinusitis. Although other antibiotics have been compared to these agents, none have been shown to be superior. Despite this evidence there is widespread use of other broad-spectrum antibiotics for patients with sinusitis. We evaluated the effectiveness of a program to reduce non-recommended antibiotic use for patients with acute sinusitis.
METHODS: We conducted a quasi-experimental study comparing antibiotic prescribing before (1/2000–6/2001) and after (7/2001–12/2002) distributing physician-specific antibiotic prescribing data. During the latter period a natural experiment

occurred when one department permitted academic detailing, conducted by two physicians, and a second did not. Data were collected on 4,153 and 3,820 managed care patients with sinusitis in the two periods, respectively, who were treated by 112 physicians working in 14 Family Medicine and General Medicine out-patient clinics of an academic health care system. Antibiotics were classified as recommended (TMP/SMX, amoxicillin), second-line alternatives (e.g., amoxicillin/clavulanate, cefuroxime) and not recommended (e.g., azithromycin) according to the institution's sinusitis guideline. To control for time-trends, we assessed antibiotic prescribing for upper respiratory infection (URI) for which there were no guidelines. Data were collected on 5,589 and 5,709 managed care patients diagnosed with a URI in the two periods, respectively. Diagnoses were obtained from encounter forms and antibiotics from a managed care organization's pharmacy files.
RESULTS: Antibiotics were prescribed to 67% of patients with sinusitis before feedback and to 57% of patients after physician-specific feedback ($P < .001$). Similarly, antibiotic prescribing for URI decreased from 20% to 14% ($P < .001$). The use of non-recommended antibiotics for sinusitis decreased from 24% to 15% among physicians receiving feedback and academic detailing ($P < .001$) and from 11% to 8% among physicians who received feedback only ($P = .09$).
CONCLUSION: While academic detailing was associated with reduced use of non-recommended antibiotics it had no significant impact on overall prescribing. Careful evaluation of guideline implementation projects is necessary to avoid falsely attributing success to a program.

IMPROVING DEPRESSION CARE: SYSTEMATIC REVIEW OF MULTIFACETED INTERVENTIONS IN PRIMARY CARE SETTINGS. M.S. Gerrity[1]; J.W. Williams[2]; S.K. Dobscha[1]; J. Deveau[2]; T. Holsinger[2]; B.N. Gaynes[3]; B.K. Moser[2]; A.J. Dietrich[4]. [1]Portland VA Medical Center, Portland, OR; [2]Duke University Medical Center, Durham, NC; [3]University of North Carolina at Chapel Hill, Chapel Hill, NC; [4]Dartmouth Medical School, Hanover, NH. *(Tracking ID #116435)*

BACKGROUND: Depression is a prevalent illness with poor outcomes in primary care settings. A variety of multifaceted interventions to improve depression outcomes have been evaluated. We conducted a systematic review of the literature to determine to what extent multifaceted interventions improve depression outcomes in primary care and to define key components, patients likely to benefit, and required resources.
METHODS: We searched Medline, HealthSTAR, CINAHL, PsycINFO, and a specialized registry of controlled trials from 1966 to December 2002 and bibliographies of pertinent articles. Searches were limited to the English language. We also consulted experts. Included studies met the following criteria: 1) study involved primary care patients; 2) intervention had multiple components enhancing direct patient care; 3) design was a randomized controlled trial; 4) outcomes included depression severity. Pairs of investigators independently abstracted information regarding the 1) setting and subjects, 2) components of the intervention, 3) care management system, and 4) outcomes. Authors were contacted for key missing data.
RESULTS: Ten of the 12 interventions improved depression symptoms over 3 to 12 months (absolute increase of 16% to 30.6% in patients with 50% improvement in symptoms). The two studies that did not improve this outcome involved VA patients and may have differed in other ways. Interventions had 3 to 4 components (decision support, self-management support, delivery system redesign, information systems) and required additional resources to implement. Care management included 4 functions (education and support, monitoring symptoms and adherence, self-management support, psychological treatments) and 3 processes (duration, number of contacts, mental health supervision). Interventions varied greatly within these functions and processes.
CONCLUSION: Multifaceted interventions that include care management can improve outcomes of depression. Research is needed to identify essential intervention elements and subgroups of patients who benefit from additional elements (e.g., psychological treatments).

IMPROVING MEDICAL RESIDENT FATIGUE MAY REQUIRE MORE THAN WORK HOUR LIMITS. J. Friedman[1]; S. Vazirani[2]; J. Tillisch[1]; N.S. Wenger[1]. [1]University of California, Los Angeles, Los Angeles, CA; [2]Greater Los Angeles VA Healthcare System, Los Angeles, CA. *(Tracking ID #117409)*

BACKGROUND: Concern over the effect of fatigue on quality of care led to rules capping the number of permissible resident work hours, with the assumption that fewer work hours will lead to more sleep time. But little is known about the relationship of number of hours of work and sleep and perceived fatigue and its effect on patient care. We investigated resident work and sleep behavior, how this related to perceived fatigue and the relationship to faculty lifestyle and perceptions.
METHODS: We conducted a survey prior to mandatory implementation of new work hour restrictions with internal medicine residents in one training program and physicians who attend on the medicine wards. The survey asked about the precise hours spent in various activities over the past 7 days, fatigue and the perceived effect of fatigue on activities in and out of the hospital. We compare attending and resident physician time working and sleeping, and perceptions of rest adequacy.
RESULTS: Fifty-two residents (70% response) and 46 attending physicians (68% response) completed the survey. Residents (mean age 29, 56% men) reported that during the prior week they worked a mean of 57 hours (63 hours if on a ward or ICU rotation) and had 13 hours of non-clinical work and 50 hours of sleep (7.1 hours per night). This left a mean of 48 hours per week for other activities, during which most residents reported at least one hour of exercise (54%), medical reading (76%) and pleasure reading (54%). Compared to residents, attending physicians (mean age 43, 62% men) reported working more hours (70, $P < .01$) but the same amount of sleep (50 hours) during the prior week. Forty-six percent of residents reported that they did not get enough rest, 48% reported being overworked, and many reported a moderate to high chance of falling asleep with common activities: reading 63%, sitting in a public place 27% and sitting in a medical conference 50%. Most residents felt that they would learn better (84%), be less stressed (92%) and make fewer errors (50%) if they got more sleep. Contrary to resident views, attending physicians felt that residents got enough rest (79%) and were not overworked (72%), although many attending physicians felt that residents would learn better (45%), be less stressed (70%) and make fewer errors (44%) if they got more sleep.
CONCLUSION: Although residents worked less then current maximum work hours, they described substantial fatigue and perceived important implications from lack of rest. Attending physicians underrated levels of resident fatigue, perhaps because they reported more work hours than their residents. Reducing internal medicine resident fatigue will likely require changes beyond limiting work hours.

IMPROVING OSTEOPOROSIS SCREENING AMONG ELDERLY WOMEN. B.K. Muma[1]; J. Elston Lafata[2]; E. Peterson[2]; D.M. Kolk[2]. [1]Henry Ford Hospital Detroit, Detroit, MI; [2]Henry Ford Health System, Detroit, MI. *(Tracking ID #116805)*

BACKGROUND: The US Preventive Services Task Force and the National Osteoporosis Foundation recommend that women age 65 years or older be screened routinely for osteoporosis. Current estimates are that only 20% of this population has received a bone density test. Thus, a large number of elderly women are at risk of avoidable late-stage osteoporosis and its consequences. We report the preliminary findings of a randomized prospective study designed to evaluate strategies to enhance the quality of care for osteoporosis in this high risk population.
METHODS: We identified women aged 65–89 that received their primary care from 15 ambulatory care clinics staffed by a large medical group in southeast Michigan between 4/1/2001 and 3/31/2003. The clinics were stratified by size and Bone Mineral Densitometry (BMD) equipment availability, and randomized to one of 3 types of osteoporosis disease management strategies: (1) usual care; (2) mailed patient letters; and (3) mailed patient letters plus physician prompts. Women that received care from the clinics who had a BMD test, a diagnosis for osteoporosis, or a prescription drug claim for an osteoporosis-specific therapy (alendronate, risedronate, raloxifene, or calcitonin) were excluded. A total of 10,565 eligible women were included in the study: The remaining 3,110 women in strategy (1) clinics; 3,368 in strategy (2) clinics; and 4,087 in strategy (3) clinics. Statistically significant differences in BMD testing rates were evaluated using generalized estimating equation approaches.
RESULTS: Preliminary analyses indicate a BMD screening rate of 2% in the usual care group, compared to 2% in the mailed patient letter group and 9% in the mailed patient letter plus physician prompt group. Differences between usual care and patient mailed reminders alone were not statistically significant ($P = .67$). The use of patient mailed reminders plus physician prompts lead to significant improvements in BMD testing compared to both usual care and patient mailed reminders alone ($P < .001$). Results did not change with adjustments for clinic, race or both.
CONCLUSION: Preliminary results indicate that the use of mailed patient reminders in combination with physician prompts can lead to significant increases in osteoporosis screening compared to usual care and the use of mailed patient reminders alone.

IMPROVING OUTPATIENT CHART DOCUMENTATION BYMEDICAL RESIDENTS. C.M. Vergara[1]. [1]Hartford Hospital, Department of Medicine, Hartford, CT. *(Tracking ID #116389)*

BACKGROUND: Introduction: Very little data exists that describe the quality of chart documentation by medical internal medicine residents during their weekly, outpatient, continuity clinic. The quality of chart documentation may serve as a surrogate measure of the quality of medical care that is provided. Hypothesis: Documentation of patient encounters by medical residents are suboptimal and amenable to simple quality improvement interventions. Clinical Setting: Hospital-based, ambulatory center that delivers primary care to a predominantly underserved population and serves as the one of the major outpateint teaching sites for a university-based internal medicine residency program.
METHODS: Intervention: A paper flyer in the form of a tabular checklist is placed on the front of the chart for all patients seen by residents who have their continuity clinic practice on Monday and Wednesdays for two consecutive weeks. No paper flyer was provided for those residents who have their clinic sessions on Tuesday, Thursday and Friday. This latter group served as the comparative control group. The checklist in the paper flyer prompted reminders to complete five quality measures of the level of written chart documentation. The five quality variables are as follows: (1) updated medical problem list (2) updated medication list (3) updated health maintenance log (4) legible signature or name of the resident documenting the patient encounter (5) documentation of the supervising attending with whom the case was discussed. A single technician audited all charts seen by medical residents during the two-week period to assess completion of the five aforementioned variables.
RESULTS: 142 of 161 charts were audited (89% and 87%, intervention and control group, respectively). The intervention group demonstrated significant improvements in all of the quality measures. Documented entries for the problem list, medication list and health maintenance log were 59.2%, 60.5% and 26%, respectively, in the intervention group. The comparative percentenges for the control group were 42.6%, 42.6% and 6.6%, respectively. 77% versus 62.2% of intervention and control group, respectively, documented that the patient encounters were discussed with

the supervising physician. Similarly, 76.9% vs. 63.9% of the written medical progress note had legible signatures in the intervention and control group, respectively.
CONCLUSION: A simple and inexpensive paper flyer can improve the level and quality of the medical documentation by medical residents during their regularly scheduled continuity clinic practice. Whether the improved documentation translates to improved medical care and clinical outcomes is not known. Future follow up studies are needed to study the clinical consequneces of improved medical documentation.

IMPROVING PHYSICIAN AND PATIENT COMMUNICATION SKILLS IN OUTPATIENT SETTINGS: LESSONS LEARNED FROM INTERVENTION RESEARCH. J.K. Rao[1]; L.A. Anderson[2]. [1]Centers for Disease Control and Prevention (CDC), Atlanta, GA; [2]Centers for Disease Control and Prevention, Atlanta, GA. *(Tracking ID #115969)*

BACKGROUND: Effective physician-patient communication is associated with satisfaction with care and better health outcomes. We conducted a systematic review of interventions designed to enhance physicians' and patients' communication skills in outpatient clinical settings.
METHODS: We searched 13 computerized databases (i.e., Medline, Psychlit, Cochrane Collaboration, etc.) and performed hand searches of the reference lists of eligible articles. Eligible studies: 1) tested an intervention designed to facilitate patient or physician communication skills; 2) targeted the intervention(s) toward patients, physicians, or both; 3) were RCTs; 4) included an objective, quantitative assessment of verbal communicative behavior as the primary study outcome; and 5) were published in English between 1966 and 2001. Verbal communicative behaviors were classified into: information gathering, information providing, information verifying, interpersonal skills, or global evaluation of communication. We assessed the effect of the intervention on verbal communication and selected secondary outcomes.
RESULTS: Twenty-eight studies met the eligibility criteria. Twelve intervened on physicians only, 13 intervened on patients only, and 3 intervened on physicians and patients. Twenty-one studies were published after 1990 (10 physician, 8 patient, 3 physician and patient). Twenty studies involved primary care encounters whereas 8 involved specialty visits. Twenty-one studies examined information gathering skills as the primary verbal outcome. Of these, the experimental groups demonstrated more question asking behavior than the control group in 12 studies. In 3 of 6 studies, the experimental group showed improvements in information verifying skills compared to controls. In 8 of 10 studies, the experimental groups received higher global ratings of interpersonal communication skills than controls. Of 13 studies assessing satisfaction, 2 studies demonstrated an increase, 1 demonstrated a decrease, and 10 demonstrated no difference in satisfaction between the experimental and control groups. In the 9 studies assessing visit duration, the interventions showed little impact [experimental versus control: increased visit length (n = 2), decreased (n = 1), no effect (n = 6)].
CONCLUSION: There was considerable variation in the communication behaviors studied. Overall, the interventions demonstrated positive effects on communication skills, particularly in studies involving physicians. These interventions demonstrated little positive impact on patient satisfaction or visit duration. Further theoretical and practical work is necessary to understand how the specific types of communication behaviors may relate to patient outcomes.

IMPROVING THE EFFICIENCY OF BREAST CANCER RISK ASSESSMENT IN PRIMARY CARE. R.C. Burack[1]; N. Patel[2]; J. George[1]; R. Everson[1]. [1]Wayne State University, Detroit, MI; [2]Karmanos Cancer Institute, Detroit, MI. *(Tracking ID #117366)*

BACKGROUND: Chemoprevention with tamoxifen can reduce the 5-year risk of breast cancer (BCa) by 47% among women whose Gail model risk is 1.7%. However, the efficient identification of these higher-risk women is a challenge in primary care. We assessed the performance of a risk factor-based triage system designed to identify women for whom a complete Gail risk assessment might be unnecessary.
METHODS: BCa risk factor data was collected for 18,817 women at the time of mammography and a Gail score calculated for each. We included 2 factors in a triage system (family history and biopsy history) based on their strength of association with BCa in the Gail model. Women with either factor were classified "triage +"; those with neither were "triage-". We calculated the maximum Gail score possible within age-ethnicity strata, assuming that family history and biopsy history were absent ("triage-") but that all other factors were at their "highest risk" level. Within age-ethnicity strata we compared the maximum expected and observed Gail scores and calculated the triage system's sensitivity and specificity.
RESULTS: Among 11,214 African-American (AA) women, the Gail score was 1.7% for 5.9% and the triage function + for 38%. Among 7,603 White women, the Gail score was 1.7% for 35% and the triage + for 47%. Among AA women 40–69 and White women 40–52, no woman lacking a family history of breast cancer or a previous breast biopsy ("triage-") had a Gail score 1.7%.
CONCLUSION: A relatively simple triage approach can be used to identify women within age-ethnicity subgroups for whom a full Gail risk assessment is unnecessary. In our population this approach would have allowed avoidance of full Gail risk assessment for 62% of AA and 31% of White women without missing any woman with a Gail score 1.7%. Since these results are based on the structure of the Gail model itself (in the absence of our triage factors the maximum possible Gail score cannot exceed 1.7% for the specified ethnicity-age groups) our approach should be generalizable.

	AA "triage-" women				All AA		White "triage-" women				All White	
		Gail model score			Triage system			Gail model score			Triage system	
Age	n	Max exp	Max obs	n ≥ 1.7%	Sens (%)	Spec (%)	n	Max exp	Max obs	n ≥ 1.7%	Sens (%)	Spec (%)
40–49	2763	0.8	0.8	0	100	68	1795	1.4	1.4	0	100	61
50–52	894	0.9	0.9	0	100	62	543	1.6	1.6	0	100	54
53–59	1664	1.3	1.3	0	100	57	947	2.1	2.1	66	88	48
60–69	1658	1.4	1.4	0	100	57	732	2.6	2.6	254	57	43

INCIDENCE AND SEVERITY OF DISPENSING ERRORS IN A HOSPITAL PHARMACY. E.G. Poon[1]; J. Cina[1]; E. Featherstone[1]; W. Churchill[1]; P. Mitton[1]; M. McCrea[1]; C.A. Keohane[1]; D.W. Bates[1]; T.K. Gandhi[1]. [1]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #115800)*

BACKGROUND: Hospital pharmacies dispense very large numbers of medication doses for hospitalized patients every day. Many of these seriously ill patients are particularly susceptible to adverse drug events (ADE). Because of the large number of medications used, even a very low dispensing error rate may potentially lead to many ADEs. We therefore sought to characterize the incidence and severity of medication dispensing errors in a hospital pharmacy.
METHODS: Using direct observation techniques, we studied the medication dispensing process in the hospital pharmacy at a 720-bed tertiary academic medical center. This pharmacy employed a commonly-used 2-stage dispensing process in which first a pharmacy technician picked medications from pharmacy supplies according to physician orders, and then a registered pharmacist checked the picked medications for errors. As part of this research study, a trained observer visually inspected medications after completion of the routine 2-stage dispensing process in order to look for non-intercepted errors. These errors were defined as discrepancies between what was approved for dispensing by the pharmacist vs. what was ordered by physicians, or other deviations from established pharmacy policies. Each error was further reviewed by a 2-physician panel to determine its potential to cause an ADE if the error was not intercepted by the nurse prior to medication administration.
RESULTS: We observed 19,338 medication doses that were dispensed over a 2-month period. Overall, 2.9% (557 of 19,338) of the medication doses picked by the pharmacy technician contained an error. While the pharmacist intercepted 69% (n = 393) of the errors committed by the pharmacy technician, 31% (n = 179) of errors were undetected by the routine 2-stage dispensing process. This corresponds to an overall dispensing error rate of 9.2 errors per 1,000 medication doses dispensed. Of the 179 non-intercepted errors, 26% (n = 47), or 2.4 per 1,000 medication doses dispensed, had the potential to cause an ADE. Of these 47 potential ADEs, 25 (53%) were considered significant, 18 (38%) severe, and 2 (4%) life-threatening.
CONCLUSION: Dispensing errors in hospital pharmacies are common and more than 30% of these errors are not intercepted by the routine checking processes in the hospital pharmacy; this error rate is typical for low-fidelity practices such as inspection. More than a quarter of these non-intercepted errors have the potential to cause ADEs. These data suggest that to make dispensing safer, high-reliability technologies such as electronic bar-coding or robot dispensing should be considered.

INCREASING REFERRALS TO TELEPHONE COUNSELING FOR SMOKING CESSATION. S.E. Sherman[1]; N. Takahashi[1]; P. Kalra[2]; W. Kuschner[3]; J. Canfield[2]; E. Gifford[2]; J. Kelly[2]; J. Finney[2]. [1]VA Greater Los Angeles Healthcare System, Sepulveda, CA; [2]VA Palo Alto Healthcare System, Palo Alto, CA; [3]Stanford University, Stanford, CA. *(Tracking ID #116290)*

BACKGROUND: Despite widespread availability of free Quitlines, proven Quitline effectiveness, and scarce institutional resources for counseling, few healthcare organizations refer patients to Quitlines for smoking cessation. We tested the effectiveness of a telephone care coordination program (TCCP) for smoking cessation, whose objectives were to increase referrals to the state Quitline and to provide smoking cessation medication management.
METHODS: We randomly assigned 10/18 sites in 2 California Veterans Health Administration (VA) health care systems to receive the TCCP intervention. This included simple referral (2 mouse clicks) by the primary care provider or staff, after which the telephone care coordinator contacted the patient and assisted them in contacting the state Quitline. The care coordinator arranged providing smoking cessation medications, and monitored their use during follow-up contact at 2, 4, 6, and 8 weeks. At baseline, we conducted a very brief survey of providers at all 18 sites, which included a question on referrals to telephone counseling. Our outcome measures were the number of patients starting treatment and the number who completed the 2-month program and were abstinent from cigarettes.
RESULTS: At baseline, providers reported essentially never referring patients for telephone counseling (median 0 referrals/month). During the first seven months, TCCP received 2,221 referrals. We were unable to reach 1,106 patients (50%) despite multiple attempts. 241 patients (11%) opted not to start. Of the remaining 874 patients who began the telephone cessation program, 723 (87%) patients completed their counseling from the Quitline and entered into the care management program and 95% of them started smoking cessation medications. At this time, 28% of patients completed the 2 month TCCP, 21% dropped out and 51% were still in progress.
CONCLUSION: The TCCP dramatically increased use of the state Quitline. At least 28% successfully completed the 2-month program. This program provides an effective method to increase referrals to telephone counseling and coordinate smoking cessation medications. This program now accounts for 5–10% of all counseling calls received by the state Quitline, making it the most referrals from any health care

system. It gives medical centers another option, increasing access to smoking cessation treatment without overwhelming primary care providers.

INDIVIDUALIZED TREATMENT PREDICTIONS FOR BRCA POSITIVE WOMEN WITH BREAST CANCER. H. Burke[1]; J. Weitzel[2]; S. Narod[3]. [1]George Washington University, Washington, DC; [2]City of Hope, Duarte, CA; [3]University of Toronto, Toronto, Ontario. *(Tracking ID #116882)*

BACKGROUND: A woman newly diagnosed with breast cancer who is BRCA positive needs to receive information that can help her choose her best treatment. We have developed a clinical decision tool that integrates genetic and clinical information and provides the physician and patient with the patient's individual probability of contralateral breast cancer (a second primary tumor) and of disease-specific survival for each treatment option.
METHODS: The data was a multi-institutional collaboration of 1,139 women with breast cancer who were BRCA positive. Women were included if they were less than 66 years of age, were diagnosed with Stage I or Stage II breast cancer, and were either BRCA1 or BRCA2 positive. 647 women were alive and 492 were deceased. SAS (Cary, NC) was used to construct proportional hazards models for the risk of contralateral breast cancer and of disease-specific survival.
RESULTS: The model inputs were: age at diagnosis, BRCA1 or BRCA2 positive, ER and PR status, lymph node involvement, tumor size, type of primary surgery, tamoxifen, and chemotherapy. The model's outputs were the five-year and ten-year probability of contralateral breast cancer and of disease-specific survival for prophylactic contralateral mastectomy and prophylactic oophorectomy. Contralateral mastectomy provided a modest but significant ($P < .05$) improvement in survival. Oophorectomy reduced a woman's risk of death due to breast cancer by over 70% ($P < .001$).
CONCLUSION: We have created a powerful clinical decision support system that integrates genetic and clinical information. It is helping women with breast cancer who are BRCA positive make informed treatment decisions.

INDIVIDUAL-LEVEL AND NEIGHBOURHOOD-LEVEL INCOME MEASURES: AGREEMENT AND ASSOCIATION WITH OUTCOMES IN A CARDIAC DISEASE COHORT. D. Southern[1]; L. McLaren[2]; P. Hawe[1]; M.L. Knudtson[1]; W.A. Ghali[1]. [1]University of Calgary, Calgary, Alberta; [2]Unviersity of Calgary, Calgary, Alberta. *(Tracking ID #116700)*

BACKGROUND: Census-based measures of income are often used a proxy for individual-level income. Yet, the validity of such area-based measures relative to 'true' individual-level income has not been fully characterized. The objectives of this study were 1) to determine whether area-based measures of household income are a valid proxy for self-reported household income, and 2) to assess whether one or both of these measures are associated with outcomes in a cardiac disease cohort.
METHODS: We used follow-up data (1999 to 2001) from the Alberta Provincial Project for Outcome Assessment in Coronary Heart Disease (APPROACH) to address this question. The APPROACH study's follow-up survey contains an item for self-report of household income, as well as postal codes for deriving census-based measures of income. Census enumeration area (EA)-derived and self-reported measures of household income were thus both available and the extent of agreement between measures was determined. We also assessed the association between each of these income measures and clinical outcomes after cardiac catheterization—survival (from the time of the APPROACH follow-up survey) and quality of life (based on the EuroQoL)
RESULTS: : 4,372 patients had complete EA-derived and self-reported household incomes. Agreement between the two income measures was generally poor: For any given self-reported household income grouping provided in the follow-up, EA-derived household income estimates were only in perfect agreement for 1.9% of the lowest (5th) income group, 17.2% of the 4th group, 44.1% of the 3rd group, 36.5% of the 2nd group, and 30.5% of the highest (1st) income group. This level of agreement corresponds to a kappa level of only 0.07, and a weighted kappa (accounting for partial agreement across quintiles) of 0.16. Despite this poor agreement, both income measures were associated with progressively improving survival and EuroQoL scores as income increased. An outcome analysis that simultaneously considered self-reported (individual level) income and area-based income revealed that low-income neighbourhoods are associated with poorer survival and lower quality of life scores regardless of individual-level income
CONCLUSION: The area-based estimates of household income in these data demonstrate poor agreement with self-reported household income at the level of individual patients, particularly for low-income patients. Despite this, both income measures appear to be prognostically relevant, perhaps because individual and neighbourhood income are not a single construct. These findings intriguingly suggest that individual wealth, although important as a determinant of health, may be overshadowed in importance by neighbourhood-level factors.

INFLUENCE OF PERSONAL CHARACTERISTICS AND PRE-MEDICAL EXPERIENCES ON MEDICAL STUDENTS' CLINICAL PERFORMANCE. D.M. Windish[1]; E.G. Price[1]; S.L. Clever[1]; J.L. Magaziner[1]; P.A. Thomas[1]. [1]Johns Hopkins University School of Medicine, Baltimore, MD. *(Tracking ID #116095)*

BACKGROUND: Studies suggest that prior academic achievement does not predict future clinical performance or patient satisfaction. This study explores the influence of personal characteristics and pre-medical educational experiences on medical students' communication and clinical reasoning skills in the second year.
METHODS: 119 second-year students were surveyed regarding their age, gender, college major, previous interviewing experience and prior medical training. We assessed their clinical reasoning skills and their ability to recognize communication behaviors at baseline through their assessment of a taped medical encounter after one week of interviewing training. We subsequently evaluated communication and clinical reasoning skills in 93 of the students during a standardized patient (SP) exercise after 9 weeks of training. Communication skills were rated by the SP using a 5-point Likert scale and a history item checklist. We assessed clinical reasoning skills by the accuracy of differential diagnoses as well as the number and breadth (different components listed from the history and physical) of their problem lists. We compared differences among variables using Mann-Whitney U, chi square and *t* tests.
RESULTS: At baseline, there were no statistical differences in students' self-rated proficiency in creating problem lists or in generating differential diagnoses by any characteristic studied. There were also no differences in their ability to recognize different communication behaviors. During the SP exercise, older students were more likely to use vocabulary at the level of patient understanding [median 4 (interquartile range (IQR) 3–4) vs. 4 (IQR 4–5); $P = .03$], but did not differ in any other area of performance. Women were more likely than men to list personal stress as a potential medical problem (93% vs. 74%; $P = .004$) but performed similarly in their communication skills. Science majors scored statistically lower on five interpersonal items including encouraging the patient to ask questions [3 (IQR 2–3) vs. 4 (IQR 3–5); $P = .008$], but did not differ from non-science majors in their clinical reasoning ability. Students with prior interviewing experience obtained more history items from the SP (mean 11.6 vs. 10.4; $P = .01$) and were more likely to be recommended to a friend than those with no prior experience [5 (IQR 4–5) vs. 4 (IQR 4–5); $P = .03$]. Students with previous medical training performed at the same level as those without former training in all areas assessed.
CONCLUSION: Certain personal characteristics and past educational experiences are associated with second-year students' clinical performance. Medical schools may wish to closely explore these areas and consider tailoring clinical skills training for students that have different backgrounds.

INFLUENCE OF PHYSICIAN ADVICE ON THE USE OF LOW-YIELD CIGARETTES: RESULTS FROM THE 2000 NATIONAL HEALTH INTERVIEW SURVEY. H.A. Tindle[1]; R.B. Davis[2]; I. Kawachi[3]. [1]Harvard Medical School, Boston, MA; [2]Beth Israel Deaconess Medical Center, Boston, MA; [3]Harvard School of Public Health, Boston, MA. *(Tracking ID #116838)*

BACKGROUND: Low-nicotine and low-tar cigarettes, referred to collectively as "low yield" cigarettes (LYC) have not been demonstrated to result in lower harm. Yet many smokers are known to switch to LYC in an attempt to reduce their health risk. In a nationally representative survey, we examined the predictors of LYC use among current smokers, including receipt of physician advice to quit smoking.
METHODS: We studied 32,374 respondents to the 2000 National Health Interview Survey (NHIS). The Adult Sample Core and Supplement on Cancer Control elicited information on sociodemographic factors and chronic health conditions as well as questions on perceived personal and family cancer risk. Current smokers were asked, "Did you ever use or switch to a lower tar and nicotine cigarette to reduce your health risk?" We performed multivariable logistic regression using backward elimination to identify determinants of LYC use. All analyses used SAS-callable SUDAAN and were weighted to reflect national estimates.
RESULTS: Of the 5,378 smokers who responded to the questions of interest, 2,363 (43.9%) indicated that they had switched to LYC in order to reduce their health risks. Respondents who used LYC were more likely than non-LYC users to be white (87.4% vs. 72.7%) and female (57.6% vs. 49.4%). LYC users were more likely to report a history of vascular disease (including coronary artery disease and stroke) as compared to non-LYC users (8.6% vs. 5.7%). LYC users were also more likely than non-LYC users to have received physician advice to quit smoking (60.2% vs. 45.7%). In the adjusted analysis, whites were more likely to use LYC than Hispanics (AOR: 2.91 [2.08–4.06]) and non-Hispanic blacks (2.60 [2.10–3.23]). Females were more likely than males to use LYC (1.31 [1.12–1.52]), and respondents with a history of vascular disease were more likely than their healthy counterparts to

report use of LYC (1.55 [1.15–2.10]). Finally, respondents who had received physician advice to quit smoking were over 50% more likely to use LYC as respondents who were not advised to quit (1.55 [1.34 – 1.79]).
CONCLUSION: Smokers who received physician advice to quit smoking were over 50% more likely to use LYC as those who did not receive such advice. The weighted sample of LYC users represents over 12 million Americans who smoke. In the absence of convincing evidence of harm reduction resulting from LYC use, there needs to be wider discussion within the medical community, as well as between physicians and their patients, concerning the risks of switching to LYC.

INTEGRATING PERSONALIZED DECISION SUPPORT INTO PRIMARY CARE: IMPACT ON DECISIONAL CONFLICT. N.F. Col[1]; J.M. Fortin[1]; L. Ngo[2]; A.M. O'Connor[3]; R. Goldberg[4]. [1]Brigham and Women's Hospital, Boston, MA; [2]Harvard School of Public Health, Boston, MA; [3]University of Ottawa, Ottawa, Ontario; [4]University of Massachusetts Medical School (Worcester), Worcester, MA. *(Tracking ID #117423)*

BACKGROUND: Good communication and strong patient-provider relationships are associated with better clinical outcomes, yet increased productivity pressures on physicians limit time spent with patients and opportunities for informed decision making. We developed a computer-generated, personalized decision support aid (DSA) to help women make more informed decisions about menopause and to become more active participants in their health care, testing alternative approaches to delivering the intervention in primary care.
METHODS: We developed decision support software that provides women with personalized information about their menopausal symptoms and chronic disease risks (heart disease, breast cancer, and osteoporosis), the impact of hormone therapy and other treatment options on their symptoms and risks, and strategies for risk reduction. A 3-armed randomized control trial was conducted among postmenopausal women in 4 clinical practices comparing a control group (receiving a brochure of American College of Physicians guidelines; n = 50), to the DSA alone (n = 45), or the DSA with coaching conducted just prior to the clinic visit (n = 50). Healthy menopausal women between the ages of 45 and 65 were recruited through clinic rosters. Participants completed a questionnaire about their lifestyle and medical history; responses were entered into a software program that generates a 35+ page personalized health report (the DSA) for the patient and a summary page for her clinician. Decisional conflict (DC) was measured at baseline and 2 weeks after the clinic visit. Lower DC scores are desirable.
RESULTS: Of the 145 women included in the trial, 99 had valid responses. The mean age was 52.3, 98% were white, and 58% had completed some college. Total DC declined more in the intervention vs control group (0.6 vs 0.09, $P < .001$). Improvements were observed in all subscales. No differences between the 2 intervention arms (DSA alone vs DSA + coaching) were observed on either total DC or any subscales.
CONCLUSION: A DSA that includes personalized risk estimates and treatment options dramatically lowered decisional conflict. The effect size was 2–3 fold larger than that observed among DSAs included in a systematic review of DSAs, suggesting that inclusion of personalized information on risks and symptoms improves effectiveness. No difference between DC scores were observed between the 2 intervention arms, suggesting that computer-generated personalized information can supplant coaching and leverage clinician time.

INTENSITY AND QUANTITY OF PHYSICAL ACTIVITY AND THE RISK OF DIABETES IN WOMEN. A.R. Weinstein[1]; H.D. Sesso[2]; I.M. Lee[2]; N.R. Cook[2]; J.E. Manson[2]; J.E. Buring[2]; J.M. Gaziano[1]. [1]Boston VA Healthcare System, Boston, MA; [2]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116381)*

BACKGROUND: Previous studies have demonstrated that physical activity reduces the incidence of type 2 diabetes mellitus (DM); however, data examining the association between the intensity and quantity of physical activity and the risk of DM in women are sparse.
METHODS: We analyzed 38,180 subjects who provided data on time spent on 8 groups of leisure-time physical activities in the Women's Health Study, an ongoing prospective study of initially healthy women aged ≥45 years who were free of DM. Total energy expenditure (kcal/wk) was calculated. Energy expended by intensity level was calculated and categorized as no activity, light-to-moderate intensity (<6 METs), and vigorous intensity (≥6 METs). Walking pace (mph) and walking time (h/wk) were reported. Multivariate Cox proportional hazards regression models evaluated the relationship between each measure of physical activity and the risk of DM, adjusted for lifestyle, clinical, and dietary risk factors.
RESULTS: After a median follow-up of 7.2 years, there were 1,376 incident cases of type 2 DM. 3,816 subjects reported no activity, 18,291 reported light-moderate activity only, and 16,068 reported any vigorous activity. The rates of incident DM were 6.3% for inactive subjects, 3.9% for those who performed light-moderate activity only, and 2.7% for those who performed any vigorous activity. In the multivariate-adjusted analysis of overall activity (in kcal/wk), the RRs (95% CIs) were 0.91 (0.79, 1.06), 0.86 (0.74, 1.01), and 0.82 (0.70, 0.97) for the 2nd, 3rd and 4th quartiles compared to the 1st (P trend = 0.01). In the multivariate-adjusted analysis of intensity level, compared to inactive subjects, the RR (95% CI) was 0.91 (0.77, 1.06) for the light-moderate group and 0.83 (0.69, 1.01) for the vigorous group. The difference between the groups was not significant (P trend = 0.06). We further evaluated walking, since it is the most common moderate activity in women. Compared to non-walkers, the multivariate-adjusted RR (95% CI) was 1.00 (0.85, 1.18) for a walking pace of <2 mph, 0.89 (0.77, 1.02) for 2–2.9 mph, and 0.75 (0.62, 0.89) for ≥3 mph (P trend < .01). In the analysis of walking time, compared to non-walkers, the multivariate-adjusted RR (95% CI) was 0.85 (0.62, 1.16) for <1 h/wk, 0.78 (0.57, 1.08) for 1–1.5 h/wk, 0.59 (0.42–0.84) for 2–3 h/wk, and 0.79 (0.57, 1.11) for ≥4 h/wk (P trend = .01).
CONCLUSION: In this study, greater energy expenditure is associated with lower risk of type 2 DM in women. Even moderate activity, such as walking, is associated with lower risk. For type 2 DM prevention in women, it appears that the amount of physical activity is at least as important as the intensity level of selected exercise each week.

INTEREST IN BRCA TESTING AMONG RELATIVES OF WOMEN WITH BREAST CANCER. M. Gilligan[1]; M. Schapira[1]; S. Bourassa[1]; A. Nattinger[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #117359)*

BACKGROUND: First-degree relatives of women with breast cancer represent a group of women with a moderately increased personal risk of developing breast cancer, many of whom, nevertheless, would not be appropriate candidates for BRCA testing according to established guidelines. We hypothesized that interest in genetic testing would be associated with perceived risk, knowledge, and coping style, and that an educational intervention regarding breast cancer risk and BRCA testing would decrease interest in testing in this population.
METHODS: The study questionnaires and educational intervention were developed based on a focus group analysis completed in a previous phase of the study. First-degree relatives were recruited through their relatives with breast cancer listed in the hospital tumor registry, and through general advertisement. A total of 57 women completed the baseline study and the pre- and post-intervention questionnaires. Interest in testing was assessed using a single 5-point Likert item (1-definitely not interested to 5-definitily interested). Knowledge score was the percentage correct out of 25 true-false questions. Perceived risk was assessed using a 0–100% visual analog scale. Numeracy was assessed using a 3-item scale. Monitor-Blunter (M-B) scores were determined using the methods of Miller, et al. Descriptive statistics and univariate testing were performed.
RESULTS: The study cohort was predominantly white (98%), well-educated (65% college degree or greater), numerate (61%) and had a moderately high lifetime risk of breast cancer as calculated by the Gail model (mean 19%, range 9–44%). The mean M-B score was 5.64, with a range of –11 (High Blunter) to +15 (High Monitor). At baseline, higher interest in BRCA testing was associated with lower knowledge scores ($P = .007$) and higher self-perceived risk ($P = .041$) but was not associated with high scores on the M-B scale. The intervention was effective in increasing knowledge with a mean score pre- and post- of 70.86% (SD 9.69) and 83.34% (SD 8.98), respectively ($P < .0001$). There was no change in perceived lifetime risk (median 50, range 10–90 on both pre- and post-tests). Interest in genetic testing decreased after the intervention, with 65.6% and 54.5% stating that they "probably" or "definitely" wanted testing on pre- and post-tests, respectively ($P = .018$).
CONCLUSION: In a well-educated cohort of moderate risk women, interest in genetic testing was high but decreased after an intervention which focused on educating women about breast cancer risk and genetic testing. This study suggests that high perceived risk of cancer and low knowledge may be factors associated with higher interest in genetic testing. No support was found for the hypothesis that coping style is associated with interest in testing.

INTERNISTS AND GYNECOLOGISTS ATTITUDES AND KNOWLEDGE OF CORONARY HEART DISEASE (CHD) PREVENTION IN WOMEN. J.M. Barnhart[1]; P. Charney[2]; O. Cohen[3]; J.L. Houghton[4]; V. Lewis[5]; I.R. Merkatz[1]. [1]Albert Einstein College of Medicine, Bronx, NY; [2]Norwalk Hospital, Norwalk, CT; [3]Ferkauf Graduate School of Psychology, Yeshiva University, Bronx, NY; [4]Albany Medical College, Albany, NY; [5]University of Rochester School of Medicine & Dentistry, Rochester, NY. *(Tracking ID #115849)*

BACKGROUND: The New York State Department of Health funded the "Women and Heart Disease: Physician Education Initiative" developed and implemented by the American College of Obstetricians and Gynecologists District II/NY (ACOG) and American College of Physicians (NYACP). We sought to determine the physicians' knowledge and attitudes toward CHD prevention in women.
METHODS: A multi-disciplinary physician panel developed and presented an educational program at 24 sites (Grand Rounds and regional meetings) from October 2003 through April 2004. All attendees were asked to complete a 5-minute questionnaire during the program, which focused on barriers to CHD prevention, knowledge of evidenced-based guidelines for optimal cholesterol and blood pressures levels, and current smoking cessation services available in their practice. Six items assessed barriers to CHD prevention and were rated on a 5-point Likert scale (1 = strongly agree to 5 = strongly disagree). This analysis only includes the responses of attending physicians who were internists or gynecologists (n = 529).
RESULTS: Surveys were completed by 704 attendees; 75.1% were either internists (n = 378) or gynecologists (n = 151). The mean age was 41 years (S.D. = 12.3), 73.5% (n = 389) practiced in the New York City area, and 42.7% (n = 226) were females. Gynecologists were more likely than internists to report lack of time and training as barriers to CHD prevention in their practice (66% vs. 52%; $P = .004$ and 53.8 % vs. 29.3%; $P < .001$, respectively). Moderate knowledge of CHD prevention in women was found (mean score = 9.3 [SD = 1.8]; range 4–13), with higher mean knowledge scores for internists than gynecologists (9.6 vs. 8.6; $P < .001$). However, 90% of internists and gynecologists did not know that a woman's relative risk of CHD increases 2-fold for a body mass index (BMI) over 22. Gynecologists were less likely than internists to know the ATP III value for optimal LDL cholesterol (65.5% vs. 35.1%; $P < .001$) or provide nicotine replacement therapy for their patients who wanted to stop smoking (35% vs. 53.7%; $P < .001$).

CONCLUSION: Internists and gynecologists perceive time as a barrier to implementing heart disease prevention into practice. Both groups need more educational programs to further enhance their knowledge and practice of CHD prevention. Such programs should reflect specialty differences.

INTERPRETER USE VERSUS LANGUAGE CONCORDANCE IN ASIAN AMERICAN OUTPATIENTS. A.R. Green[1]; Q. Ngo-Metzger[2]; A. Legedza[1]; R.S. Phillips[1]; L.I. Iezzoni[1]. [1]Beth Israel Deaconess Medical Center, Boston, MA; [2]University of California, Irvine, Irvine, CA. *(Tracking ID #115567)*

BACKGROUND: Patients with language barriers are less likely to understand their care, are at higher risk for medical errors, and are less satisfied than others. Interpreters can ameliorate these problems, but few studies have compared patients' experiences with clinicians who speak their own language to those that involve an interpreter.
METHODS: We conducted a mail survey in four languages of Chinese and Vietnamese patients seen within the previous month at one of 11 community health centers across the U.S. Among demographic and other questions, we asked patients to rate their visit overall and to assess 5 aspects of clinician-patient communication. We studied patients whose clinicians spoke their native language (concordant group) or who used an interpreter, excluding patients who spoke English "very well" and for whom an interpreter was unavailable. We used multivariable logistic regression to determine relationships between interpreter use and the communication and visit rating outcomes, adjusting for age, education, primary language, English ability, time in U.S., clinic site, usual clinician, reason for visit, and health status. All analyses were performed using SUDAAN.
RESULTS: 3,258 patients (74%) returned completed questionnaires. After exclusions, 1,362 remained in the interpreter group and 1,353 in the concordant group. Interpreter group patients: had spent less time in the U.S. (mean 10.5 vs. 12.2 years, $P = .0002$); were less educated (36.6% vs.49.1% with 10+ years, $P = .0001$); had lower English proficiency (43.0% vs. 36.1% spoke no English, $P = .0003$); and were more likely to speak Vietnamese (46.9% vs. 36.8%, $P = .0001$). In unadjusted chi-squared analyses, patients who used an interpreter were less likely than language concordant patients to report they always understood their care (61.1% vs. 67.8%, $P = .02$). They were more likely to report having questions about their care (20.9 vs. 30.1, $P = .0005$) or questions about mental health (18.2% vs. 25.3%, $P = .0045$) that they did not ask. In adjusted models, these differences persisted. Patients with interpreters were less likely to report they always understood care (adjusted OR 0.73 [95%CI 0.54–0.97]), and more likely to have unasked questions about care [1.68 (1.20–2.34)] or about mental health (1.49 [1.04–2.12]) than language concordant patients. Other communication outcomes and visit rating did not differ significantly between groups: having time to explain reasons for the visit; getting enough information about health/treatment; and rating the visit excellent or very good.
CONCLUSION: Although visit ratings were not affected, patients who used interpreters were less likely to ask their clinicians questions or to feel that they explained things in an understandable way than language concordant patients. Interpreters can help overcome language differences, but certain communications barriers may remain.

INTERVENTIONS TO CHANGE PHYSICIAN BEHAVIOR: ARE MORE BETTER? D. Haggstrom[1]; A.B. Bindman[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #111420)*

BACKGROUND: Trials of interventions to change physician behavior—like reminders—show multifaceted approaches are more efficacious than single ones. We studied whether the number of interventions (1) is associated with behavior change among physicians in practice and (2) varies in effectiveness among different health care organizations.
METHODS: We surveyed a probability sample of 1,238 California primary care physicians in 2001 with a response rate of 67%. Among physicians who reported receiving practice profile information from any of 4 types of health care organizations (health plan, independent practice association (IPA), medical group, or hospital), we asked whether they had (1) received reminders, guidelines, education, feedback, or financial incentives from the same health care organization and (2) implemented a change in practice as a consequence. Univariate tables and multivariable logistic regression models were used to study the association between the number of interventions (0–5) received from any single type of health care organization and a change in physician practice. Covariates were physician demographics (age, gender, race/ethnicity), specialty, work hours, practice setting (solo, group practice, or staff/group model HMO), and the total number of interventions received from the other 3 types of health care organizations.
RESULTS: The likelihood of practice change increased as the number of interventions increased. After adjusting for covariates, each additional practice intervention was associated with practice change when received from an IPA (OR = 10.81; 95% CI = 3.49–33.48), medical group (OR = 2.23; 1.23–4.04), or hospital (OR = 5.32; 1.92–14.75) but not from a health plan (OR = 1.47; 0.80–2.68). The total number of interventions received from other health care organizations was not associated with a change in practice.
CONCLUSION: More interventions are more likely to change physician behavior, and a threshold effect occurs when >3 interventions are received. Interventions from health plans are less likely to change practice than those from other sources. There is a potential for coordinated efforts among health care organizations to change physician behavior, but multiple interventions from a single health care organization appear to be more effective.

Percentage of physicians who implemented a change in practice

Type of Organization	Number of Interventions				
	0	1	2	3	4–5
Health Plan	8.2%	5.8%	5.8%	8.8%	28.9%
IPA	0%	0.5%	12.3%	10.3%	64.7%
Medical Group	0.2%	24.4%	33.6%	20.3%	40.7%
Hospital	1.6%	14.0%	27.9%	35.8%	91.9%

INVESTIGATOR ASSESSMENT OF THE EFFECTIVENESS OF MANDATED INCLUSION OF WOMEN AND MINORITIES IN RESEARCH. G.M. Corbie-Smith[1]; D. St. George[2]; C. Blumenthal[1]; R.W. Durant[3]; I. Williams[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]Walden University, Minneapolis, MN; [3]Harvard University, Boston, MA. *(Tracking ID #117322)*

BACKGROUND: In the mid 1990's investigators (PIs) raised concerns about the impact of federally mandated inclusion of minorities and women on the conduct of research. However there has been little subsequent assessment of the effectiveness of the mandate on achieving gender and racial/ethnic diversity in research. We sought to describe PIs' assessment of the impact of the mandate on inclusion of women and minorities in research; we also evaluated whether PI sociodemographic and professional characteristics, research attributes and attitudes about inclusion are associated with PI assessment of the effectiveness of the mandate.
METHODS: Between Aug and Dec 2002, we surveyed National Heart Lung and Blood Institute PIs with active human subjects research in 2001. The mailed survey asked about recruitment of minorities and women, opinions on the NIH mandate to include women and minorities, PIs current research and PI demographics. Our dependent variables were respondents' agreement with 2 statements: "I think the NIH mandate has failed to increase the number of women (or minority) participants recruited into research."
RESULTS: 440 PIs completed the survey (70%response rate): mean age = 51 years, 75%male, 90% White, and 86% had been funded as a PI for >5 years prior to the survey. Most PIs (69%) felt that the mandate had been successful in increasing gender diversity; only 7% of respondents felt that the mandate had failed to increase female inclusion in research and 24% were unsure. Further, 55% of PIs felt the mandate had been successful in increasing minorities in research; 12% felt it had failed and 32% felt unsure. Race and attitudes about inclusion, but not other PI sociodemographic/professional characteristics or research attributes, were significantly associated with PIs assessment of both mandates. White PIs ($P = .05$), those who felt more strongly that failure to include women makes it hard to draw conclusions about treatment/prevention strategies ($P = .05$), and those who ascribed more importance to female inclusion in their own research ($P = .03$) were more positive about the mandate's success for women. Similarly, White PIs ($P = .01$), those who felt more strongly that diversity in study samples ensures generalizability ($P = .03$), and those who ascribed more importance to minority inclusion in their own research ($P < .01$) were more positive about the mandate's success for minorities.
CONCLUSION: While the majority of PIs were positive in their assessment of the mandate on increasing diversity in research, many were ambivalent. Non-minority PIs and those who endorsed the importance of inclusion were more likely to believe the mandate had been effective. More research is needed to determine whether perceptions of the mandate reflect increasing diversity in research samples.

INVESTIGATORS' VIEWS ON THE CONCEPT OF RACE: IN TALK AND TEXT. G.M. Corbie-Smith[1]; S.E. Estroff[1]; G.E. Henderson[1]; C. Blumenthal[1]; J. Dorrance[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #116632)*

BACKGROUND: While debate on the meaning of race as a variable continues, investigators (PIs) who collect data on race and use race in their analyses must make decisions on how it should be represented in their work. Given the implications of this controversy for research on health disparities by race, we sought to understand how PIs interpret the concept of "race" and use it in their research.
METHODS: From Nov 2001 to Jan 2003, we conducted semi-structured interviews with PIs from 3 universities. Topics included their experiences with recruitment of minority subjects, use of race as a variable in research/analyses and assessment of the NIH mandate. Transcripts were analyzed using the principles of grounded theory. PIs were enrolled until theoretical saturation (i.e., no new concepts arose during analysis of successive interviews). For each PI, we also abstracted up to 2 publications to assess their use of race in the reports of their research.
RESULTS: We contacted 43 PIs and conducted 33 interviews (77%response rate). Several PIs endorsed the idea of race as a biologic construct including responses such as the identification of genetic variants, race differences in response to treatments, and race as a risk marker for other diseases. Most PIs who described race as a social construct pointed to differences in risk of disease based on environment, behavior, diet, socioeconomic status, education and/or wealth. Some PIs also described theoretical underpinnings of the operation of race in health (e.g., linking race to oppression, racism or invoking feminist theory). A group of PIs used a mix of social and biologic concepts. Some held primarily a biologic view of race with modification by social factors and others acknowledged possible genetic differences but felt that social factors were the main determinants of health. A third group suggested both social and biologic factors were equally responsible for differences in health and disease. Of the 46 publications examined, 85% (n = 39) mentioned race at any point in the manuscript. Of these 12 manuscripts provided a definition or explanation of why race was included as a variable in the study: 20% as social and 11% as biologic constructs and found 67% had agreement between the how PIs described the concept of race in interviews and how it was described in their manuscripts.

CONCLUSION: PI concepts of race varied along a spectrum from biological to social constructs. A small number of papers explicitly addressed the meaning of race as variable, however, when explanations were provided, these were similar to conceptualizations of race obtained in PI interviews. PIs views on the concept of race are consistent with the debate on race and should be explicitly documented in their published work.

IS ACETYLCYSTEINE EFFECTIVE IN PREVENTING CONTRAST-RELATED NEPHROPATHY? A META-ANALYSIS. K.G. Shojania[1]; B.K. Nallamathou[2]; S.K. Saint[2]; T.P. Hofer[2]; H.D. Humes[2]; M. Moscucci[2]; E.R. Bates[2]. [1]University of California, San Francisco, San Francisco, CA; [2]University of Michigan, Ann Arbor, MI. *(Tracking ID #116951)*

BACKGROUND: Acetylcysteine for prevention of contrast nephropathy is quickly becoming standard practice, despite mixed results in clinical trials. A recent meta-analysis reported net benefit for acetylcysteine, but did not include data from 7 additional trials available in abstract form.
METHODS: We conducted an extensive electronic and manual search for published and unpublished randomized clinical trials evaluating acetylcysteine for prevention of contrast-related nephropathy. At least two authors abstracted data from each trial including assessments of its quality and additional characteristics. The primary outcome of interest was the incidence of nephropathy 48 hours after contrast administration. Data were combined using random-effects models with the performance of standard tests to assess for heterogeneity and publication bias.
RESULTS: Fourteen trials involving 1455 patients met our inclusion criteria. Trials varied in patient demographics, inclusion criteria, dosing regimens, and few trials reported important elements of study design such as concealment of allocation, or provided any details related to use of placebos or blinding. The summary relative risk ratio for contrast-related nephropathy overall was 0.67 but was of borderline statistical significance (95% CI, 0.44 to 1.0; $P = .064$). Moreover, the benefit varied significantly across the 14 trials (test of heterogeneity, $P = .027$), with this heterogeneity remaining unexplained despite numerous subgroup analyses.
CONCLUSION: Acetylcysteine may reduce the incidence of contrast-related nephropathy, but this finding is inconsistently reported and inclusion of unpublished studies substantially reduced the significance of the summary effect. Bias due to unconcealed treatment allocation in the majority of trials may explain the heterogeneity between available trials and their inconsistent results. Larger, higher quality clinical trials are needed before universally recommending use of acetylcysteine. Although inexpensive and without direct harm, incorporating it into standard practice may indirectly harm patients by delaying necessary imaging tests and angiographic procedures.

IS HIGHER QUALITY PRIMARY CARE ASSOCIATED WITH REDUCED ADDICTION SEVERITY? T.W. Kim[1]; J.H. Samet[1]; D.M. Cheng[1]; M. Winter[1]; D. Safran[2]; R. Saitz[1]. [1]Boston University, Boston, MA; [2]Tufts University, Boston, MA. *(Tracking ID #116393)*

BACKGROUND: Alcohol and drug use disorders are chronic diseases that require ongoing management of physical, psychiatric, and social consequences. While specific addiction-focused interventions in primary care are efficacious, the influence of overall primary care quality on addiction outcomes has not been studied. We examined the relationship between primary care (PC) quality and addiction severity in a prospective cohort study.
METHODS: Subjects reporting alcohol, cocaine or heroin as drugs of choice were recruited from an inpatient detoxification unit to participate in a randomized intervention trial to link them to PC. For this analysis subjects had initiated PC and completed at least 2 research interviews over 2 years. PC quality was measured using scales from the well-validated Primary Care Assessment Survey (PCAS): financial access; organizational access; visit-based continuity; thoroughness of physical exam; communication; interpersonal treatment; physician knowledge of patient; trust; and preventive counseling. Three addiction outcomes were assessed: 1. Addiction Severity Index; alcohol (ASI-alc); 2. ASI-drug; and 3. past month alcohol use to intoxication or any heroin or cocaine use. Each outcome was measured during the interview subsequent to the one at which the PCAS was assessed. Longitudinal regression models adjusted for age, gender, race, randomization group, insurance, baseline ASI-alc and ASI-drug.
RESULTS: The 183 subjects were: mean age 37 years; female 32%; black 54%; health insurance 40%. All PCAS scales were significantly related to reduced ASI-alc. In addition, a higher rating on the physician knowledge of patient scale was associated with both lower ASI-alc score (mean decrease 0.06 per standard deviation (SD) in PCAS, $P < .001$), ASI-drug score (mean decrease 0.02 per SD, $P = .02$), and lower odds of alcohol intoxication or drug use (OR = 0.66 per SD, 95% CI 0.51–0.85). Higher trust scores were associated with lower ASI-alc (mean decrease 0.05 per SD, $P = .01$) and lower odds of alcohol intoxication or drug use (OR = 0.74 per SD, 95% CI 0.59–0.95). Other comparisons were not significant.
CONCLUSION: Higher quality of primary care, across many domains, appears to be associated with reduced alcohol addiction severity. Furthermore, a higher quality primary care relationship, as indicated by physician knowledge of patients and trust, is associated with improvements in alcohol and drug outcomes. These data suggest that efforts directed towards transforming the currently fragmented, episodic medical care often received by patients with addictions into high quality primary care could reduce their alcohol and drug use and addiction severity.

IS SENIORITY BETTER? DIFFERENCES IN PERFORMANCE OF PREVENTIVE HEALTH SERVICES BY YEAR OF RESIDENCY TRAINING. L.L. Willett[1]; G.R. Heudebert[1]; S. Massie[1]; C. Benton[1]; T. Houston[1]. [1]University of Alabama at Birmingham, Birmingham, AL. *(Tracking ID #117137)*

BACKGROUND: An objective practice-based learning project was implemented to assess the performance of preventive health services in the resident continuity clinic. We present results of performance by level of residency training.
METHODS: Six quality indicators were chosen based on national guidelines and were abstracted from patient charts by a trained abstractor blinded to resident demographics using a standard computer-based tool. A patient had to be seen by the same resident more than once during the year and qualify for the preventive service by national guidelines. We conducted univariate and multivariate analyses using chi square and logistic regression respectively to compare performance between interns and residents.
RESULTS: Patient charts (N = 761) were abstracted for 71 residents and interns. Compared to patients cared for by residents, those cared for by interns tended to receive more preventive health services including: fecal occult blood testing (FOBT) (42% vs 31%, $P = .01$) and tobacco use screening (60% vs 52%, $P = .02$). A non-significant trend was also seen for pneumococcal vaccination (63% vs. 57%), mammography (43% vs. 38%), and counseling smokers to quit (71% vs. 62%). This trend was not seen for lipid screening or invasive colon screening. After adjustment for patient age and race, patient and resident gender, and number of visits during the measurement year, patients who were seen by interns were more likely to receive FOBT [OR 1.6 (CI 1.04–2.23)] and be screened for smoking [OR 1.4 (1.01–1.98)] as compared to those seen by residents. Seven residents met or exceeded the "benchmark" level of performance (top 10% as compared with other residents) in 4 out of the six indicators. Six of these seven top performers were interns.
CONCLUSION: Patients cared for by interns as compared to residents over a one year time period were more likely to receive several preventive health services recommended by national guidelines. Potential explanations include longer clinic contact time, closer attending supervision, or more attention to detail by interns as compared to residents. Regardless of year of training, performance of these quality indicators needs improvement.

IS THE PLACEBO HARMLESS? A META-ANALYSIS OF CARDIOVASCULAR TRIALS. R. Mallory[1]; E.B. Bass[1]; S.N. Goodman[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #116386)*

BACKGROUND: There is continuing debate over the ethics and utility of using placebos as controls in randomized trials. We sought to determine if patients who receive placebos in randomized controlled trials (RCTs) of cardiovascular interventions are at an increased risk of death or serious adverse events compared to patients who receive interventions.
METHODS: We used Cochrane Collaboration search strategies to identify all English-language, placebo-controlled RCTs indexed by Medline in 2002 in the field of Cardiovascular Medicine. Cross-over studies, sub-studies and follow-up studies were excluded. We abstracted data on adverse events, serious adverse events, trial withdrawals and all-cause mortality. Risk differences were calculated and then pooled using random-effects meta-analytic methods. Trials were scored on a 1–6 scale ranging from placebo highly preferred to intervention highly preferred, based on the original investigators' interpretation of the overall trial results.
RESULTS: We identified 654 RCTs of which 236 met the inclusion criteria. A total of 127,626 patients were enrolled. Intervention arms were preferred or highly preferred in 66% of the studies, placebo arms preferred or highly preferred in 15%, and the two arms considered equal in 19%. 138 trials provided information on adverse events, 101 on serious adverse events and 115 on mortality. The median proportion of patients with adverse events was 21% (IQR: 6, 51). The pooled estimate of the absolute risk difference between placebo and intervention arms was –2.6% (95% CI: −4.1, −1.1) with an increased risk of adverse events for patients in intervention arms. For serious adverse events the pooled estimate of the risk difference was 0.7% (95% CI: 0.1, 1.4) with an increased risk for patients in placebo arms. The median overall trial mortality was 2.7% (IQR: 0.8, 6.9), and the pooled estimate of the absolute risk difference in mortality was 0.28% (95% CI: 0.12, 0.44) indicating 10% greater mortality in the placebo group. In a meta-regression model including trial size, trial length, number of trial sites, trial funding source and journal impact factor only trial location remained associated with a risk difference in mortality The absolute risk difference in mortality for US trials was −0.03 (95% CI: −0.36, 0.29) while the risk difference for non-US trials was 0.49 (95% CI: 0.28, 0.70).
CONCLUSION: This analysis suggests that patients enrolled in the placebo arms of randomized controlled trials in Cardiovascular Medicine are at a modestly increased risk of death and serious adverse events. Whether this reflects an over-reliance on the use of placebo controls, or is actually a welcome sign of medical progress remains to be determined. Further work focusing on possible sources of difference between US and Non-US trials is also required.

IS THERE A RELATIONSHIP BETWEEN SHARED DECISION MAKING AND SUBJECTIVE COLLABORATION? D. Schillinger[1]; G.W. Saba[1]; C.P. Somkin[2]; A. Fernandez[1]; C. Wilson[1]; K. Grumbach[1]; S.T. Wong[3]. [1]University of California, San Francisco, San Francisco, CA; [2]Kaiser Permanente Division of Research, Oakland, CA; [3]University of British Columbia, Vancouver, British Columbia. *(Tracking ID #117233)*

BACKGROUND: Shared decision-making (SDM) is promoted as an ideal method of physician-patient communication and indicator of collaborative care. Whether SDM is experienced by patients and providers as genuinely collaborative is questionable.
METHODS: To examine the relationship between the extent of SDM and subjective collaboration, we combined methods of direct observation of patient-physician encounters with patient and physicians' stimulated recall of these same encounters. We videotaped and transcribed a diverse convenience sample of chronic care visits in a public hospital's primary care clinic. We coded decision moments, critical events

in the encounter containing a choice of action, according to modified criteria of Elwyn and Braddock. Decision-making was shared if the dialogue included at least 5 of 10 possible communication criteria. Patient and physician participants separately viewed their encounter with a clinical psychologist, who asked them to discuss whether the decision-making was congruent with their preferences and was experienced as collaborative. Transcripts of the stimulated recall sessions were analyzed for themes at each decision moment and characterized as subjectively collaborative if each partner reported the decision-making congruent with their personal or professional values and/or reflective of genuine partnership.
RESULTS: We analyzed 5 visits and 10 stimulated recall sessions involving 5 patients and 5 primary care physicians. We identified 29 decision moments, 16 of which (55%) had objective evidence of SDM. Among the SDM decisions, 9/16 were experienced as collaborative; among the non-SDM decisions, 10/13 were experienced as collaborative.Inconsistencies were observed in the association between SDM and subjective collaboration even within patient-physician dyads. Thematic analysis revealed that relationship dynamics involving trust, truth telling, expectations of roles, and unchecked assumptions mediated the extent to which SDM was associated with subjective collaboration.
CONCLUSION: Because decision-making in primary care appears to occur in a context of a set of assumptions and experiences within the patient-physician relationship, the presence or absence of shared decision-making behavior is not necessarily related to perceived collaborative care. However, how decisions are made does appear to be related to important issues in the patient-physician relationship such as trust and role expectation.

IS TRAINING IN SHARED DECISION MAKING IN UNDERGRADUATE MEDICAL EDUCATION ADEQUATE? S.L. Clever[1]; E.G. Price[1]; D.M. Windish[1]; J.L. Magaziner[1]; P.A. Thomas[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #117294)*

BACKGROUND: Shared decision making (SDM) is an important component of patient-centered care, which is key element of quality of care. Unfortunately, SDM is rarely incorporated into routine office visits. Medical school is a critical time for shaping future physicians' attitudes and practices with patients, and inadequate preparation in SDM skills in medical school may be contributing to this problem. As preparation for a curriculum focusing in part on SDM, we set out to determine the status of SDM education at our institution.
METHODS: We surveyed a convenience sample of 3rd- and 4th-year medical students while they attended 5 clerkship orientation meetings in January 2003. We asked them to indicate whether they had formal training during their preclinical or clinical years in taking a medical history and performing a complete physical exam, as well as in key SDM skills of: encouraging questions from patients; eliciting patients' concerns, beliefs and expectations of their illness; eliciting patients' preferences for decision making; and reaching agreement on treatment plans. We also asked them to rate their level of competence in these skills on a 5-point scale, 0 = No exposure, 1 = Familiar, 2 = Can perform somewhat, 3 = Can perform well, 4 = Can teach to other students. In addition, we surveyed 6 clinical clerkships directors (Ambulatory Medicine, Emergency Medicine, Internal Medicine, Neurology, Pediatrics and Surgery) and asked them to rate the "average" student's performance in these same skills on a 3-point scale, 1 = Less prepared than s/he should be, 2 = At the level s/he should be, 3 = More prepared than expected.
RESULTS: We received surveys from ≥96% of students who attended the orientation meetings, for a total of 96 (40%) of the 240 3rd- and 4th-year medical students. The table below presents the percent of students who indicated they had not received formal training in the targeted skills. It also presents the percent of students who rated themselves as being able to perform the skills "somewhat" or worse, and the percent of course directors who rated the average student as less prepared than s/he should be.
CONCLUSION: In our institution, while students are consistently receiving training in history taking and physical exam, a substantial proportion of 3rd- and 4th-year students indicated that they do not have any formal training in key SDM skills. Even if they receive this training, many students and a majority of faculty rate students' skills as inadequate. If these results hold true at other institutions, it indicates a need for improved training in SDM skills during undergraduate medical education.

Skill	% students with no formal training	% students rating "Can perform somewhat" or worse	% faculty rating average student "Less prepared than s/he should be"
Performing a medical history	0	14	43
Performing a complete PE	0	30	17
Encouraging questions	11	52	100
Eliciting patients' concerns	12	39	83
Eliciting patients' preferences	30	53	67
Reaching agreement on treatment	31	45	50

"IT WAS AWFUL, REALLY AWFUL": A QUALITATIVE STUDY OF SICKLE CELL PATIENTS' TRANSITION FROM PEDIATRIC TO ADULT CARE. M. Landry[1]; K. Hampton[1]; K.B. DeSalvo[1]. [1]Tulane University, New Orleans, LA. *(Tracking ID #115015)*

BACKGROUND: Transition of care from pediatric to adult providers for adults born with chronic disease (ABCD) is often an unplanned experience that is occurring more frequently as medical advances increases the lifespan of these patients. Sickle cell (SS) patients are one group who must undergo this transition and in this study we explored their attitudes and perceptions about their transition of care and sought to identify ways to improve this process.
METHODS: We interviewed SS patients at an academic medical center that serves an urban minority population. Patients were selected sequentially based on their presentation for care and a diagnosis of SS disease. Open-ended questions from a structured survey tool were asked by a same race, similar age, non-medical interviewer. All interviews were anonymous and audiotaped for later transcription. Interviews were continued until recurrent themes emerged. Three researchers independently reviewed and coded the interview transcripts using Atlas.ti coding software to identify overarching themes.
RESULTS: Eleven patients were interviewed, 6 men and 5 women. The mean age was 29 (range 22–46) and 8 patients had at least a high school education. Patients' experiences with the transition of care were generally negative. Some were informed upon seeking health care that they had already been transferred to the adult service without their knowledge. "Just like that, I was moved and I had no clue as to where I was going or who was my new doctor." Patients perceived that their pediatric providers spent more time with them, communicated better and had better attitudes compared with their adult providers. Nursing interaction was as critical as physician interaction in patients' perceptions of treatment. Family support and self-care were integral components of the overall care. Patients reported significant lack of control over their care while hospitalized but felt in control in the ambulatory environment. Patients desired more professional support, communication, education and encouragement. All participants believed that there was a need for a structured transition program.
CONCLUSION: These sickle cell patients perceived a significant, negative change in their care during their transition from pediatric to adult health care providers. Some potential results of this negative experience are decreased continuity of care, decreased patient satisfaction and overall increased health care utilization. A formal transition of care program that addresses both medical and psychosocial support is indicated for this patient population and other ABCD patients. This program should involve a team approach including physicians, staff, families and patients.

KNOWLEDGE OF MOST RECENT HEMOGLOBIN A1C VALUES AMONG ADULTS WITH DIABETES: PREVALENCE AND CORRELATES. M. Heisler[1]; J. Piette[1]; E.C. Kieffer[2]; M.S. Spencer[2]; S. Vijan[1]. [1]VA Center for Practice Management and Outcomes Research, Ann Arbor, MI; [2]University of Michigan, Ann Arbor, MI. *(Tracking ID #116254)*

BACKGROUND: In chronic diseases such as diabetes, patient knowledge of their actual and target disease outcomes (such as Hemoglobin A1c values) is hypothesized to be an important prerequisite for effective patient involvement in managing their conditions. Accordingly, among a sample of adults with diabetes, we assessed: 1) the frequency and clinical, socio-demographic and health care correlates of knowing one's most recent A1c value; and 2) whether knowing one's most recent A1c was associated with better self-reported diabetes care understanding and self-efficacy.
METHODS: Cross-sectional survey of a sample of 840 U.S. adults with type 2 diabetes receiving care in a suburban Veterans Affairs facility, academic medical center, or inner-city urban health care facility (response rate of 68%). The primary outcome measure was accurately reporting (within a ±0.5 range) one's last HbA1c value (comparing respondents' survey report with the most recent A1c value prior to the survey from medical records). Independent variables were patients' income, education, race/ethnicity, age, gender, diabetes duration, diabetes medications regimen, health care site, and several variables for respondents' evaluation of their health care providers.
RESULTS: Twenty-five percent of the respondents accurately reported their last A1c level. In the multivariable logistic regression analyses, when only respondents' socio-demographic and clinical characteristics were included in the model, Latino respondents had significantly lower odds than white respondents of knowing their most recent A1c value (AOR: 0.12, 95% CI: 0.02–0.74), as did respondents with less than a high school education (AOR: 0.26, 95% CI:0.13–0.51). When the health care variables were added to the model, only education level continued to be an independent predictor of knowing A1c. Respondents who strongly agreed that their health care provider thoroughly answered their questions had higher odds of accurately knowing their last A1c value (AOR: 1.64, 95% CI: 1.05–2.56). After adjusting for all the above variables, respondents who knew their last A1c value had significantly higher reported understanding of their diabetes care ($P < .001$). A1c knowledge, however, was not associated with respondents' reported self-efficacy in managing their diabetes.
CONCLUSION: Few respondents in this sample of adult patients with diabetes accurately knew their last A1c value. While Latino patients had more than 80% lower odds of knowing their A1c value than white patients, these ethnic differences were no longer statistically significant once the health care variables were added to the models. A1c knowledge was indeed associated with better reported diabetes care understanding, but not with increased confidence about managing diabetes.

LABOR INPUTS AND COSTS OF A SUCCESSFUL PRIMARY CARE-BASED, DIABETES DISEASE MANAGEMENT PROGRAM. R. Rothman[1]; S. So[1]; R.M. Malone[2]; B. Bryant[2]; D.A. DeWalt[2]; M. Pignone[2]; R.S. Dittus[1]. [1]Vanderbilt University, Nashville, TN; [2]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #116447)*

BACKGROUND: Government and private sector organizations have recently invested in disease management programs to improve quality of care and reduce costs for patients with chronic disease. However, little has been published on the labor inputs

and costs necessary to implement a disease management program. We examined the labor inputs and costs of a successful primary care-based, diabetes disease management program.
METHODS: We performed a randomized controlled trial of a diabetes disease management program for 217 patients in an academic primary care practice. The intervention group received intensive management from clinical pharmacists and a diabetes care coordinator (DCC) who: provided diabetes education; applied algorithms for treating glucose and decreasing cardiovascular risk, and addressed barriers to care. Control patients received a one-time management session from pharmacists followed by usual care from their primary provider. Clinical outcomes included glycated hemoglobin (A1C), blood pressure, total cholesterol, and aspirin use at 12 months. Process outcomes included number of actions/contacts with patient, time spent with patient, number of drug additions/titrations. Labor costs were calculated based on Bureau of Labor Statistics national wage data with a sensitivity analysis.
RESULTS: For the 194 (89%) patients with 12-month data, the intervention group had significantly greater improvement than the control group for: systolic blood pressure (−6.9 mmHg vs. +2.3 mmHg, $P = .004$); A1C (−2.7% points vs. −1.5% points, $P = .01$); and aspirin use (+47% vs. +6%, $P < .0001$). Change in total cholesterol was not significant (−19 mg/dl vs. −14 mg/dl, $P = .35$). There were no significant differences in use of clinical services or adverse events. The disease management team made a median of 44 contacts or care-related activities for a median 450 minutes for intervention patients and 12 contacts for 125 minutes for control patients ($P < .0001$). For intervention patients, 68% of contact time was conducted by clinical pharmacists, 19% from the DCC, and 13% from both. This time was allocated as follows: 46% in-person patient contact, 42% phone management, 12% chart-review/data management. Of note, 20% of time was spent on incomplete actions (ex. incomplete phone calls). The most common pharmacist actions included: medication titration/addition (34%), patient assessment (21%), and prescription renewal (19%). Intervention patients had a median of 7 drug titrations or additions during the study. In sensitivity analysis, the incremental labor costs for the intervention were $16.24 per patient per month (sensitivity analysis: $13.27–$22.58).
CONCLUSION: A diabetes disease management program that improved patient outcomes can be successfully integrated into a primary care clinic at a reasonable cost.

LACK OF ASSOCIATION BETWEEN LITERACY AND DEPRESSIVE SYMPTOMS OR MENTAL HEALTH FUNCTION OF ADULTS WITH ADDICTION. M. Paasche-Orlow[1]; A.K. Lincoln[1]; D.M. Cheng[1]; M. Winter[1]; R. Saitz[1]; J.H. Samet[1]. [1]Boston University, Boston, MA. *(Tracking ID #117307)*

BACKGROUND: While multiple surveys have reported an association between low literacy and worse health status in various chronic diseases, longitudinal data have been sparse. We hypothesized that low literacy would be associated with more depressive symptoms and worse mental health functioning in patients with addictions.
METHODS: In a prospective cohort study, we evaluated literacy using the Rapid Estimate of Adult Literacy in Medicine (REALM) (≤6th grade, 7th–8th grade, ≥9th grade), depressive symptoms using the Center for Epidemiologic Studies-Depression (CES-D) scale, mental health functioning using the Mental Component Summary (MCS) scale of the Short Form-36 health survey, and drug and alcohol addiction severity using the Addiction Severity Index (ASI-Drug and ASI-Alc). Eligible subjects were inpatients at a detoxification unit, had no primary medical care, had a Mini-Mental State Exam (MMSE) of >21, completed the REALM, and were in a randomized controlled trial of a clinical intervention to link them with primary care from 1997–1999. Follow-up was at 6-month intervals for 2 years. Using unadjusted and adjusted linear regression models at study entry and then unadjusted and adjusted longitudinal generalized linear models we investigated the relationship between 1) literacy and CES-D score and 2) literacy and MCS score. Adjustment variables included age, race, gender, income, education, primary language, MMSE, and randomization group.
RESULTS: Literacy levels among the participants were: 14% ≤6th grade, 33% 7th–8th grade, 53% ≥9th grade. At cohort entry, there were significant unadjusted correlations between low literacy and less depressive symptoms ($P = .01$) and better mental heath functioning ($P = .05$), but these correlations were not significant when adjusted for potential confounders. In longitudinal analyses no association was found between literacy and CES-D or MCS in unadjusted or adjusted models.
CONCLUSION: Literacy was not associated with depressive symptoms or mental health function in either cross-sectional or longitudinal analyses in patients with addictions. The impact of literacy on health outcomes is not uniform; insight into the mechanisms by which literacy effects are elaborated are important next steps.

LANGUAGE BARRIERS: EFFECTS ON HEALTH CARE COMPREHENSION. E. Wilson[1]; A.H. Chen[2]; K. Grumbach[1]; F. Wang[3]; A. Fernandez[1]. [1]University of California, San Francisco, San Francisco, CA; [2]Asian & Pacific Islander American Health Forum, San Francisco, CA; [3]University of California, San Francisco, Orinda, CA. *(Tracking ID #117257)*

BACKGROUND: Language barriers can negatively impact the quality of care and may place patients at risk for adverse outcomes. Language concordant physicians may reduce these risks. We studied a linguistically diverse sample of Californians to determine a) the effect of limited English proficiency on comprehension in the healthcare setting and b) whether access to language concordant physicians can reduce language barriers.
METHODS: Telephone survey of 1200 randomly selected Californian immigrants conducted in 11 languages, excluding English. The survey asked about spoken English fluency on a 4-point scale, usual sources of care, demographics, and included four questions on comprehension in a healthcare setting: problems understanding a medical situation, confusion about how to use medication, trouble understanding labels on medication, and bad reactions to medications due to a problem understanding instructions. Respondents were defined as limited English proficient (LEP) if they indicated they spoke English "not well" or "not at all." We used multivariate logistic regression to determine the relationship between LEP status and medical comprehension, adjusting for age, sex, education, income, health insurance, language/ethnicity, number of years in U.S., and usual source of care. In order to determine the effect of physician language concordance on comprehension, we performed a stratified analysis for respondents with language concordant and discordant physicians.
RESULTS: 592 (49%) of the 1200 respondents were defined as LEP. 49% of LEP and 21% of non-LEP respondents had problems understanding a medical situation (AOR 3.2/CI 2.1,4.8); 35% of LEP and 24% of non-LEP respondents were confused about how to use medication (AOR 1.4/CI 0.9,2.1); 42% of LEP and 25% of non-LEP respondents had trouble understanding labels on medications (AOR 1.5/CI 1.0,2.3); and 16% of LEP and 8% of non-LEP respondents reported a bad reaction to medications (AOR 2.3/CI 1.3,4.4). In the stratified analysis, among respondents with language concordant physicians, LEP respondents were more likely to have problems understanding a medical situation than non-LEP respondents (AOR 2.2/CI 1.2,3.9); there were no differences between the two groups in the other three measures. Among respondents with language discordant physicians, LEP respondents were more likely to have problems understanding a medical situation (AOR 9.4/CI 3.7–23.8), more likely to have trouble understanding medication labels (AOR 4.2/CI 1.7–10.3), and more likely to report a bad reaction to medications (AOR 4.1/CI 1.2–14.7) than non-LEP respondents.
CONCLUSION: Limited English proficiency among Californians is a barrier to understanding medical situations and instructions, and increases the risk for adverse medication reactions. Access to language concordant physicians greatly mitigates but does not eliminate these barriers.

LANGUAGE CONCORDANCE AND GLYCEMIC CONTROL IN AN URBAN HISPANIC COHORT. A. Montero[1]; J. Jones[1]; R. Gross[1]; O. Carrasquillo[1]. [1]Columbia University, New York, NY. *(Tracking ID #117367)*

BACKGROUND: Hispanics diabetics have poorer glycemic control than non-Hispanic Whites. We carried out this study to evaluate whether language discordance between patient and provider may present a unique barrier to achieving glycemic control among Spanish speaking Latino patients.
METHODS: Subjects were drawn from a larger study of 1,157 patients randomly selected from an urban general medicine group practice. Our cross sectional analysis linked responses from that study's questionnaire with data from our practice's clinical information system. Our sample consisted of the 234 patients in the parent study who were Spanish-speaking (preferred the Spanish questionnaire), diabetic (based on ICD-9 code or laboratory data diagnostic for diabetes), and had at least one hemoglobin A1C(HgA1C) measurement in 2001 or 2002. There were 89 distinct primary care providers; our unit of analysis was the patient. Our dependent variable was language concordance categorized as a) language concordant (provider known to be fluent in Spanish using implicit criteria; N = 99) b) providers who routinely used interpreters based on interpreter logs; (N = 86) or c) non-concordant (providers who were neither Spanish fluent nor routinely used interpreters; N = 49). Our outcome variable was poor glycemic control (last HgA1C > 9.5). We used logistic regression to adjust for those covariates which in bi-variate analysis were correlated with poor glycemic control.
RESULTS: We found poor glycemic control in 9% of patients in the language concordant group as compared to 26% of patients in the interpreter group ($P = .015$) and 20% of patients in the non-concordant group ($P = 14$). Other correlates ($P < .05$) of poor glycemic control were age, provider type (resident vs. attending), Medicaid insurance, and <3 clinic visits per year with primary provider. In multivariate models, the interpreter and non-concordant group were not more likely to have poor glycemic control than the concordant group (OR = 1.96 {95% CI .73–5.29} and OR 1.49 {95% CI .45–4.89}, respectively). In this model the only age remained independently associated with poor glycemic control with younger patients having poorer control.
CONCLUSION: In our sample of urban Latino patients we did not find an independent relationship between language concordance and poor glycemic control. Caveats of this negative study include limited statistical power, high rates of language concordance or interpreter use, and inability to more precisely classify Spanish proficiency among providers who were not Spanish fluent.

LEFT VENTRICULAR HYPERTROPHY BY ECG: AN INDEPENDENT PREDICTOR OF CARDIAC COMPLICATIONS IN PATIENTS UNDERGOING NON-CARDIAC SURGERY. K. Gilbert[1]; E. Strevel[1]. [1]University of Western Ontario, London, Ontario. *(Tracking ID #116236)*

BACKGROUND: Several multivariate indices exist to aid the clinician in determining cardiac risk and include evaluation of the ECG for arrhythmia or prior myocardial infarction. Although left ventricular hypertrophy (LVH) on pre-operative echocardiography has been associated with cardiac events, this has not been demonstrated using ECG criteria. The purpose of this study was to determine whether the presence of LVH on the pre-operative ECG is independently associated with perioperative cardiac complications.
METHODS: This was a retrospective-prospective case-control study. Cases and controls were obtained from a previous prospective study designed to compare cardiac risk indices and were matched on type of surgery and Goldman cardiac

risk group. Cases were identified if they had any of: unstable angina, acute pulmonary edema, non-fatal myocardial infarction or cardiac death. Up to three matched controls were selected randomly per case. Preoperative ECGs were obtained by searching hospital charts and ECG archives. Patients were excluded if the ECG was not obtainable or if a left bundle branch block (LBBB) was found, as these were otherwise uninterpretable. LVH was diagnosed blindly, using the method of Romhilt & Estes.
RESULTS: 1465 patients were enrolled in the original study, 74 of whom had a major perioperative cardiac complication. 207 matched controls were obtained. Preoperative ECGs were not available or uninterpretable in 15 (20%) of the cases and 33 (16%) of the controls. Of the 59 cases with interpretable ECGs, 18 (31%) had at least "probable" LVH, whereas 26 (15%) of the 174 control ECGs had this pattern (OR 2.5, 95% CI: 1.25–5.00, $P < .008$). When the criteria for "definite" LVH were applied, 17% of the cases and 10% of the controls received this diagnosis (OR 1.88, 95% CI: 0.81–4.38, $P = .137$).
CONCLUSION: These results suggest that LVH on the preoperative ECG is an independent predictor of perioperative cardiac complications. Cases and controls were well-matched, underscoring the independent nature of this predictor. The frequency of missing ECGs between the cases and controls was similar, and ECGs were interpreted blind to case-control status. Thus there are few potential sources of bias in this study. Notwithstanding, a prospective study demonstrating that LVH is a predictor of perioperative cardiac complications would represent stronger evidence and would be a useful future project. In the interim, it is reasonable to consider LVH an additional risk factor to be evaluated preoperatively.

LEISURE TIME AND NON-LEISURE TIME PHYSICAL ACTIVITY IN ASIAN AMERICANS: EFFECTS OF ETHNICITY, NATIVITY, AND YEARS IN THE U.S. N.R. Kandula[1]; D. Lauderdale[1]. [1]University of Chicago, Chicago, IL. *(Tracking ID #116269)*

BACKGROUND: The majority of Asian Americans are immigrants whose risk of heart disease, diabetes, and obesity increases as duration of residence in the United States (U.S.) increases. Regular physical activity reduces the risk of these diseases, yet little is known about physical activity in Asian Americans and how it changes after immigration. Prior economic literature on physical activity suggests there may be different effects on leisure time and non-leisure time physical activity following immigration.
METHODS: Data from the 2001 California Health Interview Survey, which oversampled Asian Americans, were analyzed to investigate the effects of ethnicity, foreign birth, and years in the U.S. on leisure time physical activity and non-leisure time physical activity. The sample included 962 Chinese, 766 South Asians, 667 Filipinos, 658 Vietnamese, 623 Koreans, 550 Japanese, and 27,853 U.S.-born non-Asians (ages 18–59).
RESULTS: Asian Americans were much less likely to participate in leisure time physical activity than U.S.-born non-Asians (odd ratio (OR), men = 0.47, 95% confidence interval (CI): 0.39, 0.56, OR, women = 0.47, 95% CI: 0.41, 0.56). Foreign-born Asians were least likely to participate in leisure time physical activity; leisure time physical activity increased as years in the U.S. increased. Asian Americans were not more likely to participate in non-leisure time physical activity than U.S-born non-Asians. Ethnicity was significantly associated with being sedentary among Asian subgroups. Chinese Americans were most sedentary.
CONCLUSION: Asian Americans, especially immigrants, are at risk for low levels of leisure time physical activity. Low levels of leisure time physical activity were not offset by increased non-leisure time physical activity. Research is needed to understand the socioeconomic and cultural factors that promote or limit physical activity in Asian Americans. Increasing regular physical activity is key to protecting the health of this rapidly growing population.

LETHAL ERRORS: DISPARITY BETWEEN PUBLIC AND PHYSICIAN UNDERSTANDING OF "ADVANCE DIRECTIVES" AND "DO NOT RESUSITATE" STATUS. A. Egbert[1]. [1]University of Kansas, Wichita, KS. *(Tracking ID #116782)*

BACKGROUND: Advance directives are infrequently useful in emergent situations, unavailable, or misunderstood by physicians. Nevertheless, considerable emphasis has been placed on the completion of advance directives by the public. Serious unintended consequences may be the result.
METHODS: Three audiences were recruited: one consisting entirely of laypersons recruited by advertisement on National Public Radio (NPR) (n = 32), one of health care professionals (university internal medicine faculty, residents, and students [n = 78]), and one mixed audience, a hospital ethics committee (70% laypersons [n = 14]). Information was gathered about knowledge of advance directives, personal experiences with them, and answers to four hypothetical cases. An Audience Response System (ARS) was used, which allowed 100% participation, anonymous answers, electronic tallies of the results, and immediate feedback so that interest in the poll was sustained. All results were preserved by the ARS and subsequently analyzed.
RESULTS: Healthcare professionals considered themselves very knowledgable (30%) or somewhat knowledgable (53%) about the proper use of advance directives. Nevertheless, the information was used at the point of care in <25% of proposed situations; instead, "DNR" status or "talking to the nearest relative" were preferred. Only 28% of physicians were aware their patients had completed advance directives. Further, physicians frequently misapplied the supplied information. In one scenario, a lethal error was made by >55% of the physicians which would have resulted in the unintended death of a patient; in another scenario, 30%. In contrast, lay audiences used the information contained in advance directives correctly the majority of the time (76%). When presented with this information, lay audiences indicated mistrust of physicians, and requests for physician-assisted suicide.
CONCLUSION: In emergent situations, advance directives are seldom present or useful at the point of care. Some physicians do not understand their limited applicability, and errors resulting in unintended patient death may occur. The general public does not appreciate these consequences, and feels betrayed and mistrustful of physicians when informed.

LIMITED HEALTH LITERACY IS ASSOCIATED WITH INADEQUATE UNDERSTANDING OF ANTICOAGULATION RISKS, BENEFITS, AND MANAGEMENT. M.C. Fang[1]; E. Machtinger[1]; D. Schillinger[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116665)*

BACKGROUND: Because of the risk of bleeding complications and the need for ongoing monitoring, oral anticoagulation requires a significant degree of patient involvement and education about warfarin's risks and benefits. Little is known about the extent to which patients comprehend basic concepts inherent in the management of anticoagulation as well as what factors are associated with poor comprehension.
METHODS: Bilingual research assistants surveyed outpatients followed in a hospital-affiliated anticoagulation clinic and assessed patient demographics, cognitive status (using the s-CASI), and identified patients with limited health literacy (score of <23 on the Test of Functional Health Literacy in Adults [TOFHLA] in English or Spanish). Using expert opinion and adapting questions from prior studies on anticoagulation knowledge, we developed a 6 item Fundamentals of AntiCoagulation Test (FACT), composed of 5 multiple-choice questions about the mechanism, monitoring, and complications of warfarin, as well 1 question about risk-reduction, all phrased in lay terms. Inadequate understanding was defined as scoring in the lowest FACT quartile. We then used multivariable logistic regression to find predictors of inadequate understanding.
RESULTS: We interviewed 179 anticoagulated patients whose mean age was 60 yrs and who had been on chronic warfarin for an average of 4 yrs. The population was racially and ethnically diverse, with 34% being Hispanic, 25% Asian-American/Pacific Islanders, 20% White, 17% African-American, and 4% of other race. Most patients (85%) were anticoagulated for atrial fibrillation or prosthetic valves. The median FACT score was 4; 14% of patients correctly answered all 6 questions, while 19% scored in the lowest quartile (≤2). 46% of patients with limited health literacy scored in the lowest quartile, compared to only 6% of those with adequate health literacy. After adjusting for age, sex, language, education and cognitive status, patients with limited health literacy were substantially more likely than those with adequate health literacy to have inadequate anticoagulation knowledge (odds ratio 7.2 [95% CI 2.1–24]).
CONCLUSION: Limited health literacy was strongly associated with inadequate understanding of concepts essential to collaborative anticoagulation management. Further studies should examine ways to more consistently communicate these concepts so that all patients can participate in informed decision-making.

LITERACY AND ACCURACY FOR SELF-ADJUSTED DIURETIC DOSING IN PATIENTS WITH HEART FAILURE. N. Rogers[1]; D.A. DeWalt[1]; M. Pignone[1]; R.M. Malone[1]; B. Bryant[1]; K. Felix[1]; C. Rawls[1]; K. Corr[1]; M.C. Kosnar[1]; R. Rothman[2]; B.F. Angel[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]Center for Health Services Research, Nashville, TN. *(Tracking ID #116117)*

BACKGROUND: Patients with low literacy have less disease specific knowledge and may be prone to more self-care errors. Daily weight measurement and diuretic dose adjustment are associated with improved outcomes for patients with heart failure. We sought to determine if low literacy is associated with decreased accuracy in weight based diuretic dose adjustment in a structured heart failure disease management program.
METHODS: We performed a chart review of patients enrolled in the interventional arm of a HF disease management study. Patients received HF educational materials designed for patients with low literacy and a one-hour education session on self-care. We provided a digital scale and asked patients to measure and record weights daily in a specially designed logbook and to adjust their diuretic dose based on weight, using an individualized care plan. Patients also received phone calls to reinforce program adherence and answer questions. We measured literacy using the Rapid Estimate of Adult Literacy in Medicine (REALM) and dichotomized the measure at the 6th grade level. We reviewed 2 weeks of patient logs from two separate periods (3–7 weeks and 18–22 weeks) after enrollment. For each two-week period 28 errors were possible, including no daily weight recorded and improper diuretic dose for weight.
RESULTS: Our final sample of 56 patients was taken from the 64 intervention patients with the following exclusions: deceased prior to 6 months (2), withdrawn/lost to follow-up (5), 6 month assessment not completed (1). Of the 56 patients reviewed, 11 did not use the logs. Low literacy patients (25 total) were more likely to use the logs than higher literacy patients (31 total) (92% vs. 71%, $P = .05$). During weeks 3–7, the mean number of errors was higher in the low literacy group (6.7 vs. 3.6, $P = .14$). During weeks 18–22, the mean number of errors was similar between the groups (3.6 vs. 4.2, $P = .76$) and lower than during the early time period. There was no relationship between literacy and number of encounters with the disease management team.
CONCLUSION: Low literacy patients are more likely to use the self-monitoring materials, but they may be more likely to make early errors in diuretic dosage adjustment Errors become less common over time. Patients with low literacy skills can learn to perform complex self-care for HF, but may benefit from more intensive early support.

LITERACY AND PAIN, FUNCTIONAL STATUS, AND DEPRESSION SCORES IN PRIMARY CARE PATIENTS WITH CHRONIC PAIN. J.S. Perhac[1]; T.J. Ives[1]; S. Prakken[1]; K. Felix[1]; R.M. Malone[1]; B. Bryant[1]; J. Ripton[1]; D.A. DeWalt[1]; M. Pignone[1]; P.R. Chelminski[1]. [1]University of North Carolina, Chapel Hill, NC. *(Tracking ID #115921)*

BACKGROUND: Low literacy is associated with several adverse health outcomes. We investigated whether literacy is associated with patient report of pain, depression, functional status, and disability and whether literacy affects the degree of change in these measures over time for patients enrolled in a primary care based general medicine disease management program for chronic non-malignant pain.
METHODS: Eligible patients had chronic pain (>3 months duration), were taking or being considered for opioid medication, and were referred by their primary care providers. We measured literacy using the Rapid Estimate of Adult Literacy in Medicine (REALM). We assessed pain with the Brief Pain Inventory (BPI), depression with the Center for Epidemiological Studies scale (CES-D), and functional status with the Pain Disability Index (PDI). We dichotomized literacy at 9th grade reading level and evaluated baseline measures and change over 3 months according to literacy.
RESULTS: We enrolled 114 patients with chronic pain. Mean age was 52.7 years, 56% were female, 79% Caucasian, 37% did not graduate HS, 85% reported an annual household income less than $20,000, 63% reported receiving disability benefits, and 52% were unemployed at enrollment. We observed 57% (65) of patients read below 9th grade level. According to CES-D, major depression was more prevalent in patients with literacy at or above 9th grade level (69%) verses below 9th grade level (46%, $P = .017$). Receipt of disability benefits was more common among patients reading below the 9th grade level (64% vs. 44%, $P = .039$). We found no difference at enrollment in BPI or PDI according to literacy. Literacy was not related to changes in pain, depression, or functional status at 3 month follow-up.
CONCLUSION: Higher literacy was associated with higher levels of depression among patients in a primary care based general medicine disease management program. Low literacy patients were more likely to receive disability benefits. Literacy is not related to patient reported pain, functional status, or to change in these parameters over three months.

LONG TERM OUTCOMES OF INFECTIVE ENDOCARDITIS IN AN URBAN HIV COHORT. M. Burkey[1]; L. Wilson[1]; R.D. Moore[1]; K. Gebo[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #115971)*

BACKGROUND: Infective Endocarditis (IE) has been shown to occur frequently in HIV infected injection drug users (IDUs) . Few data exist on the long term outcomes of HIV infected patients with IE.
METHODS: We evaluated 64 first cases of IE between 1996–2002 in a large Baltimore clinical cohort in which comprehensive demographic, clinical, therapeutic and outcomes data are longitudinally collected. Primary outcomes were one year mortality or recurrence of IE. Multivariate logistic regression were used in the analysis, with 95% CI reported.
RESULTS: Of 3,995 patients followed after January 1, 1996, there were 64 first IE episodes between January 1, 1996 and December 31, 2002 for an incidence of 5.2 IE events per 1000 PY. Of the 64 IE subjects, the majority (91% African-American, 64% male) were IDUs (86%), with a mean age of 41 years (range 28–57). The median CD4 at first IE was 68 cells/mm3 (range 1–1224), with a median HIV-1 RNA 78,288 copies/ml (range 0–226,195). At the time of IE , 31% were on HAART, 88% on PCP prophylaxis, 67% on MAC prophylaxis, and 78% were HCV+. The most common etiologic organisms of IE were Staphylococcus aureus (69%), coagulase negative Staphylococci (5%), Streptococcus viridans (5%), and Enterococcus faecalis (5%). Within one year of IE diagnosis, 17% had an IE recurrence and 48% of all patients died; 58% of all patients either died or had IE recurrence. Adjusting for gender, IDU, and HAART usage, age >40 years (AOR 4.06, 95% CI 1.17, 14.2) was associated with one year mortality, but not with one year recurrence (AOR 1.51, 5% CI 0.31, 7.51). All recurrences occurred in African-American patients. Race was not associated with one year mortality. History of IDU, HCV infection, PCP prophylaxis, MAC prophylaxis, and HAART usage were not significant predictors of mortality or recurrence.
CONCLUSION: In our cohort, IE is a common diagnosis, and the rates of recurrence and one year mortality are high. Our data suggest the need for close follow-up focusing on preventing recurrence of IE—especially in those over 40 years. Future studies investigating the utility of IE prophylaxis in HIV patients with a history of IE may be warranted.

LONGITUDINAL CHANGES IN A1C TO ASSESS DIABETES QUALITY OF CARE. W. Thompson[1]; H. Wang[1]; M. Xie[1]; L. Pogach[2]; M.M. Safford[3]. [1]Rutgers, The State University of New Jersey, Piscataway, NJ; [2]VA New Jersey Health Care System, East Orange, NJ; [3]University of Alabama at Birmingham, Birmingham, AL. *(Tracking ID #115738)*

BACKGROUND: We explored longitudinal analysis as a potential tool for diabetes quality measurement.
METHODS: Using administrative data from 125 VA facilities, we identified 284,895 veteran users with diabetes and at least one National Glycosylated Hemoglobin Standardization Project certified A1c lab test in fiscal year (FY) 1999 or FY 2000. Individual A1c was the dependent variable in a multi-level linear regression analysis incorporating facility-level fixed effects, individual initial A1c, time between A1c tests, and baseline patient characteristics. To evaluate variation, we examined coefficients for facility-level fixed effects, which reflected the average change in A1c for patients cared for at that facility.
RESULTS: Mean age of the population was 64.1 ± 11.3 years, 97.5% were male, 31.0% were on insulin at baseline, and 76.0% had at least two A1c tests. Mean A1c for FY 1999–2000 was 7.6 ± 1.8%. Overall, for patients with at least 2 tests, A1c declined over FY 1999–2000, (mean –0.31 A1c%) but varied substantially by facility (SD ± 0.45, range –1.90 to +1.03 A1c%). Sixty-eight facilities demonstrated significant ($P < .05$) declines and 5 demonstrated significant increases. Among the bottom 10 ranked facilities, only four were within the bottom decile with 90% confidence.
CONCLUSION: Individual glycemic control in patients in most VA facilities improved over two years, suggesting improvements in the effectiveness and outcomes of care. Average facility-level change in A1c levels varied substantially, suggesting process of care variability and room for further improvement.

LONG-TERM FOLLOW UP OF A LONGITUDINAL FACULTY DEVELOPMENT PROGRAM IN TEACHING SKILLS. A.M. Knight[1]; K.A. Cole[1]; D.E. Kern[1]; L.R. Barker[1]; S.M. Wright[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #116869)*

BACKGROUND: In this country, millions of dollars and thousands of hours of faculty time continue to be invested each year on faculty development programs. Little is known about the impact of these programs. This study describes follow-up data for participants in a longitudinal faculty development program in teaching skills and attempts to understand the impact that it had on the participants.
METHODS: A ten-page, 160-item, survey was developed for this study. All those who participated in the Johns Hopkins Faculty Development Program in Teaching Skills from 1987 through 2000 were surveyed, as well as members of a comparison group selected by participants from 1988 through 1996. Surveys were mailed to past participants and their matches in July 2002. Comparisons between the two groups were made using Chi-square tests.
RESULTS: Surveys were received from 200 participants (83% response rate) and from 104 matches (82% response rate). Participants were more likely than matches to have taught or mentored learners in the past year (89% vs. 80%; $P < .05$) and more likely to currently have a medical school faculty appointment (77% vs. 66%; $P < .05$). Participants had more commonly written down or reviewed a list of their professional work goals in the last year (70% vs. 49%; $P < .0001$). A larger number of participants than matches rated their proficiency 'very good' or 'excellent' in "giving feedback to those you teach" (88% vs. 75%; $P < .01$), "eliciting feedback on your own performance" (70% vs. 56%; $P < .05$), and "working in groups" (96% vs. 89%; $P < .05$). Greater numbers of participants than matches said that they 'frequently' or 'always' "ask learners what they would like to get out of interactions" (70% vs. 50%; $P < .01$), "spend time building supportive relationships with learners" (85% vs. 71%; $P = .01$), "assess and focus on the learner's needs rather than their own agenda when precepting" (77% vs. 57%; $P < .01$), "start feedback sessions by asking learners to assess their performance" (71% vs. 42%; $P < .001$), and "let learners know their limitations as a teacher" (60% vs. 43%; $P < .01$).
CONCLUSION: Past participants in the Johns Hopkins Faculty Development Program have a higher self-assessment of their teaching proficiencies and self-report performing desirable teaching methods more frequently than do matched faculty who never experienced the longitudinal curriculum.

LOOKING FROM THE OTHER SIDE: A MEASURE OF PHYSICIANS' PERCEPTIONS OF PATIENTS' COMMUNICATION. H.S. Gordon[1]; K.J. O'Malley[1]; B.F. Sharf[2]; R.L. Street[2]; P. Haidet[1]. [1]Houston Center for Quality of Care and Utilization Studies, Veterans Affairs Medical Center, Houston, TX; [2]Texas A&M University, College Station, TX. *(Tracking ID #115518)*

BACKGROUND: Patients' communication skills are associated with improved health outcomes. Nevertheless, most studies of physician-patient communication have focused on physicians' communication. Methods to assess patients' communication, particularly from the physician's perspective, have received comparatively little attention.
METHODS: We report the development and psychometric testing of a new instrument to measure physicians' perceptions of patients' communication behaviors. Based on prior research indicating that patients who provide, seek, and verify information have better outcomes, we created an initial set of 7 items to assess a doctor's perception of the extent to which a patient performs these behaviors. Items assess physicians' perceptions of patient's discussion of symptoms, discussion of concerns, question asking, and overall communication. Items were tested in a developmental sample to gather evidence for unidimensionality, reliability, and validity. In the development sample, 17 physicians rated the communication of 98 patients undergoing consultation for pulmonary nodules or lung cancer. In the validation sample, 31 physicians rated the communication of 265 patients in primary care settings.
RESULTS: In the developmental sample, patients were mostly male (94%), white (79%), had mean age of 65.7 years (range 41–85), were seen for a first visit (76%) and were consulting a thoracic surgeon (58%) or an oncologist (42%). Physicians reported mean visit lengths of 20–30 minutes. In the validation sample, patients had mean age of 56.2 years (range 19–85), were mostly male (61%), were approximately equally representative of African American, Hispanic, and white ethnicities, and physicians were mostly general internists (58%). In the developmental sample, the exploratory factor analysis resulted in a single factor of five items that accounted for 51% of the variance, reliability was fairly high (Cronbach's Alpha of 0.74), and convergent/discriminant validity evidence was strong. In the validation sample, the 5-item factor accounted for 62% of the total variance, the reliability was high (0.84), and validity evidence was strong. Total scores on the measure ranged from 12 to 50 in the developmental sample and 13 to 50 in the validation sample, with higher

scores indicating "better" communication. Mean (SD) scores on the measure were 37.6 (8.4) and 37.4 (8.7) in the developmental and validation samples, respectively.
CONCLUSION: Our measure provides a method for evaluating physicians' perceptions of patients' communication behaviors. Future studies should evaluate whether communication skills training improves performance on the measure and whether improved performance is associated with behavioral and health outcomes.

LOW HEALTH LITERACY IS COMMON AND UNHEALTHY: DO WE RECOGNIZE IT IN OUR OWN PATIENTS? C.R. Horowitz[1]; S. Monteith[1]; M. McLaughlin[1]; J.E. Sisk[1]; S. Chatterjee[1]. [1]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #116390)*

BACKGROUND: Functional health literacy is a patient's ability to read and interpret common health information such as prescription labels and patient instructional handouts. Low health literacy has been associated with poorer health outcomes and higher health care costs. We surveyed patients to assess their literacy and factors associated with low literacy, and surveyed clinicians to determine if they could accurately identify which of their patients have low health literacy.
METHODS: At the onset of a randomized controlled trial aimed at improving the health of patients with congestive heart failure (CHF), each patient completed the the Short Test of Functional Health Literacy in Adults (STOFHLA) in English or Spanish. At the end of the trial, we identified the clinicians of enrolled patients seen at one of the participating urban academic medical centers. We then developed a brief survey asking clinicians to rate their patients' functional health literacy and provide some demographic data. We distributed the surveys to the clinicians at the medical center who most frequently saw each enrolled patient and asked the clinicians to rate their patient's health literacy in English or Spanish using the STOFHLA categories of inadequate, marginal and adequate health literacy.
RESULTS: The 264 enrolled patients were 20% non-Hispanic White, 42% non-Hispanic Black, 34% Latino, 4% Asian, and 48% female, with a mean age of 58 (20–96). Overall, 48% had low literacy, or LL (which encompasses inadequate and marginal literacy). Non-whites were more likely to have LL (56% vs.17%; $P < .0001$), as were persons aged 60 and over (66% vs. 34%; $P < .0001$). LL individuals had more severe heart failure (NY Heart Association Class IV = 49% vs. 38%, $P = .01$) and more self-reported hospitalizations in the past 3 months (23% vs. 13%; $P = .03$). The 82 clinicians who returned surveys for 193 (73%) patients were 20% non-white; 48% were female, 30% cardiologists, 31% primary care providers, and 39% residents. Clinicians overestimated the literacy of 81% of all LL patients. Their estimates did not differ significantly by their patients' race, age or gender. Accuracy did not differ by clinicians' own race or gender, but 76% of internists vs. 91% of cardiologists overestimated patients' literacy ($P = .08$).
CONCLUSION: Nearly half the urban adults with CHF enrolled in this randomized trial are low literate, especially those who are non-white, older, more severely ill and more frequently hospitalized. Their clinicians overestimated their health literacy in over 80% of cases. Future research should examine whether it is beneficial for clinicians and researchers managing complex chronic conditions, such as CHF, to ascertain whether patients are literate and address low literacy as part of efforts to improve patients' health.

LOW INITIATION OF FRACTURE REDUCING THERAPY IN OLDER WOMEN WITH REDUCED BONE DENSITY. K.M. Ryder[1]; F.A. Tylavsky[2]; A.J. Bush[2]; D.C. Bauer[3]; E. Simonsick[4]; E. Strotmeyer[5]; T. Harris[6]; R.I. Shorr[2]. [1]University of Tennessee Health Sciences Center, Memphis, Memphis, TN; [2]University of Tennessee, Memphis, TN; [3]University of California, San Francisco, San Francisco, CA; [4]NIA, Bethesda, MA; [5]University of Pittsburgh, Pittsburgh, PA; [6]National Institute on Aging, National Institutes of Health, Bethesda, MD. *(Tracking ID #116739)*

BACKGROUND: The use of antiresorptive therapy is low following osteoporotic fracture, but little is known about medication initiation following a diagnosis of low bone density.
METHODS: Two year cohort study of well-functioning community-dwelling older women ages 70–79 residing in Memphis, TN or Pittsburgh, PA who were participants in the Health, Aging, and Body Composition (Health ABC) study between 1997 and 1999. At baseline, a hip DXA scan (Hologic) was performed and an alert letter was sent to participants and their physicians who had osteoporosis of the total hip. All participants and their designated physicians received the baseline bone mineral density information. Prescribed medications and OTC vitamin use were transcribed from drug containers annually. The primary endpoint was the use of fracture reducing therapy, categorized as antiresorptive therapy (ART: bisphosphonates, estrogen, calcitonin and raloxifene) or calcium and/or vitamin D (Ca-D).
RESULTS: Of 1,557 women enrolled in Health ABC, 507 had evidence of low bone mineral density and/or fracture risk (T-score ≤2.0, or a T-score ≤1.5 with an additional major risk factor for fracture). Of these, the 371 not using fracture-reducing therapy at baseline were included in the study. Initiation rates within 2 years of baseline DXA were 12.7% for ART and 24.3% for Ca-D. Initiation of any fracture reducing therapy was 29.9%. In a multivariable model, predictors for initiating fracture-reducing therapy included: white race (relative risk = 3.5; 95% confidence interval 2.1–5.7), receiving a flu shot (2.1; 1.3–3.4), and medication insurance (1.6; 1.0–2.6). An alert letter (OR 2.3, 1–5.2) was a significant independent predictor of initiation, even after adjusting for absolute T-score at the total hip. Neither difficulty standing, mental status exam score, study site, reporting any difficulty with ADL's over 2 years, self-efficacy, receiving a mammogram, educational attainment, nor history of fractures were predictors.
CONCLUSION: About 70% of high-functioning older women at risk for fracture have not initiated on fracture reducing therapy within 2 years of screening. Alert letters may increase initiation of therapy in appropriate candidates. Further efforts are needed to make older women and their physicians aware of guidelines for management of osteoporosis. Acknowledgement: NIA contract numbers N01-AG-6-2101; N01-AG-6-2103; N01-AG-6-2106

LOW LITERACY AND POOR HEALTH IN THE ELDERLY: THE HEALTH ABC STUDY. R. Sudore[1]; K. Mehta[1]; T. Harris[2]; A. Newman[3]; E. Simonsick[4]; S. Satterfield[5]; C. Rosano[3]; R. Rooks[6]; S. Rubin[1]; H. Ayonayon[1]; K. Yaffe[1]. [1]UCSF, San Francisco, CA; [2]NIA, Chevy Chase, MD; [3]U of Pitt, Pittsburgh, PA; [4]NIA, Bethesda, MA; [5]U of TN, Knoxville, TN; [6]KSU, Kent, OH. *(Tracking ID #117197)*

BACKGROUND: Little is known about the correlates or health outcomes of low functional health literacy (LFHL). Thus, we determined the prevalence and correlates of LFHL and its association with poor health among well-functioning elders.
METHODS: We studied 2,512 subjects in the Health, Aging, and Body Composition Study who completed a literacy evaluation with the Rapid Estimate of Adult Literacy in Medicine (REALM) in 1999–2000. REALM scores were categorized into LFHL (0–8th grade) or adequate literacy (≥9th grade). We assessed correlates of LFHL including demographics, socioeconomic status (SES), co-morbidities, cognition (3MS score), and health care access. The multivariate logistic regression model included all variables that were correlated with LFHL ($P < .05$). Adverse health variables included any of 3 ADL difficulties, IADL difficulty (0–5 scale), poor/fair self-reported health measured cross-sectionally, and 18-month mortality. We performed logistic regression to determine association between LFHL and adverse health and the multivariate model included demographics and SES.
RESULTS: Participants had a mean age of 75.6 years, 48% were male, 38% were Black, and 24% had LFHL. In the multivariate analyses, correlates of LFHL included being male, Black, and having lower education, income, and cognition (Table). After adjusting for age, race, gender, education, and income, elders with LFHL had greater IADL difficulty (OR = 1.3, 95% CI 1.18–1.50), were more likely to have poor/fair health (OR 3.4, 95% CI 2.68–4.28), and were more likely to have died (OR 2.3, 95% CI 1.63–3.37).
CONCLUSION: LFHL is prevalent among well-functioning elders and is associated with being male, black, having lower education, income, and cognitive scores. LFHL was also associated with worse health including functional disability, poor/fair health status, and mortality.

Multivariate Analysis of the Correlates of LFHL

Characteristics	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Male	1.6 (1.33–1.93)	2.9 (2.11–3.95)
Black	6.8 (5.53–8.34)	2.8 (2.07–3.87)
Education (per/yr less)	1.6 (1.49–1.64)	1.3 (1.23–1.39)
Income <$10,000	2.7 (2.34–3.05)	2.7 (1.39–5.29)
3MS score (per/pt less)	1.2 (1.18–1.20)	1.1 (1.09–1.14)

LOW-LITERACY INTERVENTIONS TO PROMOTE DISCUSSION OF PROSTATE CANCER SCREENING: A RANDOMIZED CONTROLLED TRIAL. E. Justice[1]; J. Sharma[1]; J. Justice[1]; S. Kripalani[1]; C.A. Spiker[2]; T. Jacobson[1]; L.E. Laufman[2]; A.D. Weinberg[2]. [1]Emory University, Atlanta, GA; [2]Baylor College of Medicine, Houston, TX. *(Tracking ID #115707)*

BACKGROUND: The efficacy of prostate cancer screening is uncertain, and professional organizations recommend that physicians discuss the potential risks and benefits with patients to promote informed decision making. However, few studies have tested strategies to encourage such discussions, particularly among high-risk populations. We examined the effect of two low-literacy, culturally-appropriate handouts on prostate cancer discussion and screening rates in an inner-city primary care clinic.
METHODS: Randomized, blinded, controlled trial with concealed allocation. Subjects were men, age 45–70, with no history of prostate cancer, who presented for a routine appointment. They received one of the three handouts while waiting to see their physician—1) a two-sided patient education handout on prostate cancer screening (PtEd), 2) a one-sided flyer simply instructing patients to talk to their doctor about prostate cancer (Cue), or 3) a control handout. The PtEd and Cue handouts did not advocate for or against screening. After the physician appointment, patients completed a brief interview and the Rapid Estimate of Adult Literacy in Medicine (REALM). We abstracted additional data from clinic charts.
RESULTS: Of the 281 eligible patients randomized, we obtained data on 250 (89% follow-up). Most subjects (91%) were African-American. While 87.6% reported having at least a 9th grade education, only 21.2% read at a 9th grade level or higher by the REALM. Overall, 48.4% of patients reported discussing prostate cancer during the appointment. Patients who received either intervention were more likely to have this discussion (50.0% PtEd and 58.0% Cue, vs. 37.4% control, $P < .05$ for each comparison to control), and when it took place, they more commonly initiated it (47.6% PtEd and 40.0% Cue, vs. 9.7% control, $P < .01$ for each comparison). Rates of prostate specific antigen (PSA) testing were higher in the intervention groups (14.1% PtEd and 12.8% Cue, vs. 2.4% control, $P < .05$ for each comparison). Rates of documented digital rectal examination (DRE) did not differ significantly (4.7% PtEd, 5.1% Cue, and 6.0% control).
CONCLUSION: Two low-literacy interventions significantly increased patient-physician discussion of prostate cancer screening and PSA testing, but did not affect DRE rates. A detailed patient education handout and a short motivational flyer had similar efficacy in empowering low-literate patients to take a more active role in their health care by initiating the screening discussion.

MAKE THE BEST OF YOUR ORAL PRESENTATION: WHAT DO I FOCUS ON? C. Estrada[1]; S.R. Patel[1]; G.M. Talente[1]; M.S. Kraemer[1]. [1]East Carolina University, Greenville, NC. *(Tracking ID #115095)*

BACKGROUND: Presenters at professional meetings need to clearly summarize their work. Such presentation skills can be learned. We sought to identify features that make oral presentations successful by determining which aspects of a presentation experienced reviewers focused on.
METHODS: Observational study over a 3-year period. Three reviewers observed presenters during oral sessions at a regional meeting. Reviewers identified the best features ("B") and made suggestions for improvement ("I") using an open-ended form. The authors reviewed selected comments and developed a coding system based on three domains; content, slides, and presentation style. Two raters blinded to the presenter then coded the comments. Disagreement was resolved by concurrent review.
RESULTS: Twenty-nine presenters participated. The interrater agreement (kappa) was >0.75 in 19 of 32 coding domains (range 0.35–1). The content areas most frequently mentioned were: Key Concepts (B = 41.4%, I = 13.8%), Relevance (B = 41.4%, I = 3.5%). Comments about slides focused on: Text/Font (B = 31%, I = 41.4%), Graphics (B = 27.6%, I = 20.7%), and Clarity (B = 44.8%, I = 0%). Comments regarding presentation style focused on: Audience Engagement (B = 48.3%, I = 3.5%), Clarity (B = 51.7%, I = 0%), and Pace (B = 58.6%, I = 6.9%). Non-verbal communication, voice and eye contact, was noted in 83% (24/29) of the reviews as either a best aspect or an area for improvement.
CONCLUSION: Features perceived as important during oral presentations relate to specific areas of content, clear slides, and a presentation style that was well paced, engaging, and clear. Non-verbal communication, specifically voice and eye contact, is important in oral presentations. Presenters should be mentored to focus on these areas to ensure successful presentations.

MANAGING ADULT SORE THROATS: REANALYZING A PUBLISHED COST-EFFECTIVENESS (C-E) ANALYSIS. R.M. Centor[1]; R. Matthew[1]. [1]University of Alabama at Birmingham, Birmingham, AL. *(Tracking ID #115688)*

BACKGROUND: A recently published C-E analysis of the management of adult sore throats concluded that empiric treatment was neither the most effective nor the least costly strategy. That analysis imputed an acute pharyngitis utility (0.95) from published utilities for equivalent diagnoses (dyspepsia and diarrhea). It also assumed symptomatic benefit only for group A strep (while Zwart also found benefit for non-group A strep in those with severe symptoms). We postulated that patients with varying severity of sore throat would have different utilities. We also hypothesized that including elicited utilities and a clinical benefit for treating non-group A pharyngitis would significantly alter the analysis.
METHODS: We administered a time-tradeoff utility survey (using clinical scenarios) to 340 undergraduate and graduate students. We calculated both mean and median results. We then entered the utilities into a C-E analysis of the management of adult sore throats. The analysis also included a clinical benefit for treating non-group A pharyngitis.
RESULTS: 202 women and 138 men answered the survey. Almost 80% of the respondents had previous medical care for sore throat. Using a utility scale anchored by 1 (perfect health) and 0 (death), mild pharyngitis had a median utility of 0.975 (mean of 0.95). Severe pharyngitis had a median utility of 0.885 (mean of 0.861). Peritonsillar abscess had a median of 0.819 (mean of 0.864). Using these new utilities in a C-E model yielded different results than the recently published C-E analysis. We found the treat all strategy to have the greatest effectiveness in patients with severe strep symptoms. While culture was slightly less expensive, the treat empirically strategy had an incremental C-E per quality adjusted life day of less than $9 and per quality adjusted life year of less than $4,000. Sensitivity analysis showed that pharyngitis utility was the most important factor in making these decisions. Patients with mild strep symptoms had watchful waiting recommended.
CONCLUSION: Directly assessing utilities for mild and severe pharyngitis changed the recommendations of a C-E analysis of adult sore throats. Our analysis shows that clinical pharyngitis severity (i.e., the degree of discomfort) should influence our decision to consider empiric treatment.

MARRIAGE AND LATINO ETHNICITY PREDICT PROSTATECTOMY IN HEALTHY MEN WITH LOCALIZED PROSTATE CANCER. T. Denberg[1]; B. Beaty[1]; F. Kim[1]; E.J. Perez-Stable[2]; J. Steiner[1]. [1]University of Colorado Health Sciences Center, Denver, CO; [2]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115713)*

BACKGROUND: Otherwise healthy men with early-stage prostate cancer have several treatment options of comparable effectiveness, including prostatectomy, radiation, and watchful waiting. Because uncertainty and controversy continue to surround treatment, we studied predictors of prostatectomy, the most aggressive form of therapy, through the latest years available in SEER-Medicare. Previously unexamined, we also included Latino ethnicity and marital status in the analysis.
METHODS: A cohort of 27,802 white, black, and Latino men without comorbidities from the national linked, retrospective SEER-Medicare dataset (years 1995–1999) were used in an observational design. Bivariate and multinomial logistic regression were used to predict receipt of prostatectomy based on age, tumor grade, race, marital status (married vs. other), census-tract inferred educational attainment, and several interaction terms.
RESULTS: In bivariate analysis, age, race/ethnicity, marriage, high school education, and tumor grade were predictive of prostatectomy ($P < .0001$). In multivariate analysis, age was the strongest predictor of treatment choice with men 70 significantly less likely to receive prostatectomy than men < 70 (adjusted OR = 0.17(0.16–0.18)). While tumor grade was also a strong predictor of prostatectomy, marriage was the second strongest predictor among all ages and without variation by race (adjusted overall OR = 1.95(1.83–2.09)). Finally, blacks were significantly less likely (adjusted OR = 0.62 (0.56–0.69)) while Latinos were significantly more likely than whites to receive prostatectomy (adjusted OR = 1.45(1.28–1.65)).
CONCLUSION: In all racial/ethnic groups, marriage is strongly associated with receipt of prostatectomy in healthy men with localized prostate cancer. Hypothetically, this might reflect the influence of wives encouraging husbands to have more "definitive" therapy or perhaps clinicians recommending more aggressive treatment to married men. Second, Latinos appear to receive more prostatectomy than whites. This may be due to unknown cultural factors or, possibly, less access to radiation therapy. Future studies of treatment decision-making in early-stage prostate cancer should include Latinos and assess the role of spouses.

MEASURING PATIENTS' EXPERIENCES WITH INDIVIDUAL PHYSICIANS. D. Safran[1]; M. Karp[2]; K. Coltin[2]; J. Ogren[1]; A. Li[1]; H. Chang[1]; W. Rogers[1]. [1]TUFTS-New England Medical Center, Boston, MA; [2]Massachusetts Health Quality Partners, Waltham, MA. *(Tracking ID #116070)*

BACKGROUND: While standardized national measures of health plan performance were instituted in the 1990s, there are no standard performance measures for individual physicians or practices. Several large-scale initiatives to develop such measures are underway. The Massachusetts Ambulatory Care Experiences Survey Project involved a collaborative of 6 payers (5 commercial plans and Medicaid), 5 physician network organizations, and the Massachusetts Medical Society working through Massachusetts Health Quality Partners. This statewide demonstration project tested the feasibility and value of measuring patients' experiences with individual primary care physicians.
METHODS: The sample included adults drawn from the panels of 215 generalist physicians at 67 sites statewide. Sample frames were provided by the six payers. The Ambulatory Care Experiences Survey was administered by mail and telephone (May–Aug 2002). The survey produces 11 summary measures covering two dimensions of care: physician-patient interaction quality (communication, interpersonal treatment, whole-person orientation, health promotion, trust, relationship duration) and organizational features of care (access, continuity, integration, clinical team, office staff). Physician-level reliability was computed for all measures using intra-physician correlation and the Spearman-Brown Prophesy Formula. Variance components analysis was used to determine the influence of each level of the system (physician, site, network organization, plan) and system interaction effects on each measure, controlling for patient characteristics.
RESULTS: Physician-specific samples were successfully constructed by linking payer-provided files. With samples of 45 patients per physician, all measures except two (clinical team, office staff) achieved physician-level reliability exceeding 0.70, and several exceeded 0.80. In variance components analysis, physicians and sites accounted for the majority of system-related variance, with physicians accounting for the majority on all "interaction quality" measures (range: 52.9% to 74.5%) and sites accounting for the largest share on "organizational" measures (range: 48.2% to 78.2%). Network organizations accounted for little variance, and health plans accounted for less then 3% on all measures. There were no significant plan-physician interactions.
CONCLUSION: With national attention now focused on providing patient-centered care, this project demonstrates the feasibility of obtaining highly reliable measures of patients' experiences with individual physicians and practices. Variance components results underscore the validity and importance of looking beyond health plans to individual physicians and sites as we seek to improve health care quality.

MEASURING PROFESSIONALISM ATTITUDES AND BELIELFS. A.L. Kalet[1]; H. Steven[1]. [1]New York University, New York, NY. *(Tracking ID #116092)*

BACKGROUND: Little is know about how learners' feelings and beliefs about medical professionalim develop over time, predict receptivity to learning, and impact behavior. We report on the development of a Medical Professionalism Attitudes and Beliefs Questionnaire (MPABS) which is the first step in an IRB approved controlled pre/post evauation of a new professionalism curriculum and assessment process.
METHODS: Questionnaire items were generated from; the written responses of 3 entering classes of medical students (n = 480) to the question "What is medical professionalism?", student focus groups, a literature review. We adminstered the piloted and refined 44 item MPABS to 149, 1st year and 86, 2nd, 3rd, and 4th year students along with the Defining Issues Test (DIT-copyright 1979) a widely used and validated measure of moral reasoning which produces an individual overall and component scores (e.g. Anti-Social Measure, Religious Orthodoxy, Political Liberalism).
RESULTS: Factor analysis (n = 234) revealed the 4 contructs which explained 52% of the variance with high Crohnbach's alpha coefficients (a); view of professional behavior in medical school (Behavior, 13 items, a = .808), knowledge of the definition of professionalism (Knowledge, 5 items, a = .706), idealism (Ideal, 11 items, a = .803), confidence in one's professionalism (confidence, 16 items, a = .849), and the importance of duty and social justice (Duty, 8 items, a = .736). While none of the contructs related to the the overall DIT score the component variable Anti-Social Measure was inversely associated with the variables knowledge, confidence, duty, and importance (ANOVA, $P < .05$). Idealism scores increased the greater the Religious Orthodoxy, and duty scores increased with increasing Political Liberalism (ANOVA, $P < .05$).

CONCLUSION: While more will be done to further establish the validity of a briefer MPBAS to predict professionalism competency this instrument has impressive reliablity. We are studying both it's change over time and sensitivity to educational interventions.

MEASURING THE PROFICIENCY OF CLINICAL TEACHERS: A THEMATIC REVIEW OF RELIABLE AND VALIDATED INSTRUMENTS. T.J. Beckman[1]; A.K. Ghosh[1]; P. Erwin[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #115062)*

BACKGROUND: Learner feedback is the primary method for evaluating medical educators, yet there are few standards for measuring teaching proficiency. Our objective was to review the published literature on instruments for assessing clinical teaching and to summarize themes that will aid in developing universally appealing tools.
METHODS: Electronic databases including MEDLINE, EMBASE, PsycINFO, ERIC, and Social Science Citation/Science Citation indexes were searched using the terms validity, medical faculty, medical education, evaluation studies, instrument, and the text word reliability. Over 330 studies were identified and additional references were extracted from these papers. Excluded were review articles, editorials, and qualitative studies. Reviewing abstracts from the original search revealed 21 papers describing instruments designed for evaluating clinical faculty by learners. Two investigators studied these papers and tabulated characteristics of the learning environments and validation methods. Salient themes amongst the evaluation studies were also determined.
RESULTS: Most studies combined evaluations from both outpatient and inpatient settings. Wide ranges in numbers of subjects (10–711), evaluators (3–131), evaluations (30–7845), and instrument items (1–43) were observed. The most frequently encountered statistical methods were factor analysis and determining internal consistency reliability with Cronbach's alpha. The least common methods were the use of test-retest reliability and convergent validity between validated instruments. Seventeen domains of teaching were identified. The most frequently studied domains were interpersonal and clinical-teaching skills.
CONCLUSION: Characteristics of teacher evaluations vary between inpatient and outpatient settings and between different learner levels, indicating that future investigations should utilize more narrowly defined study populations. Establishing an instrument's temporal stability and convergent validity should also be considered. Finally, existing data supports the validation of instruments simply comprised of interpersonal and clinical-teaching domains.

MEDICAL DEBT AND AGGRESSIVE DEBT RESTITUTION: PREDATORY BILLING AMONG THE URBAN POOR. T.P. O'Toole[1]; J. Arbelaez[1]; R.S. Lawrence[1]; L. Knickmeyer[2]. [1]Johns Hopkins University, Baltimore, MD; [2]The Baltimore Community Health Consortium, Baltimore, MD. *(Tracking ID #116704)*

BACKGROUND: Health care providers are increasingly relying on collection agencies to recoup charges associated with medical care with medical debt now accounting for 40% of all personal bankruptcies Little is known about the prevalence of this practice in low-income communities and what effect it has on subsequent health seeking behavior.
METHODS: Cross sectional survey at ten "safety net" provider sites in Baltimore, Maryland. Specific queries were made to underlying medical and mental health conditions, whether they had a current medical debt, actions taken against that debt, and what effect this has had on health seeking behavior. Separate multiple logistic regression models were developed for three depedent variables: (1) having an active medicla debt; (2) being referred to a collection agency; and (3) reporting a change in health seeking behavior as a result of that referral.
RESULTS: Overall, 274 adults were interviewed. The average age was 43.9 years, 77.3% were African American, 54.6% male, 47.2% were homeless and 34.4% had less than a 12th grade education. 47.2% reported they currently had a medical debt (ave: $3,409) and 65.0% of individuals with a medical debt reported being referred to a collection agency. Overall, 46.0% of individuals referred to a collection agency reported it had affected their seeking subsequent care: 16.7% no longer went to that site for care; 12.7% delayed seeking care when needed; and 7.1% reported only going to an emergency departments now. In the multiple logistic regression model, having less than a 12th grade education (OR 2.6; 95% CI: 1.1–5.9) and being homeless (OR 3.7; 95% CI: 1.3–10.8) were independently associated with reporting an adverse health seeking consequence to a collection agency referral.
CONCLUSION: Aggressive debt retrieval for medical care appears to be indiscriminately applied with a negative effect on subsequent health seeking behavior among those least capable of navigating the health system.

MEDICAL PRESCRIPTION WRITING BEHAVIORS OF PHYSICIANS IN TRAINING. L. Khrizman[1]; D.J. Shulkin[1]. [1]Drexel University School Of Medicine, Internal Medicine, Philadelphia, PA. *(Tracking ID #102547)*

BACKGROUND: Numerous efforts have been made to reduce medical errors, particularly in the area of medication management. Since medication errors account for a considerable part of all medical errors, in this study we examined both the actual practices of residents-in-training of prescription order writing and the attitudes of this group towards strategies to reduce errors.
METHODS: A survey, comprising of 15 questions (N = 68 residents in the Internal Medicine Department) was distributed which collected information on factors including the year of residency, use of a hand-held device to look up medications and resident awareness of hospital guidelines of order writing. Residents were also asked to write-out a series of orders in the same way that they would on an actual hospital order form. Lastly, residents were asked their attitudes toward order-writing guidelines, as well as what implementations they felt would reduce medication order-writing errors.
RESULTS: Sixty-four surveys were collected (response rate 94%). Analysis of the resident orders of medications demonstrated significant deficiencies in medication order writing practices. The most common error in medication order writing was the inappropriate use of abbreviations of the QD/QOD/HS type (58% error rate), followed by incorrect medication names and dosage usage (48% error rate), use of a "U" symbol for units (41% error rate), improper route of administration (34% error rate), using a "d" for days (33% error rate), medication orders that were not dated or timed (36% error rate), and inappropriate abbreviations for "micrograms" (23% error rate). The medication writing error that was made with the least frequency was using a zero after the decimal point in medication dosages (2% error rate). Analyzing resident attitudes towards medication order writing and strategies to reduce errors we found that 47% of residents used a hand-held device to look up medications, with 95% believing they would benefit from a hand-held device. Seventy-eight percent said that they would derive benefit from an order form that prompted standardized order writing. Sixty-nine percent stated that they would benefit from a teaching session on order writing. Nearly 97% said that a call from a pharmacy regarding order-writing errors would help in reducing mistakes.
CONCLUSION: This study showed that there is a significant error rate ranging from 2% to 58%, depending on the error type, in prescription writing among residents. The most common error type (58%) turned out to be an improper use of abbreviations. Interventions such as teaching sessions, hand-held devise usage, a better order form and more error reporting from the pharmacy would all be well-accepted and bring potential benefit into reducing medication errors according to the residents.

MEDICAL STUDENT RESOURCE USE AND KNOWLEDGE ACQUISITION IN THE MEDICINE CLERKSHIP. K. DeZee[1]; G. Denton[1]; S. Durning[1]. [1]Uniformed Services University of the Health Sciences, Bethesda, MD. *(Tracking ID #116551)*

BACKGROUND: The third year internal medicine clerkship at the Uniformed Services University (USU) is a required 12-week rotation. While knowledge acquisition through focused reading about assigned patients and general topics in internal medicine is a principal goal of the rotation, there are no assigned textbooks or reading materials for the course. Students are given a print copy of Harrison's Textbook of Medicine and unlimited electronic access to several web based resources, including MD Consult, UpToDate, and many full-text journals. Our specific questions were: 1) What resources do 3rd year IM clerkship students use? and 2) Do these choices affect knowledge acquisition, as reflected by the National Board of Medical Examiners (NBME) shelf exam?
METHODS: This was a prospective cohort study including three consecutive groups of students rotating through the clerkship at this medical school. On the first day of the clerkship, students took a faculty-developed 100-question multiple-choice pretest, which reflects knowledge base and is well correlated with USMLE Step One. During the last week of the clerkship, students took the NBME shelf exam in internal medicine. Immediately prior to the NBME exam, students completed a one-page survey instrument, ranking the resources they used during the clerkship and listing print or electronic for each. Student NBME scores were standardized and were used as an assessment of knowledge acquisition. Analyses of univariate comparisons were done using Chi square and ANOVA, multivariate analyses, controlling for potential confounding variables, were done using linear regression.
RESULTS: One hundred and eight (108) students participated (82% of cohort); 61% reported using an electronic reference for their primary (most important reference listed) resource and 39% a print reference. At baseline, there were no differences in age, sex, race, or pre-rotation knowledge between the two groups. At the end of the rotation, there was no difference in mean NBME scores between the two groups (Electronic: 71.71, sd: 7.17; Print: 71.67, sd: 7.29, $P = .97$). In multivariate modeling, baseline knowledge and student age explained 32% of the variance in NBME scores. The study had 80% power to detect a difference of four points (5.6%) in the NBME exam score, by type of primary reference used.
CONCLUSION: The majority of students rely on electronic resources for their most important reference for their 3rd year internal medicine clerkship, with UpToDate dominating. The choice of an electronic or print resource for the primary reference material was not associated with differential acquisition of knowledge. Based on our results, students should be allowed to choose their primary reference based on their own preferences.

MEDICARE FIRST DOLLAR COVERAGE OF ACE-INHIBITORS FOR BENEFICIARIES WITH DIABETES SAVES MONEY AND LIVES. A.B. Rosen[1]; M.B. Hamel[1]; M.C. Weinstein[2]; D. Cutler[2]; S. Vijan[3]. [1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Harvard School of Public Health, Boston, MA; [3]University of Michigan, Ann Arbor, MI. *(Tracking ID #116162)*

BACKGROUND: Diabetic nephropathy is the leading cause of end stage renal disease (ESRD) in the United States and is associated with marked morbidity, mortality, and costs. ACE-Inhibitor (ACE) use in diabetics slows progression of renal disease and also reduces cardiac morbidity and mortality. Six percent of the Medicare budget is spent annually on the care of the 0.6% of the Medicare population with ESRD. The objective of this study was to assess the health outcomes and budgetary impact to Medicare of first dollar (i.e. no cost-sharing) coverage of ACE for elderly beneficiaries with diabetes.

METHODS: Clinical events, survival, and Medicare costs for 65 yo diabetic patients, with and without ACE, were assessed using a Markov cohort model. We assumed that 'no coverage' resulted in 40% ACE use (NHANES 4) at no cost to Medicare, and 'Medicare coverage' increased ACE use by 20% (to 60% overall) based on price elasticity data from the literature. Modeled outcomes included progression of renal disease, cardiovascular events, life expectancy, quality-adjusted life years (QALYs), lifetime costs (2003 US $), and incremental cost-effectiveness ratios. Costs and benefits were discounted at 3%; all analyses took a Medicare perspective. One-way and multi-way sensitivity analyses were performed on uncertain model parameters. National aggregate estimates were based on the age distribution of the current 6.2 million Medicare beneficiaries with diabetes.
RESULTS: Standard Medicare coverage results in a discounted lifetime cost of $80,129 and quality-adjusted life expectancy of 10.44 QALYs. The addition of first dollar ACE coverage decreased lifetime costs to $79,005 and increased benefits to 10.78 QALYs. Thus, Medicare ACE coverage saves both lives and money. Results were robust to a wide range of renal and cardiac risk reductions, costs, utilities, and discount rates. Results were most sensitive to the cost of ACE (threshold at which no longer cost-saving, drug price >1.8 times the annual average wholesale price) and the impact of coverage on utilization rates (threshold at which no longer cost-saving, increase in ACE use of <7%). Applying our model to the 6.2 million current Medicare beneficiaries with diabetes, first dollar coverage of ACE would result in a total of 1.3 million QALYs gained and 4.88 billion dollars saved over this cohort's life.
CONCLUSION: Medicare first dollar coverage of ACE-Inhibitors extends life and reduces Medicare program costs. A reduction in program costs from one cost-saving intervention will result in more money to spend on other health care needs of the elderly.

MEDICATION COSTS: THE ROLE PHYSICIANS PLAY WITH THEIR SENIOR PATIENTS.
M. Beran[1]; M. Laouri[2]; M.J. Suttorp[3]; R.H. Brook[3]. [1]Park Nicollet Health Services, Minneapolis, MN; [2]Genentech, South San Francisco, CA; [3]RAND, Santa Monica, CA. *(Tracking ID #116494)*

BACKGROUND: Many patients over 65 experience a financial burden from out-of-pocket (OOP) medication costs due to the number of chronic conditions, number of medications, and the lack of adequate prescription drug coverage. The inability to afford necessary medications may lead to cost reducing strategies, such as skipping or stopping medication, and subsequent adverse outcomes. Physicians who care for seniors have the opportunity to address the OOP costs of medications. This study examined how often physicians discuss OOP medication costs with seniors, and the cost reducing strategies they employ when these discussions occur.
METHODS: A cross sectional, random sample of 1,200 internal medicine and family practice physicians in CA, selected from the AMA Masterfile, were mailed self-administered questionnaires. We asked how often physicians discuss OOP medication costs with seniors, what factors influence these discussions, and what cost reducing strategies physicians recommended to patients who express difficulty affording their medications. We used logistic regression to relate physician and system characteristics to discussions of medication costs.
RESULTS: We obtained completed surveys from 678 of 1,098 (62%) eligible physicians. 68% of physicians reported medication cost as "somewhat" or "very" important when prescribing to seniors, and 43% reported discussing medication costs with more than half of their senior patients in the last 30 days. 40% reported that there was at least one time in the last 30 days when they did not discuss cost but wish they had. The most common reason given was "I ran out of time" (14%). When cost was discussed, 65% of physicians reported that patients initiated the discussion. Predictors of discussing medication cost with half or more of senior patients were group practice setting (vs.other practice settings) and physician rating of cost as of high importance when prescribing a medication for a senior patient (OR 1.5, CI 1.07–2.24). Physician gender, race, specialty, years in practice, patient volume, and percentage of senior patients were not associated with frequency of discussing medication costs. The most common cost reducing strategy used by physicians was generic substitution (33%) followed by offering samples (25%).
CONCLUSION: More than two-thirds of physicians believe that OOP medication costs are important, and a surprisingly large percentage of physicians are spending time discussing cost with their senior patients. These results are encouraging, however, due to time constraints in practice, improvement of these numbers may be dependent upon development of a tool to identify patients for whom medication costs represent a substantial financial burden.

MEDICATION KNOWLEDGE AMONG UNDERSERVED PATIENTS IN TWO COMMUNITY CLINICS.
N. Kim[1]; J. Talwalkar[2]; E.S. Holmboe[1]. [1]Yale University, New Haven, CT; [2]Yale University School of Medicine, New Haven, CT. *(Tracking ID #117200)*

BACKGROUND: The effectiveness of drug therapy for chronic diseases depends on patients' knowledge and adherence to medications. Medication mismanagement results in 10% of hospital admissions, 25% of malpractice suits, 50% of therapeutic failures and 2.5 million emergencies. Little is known about under-served patients' knowledge of their medications, a group disproportionately affected by chronic disease. The purpose of this study was to assess underserved patients' knowledge of their medications.
METHODS: This prospective observational study evaluated patients = 18 years receiving ongoing care at two continuity clinics of the Yale Primary Care Program in Waterbury, CT. These clinics serve largely Medicaid or self-pay patients. To assess medication knowledge, we conducted a 10-minute semi-structured interview prior to the patient-physician encounter. Patients were asked to describe the names, doses, frequencies, indications, side effects, and safety of their current medications. We reviewed charts to obtain a reference standard for patients' current medication regimens.
RESULTS: One hundred twenty-five interviews were completed. The median age was 46 years, 60% were female, 68% were non-white, 60% had less than a high school education, and 70% had an annual income = $10,000. Nearly half suffered from at least one chronic condition. Patients were on a median of 5 drugs, most commonly anti-hypertensives, glucose-lowering agents, and anti-depressants. Although 89% patients report being satisfied with their personal medication knowledge; they could cite only 50% of their medication names, 25% of medication doses, 50% of medication frequencies, 50% of medication indications, and none (0%) of their medications' side effects. Paradoxically, when asked what information they felt they needed in order to take their medications safely, 47% responded that side effects were essential information. Forty-three percent of patients reported taking at least one medication that was not documented anywhere in the medical record. In total there were 84 discordant medications of which 57% were prescription drugs.
CONCLUSION: Under-served patients have poor knowledge of their medications, yet report being satisfied with their medication understanding. Although poor knowledge does not necessarily portend poor adherence to medications, without certain pieces of knowledge, such as medication frequency, it is highly unlikely that patients are taking their medications correctly. This coupled with the large discrepancy between medications taken by the patient and those documented in the medical record as well as patients' complete lack of knowledge of medication side effects greatly threaten not only medication adherence and achievement of treatment goals, but also patient safety.

MEDICINE AND PUBLIC HEALTH: A SURVEY OF THE ATTITUDES, KNOWLEDGE AND CLINICAL PRACTICES OF GENERAL INTERNISTS IN AN URBAN SETTING.
L.D. Ward[1]; J.A. Shea[1]. [1]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #115397)*

BACKGROUND: Public health officials and clinical physicians were once integral partners. Recent events such as the SARS outbreak and the ongoing threat of bioterrorism have exposed a lack of coordination between the two that might be addressed by education. While a prior survey of medicine residents demonstrated interest in improving education on public health topics, the views of practicing physicians are not well studied. To address this deficit, we surveyed general internists on their attitudes, knowledge and clinical practices regarding public health issues.
METHODS: In 2003, a city-wide sample of general internists (n = 260) received 3 mailings of a survey. Surveys included 15 opinion items, 3 knowledge items, 7 items on current clinical practices and 2 items on preferences for a future educational seminar. Participants had to be practicing in the city of Philadelphia, board certified in Internal Medicine and identify themselves as a primary care physician or general practitioner.
RESULTS: The overall response rate was 63%. The respondents were 40% female, averaged 11 years in practice and 8 half-days of clinical practice per week. Most (69%) worked in a group of 4 or more physicians. Attitudes were supportive of public health. 75% saw themselves as a component of the public health system and 90% thought they should be able to recognize new patterns of disease. Most (80%) felt public health topics were insufficiently taught during residency. Nearly half believed it unimportant for them to participate in community-related health activities. Only a third had ever driven or walked around the neighborhood served by their practice, noting characteristics influencing the lifestyle or health of patients. Knowedge was limited: 42% did not know they had to personally submit a report to the city to report certain diseases and only 16% knew that there were over 40 reportable diseases. The public health tools most commonly utilized in practice were methods to identify patients requiring certain preventive services and a system to report diseases to public health officials. The most common reasons for not utilizing public health tools in practice were lack of time and money. Almost all (85%) respondents were interested in a CME-eligible seminar on public health issues and skills. A third were willing to pay for this seminar, with most preferring it take place at the physician's office during lunch or via the internet.
CONCLUSION: Practicing general internists believe themselves to be a component of the public health infrastructure yet feel inadequately trained to perform their duties. They lack a basic understanding of their role as agents on the front lines of both public health and clinical medicine. As a result, they fail to perform some basic tasks required of them. A brief and targeted intervention could be a first step to correct these deficiencies.

MEETING THE MANDATE TO CARE FOR LOW-INCOME VETERANS.
J.A. Long[1]; J.P. Metlay[2]. [1]Philadelphia VA Center for Health Equity Research and Promotion, Philadelphia, PA; [2]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #116921)*

BACKGROUND: Part of the Veterans Health Administration (VHA) mandate is to care for low-income veterans. Previously we showed that in 1992 all low-income veterans, compared to high-income veterans, are less likely to receive outpatient and preventive care and more likely to have unmet medical needs. The objectives of this study were to determine current patterns of care for low-income veterans.
METHODS: The data for this study comes from a telephone survey of 20,048 veterans—the 2001 National Survey of Veterans. The dependent variables were having received the following services in the last 12 months: an out-patient visit; an overnight stay in the hospital; and a prescription medication. Independent variables included site in which the veteran received care (any VHA use, no VHA use, no care), annual income, age, sex, race, marital status, education completed, having

additional health insurance, number of chronic conditions, having any difficulties with activities of daily living, and having a service related disability. Results were weighted to reflect the probability of sampling.
RESULTS: In 2001, 21.3% of all low-income veterans reported receiving no care from a VHA or non-VHA site, which was a decrease from 47.2% in 1992. Overall, compared to veterans who did not use the VHA, VHA users were more likely to get out-patient care, to be hospitalized, and to receive prescription medications. After adjusting for all independent variables, among veterans who used VHA services, there was no association between income level and receiving out-patient care or being hospitalized. However, among veterans who did not use the VHA, compared to veterans whose annual income was over $50,000, veterans whose income was below $20,000 were less likely to receive out-patient care (OR = 0.68, 95% CI 0.58–0.81) and more likely to be hospitalized (OR = 1.24 95% CI 1.04–1.49). Finally, among VHA users, lower income veterans were more likely to receive a prescription medication while among non-VHA users lower income veterans were less likely to receive a prescription medication. For example, compared to veterans whose income was over $50,000, veterans whose income was $20,000 or less and used the VHA had an odds of receiving medications of 1.99 (95% CI 1.22–3.24) and for veterans who did not use the VHA the odds were 0.58 (95% CI 0.48–0.70).
CONCLUSION: In 2001 utilization of the VHA diminished the number of low-income veterans getting no medical care as well as unwanted income disparities in out-patient care and hospitalizations while increasing access to expensive prescription medications. In a time when Americans are having greater difficulty accessing care, the VHA has made great strides in addressing the mandate to care for low-income veterans.

MENTAL ILLNESS AND PATTERNS OF CHOLESTEROL TESTING IN A POPULATION OF U.S. VETERANS. R.A. Kaplowitz[1]; R. Scranton[1]; D.R. Gagnon[1]; J.W. Levenson[1]; C. Cantillon[1]; L. Fiore[1]; J.M. Gaziano[1]. [1]Massachusetts Veterans Epidemiology Research and Information Center, Boston, MA. *(Tracking ID #116574)*

BACKGROUND: Although current data suggest that people with mental illness have worse outcomes from cardiovascular disease, disparities in cholesterol testing associated with mental illness have not been well studied.
METHODS: Using a retrospective cohort study design, we analyzed the ICD-9 diagnosis codes, pharmacy profiles, and laboratory data of subjects who used Veterans Affairs (VA) New England Healthcare System outpatient services during at least two months of the 42-month study period. We defined mental illness as the concurrence of an ICD-9 code for an Axis I psychiatric disease and a prescription for a psychiatric medication; the control group had neither a psychiatric diagnosis nor a prescribed psychiatric medication. The outcome variable was one serum cholesterol test that included a high-density lipoprotein value. We used logistic regression to model the odds of cholesterol testing. We stratified by quartile of outpatient visit frequency and adjusted for number of months of outpatient service use within each stratum, age, race, gender, baseline hypercholesterolemia, cardiovascular disease, tobacco use, diabetes mellitus, hypertension, alcohol abuse, and substance abuse.
RESULTS: Of the 64,966 subjects included in the study, 22.6% had a mental illness and 74.3% received a cholesterol test. Subjects with mental illness were less likely than subjects without mental illness to receive a cholesterol test in the first and second quartiles of outpatient visit frequency (Table). The odds of cholesterol testing peaked in the second quartile for subjects without mental illness, and reached a plateau for subjects with mental illness between the second and fourth quartiles.
CONCLUSION: Mental illness was associated with decreased odds of cholesterol testing in the population that used less than the median frequency of VA outpatient services. Complex relationships between visit frequency and odds of testing were found for patients both with and without mental illness.

Odds of Cholesterol Testing by Mental Illness Status and Outpatient Service Use

Quartile (Months of Outpatient Service Use)	No Mental Illness OR (95% C.I.)	Mental Illness OR (95% C.I.)
1 (2–10)	1.00 (ref)	0.47 (0.41–0.54)
2 (11–18)	1.52 (1.42–1.64)	0.74 (0.66–0.82)
3 (19–30)	1.13 (1.01–1.27)	1.03 (0.90–1.18)
4 (31–42)	0.53 (0.44–0.63)	0.77 (0.63–0.94)

MENTORING IN INTERNAL MEDICINE RESIDENCY: THE HOUSESTAFF PERSPECTIVE. A. Castiglioni[1]; G. Heudebert[1]. [1]University of Alabama at Birmingham, Birmingham, AL. *(Tracking ID #117350)*

BACKGROUND: Mentoring in academic medicine has been linked to greater career satisfaction and academic success. Despite its recognized importance, there is paucity of literature examining internal medicine residents' needs and perceptions on mentoring. The objectives were to 1) assess internal medicine residents' attitudes towards mentoring in residency, 2) identify perceived benefits of successful mentoring.
METHODS: A two-page questionnaire was sent to all internal medicine and medicine-pediatrics residents. The instrument included questions on demographics, future career plans, attitudes towards mentoring, mentor/mentee demographics, and perceived benefits of mentoring.
RESULTS: Among the 99 respondents (75% response rate), 30% were female, 32% were PGY1, and 66% indicated interest in fellowship training. On 6 attitude statements, greater than 90% of residents agreed that mentoring is important, that program directors (PD) should promote mentoring (80%) and that PD should encourage faculty participation (87%). When asked to design a structured mentoring program for residents, respondents favored individual faculty mentoring with regular scheduled meetings. Respondents also favored assignment of a mentor during the PGY1 year (51%) and utilizing the advise of the PD to identify such mentor (48%). Among those residents who currently had a mentor (31%), 90% could identify up to 2 mentors (mean 1.5). Most mentors were the same gender (78%) and same ethnic group (64%) as the mentee; a minority of mentees had changed mentors (15%). On a five-point scale (with 5 indicating strong agreement) respondents perceived mentors as most beneficial in career planning (mean 4.1) and growth and development (mean 4.0). Mentoring was felt least beneficial in coping with stress (mean 3.4) and development of clinical skills (mean 3.2). Of those without a mentor, 52% would have liked a mentor assigned. We found no relationship between having a mentor in residency and residents' gender, future career plans or having had a mentor in medical school.
CONCLUSION: A minority of our residents have established a mentor. Overall, residents favor mentoring and perceive the program director to have mostly a facilitator role. Respondents favor early identification of a mentor and a flexible structure for mentoring. Residents perceive mentoring as beneficial for personal growth and career choices.

META-ANALYSIS OF WARFARIN PLUS ASPIRIN AFTER MYOCARDIAL INFARCTION. M. Rothberg[1]; C. Celestin[2]; J. Cook[2]. [1]Tufts University, Springfield, MA; [2]Baystate Medical Center, Springfield, MA. *(Tracking ID #115840)*

BACKGROUND: Patients with history of myocardial infarction (MI) are at increased risk for reinfarction. Although adding warfarin to aspirin decreases the incidence of MI and stroke, the inconvenience of therapy and the increased risk of bleeding have limited its use. Because not all patients are likely to benefit equally from warfarin therapy, we conducted a meta-analysis to quantify the benefit, then applied it to individuals at varying degrees of cardiovascular and bleeding risks.
METHODS: We searched MEDLINE from 1990 for randomized controlled trials comparing high dose warfarin (INR > 2) plus aspirin with aspirin alone in patients with history of MI or acute coronary syndrome. We evaluated the endpoints of recurrent MI, thrombogenic stroke, death, major bleeding, and minor bleeding. Hypothetical patients were then divided into tertiles of cardiovascular and bleeding risk based on published data from 2,677 post-MI patients and the Outpatient Bleeding Risk Index.
RESULTS: Ten articles (7,689 patients) met the study criteria. Nine found a risk reduction for MI in the warfarin plus aspirin group, but only one reached statistical significance. Combining all trials, adding warfarin to aspirin resulted in a relative risk of 0.67 (95% CI 0.56 to 0.81) for myocardial infarction, 0.40 (95% CI 0.24 to 0.65) for ischemic stoke, and 2.3 (95% CI 1.6 to 3.3) for major bleeding. There was no difference in mortality. Applying the results to risk tertiles, patients with low (1%) or medium(8%) bleeding risk based on personal risk factors stand to benefit most from warfarin therapy, especially if they are at medium (8%) to high (21%) risk of reinfarction.
CONCLUSION: For patients suffering a prior MI, warfarin plus aspirin decreases morbidity from recurrent MI and stroke. Patients at low risk of bleeding benefit most.

Expected change in number of MIs/strokes/major bleeds by adding warfarin to aspirin per 1,000 patient-years, by risk group

	Annual Bleeding Risk		
	Low (1%)	Med (8%)	High (30%)
Annual MI Risk	Low (3%	–10/–5/6	–10/–5/167
	Med (8%)	–26/–12/6	–26/–12/167
	High (21%)	–69/–30/6	–69/–30/167

MISCONCEPTIONS ABOUT SCREENING AND PREVENTION: IMPLICATIONS FOR INFORMED DECISION-MAKING. T. Denberg[1]; S. Wong[2]; A. Beattie[2]; E.J. Perez-Stable[2]. [1]University of Colorado Health Sciences Center, Denver, CO; [2]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115709)*

BACKGROUND: Informed decision-making about cancer screening requires that patients have a correct understanding of a test's purpose, benefits, and risks. Understanding patients' actual beliefs in these areas may enhance informed decision-making.
METHODS: Semistructured interviews were transcribed and thematically coded using a convenience sample of 24 socioeconomically diverse white, African American, Latino and Chinese American women recruited from community settings. Interviews focused on participants' ideas related to cancer prevention and screening.
RESULTS: A majority of women doubted that the emergence of cancer can be prevented, even while asserting that, if caught early enough, death can be avoided. Lack of knowledge of pre-malignancy was widespread, reinforcing the equation of prevention with cancer survival. Screening was often described in terms that invoked the magical notion of bodily protection rather than prevention: it is therapeutic by itself without regard to cancer or for gathering information to prompt medical follow-up. The most extreme manifestation of this idea was that a failure to get screening can actually cause cancer. A subset of respondents believed that screening is indicated only with symptoms. These beliefs cut across ethnic and social class boundaries.
CONCLUSION: Women expressed cancer-related beliefs characterized by inaccuracies, distortions, and over-simplifications. Many of these beliefs may go unrecognized in clinical settings yet have a profound influence on risk communication and, therefore, informed decision-making. Effective communication depends, first, on clinicians and patients sharing an accurate understanding of background concepts such as "prevention," "screening," "cancer," and "risk." Furthermore, screening decisions may be based on beliefs unrelated to risk.

MISSED OPPORTUNITIES: REFUSERS OF ROUTINE HIV TESTING IN AN URGENT CARE SETTING. R.V. Liddicoat[1]; E. Losina[2]; M. Kang[1]; K.A. Freedberg[1]; R.P. Walensky[1]. [1]Massachusetts General Hospital, Boston, MA; [2]Boston University School of Public Health, Boston, MA. *(Tracking ID #115690)*

BACKGROUND: Efforts to increase routine HIV testing and case identification in the US are hindered by high test refusal rates. Though little is known about people who refuse voluntary HIV testing, data suggest that refusers may have higher rates of HIV infection than acceptors. Our objective was to identify those likely to refuse HIV testing in order to improve future testing efforts.
METHODS: We developed a new routine, voluntary HIV testing program at 4 Massachusetts urban, hospital-associated urgent care centers located in areas of high HIV prevalence. In a confidential setting, all patients registering were asked if they were interested in routine HIV testing. Those who refused were asked for demographics and reasons for test refusal. We performed univariate and multivariate logistic regression to identify demographic factors and reasons associated with test refusal.
RESULTS: Of 10,354 patients offered HIV testing from 1/02–12/02, 7,073 (68%) refused. Refusers had a median age of 35 years, 48% were male, 69% English speaking, 35% white, 33% African American, and 23% Hispanic. Refusers were older, more likely to be female, English speaking and white compared to acceptors ($P < .001$). In multivariate analysis adjusted for site, refusal was associated with being white and English speaking compared to non-white, non-English speakers [OR 1.24 (95% CI: 1.09–1.41)], female gender[OR 1.23 (1.20–1.35)], older age ($P < .001$) and having a higher educational level ($P < .001$). Three of the sites had refusal rates of 77–80%, the fourth site's refusal rate was 49% ($P < .001$). Most common reasons for test refusal were "felt not at risk" (42%), "previously tested" (37%), and "felt too sick" (14%). Two percent refused because they were already known to be HIV-infected, while only 1% felt the information was "too personal." Among test acceptors, overall HIV prevalence was 1.8%; prevalence among repeat testers was 2.1%. Demographic groups that refused more often had high prevalence rates of HIV among those who accepted; 1.4% among women, 1.3% among those with greater than a high school education, and 0.9% among patients >40 years.
CONCLUSION: Two thirds of patients offered routine HIV testing in an urgent care program refused. Refusers were more likely to be female, older, white, and more educated. HIV prevalence among similar demographic groups who accepted testing generally exceeded 1%, highlighting the need to test groups that are more likely to refuse. Efforts should be made to educate patients about the yield of testing as well as the value of repeated testing in the setting of continued risk behavior.

MONITORING DEPRESSION WITH A BRIEF SELF-REPORT SCALE (PHQ-9). K. Kroenke[1]; J. Unutzer[2]; C.M. Callahan[1]; A.J. Perkins[1]; B. Löwe[1]. [1]Indiana University and Regenstrief Institute, Indianapolis, IN; [2]University of California, Los Angeles, CA. *(Tracking ID #115147)*

BACKGROUND: Although efficacous treatments are widely available, only 22% of Americans with major depression are treated adaequately. Self-adminstered screening instruments can efficiently help to diagnose and monitor depression in patient care and research. The 9-item depression module from the Patient Health Questionnaire (PHQ-9) is increasingly regarded as a standard instrument for assessing depression in primary care, but its sensitivity to change has not yet been established. In this study, we aimed to investigate sensitivity to change of the PHQ-9 in comparison to validated self-report scales, as well as to interview-based criterion standards for depression diagnosis.
METHODS: Data from the multisite IMPACT clinical depression trial was used to compare sensitivity to change of the PHQ-9, the SCL-20 depression scale, and the SF-12 Mental Component Summary (MCS-12). Depression diagnoses from two sources—the Structured Clinical Interview for DSM-IV (SCID), and the Depression Clinical Specialist (DCS)—were used as companion criterion standards for persistent major depression, partial remission, and full remission at 3 and 6 months. We analyzed data on 434 patients (63% female, mean age 71 years) from the intervention group of the IMPACT trial.
RESULTS: The PHQ-9 sensitivity to change as measured by effect size was equal to or greater than either the SCL-20 or MCS-12 at both 3 months (–1.3 vs. –0.9. vs. 0.9) and 6 months (–1.3 vs. –1.1 vs. 0.8). With respect to the DCS's depression diagnosis at 6 months, effect sizes of PHQ-9 change were –2.6 for the patient group with full remission, –1.8 for the patient group with partial remission, and –0.9 for the unchanged patient group. Using the SCID as a more conservative criterion standard, PHQ-9 change scores still discriminated well between the 3 groups.
CONCLUSION: Half the length of the SCL-20 with the added advantage of establishing depression diagnoses, the PHQ-9 is also comparable as an outcome measure in terms of its sensitivity to change. Moreover, the PHQ-9 discriminates well between patients with full, partial, and no remission of depressive symptoms.

MORE TIME, MORE WORK: TEAM STRUCTURE AND WORKLOAD EFFECTS ON PATIENT OUTCOMES IN AN ACADEMIC GENERAL MEDICINE INPATIENT SERVICE. M.K. Ong[1]; A. Bostrom[2]; A. Vidyarthi[2]; C.E. McCulloch[2]; A.D. Auerbach[2]. [1]Stanford University, Stanford, CA; [2]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117243)*

BACKGROUND: Housestaff work hour reduction mandates have forced residency programs to change team structures to limit resident and intern workloads. However, there is little research on how resident workloads influence patient outcomes.
METHODS: A retrospective cohort of 5,743 patients admitted to the University of California, San Francisco Medical Center general internal medicine wards between July 1998 and June 2001 was analyzed. We examined the effect of housestaff team structure variation (total number of teams, the number of teams admitting per day, and the number of interns on a team) on a combined outcome of 30-day readmission and death. We also examined the effect of daily workload (i.e. number of admissions or discharges, team patient loads, and overall service census), patient demographics, and weekend admission. Significant predictors were analyzed for associations with length of stay (LOS).
RESULTS: During the study period, 5,743 patients were admitted; the average age was 62 years (SD = 20) and 48% were male. More patients were admitted to two-intern teams (83%) than one-intern teams (17%). Teams averaged 6 admits per admit day (SD = 3) and a daily team census of 10 patients (SD = 4). Significant ($P < .05$) predictors of 30-day readmission and death are reported below with odds ratios (OR) and 95% confidence intervals (CI). Total team admits during the month and on the admit day significantly ($P < .05$) increased LOS by 0.6% and 4% per additional admit, respectively.
CONCLUSION: Reduction in readmission and death associated with team workload variables is likely due to increased lengths of stay caused by high patient loads. High overall service loads also lead to more readmissions and deaths. The worse outcomes associated with more team interns may reflect less time spent by residents working with individual interns. The beneficial effect of weekend admissions may be due to teams having more time to spend working up their patients than on weekdays.

Predictor	OR (95% CI)
Number of team interns	1.38 (1.02–1.87)
Total service admits on admit day	1.06 (1.01–1.11)
Total team admits during admit month	0.99 (0.97–1.00)
Total team admits on admit day	0.93 (0.87–0.99)
Weekend Admission	0.74 (0.55–0.98)

MORTALITY FOLLOWING SUBSTANCE DETOXIFICATION. J. McCary[1]; J.H. Samet[2]; D.M. Cheng[2]; M. Larson[3]; R. Saitz[2]. [1]Boston Health Care for the Homeless Program, Boston, MA; [2]Boston University, Boston, MA; [3]New England Research Institutes, Watertown, MA. *(Tracking ID #116943)*

BACKGROUND: Alcohol and other drug dependent adults are often not engaged in primary medical care yet they are at risk for serious health consequences. Mortality in this population has not been well described. We hypothesized that despite relatively young age, mortality in adults after detoxification would be substantial, causes of death would be related to addiction, and patient characteristics at the time of detoxification could identify those at higher risk for death.
METHODS: Between 1997 and 1999, a prospective cohort of adults without primary medical care in an inpatient urban detoxification unit for alcohol, heroin, or cocaine underwent standardized research assessments and was followed for 2 years. Deaths were identified at the time of attempted follow-up contacts and by matching study subjects with 1997–2001 National Death Index data. Underlying causes of death were identified from death certificates. Unadjusted and adjusted (for age and gender) Cox proportional hazards models were fit with death as the outcome.
RESULTS: Subjects were: 76% male; 46% white, 37% black, 11% latino; 60% uninsured; 47% homeless; 86% smokers; and 47% with chronic medical illnesses. Forty percent reported alcohol, 27% heroin, and 33% cocaine as their substance of choice. The median age was 35. Of the 470 subjects, 27 (6%) died during the 4-year follow up. National Death Index data were available for 88% (24/27) of the deaths. The median age at death was 39. Causes were: poisoning by any substance (38% of deaths); trauma (13%); cardiovascular disease (13%); exposure to cold (8%); alcohol abuse (8%); unknown (8%); diabetes (4%); lung neoplasm (4%); and intracerebral hemorrhage (4%). In unadjusted analyses, age, sex, smoking, homelessness, and addiction severity (Addiction Severity Index) were not associated with mortality. Significant predictors in unadjusted analyses remained so in adjusted analyses: drug of choice (heroin: adjusted Hazard Ratio [HR] 7.9 [95% CI 1.8–35]; alcohol: HR 5.0 [95% CI 1.1–23] as compared to cocaine); past suicide attempt (HR 3.2 [95% CI 1.5–7.0]); previous drug or alcohol overdose (HR 2.4 [95% CI 1.1–5.1]); history of any chronic medical illness (HR 2.3 [95% CI 1.0–5.2]); and Hispanic ethnicity (HR 5.2 [95% CI 1.7–16] as compared to Black).
CONCLUSION: Mortality was substantial after substance detoxification in these relatively young adults without primary medical care. At the time of detoxification, heroin and alcohol as drugs of choice, overdose, past suicide attempt, medical comorbidity, and perhaps ethnicity, may help identify those at highest risk. These risk factors may help efforts to design and target interventions to prevent premature death in patients with addictions.

MOVING BEYOND ESTABLISHING COMPETENCE: WHY PROGRAMS SHOULD IMPLEMENT OBJECTIVE STRUCTURED CLINICAL EXAMINATIONS. S. Zabar[1]; A.L. Kalet[1]; K. Hanley[1]; D.L. Stevens[1]; E.K. Kachur[2]; M.D. Schwartz[1]; E. Pearlman[1]; M. Lipkin[1]. [1]New York University, New York, NY; [2]Medical Education Development, New York, NY. *(Tracking ID #116577)*

BACKGROUND: All programs are struggling with how to incorporate performance based assessment of medical residents that are valid and worth the investment of time and resources. We evaluated the validity and educational benefit of our 3rd annual comprehensive, performance based assessment which has become an important source of individual and programatic formative feedback.
METHODS: We developed a 10-station, faculty observed, objective structured clinical exam (OSCE) with eight standardized patients (SP) and 2 standardized student

(SS) cases. Assessed competencies included: management of chronic and acute diseases, patient education, phone consultation, and teaching. In each station, trained faculty completed a 22 item behavioral checklist evaluating 5 domains: data gathering, rapport building, patient education, knowledge and synthesis and recorded global assessments (1–9 scale) of overall performance, communication skills, and fund of knowledge. Residents self-assessed, SPs and SSs evaluated residents' overall performance, and faculty feedback was provided at each station. Convergent and construct validity were assessed using nationally normed in-service knowledge test exam (In-Service) which they took 6 months prior to the OSCE. Faculty and residents evaluated the OSCE's educational impact by a post-program survey.
RESULTS: 76 residents participated (8 PGY1, 60 PGY2, 8 PGY3). In-service scores correlated with faculty ratings of knowledge (r = .522, $P = .01$) but not with ratings of communication skills. SP ratings correlated with faculty ratings of communication skills (r = .747, $P = .01$) and overall performance (r = .762 $P = .01$). Resident self-assessment did not correlate with any faculty ratings. Fund of knowledge scores increased with each year of training ($P = .001$). 82% of faculty reported the OSCE helped them recognize residents' strengths and weaknesses. 92% felt the OSCE provided valuable new information on resident performance. 60% of residents stated that the OSCE definitely stimulated them to learn more, and 62% felt it taught them something new. 70% of residents reported it provided them with valuable feedback and helped them identify personal strengths and weaknesses. Residents performed poorly on smoking cessation and telephone skills but felt they were appropriate cases of high educational value.
CONCLUSION: A comprehensive performance based assessment reliably measured clinical skills, correlates with national inservice exam scores, helped residents identify strengths and weakness they are unlikely to be aware of, and led to important new curriculum and new information on residents performance.

MULTI-DISCIPLINARY ROUNDS: EARLY RESULTS OF A RESIDENT FOCUSED INITIATIVE TO IMPROVE CLINICAL QUALITY MEASURES, PROMOTE SYSTEMS BASED LEARNING, AND SHORTEN INPATIENT LENGTH OF STAY. S.P. O'Mahony[1]; J. Fine[1]; P. Charney[2]; A. Brooks[1]; E. Mazur[1]. [1]Norwalk Hospital, Norwalk, CT; [2]Albert Einstein College of Medicine, Bronx, NY. *(Tracking ID #116556)*

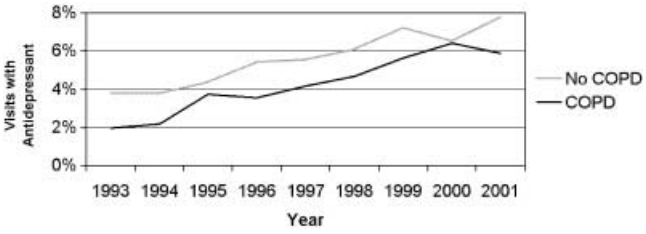
BACKGROUND: Academic medical centers must contend with seemingly competing expectations in their oversight of inpatient services. Hospital administrators demand decreased inpatient length of stay (LOS), while CMS and JCAHO expect documented improvements in quality of care. ACGME mandates instruction of residents in system-based care alongside traditional teaching topics. We sought to determine whether resident-focused multidisciplinary rounds (MDR) measurably addresses these issues. The specific goals were to achieve, without additional personnel, "best demonstrated practice" in JCAHO Core Measures metrics for adult medicine diagnoses, educate and involve residents in Core Measures performance as well as evidence and systems based practice, and to reduce LOS for CHF, community acquired pneumonia, and acute MI.
METHODS: Patterned after the MDR pioneered at Berkshire Medical Center (Resp Care 2001; 46:1), we implemented thrice-weekly, hour long resident-centered and nurse-driven rounds in July 2003. MDR is led by the medicine faculty and attended also by dieticians, pharmacists, case managers, psychiatry, and physical therapy. Fifty to 70 cases are presented per session on a sequential team by team basis. Core Measures performance is tracked monthly along with LOS for CHF, pneumonia, and acute MI. An anonymous survey to ascertain attitudes and knowledge was administered to all residents participating in MDR.
RESULTS: Five months after the implementation of MDR, average LOS decreased 0.88 days ($P < .05$) for pneumonia, 1.55 days ($P = .06$) for CHF, and 2.31 days ($P < .05$) for acute MI compared to 9 months prior. After three months, Core Measures performance improved for almost all measures, although statistical significance was reached only for pneumococcal vaccinations (52% vs. 10%, $P = .0002$). The resident questionairre revealed significant improvement in understanding of evidence-based care delivery as well as in overall quality of care, efficiency, and relationships with all disciplines. Knowledge of core measures increased in 100% of residents, while 67% improved from lowest scores of "none" or "some" knowledge to the top scores of "very good" or "excellent". Residents felt that the benefits of MDR outweighed the costs of interruption of their work rounds, and they felt comfortable with the nurse-driven MDR presentation process.
CONCLUSION: MDR led by physicians, driven by nurses, and focused on residents is associated with improvement in core measure performance, significant decreases in length of stay, and increased resident knowledge and competency in systems-based practice and evidence-based care.

N-ACETYLCYSTEINE FOR THE PREVENTION OF CONTRAST-INDUCED NEPHROPATHY: A SYSTEMATIC REVIEW AND META-ANALYSIS. R. Liu[1]; D. Nair[1]; J. Ix[1]; D.H. Moore[1]; S.W. Bent[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115599)*

BACKGROUND: Contrast-induced nephropathy is a common cause of acute renal failure in hospitalized patients. Although patients are often given N-acetylcysteine to prevent renal injury from contrast agents, there are no clear guidelines supporting its use. We conducted a systematic review to determine if administering N-acetylcysteine around the time of contrast administration reduces the risk of contrast-induced nephropathy.
METHODS: We searched MEDLINE, EMBASE, the Cochrane Collaboration Database, bibliographies of retrieved articles, abstracts of conference proceedings, and consulted with experts to identify relevant studies. Randomized controlled trials of N-acetylcysteine in hospitalized patients receiving contrast were included. Studies were excluded if they did not report change in creatinine or incidence of contrast-induced nephropathy at 48 hours.
RESULTS: Nine randomized controlled trials satisfied all inclusion criteria and were included in the analysis. The difference in mean change in creatinine between the N-acetylcysteine treated group and controls was –0.27 mg/dl (95% CI, –0.43 to –0.11). The relative risk of developing contrast-induced nephropathy was 0.43 (95% CI, 0.24 to 0.75) in subjects randomized to N-acetylcysteine. Significant heterogeneity existed among studies, suggesting differences in patient populations or study methodology not identified by sensitivity analyses. The incidence of dialysis was rare (0.2%).
CONCLUSION: Our findings suggest that N-acetylcysteine helps prevent declining renal function and contrast-induced nephropathy. While N-acetylcysteine is inexpensive and non-toxic, use of this agent may delay diagnostic and therapeutic procedures. Future studies are needed to address the long-term effects and cost-effectiveness of this agent.

NATIONAL TRENDS IN ANTIDEPRESSANT PRESCRIBING IN PRIMARY CARE TO PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE. P.A. Pirraglia[1]; C.M. Duffy[2]. [1]Rhode Island Hospital, Providence, RI; [2]Brown University, Providence, RI. *(Tracking ID #115908)*

BACKGROUND: While antidepressant prescribing in primary care has increased significantly, it has been reported that acceptance of antidepressant medications may be poor among COPD patients. We sought to compare trends in antidepressant prescribing in office-based primary care visits where the patient had a diagnosis of COPD to visits where COPD was not a listed diagnosis.
METHODS: We used National Ambulatory Medical Care Survey data from 1993 to 2001 to examine antidepresssant prescribing at office-based primary care visits. We defined the presence of COPD in visits by an ICD-9-CM code for COPD (490–496). Age, sex, race/ethnicity, and insurance status were also available for analysis. We used SUDAAN software to perform chi-squared tests and multivariable logistic regressions to compare visits with COPD versus no COPD listed.
RESULTS: There were ~2.7 billion primary care visits between 1993 and 2001; 7.4% listed COPD as a diagnosis. Overall, those with COPD were more commonly over 65 years old (33.7% versus 26.3%), male (43.4% versus 41.4%), and white (81.7% versus 78.9%), less commonly privately insured (57.4% versus 62.3%). Antidepressants were prescribed less commonly (see figure). The overall adjusted odds of antidepressant prescribing increased by 10% per year (OR 1.10, 95% CI 1.07–1.13). However, the adjusted odds of antidepressant prescribing for visits with COPD were 0.71 (95% CI 0.59–0.84); there was no interaction between COPD and year.
CONCLUSION: While antidepressant prescribing in primary care has increased overall and among visits with COPD, there were persistently lower odds of antidepressant prescribing to those with COPD. Future research is needed to examine the cause of this disparity.



NIGHT FLOAT—AN INTERN'S EXPERIENCE. J.M. Mercado[1]; A. Tulsky[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #117143)*

BACKGROUND: As a consequence of the ACGME mandated work hour regulations, many residency training programs are instituting a Night Float (NF) service to ensure compliance with the number of hours a medical trainee spends on call. Having little previous experience with NF, we performed a descriptive study of the cross coverage problems presented to the NF intern during a 20-day period to 1) identify the spectrum and volume of cross coverage experienced on a NF service, and 2) identify which cross coverage problems can be anticipated in advance by the primary team, and thus improve patient care and resource utilization.
METHODS: All cross-coverage calls received by the intern during a 20-day period were tallied and categorized as urgent (must be seen right away) or non-urgent (handled by telephone); and as anticipated (noted in the resident's sign-out) versus unanticipated (not mentioned in the resident's sign-out) by the primary team. Calls were further categorized by the following system-related problems and complaints: cardiovascular, respiratory, gastrointestinal, endocrine, metabolic, pain, psychiatric, falls and miscellaneous.
RESULTS: The total number of patients cross-covered during this period was 887 with an average of 44.35 patients per night (range 31 to 55). Two hundred and forty five calls were received (average 12.2 per night, range 6 to 24). Seventy eight percent of the calls were urgent and 67% were unanticipated. The most common

calls were for the management of: 1) pain, 36/245 calls (14.7%); 2) blood pressure (BP)instability, defined as systolic BP >170mmHg or <90mmHg, 32/245 calls (13.06%); and 3) insulin regimen, 30/245 (12.24%).
CONCLUSION: During this 20-day study of NF intern cross coverage, 78% of calls were due to urgent complaints, and 67% due to unanticipated problems. Pain management was the most common reason of all calls. Many of these could have been anticipated with an adequate pain management protocol. The second most common call was related to blood pressure instability, a situation which often cannot be anticipated by the day team. However, a structured teaching experience that reviews each case may identify opportunities to prevent future events, and fulfills one of the new ABIM competencies on practice based learning. The third most frequent problem encountered involved blood glucose management. These occurrences could be reduced with the institution of a standard protocol for Insulin administration. A repeat survey of cross-coverage calls would be useful to generalize these results beyond the study period. Nevertheless, we felt sufficiently confident to present these findings to the Hospital's Quality Management Committee. Consequently, a pain and a diabetes management protocol are currently in development.

NO RELATIONSHIP BETWEEN LITERACY STATUS AND MEDICAL CHARGES. R.M. Malone[1]; D.A. DeWalt[1]; M.P Pignone[1]; R. Rothman[2]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]Center for Health Services Research, Nashville, TN. *(Tracking ID #115923)*

BACKGROUND: Low literacy has been associated with worse health outcomes, and advocates often assume that low literacy is also associated with higher health care costs. However, few studies have examined the relationship between literacy status and healthcare charges. We performed a retrospective cohort study to examine the role of literacy on health care charges.
METHODS: We identified patients who participated in diabetes, anticoagulation, heart failure and pain management programs at a university general internal medicine clinic, who previously had literacy measured. Literacy was assessed with the Rapid Estimate of Adult Literacy in Medicine (REALM). All inpatient and outpatient charges, including physician, emergency department, laboratory and inpatient pharmacy charges were obtained for each patient from July 2002 through June 2003. Outpatient pharmacy, hospice, and home health charges were not included. Total charges were compared using multivariate linear regression with cost as a log transformed dependent variable. We also stratified by disease management program.
RESULTS: Literacy status was measured in 593 out of 1,640 patients enrolled in our disease management programs. Of those, 544 were actively followed during the year of analysis. Mean age was 59 (range 19–97), 54% were female, and 49% were African American. There was a high prevalence of low literacy with 20% ≤3rd grade, 14% 4th–6th grade, 26% 7th–8th grade, and 40% ≥9th grade. Median charges were: ≤3rd: $3,515, 4th–6th: $3,041, 7th–8th: $3,013, and ≥9th: $3,268. After controlling for age, sex, race and disease management program, we found no difference in charges when stratified by literacy status.
CONCLUSION: Among patients in chronic disease management programs, literacy status was not associated with higher medical charges. Further research is needed to explore the role of literacy on health care costs.

NON-ADHERENCE GENERATES FALSE EQUIVALENCE IN ACTIVE CONTROL EQUIVALENCY TRIALS R.G. Barr[1]; S.J. Shea[1]. [1]Columbia University, New York, NY. *(Tracking ID #115867)*

BACKGROUND: Active control equivalency trials (ACETs) are used increasingly to meet FDA requirements for evidence of new drug effectiveness. Unlike conventional superiority trials, intention-to-treat (ITT) analyses of ACETs are non-conservative in the presence of non-adherence therefore 'as-treated' analyses are often recommended. As-treated analyses, however, are subject to confounding unless adherence is independent of the outcome. We sought to quantify the degree of bias introduced in ACETs by non-adherence with and without modest confounding between adherence and outcome.
METHODS: We performed analyses based on results of a recently reported ACET that randomized 4,909 patients to valsartan and 4,909 to captopril following myocardial infarction with the primary outcome of all-cause mortality (NEJM 2003;349:1893–906). Risk ratios (RR) were calculated in ITT and as-treated analyses with various proportions of adherence, which was assumed to be equal in both treatment groups and constant throughout the ACET. RR were recalculated after the introduction of modest confounding of the association of adherence and mortality. Two-sided 95% CI were calculated to correspond to the one-sided alpha of 0.025 specified in the ACET.
RESULTS: The reported results of the ACET strongly rejected the null hypothesis of inferiority of valsartan compared with captopril in ITT analyses ($P = .004$). The corresponding upper bound of the CI (RR 1.02; 95% CI: 0.94–1.10) was well within the pre-specified non-inferiority margin of 1.13. The reported result, however, assumed 100% adherence, which was not measured in the ACET. To achieve the reported result with 50% adherence in both groups, the true (unbiased) effect would have had to be RR 1.05 (95% CI: 0.97–1.13), consistent with inferiority of valsartan. In the absence of confounding, as-treated analyses provided a valid estimate of this effect and a conservative CI (RR 1.05; 95% CI: 0.92–1.20 for the same degree of adherence). In the presence of modest confounding (10%), however, as-treated analyses yielded a biased effect estimate and a biased CI that falsely suggested equivalence (RR 0.99; 95% CI: 0.88–1.11 for the same degree of adherence).
CONCLUSION: If adherence is imperfect, ITT analyses of ACETs yield effect estimates and CI that are usually biased toward equivalence. As-treated analyses yield valid effect estimates and conservative CI only if confounding between adherence and outcome is absent. If such confounding is present, as-treated analyses may also falsely suggest equivalence. ACETs reliably provide valid results only in settings in which adherence is guaranteed. In the presence of non-adherence, ACETs become analogous to observational designs and require an assumption of no confounding between adherence and outcome.

NON-ADHERENCE TO EVIDENCE-BASED GUIDELINES IN THE INITIAL TREATMENT OF HYPERTENSION. M.A. Fischer[1]; R. Levin[1]; J. Avorn[1]. [1]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116478)*

BACKGROUND: Evidence-based guidelines for the management of hypertension have emphasized the importance of older medications, such as thiazide diuretics, as first-line therapy. Nevertheless, a large percentage of prescribing for hypertension falls outside of published guidelines. We examined trends in new prescriptions for hypertension in a large population of typical elderly patients, and the association between patient factors and the choice of antihypertensive medication.
METHODS: Using filled prescription data from a large state drug assistance program for the elderly, we identified all patients who began treatment for hypertension between 1997 and 2000. We used Medicare claims data for these patients to identify other medical conditions that might influence choice of antihypertensive medication. Each prescription was classified by drug class and by whether it adhered to evidence-based guidelines as published at the time (JNC-VI guidelines). We then used multivariate regression models to examine the effect of patient factors on choice of medication.
RESULTS: During the 4 year study period a total of 14,463 patients began antihypertensive medications. The most commonly prescribed drug class was angiotensin-converting enzyme inhibitors, accounting for 25% of new starts. Over the four years studied, the rate of new starts of calcium channel blockers declined while new starts of beta blockers increased. Among patients without major comorbidities, 22% were prescribed thiazide diuretics as their initial antihypertensive medication; this rate did not change over time. Use of beta blockers for patients with a history of myocardial infarction increased from 26% in 1997 to just 39% in 2000. Overall, only 50% of patients received a prescription that appeared to conform to JNC-VI guidelines; there was minimal increase in evidence-based prescribing over time (50% to 51%). Multivariate modeling showed that female patients and non-white patients were more likely to receive medications compatible with JNC-VI guidelines. Patients with cardiac disease, such as history of myocardial infarction or congestive heart failure, were more likely to receive a prescription that conformed to the guidelines, while patients with diabetes were less likely to do so.
CONCLUSION: Choice of initial medication for hypertension therapy remains heterogeneous and differs from published recommendations in half of patients. Guideline adherence did not change substantially over time, although evidence-based prescribing did increase in patients with cardiac disease.

NON-HDL VERSUS LDL CHOLESTEROL AS A RISK FACTOR FOR FIRST MYOCARDIAL INFARCTION. W.R. Farwell[1]; H.D. Sesso[2]; J.E. Buring[2]; J.M. Gaziano[1]. [1]Harvard University, Boston, MA; [2]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116863)*

BACKGROUND: Low-density lipoprotein (LDL) is the primary cholesterol parameter targeted to prevent myocardial infarction (MI). Non-high-density lipoprotein (non-HDL) includes LDL as well as other atherogenic particles and does not require a fasting sample. We examined whether non-HDL was a better risk factor for first MI compared with LDL.
METHODS: We analyzed data from the Boston Area Health Study, a case-control study from the 1980s investigating risk factors for first MI. Cases were identified as white men or women, less than 76 years old, living in the Boston area, with no previous history of MI or angina pectoris, in whom symptoms of MI began during the 24 hours before admission. The diagnosis of MI was based upon clinical history and elevated creatinine kinase. For each case, a control with no previous history of MI or angina was selected and matched for age, sex, hospital, and home neighborhood. Fasting blood samples were collected and analyzed for lipids, and a comprehensive array of dietary and lifestyle variables were collected. We performed unmatched multivariable logistic regression to compare the independent association of non-HDL and LDL to first MI. Data from 303 cases and 297 controls who had complete fasting lipid profiles were analyzed.
RESULTS: Cases had a greater prevalence of hypertension, diabetes mellitus, family history of MI and history of smoking than controls. Quartiles of non-HDL were defined among the controls as ≤143, 144–172, 173–200, and ≥201 mg/dL; LDL quartiles were defined as ≤111, 112–137, 138–159, and ≥160 mg/dL. After multivariate adjustment for other cardiovascular risk factors in unmatched analyses, the odds of an MI were greater in the second, third and fourth quartiles of non-HDL than LDL compared to the first quartile of each. For non-HDL cholesterol, the ORs in the second through fourth quartiles were 1.83 (1.07–3.14), 2.07 (1.23–3.49), and 2.33 (1.39–3.90) (p trend = 0.0027); for LDL cholesterol the ORs were 1.10 (0.67–1.81), 0.87 (0.52–1.46), and 1.45 (0.90–2.35) (p trend = 0.15).
CONCLUSION: Given that non-HDL accounts for LDL plus other atherogenic particles and does not require a fasting sample, our study suggests that non-HDL cholesterol is as useful as LDL to initially screen patients for risk of first MI.

NOTICES OF PRIVACY PRACTICES: A SURVEY OF THE HIPAA DOCUMENTS PRESENTED TO PATIENTS AT U.S. HOSPITALS. M.K. Paasche-Orlow[1]; J.N. Powell[2]; D.M. Jacob[3]. [1]Boston University, Boston, MA; [2]Harvard University, Cambridge, MA; [3]Healthcare Analytics, LLC, New York, NY. *(Tracking ID #116993)*

BACKGROUND: Under the Health Insurance Portability and Accountability Act (HIPAA) privacy rule, hospitals must present patients with a Notice of Privacy Practices (NPP) so people can control their health information. Regulations stipulate the content of NPPs, mandate that they are written in language that is readable by patients, and posted on institutional Web sites. While no specific grade-level has been federally endorsed, the average reading level of American adults is 9th grade. We hypothesized that NPP's would meet content requirements, but would not be readable by patients and that readability would be influenced by local literacy rates, the level of research activity at the hospital, and hospital size. Similarly, we hypothesized that hospitals with >5% local rate of low English proficiency (LEP) would be more likely to present easy-to-read NPP's and NPP texts in alternative languages.
METHODS: To test these hypotheses, we conducted a cross-sectional study linking data from several public-use sources. A total of 115 Web sites of Hospitals selected from the U.S. News and World Report list of top Hospitals in America 2002 were surveyed for NPP texts. All English NPP texts were evaluated for 19 content items and readability using the Flesch-Kincaid scale, which assigns the minimal grade-level required to read a text (range 0–16). Data on local literacy rates, local rates of LEP, the level of research activity, and hospital size were obtained from organizational Web sites.
RESULTS: We were able to identify NPP's for 91% (105/115) of the selected hospitals. Spanish NPP text was available at 25 of hospital Web sites; seven of these hospitals presented NPP texts in additional languages. All surveyed content items were found in 75% (79/105) of hospital's NPPs. The remaining 25% (26/105) of hospital's NPPs had 1–4 missing items. The most frequent item absent was a statement regarding fundraising. The average grade-level readability of NPP text was 12.4 (95% CI 12.0 to 12.7). Readability was not associated with the rate of local literacy ($P = .07$), the level of research funding ($P = .82$), or hospital size ($P = .49$). Hospitals with >5% local LEP had NPPs that were more difficult to read ($P = .005$) and were not more likely to have foreign language NPP texts available on their Web sites ($P = .30$).
CONCLUSION: While NPPs presented to patients in U.S. hospitals typically cover the content stipulated by regulation, they are written beyond the reading capacity of the majority of American adults. The goals of the HIPAA Privacy Rule cannot be met with NPPs patients cannot decipher.

NUMBER NEEDED TO TREAT (NNT)- CHALLENGES IN INTERPRETATION. A LITERATURE REVIEW. A.K. Ghosh[1]; K. Ghosh[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #102548)*

BACKGROUND: Number needed to treat (NNT) has been described as an essential paradigm in understanding the clinical significance of a new therapy. However the ability of patients and physicians not trained in EBM, to understand NNT remain unclear from most studies. The purpose of the study was to determine how often patients and physicians understand the concept of NNT. A secondary aim was to determine the limitations of NNT.
METHODS: Relevant articles were identified by searching various database including MedLine (1980–2003), Embase (1988–2003), PsychInfo(1984–2003), Web of Science (1993–2003), educational websites, and bibliography of relevant articles. Study design, quality of the study, and limitations of the study were abstracted by two independent reviewers. Review articles on therapy, and studies on efficacy of workshops on EBM were excluded.
RESULTS: Ten articles met the inclusion criteria. Four articles involving patients (1) and physicians (3) revealed that both the groups preferred results when presented as RRR as compared to NNT. Two studies on the physician's ability to understand and explain NNT to others revealed that only 16% in Australian physicians to 35% in a study on UK physicians respectively understood and felt confident in explaining NNT to others. Another study involving medical students revealed impaired understanding of NNT as compared to RRR (25% vs. 75%). A patient only study revealed that 80% of patients consented for therapy regardless of the size of NNT, i.e., 10 or 400. Three studies explored the limitations of NNT; which included difficulty in interpretation when comparing the effects of interventions over different periods of time, or applied in different population, using NNT for preventive interventions, equating NNT with winning a lottery, age of the physician as a determinant of using NNT to guide therapy (younger > older to be affected by NNT), consideration of wasted effort related with any treatment (i.e., [NNT-1] patients who have no benefit).
CONCLUSION: Despite numerous studies revealing the efficacy of teaching EBM in workshops the overall understanding of NNT among patients and medical personnel is limited. Ongoing effort is indicated in educating both the patients and physicians about terms commonly used in EBM. Limitations of NNT should be stressed to physicians. Drawbacks of our study included; 1) limited number of studies on NNT, 2) variable study design and quality of educational research.

OBESITY DIAGNOSIS AND TREATMENT IN OLDER ADULTS: A SYSTEMATIC REVIEW OF THE EVIDENCE. K.M. McTigue[1]; R. Hess[1]; J. Ziouras[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #117393)*

BACKGROUND: Obesity is increasingly common in older US adults. Clinical approach should reflect age-related changes in health implications, diagnostic and treatment data.
METHODS: We devised an analytic framework, study selection criteria, and search strategies, then searched MEDLINE and the Cochrane Library (January 1980 through March 2003) for articles on obesity in older adults (mean age >60 years). We evaluated observational studies (diagnosis and health implications), randomized controlled trials and systematic reviews (treatment efficacy). Two independent reviewers abstracted data on study design, population, results, and quality. We then summarized and synthesized findings.
RESULTS: The ability of body mass index (BMI), waist circumference (WC) or waist-to-hip ratio (WHR) to estimate body fat decreases, but remains significant, among older adults. BMI remains linked with the widest range of outcomes; WC and WHR add information on cardiovascular risk. Assessment of long-term (>10 year) health risk from obesity in older adults is complicated by studies' disparate sample characteristics and statistical approaches. Overall, obesity is associated with diverse mortality (total and cardiovascular-related) and morbidity (e.g. several cardiovascular endpoints, incidence of certain cancers, and functional mobility limitation) risk, but protective of other events (e.g. hip fracture mortality). Obesity's link with all-cause mortality, and possibly cardiovascular mortality, diminishes throughout old age. Limited dietary studies indicate intensive counseling strategies with behavioral and exercise components typically promote 2 to 3 kg weight loss over 1 to 3.3 years in older adults, similar to findings in younger samples. Such loss is linked with improved glucose parameters (glucose tolerance testing, diabetes incidence) and a combined hypertension/cardiovascular event endpoint, but reduced bone mineral density. Findings reflect reasonable sample sizes and racial diversity, generally healthy participants, and fair-to-good internal validity. Harms were minimally evaluated. Surgical or pharmacologic intervention efficacy cannot be assessed in this age group due to insufficient data.
CONCLUSION: Among older adults, obesity can be diagnosed anthropometrically. Treatment decisions should incorporate age and patient co-morbidities: the younger elderly, and those with high cardiovascular risk are most likely to benefit from obesity treatment. Intensive dietary interventions with exercise can promote modest sustained weight loss in older adults. With such loss, several cardiovascular-related outcomes improve, but bone density decreases. Data are lacking for surgical or pharmacotherapy intervention efficacy in this age group.

OFFICE-BASED OPIATE TREATMENT: LOCAL IMPLICATIONS OF FEDERAL LEGISLATION. L.D. Woodard[1]; P.M. Haidet[1]; L. Capistrano[1]; H. Palacio[2]; R.L. Street[3]; C.M. Ashton[1]; B.F. Sharf[3]. [1]Houston Center for Quality of Care and Utilization Studies & Baylor College of Medicine, Houston, TX; [2]Harris County Health Department, Houston, TX; [3]Texas A&M University, College Station, TX. *(Tracking ID #116791)*

BACKGROUND: Recent U.S. legislation allowing primary care physicians (PCPs) to treat opiate addiction with buprenorphine has the potential to expand access to care for these patients. However, physicians have been slow to adopt this treatment in their practices. We assessed the impact of the Drug Addiction Treatment Act of 2000 (DATA) on treatment practices for opiate addiction in the Houston area.
METHODS: We conducted interviews with key informants in the Houston area (physicians, program directors, department heads, state officials) who provide substance abuse treatment or hold regulatory and/or funding roles in the treatment of substance abuse. We analyzed verbatim transcripts using a grounded theory approach to identify key themes. We used ATLAS.ti 4.2 software to facilitate data analysis.
RESULTS: We identified four themes from these interviews: (1) barriers to DATA implementation, (2) financial implications of buprenorphine treatment, (3) feasibility of buprenorphine treatment, and (4) potential benefits of office-based buprenorphine treatment. The most commonly cited barrier to buprenorphine treatment was high medication cost, felt to be prohibitive not only to uninsured patients and nonprofit treatment programs, but also to insured patients who lack substance abuse treatment coverage or who are reluctant to file substance abuse treatment claims. Other barriers included physician unfamiliarity with addiction treatment, provider uncertainty regarding buprenorphine efficacy, limited physician and patient interest, and concern about inappropriate use of buprenorphine. In addition to cost, participants highlighted other financial implications of buprenorphine treatment. For example, participants felt the rule restricting physician practices to 30 buprenorphine patients would make provision of this treatment unprofitable. For-profit substance abuse providers were concerned that PCPs would attract patients from their clinics, leading to decreased profits. Participants felt the absence of counseling/support services in most physician practices and lack of treatment guidelines limited the feasibility of buprenorphine treatment. Participants perceived decreased stigma associated with treatment, increased patient access, and increased treatment options for opiate addiction as potential benefits of buprenorphine treatment.
CONCLUSION: Office-based treatment with buprenorphine can increase patient access, increase treatment options, and decrease stigma associated with opiate addiction treatment. However, numerous barriers must be addressed to facilitate acceptance of this treatment option by PCPs, including high medication cost, lack of treatment guidelines, and rules constraining the number of buprenorphine patients in physician practices.

"OH! SHE DOESN´T SPEAK ENGLISH.": MEASURING RESIDENT COMPETENCE ACROSS LANGUAGE AND CULTURAL BARRIERS. S. Zabar[1]; K. Hanley[1]; A.L. Kalet[1]; E.K. Kachur[2]; D.L. Stevens[1]; M.D. Schwartz[1]; E. Pearlman[1]; K. Felix[1]; M. Lipkin[1]. [1]New York University, New York, NY; [2]Medical Education Development, New York, NY. *(Tracking ID #116165)*

BACKGROUND: Residents must master complex skills to care for culturally and linguistically diverse patients. We developed a performance-based assessment to measure their competence and facilitate their learning.
METHODS: We developed, piloted, and implemented a standardized patient(s) delivered case for an annual 10-station objective structured clinical examination

for medical residents. The case presented a 50 y.o reserved, Bengali-speaking woman who has been recalled to clinic for positive fecal occult blood, accompanied by her bilingual brother (Standardized Interpreter-SI). Residents' task was to explain the results and recommend a plan. The SI did not translate word for word unless directed to, questioned medical terms, and showed reluctance to tell her frightening information. The SP and SI rated residents' overall performance on a 4-point scale. Trained faculty observed residents, provided verbal feedback, and completed a 16-item behavioral checklist covering 5 domains (data gathering rapport building, patient education, synthesis and knowledge (on a 1–4 scale) and three global assessments (overall, communication skills, knowledge on a 1–9 scale, 9 high). All participants completed a post OSCE satisfaction survey.
RESULTS: 76 residents (8 PGY1, 60 PGY2, 8 PGY3) and 4 faculty participated. Mean faculty ratings were: Overall 6.0, Communicaiton 6.0, Knowledge 6.3 (ranges of 2 to 9). Combined SP/SI ratings (3.1 mean, range 1.9–3.9) correlated with faculty ratings (overall r = .719, communication r = .639, knowledge r = .457, all $P < .01$). 94% of residents reported some or much prior experience with a similar case, 92% rated the difficulty as just right and 89% stated the educational value was moderate to high. Poor performance (based on SP/SI ratings below 2, n = 15) on this station was not associated with poor performance on other stations. Common mistakes included: talking louder, using jargon, focusing on normal results. Common faculty feedback included: attend to the patient not interpreter, explicitly correct the interpreter, speak directly to the patient, prepare a few key points for patients about common workups.
CONCLUSION: Performance based assessment is able to assess and provide indivualized feedback about cross culture and language communication skills and provide programs with general areas of strength and deficiency.

ONCE IS NOT ENOUGH: EFFECTIVE STRATEGIES FOR DOMESTIC VIOLENCE EDUCATION. R. Buranosky[1]; R. Hess[1]; M.A. McNeil[1]; A. Aiken[1]; J. Chang[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #117221)*

BACKGROUND: Domestic violence (DV) has an estimated 30% lifetime prevalence among women, yet physicians only detect 1 in 20 victims of abuse. Improving knowledge is important in detecting and treating the DV victim. Different DV curricula have been implemented; yet, quantitative measure of the effectiveness of DV education are needed. The purpose of this study was to compare knowledge and attitudes of medical students exposed to a core didactic curricula vs. an experiential, community-based curriculum.
METHODS: We surveyed 1st–4th year University of Pittsburgh medical students with an anonymous 25-item instrument consisting of 3 demographic questions, 7 exposure questions, 6 attitudinal questions, and 15 knowledge-based questions. The core curricular exposures included 3 didactic sessions while the experiential exposures included an ER advocacy program and a clinical experience in a women's DV shelter. Attitudinal topics included level of awareness, degree of comfort, importance in medical school curriculum, importance of physician competency, belief in universal screening, and importance of health care provider intervention (scored on a 5-point Likert scale). Knowledge scores were analyzed using Student's t test and linear regression and attitudinal variables using Fisher's exact and ordered logistic regression.
RESULTS: 279 of 586 students (48%) completed the instrument. Responders included 154 (55%) women and did not differ with respect to gender compared to the overall medical student population. Students with experiential exposures (N = 72) had higher knowledge scores (78% vs. 61%, $P < .001$) than those without these experiences (N = 207). Higher numbers of core courses and visits to the women's shelter correlated with higher scores. These differences remained significant controlling for gender. For both groups, attitudinal scores were high in areas expressing importance of DV education in medical school curricula and importance of physician competence, yet significantly higher in the group with experiential exposures (mean scores: 4.7 vs. 4.3 and 4.9 vs. 4.6, respectively, $P < .001$). There was no statistical difference in the view of importance of provider intervention (4.5 vs. 4.3, $P = .067$). Overall, scores were lower in areas of comfort, awareness, and importance of universal screening, yet those with experiential exposures remained significantly higher (mean scores, 3.6 vs. 2.9, 3.9 vs. 3.1, and 4.4 vs. 3.6, respectively, $P < .001$) With in increasing numbers of core exposures, attitudinal scores became increasingly positive. These differences remained significant adjusting for gender and medical school year.
CONCLUSION: Multiple didactic exposures had a positive impact on knowledge about and attitudes towards domestic violence. This impact was augmented by experiential exposures. Replication at other institutions is warranted.

ORAL ANTICOAGULATION STRATEGIES AFTER A FIRST IDIOPATHIC VENOUS THROMBOEMBOLIC EVENT: A DECISION AND COST-EFFECTIVENESS ANALYSIS. D.A. Aujesky[1]; K.J. Smith[1]; M.S. Roberts[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #115791)*

BACKGROUND: The optimal duration and intensity of warfarin therapy after a first idiopathic venous thromboembolic (VTE) event are uncertain. We used decision analysis to evaluate clinical and economic outcomes of different anticoagulation strategies with warfarin.
METHODS: We constructed a Markov model to assess 5 strategies to treat 60-year-old patients after their first VTE event: 3-month, 6-month, 12-month, and unlimited-duration treatment with conventional-intensity anticoagulation (international normalized ratio [INR], 2.0–3.0) and unlimited-duration treatment with low-intensity anticoagulation (INR, 1.5–2.0). The model incorporates clinical parameters, utilities, and costs from the literature. Using a societal perspective, we calculated quality-adjusted life-years (QALYs) and lifetime costs for each strategy and compared incremental cost-effectiveness ratios. We conducted 1-way sensitivity analyses on all variables in our model. We selected variables that influenced results for probabilistic sensitivity analyses and constructed cost-effectiveness-acceptability curves for each anticoagulation strategy based on net health benefits.
RESULTS: Quality-adjusted life expectancy was similar for all five strategies and ranged from 10.667 QALYs for 3-month conventional-intensity anticoagulation to 10.732 QALYs for unlimited-duration low-intensity anticoagulation. Effectiveness was sensitive to variation in patient preferences for warfarin therapy and its side effects (major bleeding), the efficacy of low-intensity anticoagulation, the risk of late recurrence of VTE, and case-fatality rates of VTE and bleeding. The 12-month conventional-intensity strategy was least expensive (costing $4,643 per QALY gained). The unlimited-duration low-intensity strategy was slightly more effective but very expensive ($325,727 per QALY gained). Cost-effectiveness results were sensitive to variation of the case-fatality rate of pulmonary embolism and variation of the annual major bleeding rate associated with conventional-intensity anticoagulation. Cost-effectiveness acceptability curves showed that above a societal willingness-to-pay of $6,500 per QALY gained, 12-month conventional-intensity anticoagulation was always the optimal strategy.
CONCLUSION: Based on the best available evidence, the model showed that although unlimited-duration low-intensity anticoagulation is marginally more effective than 12-month convential therapy, it is substantially more costly, resulting in a more favorable cost-effectiveness profile for the 12-month strategy. Our analysis provides support for recommendations to prescribe a 12-month course of conventional-intensity anticoagulation after a first idiopathic VTE event in most cases.

OUTPATIENT ADVERSE EVENT SURVEILLANCE: IMPROVING ACCURACY AND MITIGATING HARM. D.A. Dorr[1]; B. Bayley[2]; J.R. Nebeker[3]. [1]University of Utah, Salt Lake City, UT; [2]Providence Health Systems, Portland, OR; [3]VAMC, Salt Lake City, UT. *(Tracking ID #117364)*

BACKGROUND: Compared with the inpatient setting, research on the surveillance of outpatient adverse events (AEs) has been limited. Multiple factors contribute to the challenges of outpatient surveillance, such as more difficult access to patient records, more infrequent patient encounters, and difficulty assessing patient compliance with care plans. We reviewed the literature for the effectiveness of monitoring programs for outpatient adverse events.
METHODS: The primary literature was surveyed using the Medline database (1966–2003) and Cochrane's full database set. Terms included permutations of (adverse event) AND (ambulatory, outpatient) AND (assessment). Studies were selected for detailed review if they involved a controlled trial, a structured observational study, or a meta-analysis. A framework developed by Eddy et al. was used to assess study validity. Due to the heterogeneity of the studies, a formal meta-analysis was deemed inappropriate. The authors reviewed the findings and came to consensus about key, validated methods for surveillance and the concept areas needed for risk factor, behavior, and knowledge modification.
RESULTS: In all, 1,346 articles were identified. Of these, 22 met the criteria described above. Measurement techniques included one or more of the following: patient report, provider report, chart review, and data mining (including natural language processing of notes). Rates varied from .0037 per 100 (spontaneous reporting system) to 33 per 100 patients (patient report and chart review). Case finding was significantly increased by using multiple measurement techniques or patient report. Factors associated with increased incidence included poor communication from provider to patient, number of medications, number of changes in medications, comorbid conditions, and poor adherence. Factors associated with decreased incidence or morbidity were team approaches to care that included the patient and early detection of and intervention in cases.
CONCLUSION: Although outpatient AE detection is in its infancy, accuracy of case classification can be improved by including patient report in surveillance methods. Measurement variables should include patients' knowledge, compliance, comorbidities, and communication with providers. Specific suggestions for design and interventions are included in the presentation.

PAP SMEAR HYSTERIA: CERVICAL CANCER SCREENING IN WOMEN WITHOUT A CERVIX. B.E. Sirovich[1]; H.G. Welch[1]. [1]VA Outcomes Group, Dartmouth Medical School, White River Junction, VT. *(Tracking ID #116822)*

BACKGROUND: Most American women who have undergone hysterectomy are not at risk of cervical cancer—they underwent the procedure for benign disease and no longer have a cervix. In 1996, the United States Preventive Services Task Force recommended that routine Pap smear screening is unnecessary for these women. We sought to determine whether the number of women with a hysterectomy undergoing routine Pap smear screening has declined since the recommendation.
METHODS: We used the 1992–2002 Behavioral Risk Factor Surveillance System of the Centers for Disease Control and Prevention, an annual population-based telephone survey of civilian non-institutionalized adults, to identify US women aged 18 and older who had undergone hysterectomy (combined n = 187,670). For each year, we measured the proportion who reported a recent Pap smear (within 3 years). Overall proportions are age-adjusted to the 2000 US female population. Data about type and indication for hysterectomies were obtained from the Nationwide Inpatient Sample and other sources.
RESULTS: Twenty three million American women aged 18 and older have had a hysterectomy, representing 21% of the population. The proportion of these women who reported a recent Pap smear did not change over the 10-year study period. In

1992 (before the USPSTF recommendation), 69% of women with a hysterectomy reported a Pap smear in the past 3 years; in 2002 (six years after the recommendation), 70% had had a Pap smear during the same period (p for the comparison = 0.27). Accounting for the fact that fewer than 5% of hysterectomies spare the cervix and 10% are performed for malignant disease, we estimate that 10 million women with a hysterectomy are being screened unnecessarily.
CONCLUSION: Many American women are undergoing Pap smear screening even though they are not at risk of cervical cancer. The US Preventive Services Task Force recommendations have been ignored.

PARTICIPATION IN RESEARCH TRIALS: FACTORS ASSOCIATED WITH MINORITY RECRUITMENT. R.W. Durant[1]; R.B. Davis[1]; D. St. George[2]; I. Williams[3]; G.M. Corbie-Smith[3]. [1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Walden University, Minneapolis, MN; [3]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #116349)*

BACKGROUND: Few studies have examined investigator or study characteristics that may impact the successful achievement of minority recruitment goals for research trials. We sought to determine the recruitment goals investigators had for minority populations, whether they met the goals they reported and what factors were associated with achieving recruitment goals for each minority group.
METHODS: We surveyed, by mail, 633 Principal Investigators (PIs) conducting clinical research funded by the National Heart, Lung, and Blood Institute in 2001. The survey assessed PIs' perceptions about major and minor barriers to minority recruitment, the use of various recruitment sites or methods, predicted and reported minority enrollment proportions, study characteristics, and PI demographics. First, we determined whether PIs actually set goals for minority recruitment. Among those respondents who did set goals, we assessed whether they met or exceeded their recruitment goals. We calculated a 95% CI for the reported minority enrollment proportions. If the predicted enrollment proportion was less than or equal to the upper bound of the 95% CI for the reported enrollment proportion, the respondent was categorized as having met his/her recruitment goals. We created multivariable logistic regression models to identify factors that were associated with success in achieving minority recruitment goals.
RESULTS: 440 PIs returned completed questionnaires (70% response rate). Most PIs (97.3%) reported setting goals for at least one of the minority populations. However, 78% of PIs reported not setting any recruitment goals for Native Hawaiian/Pacific Islanders, 65% for Native Americans/Alaskan Natives, 45% for Asian Americans, 8% for African Americans and 32% for Hispanics. 65% of PIs achieved their recruitment goals for African Americans , 76% for Asian Americans, and 73% for Hispanics (results for meeting recruitment goals not presented for those minority groups with few PIs setting goals). In a multivariable model, the identification of a larger number of major barriers was associated with a lower likelihood (OR-0.59, 95% CI [0.35, 0.99]) of reaching recruitment goals for African Americans. Fewer years of PI funding, completion of study enrollment, and recruiting for an observational study were also independently associated with a lower odds of reaching African American recruitment goals. For recruitment of Asian Americans, PIs without either a PhD or an MD were less likely (OR-0.09, 95% CI [0.01, 0.94]) to have reached goals compared to those with an MD. Multivariable analysis revealed no factors significantly associated with meeting Hispanic recruitment goals.
CONCLUSION: For some smaller minority groups, most PIs set no recruitment goals. Factors predicting success at achieving recruitment goals differ for each minority group.

PATIENT EXPERIENCES AND ATTITUDES ABOUT ELECTRONIC COMMUNICATION AND ONLINE ACCESS TO MEDICAL RECORDS. E. Ortiz[1]; A. Hassol[2]; J.M. Walker[3]; D. Kidder[2]; K. Rokita[3]; D. Young[3]; S. Pierdon[3]; D. Deitz[2]; S. Kuck[2]. [1]Agency for Healthcare Research and Quality, Rockville, MD; [2]Abt Associates Inc., Cambridge, MA; [3]Geisinger Health System, Danville, PA. *(Tracking ID #103922)*

BACKGROUND: Electronic communication (e-communication) between patients and providers can potentially improve the quality of health care. Yet only a minority of patients in the U.S. communicates regularly with providers through electronic means, and little is known about patients' attitudes towards communicating electronically with their providers. Our objective was to evaluate patients' values and perceptions regarding e-communication with their primary care providers, including having electronic access to their medical record information.
METHODS: We conducted an online survey of 4,282 members of the Geisinger Health System who are registered users of MyChart. MyChart allows patients and family members to communicate electronically with their providers and view selected portions of their medical records. To supplement our survey, we also conducted focus groups with 25 patients who were MyChart users and conducted one-on-one interviews with ten primary care clinicians. Data were collected and analyzed on user satisfaction, ease of use, communication preferences, and completeness and accuracy of content of online medical information.
RESULTS: 4,282 registered users of MyChart were surveyed, and 1,421 users completed the survey (60% female). The age distribution of users was as follows: 18–30 (5%), 31–45 (24%), 46–64 (54%), 65 and older (16%). Using a scale from 1 to 100, the majority of users thought that the system was easy to use (mean scores 78–85) and thought that their medical record information was complete, accurate, and understandable (mean scores 65–85). Only a minority of users was concerned about data confidentiality or worried because of abnormal test results that had not been previously discussed with a provider. Patients preferred e-communication for some interactions (e.g., requesting prescription renewals, obtaining general medical information) while they preferred in-person communication for others (e.g., getting treatment instructions). Telephone or written communication was never the preferred mode for any type of provider interaction. In contrast, physicians were more likely to prefer telephone communication and less likely to prefer e-communication.
CONCLUSION: Patients' attitudes about the use of e-communication and online access to their medical records were mostly positive. Clinicians were less enthusiastic about using e-communication than their patients. Patients and clinicians differed substantially regarding their preferred means of communication for different types of clinical interactions.

PATIENT NAVIGATION OF A CD-ROM MENOPAUSE TREATMENT DECISION-AID. M. Schapira[1]; M.A. Gilligan[1]; A.B. Nattinger[1]; M.J. Green[2]. [1]Medical College of Wisconsin, Milwaukee, WI; [2]Pennsylvania State University, Hershey, PA. *(Tracking ID #115620)*

BACKGROUND: Decision aids have been used to enhance shared decision making for complex medical decisions. Interactive computer-based decision aids add features such as multi-media, self-quizzes, tailored risk calculations, and valuation exercises to background information on treatment options. However, the manner in which patients use these features is not well described.
METHODS: We report the experience of 69 women veterans who used an interactive CD-ROM decision aid to help them consider treatment options at menopause as part of a randomized controlled trial. Participants could choose whether to navigate through particular sections of the CD-ROM as well as features of self-quiz, calculation of tailored risk, and consideration of values through a multiattribute decision model. Data entered into the CD-ROM was captured electronically and entered into a statistical program for analysis. The percentage of participants that used each feature was tabulated and reported. The CD-ROM program included introductory and tutorial sections, the content areas listed in the table below, sections providing tailored risk estimates for breast cancer, heart disease, back, and hip fractures, and section of consideration of values through a multiattribute decision model. Additional features included self-quiz and viewing of patient testimonials. A research assistant oriented the participant to the CD-ROM and highlighted the presence of the sections providing tailored risk information and consideration of values.
RESULTS: The mean age of participants was 56.8 years (SD 7.8). Sixty-seven percent of participants were white (n = 39) and 29% were black (n = 15). The content and tailored risk sections used by participants are presented in the tables. The CD-ROM included 13 self-quiz items. Participants provided answers an average of 6.6% of the time. Of those that visited the personal values section (94% of cohort), 58 (84% of total cohort) used the multiattribute utility model to help them make a decision about hormone replacement therapy.
CONCLUSION: Participants using a CD-ROM decision aid for menopausal treatment accessed a wide variety of interactive features of the computer program. Patterns of use in the study suggest a strong interest in receiving tailored risk information, especially regarding breast cancer and heart disease. The reasons for low use of self-quiz features need further evaluation. Data describing the use of interactive features can help us to guide the development of future decision-aid interventions.

Content Areas Visited (% of users)

Menopause	Using HRT	Risks and Benefits	Calculate Risks	Personal Values	Alternate Options	New Research	Decision Making
35–45%	29–41%	75%	90%	94%	32–70%	20%	42%

Tailored Risk Information Requested (% of users)

Breast CA-no HRT	Breast CA-w/HRT	Back Fx-no HRT	Back Fx-w/HRT	Hip Fx-no HRT	Hip Fx-w/HRT	Heart Disease
74%	72%	38%	30%	61%	54%	81%

PATIENT PERCEPTIONS OF ELECTRONIC MEDICAL RECORD USE IN A GENERAL INTERNAL MEDICINE FACULTY PRACTICE. G. Makoul[1]; R.H. Curry[1]; J. Butter[1]; K. Neely[1]; D. Baker[1]. [1]Northwestern University, Chicago, IL. *(Tracking ID #117512)*

BACKGROUND: While the growing use of electronic medical-record (EMR) systems promises significant advances in many aspects of patient care, the effect on physician-patient interactions is unclear. This study gauged patient perceptions of EMR use, focusing on a primary-care context in which the EMR has been fully integrated into clinical practice.
METHODS: The research was conducted in 2003 at Northwestern's General Internal Medicine faculty practice, and involved a total of 270 patients (30 for each of 9 physicians, 3 of whom were female). We developed a 1-page post-visit survey to capture patient perceptions of the extent to which their doctor used the EMR, as well as how having a computer in the exam room affected communication, the doctor's ability to access information, and overall care.
RESULTS: The average age of patients in this sample was 44 years (sd = 14.2); 55.6% were female. About a third (34%) had not seen the study doctor before, 17% had seen the doctor once before, and 49% had seen the doctor more than once. When asked if their doctor used the EMR not at all, a little, or a lot, most patients (60%) reported "a lot" but there was marked variation within the sample: The "a lot" response associated with different doctors ranged from 30% to 83%. Patients noted that most EMR activity occurred early in the visit. More than half of the patients (55%) perceived that having a computer in the exam room improved communication, while 45% reported no effect, and 5% perceived a negative effect. Perceptions regarding the doctor's ability to access information were more positive, with 88% of patients reporting improvement and 11% reporting no effect. Similarly, 88% of patients

reported that the EMR improved overall care. None of these response patterns were related to whether the patients were seeing their regular doctors. Patients consistently highlighted better documentation and readily accessible information in responses to open-ended questions. There were fewer negative responses or suggestions for improvement, but the list was instructive (e.g., doctor was distracted by computer, doctor should use computer less during the history, doctor should explain rationale for EMR use, doctor should improve typing skills, ergonomic issues).
CONCLUSION: Patient perceptions of EMR use were positive, particularly in the areas of information access and overall care. Problems highlighted by patients parallel our earlier observational research (Makoul, Curry & Tang, 2001). The somewhat subdued response regarding physician-patient communication reinforces the importance of ensuring that training in EMR use explicitly addresses communication skills and strategies.

PATIENT VIEWS ON QUALITY AND ERRORS: DATA FROM THE MEMO STUDY (MINIMIZING ERROR, MAXIMIZING OUTCOME). D. Dowell[1]; L. Manwell[2]; A. Maguire[3]; P. An[1]; L. Paluch[4]; K. Felix[1]; E.S. Williams[5]. [1]New York University, New York, NY; [2]University of Wisconsin-Madison, Madison, WI; [3]Medical College of Wisconsin, Milwaukee, WI; [4]Center for Urban Population Health, Milwaukee, WI; [5]University of Alabama, Tuscaloosa, AL. *(Tracking ID #115684)*

BACKGROUND: The MEMO Study is a 3-year, AHRQ-funded study designed to examine the effect of workplace conditions on quality of care and medical errors. In the first phase of the study, patients and physicians were asked to "tell their stories" via focus groups.
METHODS: Three patient focus groups were conducted, including 21 patients from clinics in 3 urban areas. Moderators used a standard question guide centered on features of good care. Researchers read the transcripts independently and reached consensus on major themes. Two coders then independently assigned each transcript statement to one of the themes.
RESULTS: All but 2% of 187 distinct comments could be grouped into 4 themes. Agreement between the 2 coders assigning statements to themes was 77.5% (kappa value 0.66). 1) ***Systems Issues*** (44% of comments): Long waits for providers and access to providers were the most common frustrations. Participants identified coordination of care as important in "making sure that things are being done that need to be done." Understaffing, underfunding, and lack of health insurance were perceived as contributing to poor quality of care. 2) ***Interpersonal Skills*** (37% of comments): Physician listening skills, time spent, respect for patients, and communication were valued. Several participants described how patient attitudes affect care. "If you go into the exam room with a good attitude, then that will rub off on them." Patients reported use of specific communication skills to obtain better health care. 3) ***Knowledge and Technical Skills*** (9% of comments): Patients valued physicians' medical knowledge and familiarity with patients' histories. Poor technical skills among staff were reported. 4) ***Errors*** (7% of comments): Medication errors, errors of inattention and technical errors were discussed. Although concerned about errors, patients were tolerant and understanding.
CONCLUSION: Patients provide important insights into complex personnel and systems issues which can guide health care planners in improving quality and reducing errors in the healthcare workplace. According to the patients in our focus groups, the health care system could be improved and made safer by increasing access to primary care physicians, decreasing waiting time to see a physician, and adding staff or systems to double-check prescriptions. Patients highly value good physician interpersonal skills and perceive themselves as playing an active role in health care communication.

PATIENT-CENTERED COMMUNICATION SKILLS AMONG SECOND YEAR MEDICAL STUDENTS. E.G. Price[1]; D.M. Windish[1]; S.L. Clever[1]; J.L. Magaziner[1]; P.A. Thomas[1]. [1]Johns Hopkins University School of Medicine, Baltimore, MD. *(Tracking ID #116200)*

BACKGROUND: Prior studies suggest that physician training in patient-centered communication results in higher patient satisfaction and improved health outcomes. This study explores the impact of communication skills training on second year medical students' patient-centeredness and examines whether these skills differ by prior educational or work-related experiences.
METHODS: We randomized 119 students to participate in either the standard curriculum of history taking and physical examination (n = 59) or the combined standard and intervention curriculum (n = 60) consisting of six 3-hour small group sessions that use role play and structured peer feedback to teach psychosocial skills, communication and clinical reasoning. All students completed self-rated attitude/proficiency scales and a knowledge exam 1 week prior to the new curriculum. Eight weeks later, 45 intervention and 48 control students completed a standardized patient (SP) encounter. SPs evaluated student performance using interpersonal skills forms and case-specific checklists.
RESULTS: The intervention and control groups were similar at baseline with respect to age, gender, ethnicity, college majors, prior medical training and prior interviewing experience. Both groups reported similar attitudes and proficiency in patient-centered skills such as encouraging questions, eliciting patient beliefs, and responding to patient emotions. On the knowledge exam, both groups identified expressions of empathy and rapport-building techniques demonstrated in a videotaped clinical encounter. By Mann-Whitney U test, post-intervention students were more likely to inquire about sensitive topics (substance abuse) [29% vs. 11%; $P = .02$] and to be rated as conveying a sensitive and caring attitude in the SP encounter (median 4, IQR 3–5 vs. median 3, IQR 3–4 on a 5 point Likert scale 1 = poor, 5 = excellent; $P = .01$). Students with non-science majors were better rated on patient-centered skills compared to science majors: using clear, organized explanations (4, IQR 3–4.55 vs. 3, IQR 3–4; $P = .02$), encouraging questions (3, IQR 3–5 vs. 3, IQR 2–3.3; $P = .02$), acknowledging comments and concerns (4, IQR 3–5 vs. 3, IQR 3–4; $P = .06$), and asking opinions about decision making (3, IQR 2.5–3.5 vs. 2, IQR 1–3; $P = .01$). There were no differences in SP overall satisfaction ratings by group assignment or demographics.
CONCLUSION: Preclinical medical students have positive attitudes and adequate knowledge about patient-centered behaviors; however, previous non-science training and concurrent psychosocial training may impact performance in standardized patient scenarios. Further studies assessing the long-term impact of this training program and the link between patient-centeredness and non-science educational experiences are needed.

PATIENT-PHYSICIAN DISCUSSION OF DIABETES SELF-MANAGEMENT IN ROUTINE PRIMARY CARE OUTPATIENT VISITS. M. Heisler[1]; J.H. Forman[2]; C.H. Robinson[1]; C. Kim[2]; J.A. Tulsky[3]; P. Ubel[1]. [1]VA Center for Practice Management and Outcomes Research, Ann Arbor, MI; [2]University of Michigan, Ann Arbor, MI; [3]Duke University Medical Center, Durham, NC. *(Tracking ID #116249)*

BACKGROUND: Patients' self-management of diabetes is an important determinant of improved diabetes clinical outcomes. Patient-physician collaboration on treatment goals, strategies, and obstacles to self-care has been shown to improve patient self-management, yet little is known about the content and process of discussions of diabetes self-management during routine office visits.
METHODS: As part of a larger study of 11 initial and 63 follow-up audiotaped outpatient visits between adult patients with diabetes and their primary care physicians at a Veterans' Affairs facility, using a coding scheme developed iteratively and by consensus, we analyzed transcripts of the initial visits to assess the domains of diabetes self-management addressed and whether and how treatment goals, strategies, and obstacles were discussed.
RESULTS: Glycemic and blood pressure management were discussed in all initial visits. Cholesterol management was discussed in 82%, aspirin use in 74%, diet in 64%, foot care in 55%, and exercise in 45% of visits. Patients' target blood pressure values were discussed in 55% of visits, A1c values in one visit, and LDL levels in no visits. Physicians initiated discussion of diabetes self-management mainly to gather and provide directive information on medication-taking and blood glucose monitoring. Other domains were most often introduced by the patient. In three of the four visits in which the physician defined diabetes treatment goals the physician also outlined strategies to meet those goals, but in only two assessed patient agreement with the proposed plan. In only three visits did physicians solicit patients' treatment goals and strategies. Patients stated a treatment goal in six visits, and in five of these the physicians suggested strategies or provided a rationale to modify medically inappropriate goals. In three of these visits, the physician assessed patient agreement. In 45% of visits, physicians outlined steps to gather more information (e.g, labs) before deciding on a treatment plan. While in two visits patients mentioned obstacles they faced in implementing diabetes treatment recommendations, in no visits did physicians inquire about obstacles.
CONCLUSION: Initial visits provide an important opportunity to initiate a collaborative partnership in managing diabetes. Physicians and patients discussed many recommended domains of diabetes self-management and independently raised specific treatment goals and strategies. Opportunities were missed, however, to reach agreement on diabetes treatment goals and specific strategies to meet these goals and to assess and develop solutions to obstacles patients face in managing diabetes.

PATIENT-REPORTED MEDICATION SYMPTOMS IN PRIMARY CARE. S.N. Weingart[1]; T. Gandhi[2]; A.C. Seger[2]; D.L. Seger[3]; J. Borus[2]; E.S. Burdick[2]; L.L. Leape[4]; D.W. Bates[2]. [1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Brigham and Women's Hospital, Boston, MA; [3]Partners HealthCare System, Boston, MA; [4]Harvard School of Public Health, Boston, MA. *(Tracking ID #115578)*

BACKGROUND: Little is known about the prevalence and character of medication-related symptoms in primary care, their relationship to adverse drug events (ADEs), and factors that affect patient-physician communication about medication symptoms.
METHODS: We studied 661 patients who received prescriptions from physicians at 4 adult primary care practices. We interviewed patients 2 and 12 weeks after the index visit, reviewed medical records, and surveyed physicians whose patients identified medication-related symptoms. Physician reviewers determined whether medication symptoms constituted true ADEs. We used multivariable logistic regression models to examine factors associated with patients' decision to discuss symptoms with a physician, and physicians' decision to alter therapy.
RESULTS: 179 patients identified 286 medication-related symptoms, but discussed only 196 (69%) with their physician. Physicians changed therapy in response to 76% of reported symptoms. Patients' failure to discuss 90 medication symptoms resulted in 19 (21%) ameliorable and 2 (2%) preventable ADEs. Physicians' failure to change therapy in 48 cases resulted in 31 (65%) ameliorable ADEs. In multivariable analyses, patients who took more medications (adj. odds ratio = 1.2, 95% CI = 1.1–1.3) and had multiple medication allergies (1.3, 1.1–1.5) were more likely to discuss symptoms. Male physicians (3.1, 1.5–6.3) and physicians at two of the practice sites were more likely to change therapy (4.7, 2.4–9.4 and 2.5, 1.4–4.6).
CONCLUSION: Primary care physicians may be able to reduce the duration or severity of many ADEs by eliciting and addressing patients' medication symptoms.

PATIENTS' PERSPECTIVES ON THE RELATIVE IMPORTANCE OF RESPECT FOR PERSONS COMPARED TO RESPECT FOR AUTONOMY. M.C. Beach[1]; J.J. Arbelaez[1]; R. Johnson[1]; L.A. Cooper[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #117222)*

BACKGROUND: Respect for patient autonomy has overtaken the broader principle, respect for persons. A wide body of research links patient involvement in care to improved patient outcomes. The purpose of this study is to determine whether being involved in decisions (respect for autonomy) and being treated with dignity (respect for persons) are independently associated with positive patient outcomes.
METHODS: We analyzed data from the Commonwealth Fund's 2001 Health Care Quality Survey. This national telephone survey of 6,722 adults living in the United States was collected using random digit dialing; over-sampled communities with high concentrations of African-American, Latino and Asian households; and yielded an overall response rate of 54.3%. We performed survey weighted logistic regression analyses to evaluate the independent associations between two measures of respect (involved in decisions and treated with dignity) and four outcome measures (trust in physicians, satisfaction, adherence to therapy, and receipt of optimal preventive care), controlling for potential confounders. We then calculated adjusted probablilities and performed stratified analyses to assess the consistency of results across race/ethnicities.
RESULTS: Overall, 76% of respondents reported being treated with a great deal of dignity and 77% reported being involved in decisions to the extent that they wished. Being involved in decisions and treated with dignity were independently and significantly ($P < .001$) associated with higher levels of trust and satisfaction across all racial/ethnic groups in unadjusted and adjusted analyses. There was an interaction between race/ethnicity and adherence, such that being involved in decisions tended to be more strongly associated with adherence for whites, while being treated with dignity tended to be more strongly associated with adherence for racial/ethnic minorities. In fully adjusted analyses, the probability of receiving optimal preventive care was greater for those treated with dignity than for those not treated with dignity (68% vs. 63%, $P = .054$), whereas the probability of recieving optimal preventive care was not different according to involvement in decisions (67% vs. 67%, $P = .95$).
CONCLUSION: Being involved in decisions and being treated with dignity are both associated with trust in physicians and satisfaction with care. This is true across all racial and ethnic groups. With regard to adherence, being involved in decisions may be more important to whites whereas being treated with dignity may be more important to racial/ethnic minorities. Being treated with dignity is marginally associated with receipt of optimal preventive care for all respondents. Physicians ought to involve patients in decisions, but this does not replace treating patients with dignity.

PATIENTS' PREFERENCES FOR TECHNICAL VERSUS INTERPERSONAL QUALITY WHEN SELECTING A PRIMARY CARE PHYSICIAN. C.H. Fung[1]; M.N. Elliott[1]; R.D. Hays[1]; K.L. Kahn[1]; D. Kanouse[1]; E.A. McGlynn[1]; M. Spranca[1]; P.G. Shekelle[1]. [1]RAND Corporation, Santa Monica, CA. *(Tracking ID #116011)*

BACKGROUND: Report cards on individual physicians have been proposed as a means of improving quality of care, but not enough is known about how to make them most useful to consumers. We assessed patients' use of and preferences for information about technical and interpersonal quality when using report cards to select a primary care physician.
METHODS: We recruited a quota sample to achieve equal numbers by gender, race/ethnicity (non-Hispanic Caucasian, Hispanic, Asian/Pacific Islander, Black), and age (18–34; 35–49; 50–64; > 65). We constructed computerized report cards for seven pairs of hypothetical individual physicians. Participants were instructed to select the physician that they preferred. Two pairs provided an internal validity check. Five pairs forced participants to make tradeoffs between technical and interpersonal quality. We recorded the number of times participants selected the physician higher in technical quality versus interpersonal quality. A questionnaire collected demographic information.
RESULTS: The study included 304 participants. Ninety percent of the sample selected the dominant physician (high technical and interpersonal quality ratings) for both validity checks, indicating a level of attention to task comparable to prior studies. When forced to make trade-offs between technical and interpersonal quality, two-thirds of the sample (95% CI: 62%, 72%) chose the physician who was higher in technical quality at least three out of five times (one-sample binomial test of proportion). Age, gender, and ethnicity were not significant predictors of choosing the physician who was higher in technical quality.
CONCLUSION: A majority of participants showed a strong preference for physicians of high technical quality when forced to make tradeoffs between technical and interpersonal quality, but a substantial proportion of the sample preferred physicians of high interpersonal quality. Individual physician report cards should contain information about both domains to be most useful to patients.

PATIENTS' ILLNESS NARRATIVES: THE MEANING OF ACTIVE PARTICIPATION IN HEALTH DECISIONS. P. Haidet[1]; T. Kroll[2]; B. Sharf[2]. [1]Houston VA Medical Center, Baylor College of Medicine, Houston, TX; [2]Texas A&M University, College Station, TX. *(Tracking ID #117066)*

BACKGROUND: A growing body of literature extols the virtues of active patient participation in health care decision-making. However, there are few studies that explore how patients make sense of the idea of being and becoming active health care participants. In this study of patients' stories of illness, we examined the concept of narrative and its importance in shaping how patients respond to both the experience of illness and the process of decision making in the patient-physician relationship.
METHODS: We performed a narrative analysis on transcripts of 7 one-on-one, semi-structured interviews that were performed as part of a study to explore patients' illness experiences. The interview guide prompted participants to discuss their illness perceptions related to cause, control, treatment, severity, roles of patient and provider, and meaning. In our analysis, we examined narrative elements, including character, setting, and plot, from the stories embedded in participants' interview responses. We derived themes through repeated individual readings and more than 30 hours of discussion among the authors.
RESULTS: Participants' ages ranged from 30 to 81. All participants were seeking care for at least one ongoing health issue. Participants' narratives revealed the presence of two continua that underlie active patient participation. The first continuum consists of engagement with the illness experience, or 'engagement with one's own story.' At one end of this continuum are patients highly engaged with their illness experience, while at the other end are patients who are passive, or fatalistic. The second continuum consists of negotiated control with regards to illness decisions, or 'who has access to write one's story.' At one end of this continuum are patients who retain absolute control over health decisions, while at the other end are patients who cede complete control to their provider; in the middle are patients and doctors who have equal influence over health decisions. The 7 participants in our study each demonstrated unique patterns of positions on the two continua.
CONCLUSION: In detailing two separate continua of a) engagement and b) negotiated control, we are claiming a distinction about active patient participation that previously has been treated as a single entity. For example, some patients are very engaged with their illness, but at the same time prefer to cede much decision-making control to their physician. Future studies of patient participation should recognize the distinction between engagement with one's illness and negotiated control over illness decisions.

PATIENTS' UNDERSTANDING OF THE REGULATION OF DIETARY SUPPLEMENTS. B.H. Ashar[1]; C.P. Pichard[2]; R.G. Miller[2]; R. Levine[2]; S.M. Wright[2]. [1]Johns Hopkins University, Lutherville, MD; [2]Johns Hopkins University, Baltimore, MD. *(Tracking ID #116824)*

BACKGROUND: Under the Dietary Supplement Health and Education Act (DSHEA) of 1994, companies are permitted to sell their products without providing evidence of safety or efficacy. In contrast to the regulation of drugs, dietary supplements are not required to have Food and Drug Administration (FDA) approval prior to production or marketing. One of the fundamental reasons for the passage of the DSHEA was to empower consumers to make their own choices, free from governmental restriction. Little is known about the public's understanding of the supplement regulatory process. This study sought to assess patients' knowledge regarding governmental oversight of product marketing and advertising for advertisements promoting specific dietary supplements.
METHODS: A survey of 300 adult primary care patients from one of three General Internal Medicine practice sites was conducted. A research assistant administered a questionnaire while showing the participants paper printouts of two different Internet advertisements for dietary supplements marketed for weight loss. Somehwere within their text, both ads contained the disclaimer: "These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease." Patients were asked

questions regarding their understanding of federal regulation of the advertised products. Descriptive statistics were used to define the study population demographics and the percentage of the sample that thought the products and advertisements were approved by the government.
RESULTS: Women comprised 67% of the study population, 68% were Caucasian, and 64% were college educated. When asked about regulation of the advertised products, most respondents were incorrect or unsure about the federal government's role. Specifically, 52 (17%) patients felt that the FDA approved the product in the first advertisement, while 112 (37%) were unsure. Similarly, 26 (9%) of the participants felt that the Federal Trade Commission (FTC) had approved the advertisement while 173 (58%) were unsure. The results were similar for both advertisements.
CONCLUSION: Even though the DSHEA was enacted in an effort to allow consumers free access to dietary supplements, our data suggests that most patients are unclear about the lack of federal oversight in the marketing process. Reports of serious harm resulting from supplement use has stimulated recommendations for legislative change in the DSHEA. Until such amendments are made, efforts should be focused on educating the public about the limited regulation of dietary supplements. These efforts may serve to assist consumers in making well-informed choices rather than ones based on marketing propaganda.

PATTERNS OF A DISEASE: THE EPIDEMIOLOGY OF CHRONIC KIDNEY DISEASE IN A POPULATION OF VETERANS. L. Orlando[1]; D.B. Matchar[2]. [1]Duke University, Mebane, NC; [2]University of North Carolina at Chapel Hill, Durham, NC. *(Tracking ID #117479)*

BACKGROUND: Chronic kidney disease (CKD) currently affects 11% of the U.S. population and its incidence is rising at ever increasing rates. End stage disease is also increasing, two-fold in the last ten years, despite advancements in therapies to delay progression. To combat this epidemic nephrologists have invested in education tools to aid providers in the identification and management of CKD. This strategy is especially important since the burden of disease has already exceeded the capacity of practicing specialists. However, surprisingly little is know about the natural history of CKD, limiting the impact and usefulness of current recommendations.
METHODS: In order to describe patterns of disease progression we retrospectively identified a cohort of veterans with chronic kidney disease at the VA Hospital in Durham, NC and followed them for 5-years. Patients were included if they had a primary provider at the VA and two abnormal creatinines (>1.4 mg/dL) from outpatient visits at least 3 weeks apart between January 1, 1998 and December 31, 1999. To monitor progression, glomerular filtration rates were calculated with the modified MDRD equation and then used to establish CKD stages, according to the Kidney Disease Outcome Quality Initiative's classification, for every creatinine during the 5 year period. Each individual's initial stage (stage at entry into the cohort), subsequent stages, and times at stage change were used to identify progression patterns and progression rates with SAS 8.2 (SAS Institute, Cary, NC). Demographics, comorbidities, proteinuria, medications, and nephrology consultations were included as covariates.
RESULTS: There were 1925 individuals with a total of 74,907 creatinine values in our study. The mean age was 69 (range 17–98), 33% were African American, 98% were male, and 27% had been seen by a nephrologist. Only 47% had an ICD-9 code for kidney disease and only 50% were taking an angiotensin converting enzyme inhibitor or angiotensin 2 receptor blocker. At three years 72% with initial stage 1 remain in 1, 21% progress to 2; 38% with initial stage 2 remain in stage 2 while 35% regress; 37% with initial stage 3 remain in stage 3 while 27% regress; 38% with initial stage 4 remain in 4 but 53% progress to 5. Of those who progress from stages 1 or 2 only 2% progress more than one stage and only 11% from stage 3. These transition rates are very similar to the ones for months and 5 years.
CONCLUSION: While time has only a moderate impact, initial stage strongly influences CKD progression. This data underscores the importance of adjusting for initial stage when studying chronic kidney disease as well as the relatively reversible nature of the disease for those in stage 3 or less.

PATTERNS OF CHEST X-RAY USE IN ADULTS WITH ACUTE COUGH ILLNESS. E.M. Aagaard[1]; J. Maselli[1]; E. Lipner[1]; R. Gonzales[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116910)*

BACKGROUND: Cough is the most common symptom prompting acute medical attention in the US. Recent advances in the management of acute cough illness have focused on efficiently detecting the small minority (3%–10%) of these patients that will have community-acquired pneumonia (CAP). It is recommended that chest x-ray (CXR) be considered when acute cough patients have abnormal vitals signs and/or chest examination; and, that the diagnosis of CAP be reserved for patients with a positive CXR. We measured rates of CXR use, and examined the role of clinical factors and clinician judgment, in an urgent care clinic with readily available CXR services.
METHODS: A cross-sectional study of consecutive adult urgent care visits for acute respiratory illnesses in Nov–Dec 2003. Analysis was limited to patients presenting with cough. Standardized encounter forms (in place of free text patient charts) facilitated documentation and abstraction of study variables: sociodemographic factors, symptoms attributable to illness, tobacco use, past medical history, vital signs, physical examination findings, CXR use/result, diagnoses, and treatment. Clinicians were asked to rate their overall suspicion of pneumonia, prior to CXR results, on a 5-point Likert scale. Multivariable logistic regression analysis was used to determine independent predictors of CXR use and are presented as odds ratios [OR] with 95% confidence intervals in parentheses.
RESULTS: CXRs were obtained on 16% of patients evaluated for acute cough illness (n = 178). Of the 178 patients in our study sample, intermediate/high suspicion of CAP was present in 17% of patients, and was independently associated with the presence of rhonchi [26.6 (6.9–102.5)], rales [8.8 (1.9–41.0)], temperature >100&degF [8.3 (2.1–31.9)], heart rate > 100 beats per minute [7.0 (1.6–30.9)], and advanced patient age [3.7 (1.7–8.3)] (c-statistic = 0.92). Independent predictors of CXR use included presence of rales [7.6 (1.7–34.2)], provider level of suspicion (intermediate/high vs. low) [6.7 (2.0–22. 2)], and advanced age [2.7 (1.3–5.4)]). The clinical diagnosis of pneumonia was based on CXR in 57% of patients (n = 14).
CONCLUSION: Providers appear to incorporate current evidence-based recommendations for CXR ordering into their clinical suspicion of pneumonia. Advanced age and presence of rales on examination influence provider CXR ordering beyond their contribution to clinical suspicion of pneumonia. This suggests that clinicians do not trust their clinical suspicion alone in the presence of advanced age or rales on examination. Ironically, less than 60% of the diagnoses of pneumonia were based on CXR.

PERCEIVED HEALTH AND MORTALITY—A META-ANALYSIS. K.B. Desalvo[1]; N. Bloser[1]; K. Reynolds[2]; J. He[2]; P. Muntner[2]. [1]Tulane University, New Orleans, LA; [2]Tulane School of Public Health, New Orleans, LA. *(Tracking ID #116451)*

BACKGROUND: Many studies have reported a strong association between a single item measuring patients' global, self-rated health (GSRH) and their subsequent risk of dying. We performed a meta-analysis of these studies.
METHODS: MEDLINE and EMBASE databases, from January 1966 to September 2003, were searched for longitudinal, cohort studies that: 1) were community-based; 2) had all-cause mortality as an end point; 3) included the wording of the GSRH question; and 4) included an adjusted relative risk or equivalent risk measurement. Two independent investigators manually searched the citations from the retrieved articles, determined eligibility for inclusion, and independently abstracted data using a standard protocol.
RESULTS: Of the 163 relevant studies identified, 36 met our inclusion criteria. Using the DerSimonian and Laird test, significant heterogeneity across study results was observed. Using a random effects model, for studies reporting GSRH as a dichotomous predictor, the aggregate OR of dying for patients with "worse" versus "better" GSRH ratings was 1.99 [95% confidence interval, CI: 1.64, 2.42]. For studies employing categorical analyses, compared to persons reporting "excellent" health status, the OR [95% CI] of mortality was 1.22 [1.08, 1.38], 1.44 [1.21, 1.71], and 1.89 [1.60, 2.24] for patients reporting "good," "fair," and "poor" health, respectively. Meta-regression analysis regarding potential sources of heterogeneity, based upon a priori assumptions, indicated studies that did not adjust for co-morbidity and used comparative wording in assessing self-rated health demonstrated significantly stronger relationships between GSRH and mortality (P value for heterogeneity ≤ 0.05). In sensitivity analyses excluding these studies, a strong graded association between GSRH and mortality persisted.
CONCLUSION: The results of this meta-analysis suggest that a single question assessing global, self-rated health has a strong association with mortality. Because such a question is an easily collected indicator of underlying health status, it may be beneficial to collect and use in clinical practice.

PERCEPTIONS OF RACIAL BARRIERS TO HEALTH CARE IN SOUTHERN RURAL POPULATIONS A. Fowler-Brown[1]; E.A. Ashkin[1]; G.M. Corbie-Smith[1]; S. Thaker[1]; D.E. Pathman[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #117065)*

BACKGROUND: Perceived racism may be an important barrier to care, especially in the Southeast. We sought to (1) determine how commonly people in the rural Southeast perceive racial barriers to health care in their communities (2) identify the characteristics of individuals in whom this perception is most common and (3) examine the relationship between this perception and people's use of, and satisfaction with health care.
METHODS: This cross-sectional study uses data from 1362 African American and 2667 non-Hispanic White respondents to a random digit dialing telephone survey conducted in 7 southeastern states (AL, AK, GA, LA, MS, SC, TX). Subjects were asked, "How much do you agree with the statement: 'In my community, people's race or ethnicity is often a barrier to receiving health care.´" Multiple logistic regression was used to examine the relationship between the perception of racial barriers and participant characteristics, and its relationship with health care satisfaction and use of preventive services, including cholesterol, cervical cancer and colon cancer screening and mammography.
RESULTS: 53% of African Americans and 24% percent of Whites perceived racial barriers to care in their communities ($P < .005$). There were no significant differences by state in the proportion of African Americans or Whites that perceived racial barriers to care. Perceptions of racial barriers among African Americans were more common among those older (OR 1.12 $P = .011$) and male (OR 1.39 $P = .032$). Among Whites, perceived racial barriers to care were more common among those older (OR 1.12 $P = .008$) and those with less education (OR 1.30 $P < .005$). The perception of racial barriers to care was associated with a greater adjusted likelihood of dissatisfaction with overall health care for both African Americans (OR 2.25 $P = .005$) and Whites (OR 2.10 $P = .020$). Subjects who perceived racial barriers were also less satisfied with getting health questions answered (African Americans OR 2.37 $P = .045$, Whites OR 2.04 $P = .027$) and less likely to have confidence in their physician (African Americans OR 2.77 $P = .035$, Whites OR 3.76 $P = .003$). The perception of racial barriers was not associated with the use of preventive services in African Americans or Whites.

CONCLUSION: The perception of racial barriers to health care is common in the rural Southeast, particularly among African Americans, and is associated with age and gender. Regardless of race, those who perceive racial barriers to care are less satisfied with the care they receive.

PERFORMANCE OF GENDER-SPECIFIC SCREENING IN WOMEN WITH DIABETES. A.F. Jabarin[1]; B. Tabaei[1]; W.H. Herman[1]; C. Kim[1]. [1]University of Michigan, Ann Arbor, MI. *(Tracking ID #115356)*

BACKGROUND: Increasing numbers of women are affected with diabetes. Factors associated with performance of gender-specific screening (mammograms and Pap smears) in women with chronic illnesses are unclear.
METHODS: In a cross-sectional analysis of a study of diabetes in managed care, we examined the patient and primary care provider (PCP) characteristics associated with performance of mammograms and Pap smears. Women with diabetes who were enrolled in a health plan for at least 18 months, who had contact with their PCP at least once, and their PCPs were included. Main outcome measures were performance of mammogram in women 40 years and older without a history of breast cancer (n = 578) and Pap smear in women 18 years and older without a history of cervical cancer (n = 620) over 1 year. Data were obtained from patient surveys and medical and administrative records. Each outcome measure was examined in its own model. First, we examined the unadjusted associations between gender-specific screening and patient characteristics (age, race and ethnicity, insurance type, education, income, health status, Charlson score, diabetes duration and treatment, diabetes process/quality of care [defined as an unweighted composite of retinal, renal, foot, lipid, and hemoglobin A1C testing; recommendations to take aspirin; and influenza vaccination]). Next, we examined the unadjusted associations between gender-specific screening and PCP characteristics (physician age, gender, and specialty). Hierarchical regression models including significant covariates were then constructed to account for clustering within provider groups.
RESULTS: Forty-three percent of women had a mammogram and 27% had a Pap smear. In fully adjusted models, factors associated with mammograms were younger age (OR 0.98, 95% CI 0.96–0.99), non-medicaid insurance (OR 2.6, 95% CI 1.01–6.9), better health status (OR 1.4, 95% CI 1.1–1.7), and better diabetes quality of care (OR 1.3, 95% CI 1.2–1.5). Factors associated with Pap smear performance were younger age (OR 0.99, 95% CI 0.98–1.00), any visit to a gynecologist (OR 4.0, 95% CI 1.6–10.3), and better diabetes quality of care (OR 1.6, 95% CI 1.3–1.9). In unadjusted comparisons, only younger PCP age was associated with greater mammography performance. After adjustment for patient characteristics and clustering, no PCP factors were associated with either mammogram or Pap smear performance.
CONCLUSION: Rates of gender-specific screening were low in women with diabetes, although future research needs to examine the frequency of gender-specific screening over longer intervals. Greater diabetes quality of care was associated with greater performance of both mammograms and Pap smears. Interventions aimed at improving mammogram and Pap smear performance could potentially utilize infrastructure designed for diabetes care.

PERFORMANCE OF RISK ASSESSMENT TOOLS FOR PREDICTING COMPLICATIONS OF CAROTID ENDARTERECTOMY. M.J. Press[1]; E.A. Halm[1]; J. Wang[1]; S. Tuhrim[1]; M.R. Chassin[1]. [1]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #116722)*

BACKGROUND: Rates of carotid endarterectomy (CEA) have doubled in the past 10 years. Prediction of complications is a key element of pre-op evaluation and peri-op management. This study aims to evaluate the ability of 3 standard cardiac risk assessment indices and 1 CEA-specific risk model to predict a broad range of adverse outcomes.
METHODS: We performed a retrospective cohort study of all consecutive CEAs done in 6 hospitals during 1997–1998 by 64 surgeons. Data on patient (Pt) pre-op risk factors and complications within 30 days of surgery were ascertained by review of inpatient records, outpatient charts, and administrative databases. Complications were classified into 4 categories: 1) death or stroke, 2) medical complications, 3) minor neurologic complications (TIA, nerve palsy, seizure), and 4) wound complications (infection, bleeding). Deaths, strokes, TIAs, and MIs were confirmed by MD review. Logistic regression assessed the predictive abilities of the American Society of Anesthesiologist (ASA), Detsky, and Revised Cardiac Risk (RCR) indices, and a CEA-specific risk model. The CEA-specific risk model included: unstable CAD, stroke as indication for CEA, contralateral carotid stenosis >50%, anesthesia type, and patch grafting.
RESULTS: We abstracted 1998 of 2066 cases (97%). Mean age was 72 yrs, 57% were men, and 88% were White. Death or stroke occurred in 3.2% of Pts and medical complications in 6.3% [MI (1.2%), unstable angina (1.5%), pulmonary edema (1.8%), VT (.5%), mechanical ventilation (2.2%), pneumonia (.8%), sepsis (.2%), renal failure (.4%), DVT/PE (.2%), and GI bleeding (.2%)]. Minor neurologic complications occurred in 6.9% and wound complications in 5.9%. Pts with medical complications had higher rates of death or stroke (OR = 8.5), minor neurologic complications (OR = 2.1), and wound complications (OR = 3.7; $P < .0001$ for all).
CONCLUSION: All standard risk indices and the CEA-specific model predicted medical complications, but only the RCR Index and CEA-specific model also predicted the other types of complications. The CEA-specific model was modestly superior overall.

Discriminative ability of risk models to predict complications (cell displays c statistic (P value))

Risk Model	Death/Stroke	Medical	Minor Neuro	Wound
ASA Index	.53 (.20)	.61 (.0001)	.53 (.09)	.54 (.08)
Detsky Index	.53 (.15)	.64 (.0001)	.51 (.70)	.55 (.17)
RCR Index	.61 (.001)	.63 (.0001)	.57 (.005)	.61 (.0001)
CEA-specific	.76 (.0001)	.66 (.0001)	.59 (.001)	.63 (.001)

PERIOPERATIVE GLUCOSE LEVELS ARE NOT ASSOCIATED WITH SHORT-TERM MORTALITY OR MORBIDITY IN DIABETIC CARDIAC SURGERY PATIENTS. J. Bershad[1]; L. Motavalli[1]; H. Noveck[1]; D.R. Hoover[2]; S. Schneider[1]; A. Loftus[1]; J.L. Carson[1]. [1]University of Medicine and Dentistry of New Jersey, New Brunswick, NJ; [2]Rutgers, The State University of New Jersey, New Brunswick, NJ. *(Tracking ID #116565)*

BACKGROUND: It remains unclear if strict perioperative control of diabetes reduces short-term mortality and morbidity. The aim of this analysis was to determine if perioperative glucoses levels were independently associated with 7-day mortality and/or morbidity.
METHODS: We performed a retrospective cohort study of consecutive diabetic patients receiving insulin therapy who underwent coronary artery bypass surgery or valvular heart surgery. The data were collected at Robert Wood Johnson University Hospital for the Society of Thoracic Surgeons national database and were supplemented with additional information including pre and post-operative glucose levels. The primary composite outcome was defined as mortality or morbidity (renal failure, stroke/TIA, myocardial infarction, SIRS, infection) from day 2 to day 9 post-operatively. Infection was defined as pneumonia, septicemia, superficial or deep sternal wound infection, skin infection, UTI, arterial/venous infection. The glucose level was calculated for the day prior to surgery, the day of surgery, and post-operative day 1. An average glucose level was calculated for 6 hour intervals on each of these days, and the final glucose level for each day was the average of these values. The perioperative glucose level was defined as the mean of the calculated daily glucose levels for each of these days (day prior to surgery, the day of surgery, and postoperative day1). We used logistic regression to adjust for age, gender, type of surgery, history of diabetic complications (nephropathy, neuropathy, or retinopathy), and history of renal failure.
RESULTS: 490 patients were included in the analysis population; 420 underwent isolated coronary artery bypass surgery. The mean perioperative glucose level was 207 mg/dL (standard deviation, 35). There were 70 patients (14.3%) who had at least one postoperative complication on postoperative days 2 to 9. Perioperative glucose level was not associated with the mortality/morbidity composite outcome. The unadjusted odds ratio for every 50mg/dL increase in perioperative glucose level was 1.06 (95% confidence interval, 0.74–1.51). The adjusted odds ratio was 1.07 (95% confidence interval, 0.73–1.57).
CONCLUSION: Within the precision of this study, averaged glucose levels on the day prior, the day of surgery, and post-operative day 1 were not associated with short-term mortality and morbidity in this observational study. Clinical trials are needed to confirm that perioperative glucose levels do not impact outcomes in cardiac surgery patients.

PERSONAL GROWTH DURING RESIDENCY TRAINING. S.M. Wright[1]; R. Levine[1]; B. Beasley[2]; D. Brady[3]; S. Caccamese[4]; T. Gress[5]; P. Haidet[6]; A. Marwaha[7]; D. Kern[1]. [1]Johns Hopkins University, Baltimore, MD; [2]University of Missouri-Kansas City, kansas city, MO; [3]Emory University, atlanta, GA; [4]University of Pittsburgh, pittsburgh, PA; [5]Marshall University, huntington, WV; [6]Baylor College of Medicine, houston, TX; [7]Pennsylvania State University, york, PA. *(Tracking ID #116752)*

BACKGROUND: Residency training is a critical period for the professional and personal development of new physicians. We conducted this study to better understand what promotes and inhibits the personal growth of residents during their training.
METHODS: Three hundred and fifty-nine house officers from 7 internal medicine residency programs in 6 states were surveyed. The 8-page instrument asked housestaff about their personal growth experiences as well as the factors that were facilitative and limiting. The instrument was developed by the study team and was informed by the existing literature on this topic and a pilot study using qualitative methodologies.
RESULTS: Two hundred and eighty-one (80.3%) house officers responded. Their mean age was 29.9 years, 43% were women, and 47% were interns. Eighty-six percent of respondents "agreed" or "strongly agreed" that "the achievement of personal growth is a very important goal for them during residency." All respondents reported having had experiences during residency that led to personal growth. While a myriad of powerful experiences were described to contribute to the trainees' personal awareness and growth; reflection (86%), discussions with others (75%), and being open to learning from the experience (71%) were felt to be the factors that most readily transformed experiences into personal growth. Merely 37% of residents felt that they have been able to engage in as much reflection as they would like to during their training, and only 55% rated the overall quality of the supportive relationships that are available to them at their institution as good or excellent. Relationships that were felt to be most helpful (a lot or tremendously) to residents were noted to be spouses/significant others (71.6%), and fellow house officers (69%). Powerful experiences, reflection, helping relationships, and personal growth occurred more frequently on the hospital wards and in the units as compared to the outpatient settings and elective rotations (all $P < .05$). Three personal growth outcomes for which the most residents noted improvements compared to the beginning of their

residency training were for understanding themselves (80%), self-confidence (80%), and clarity of goals (75%). The most commonly described impediments to the achievement of personal growth during residency training were exhaustion (85%), insufficient time (75%), and stress (52%).
CONCLUSION: Residents describe personal growth associated with powerful experiences, reflection, and helping relationships in spite of substantial barriers. Educators hoping to facilitate personal growth in their medical learners may wish to consider these data.

PERSPECTIVES FROM MEDICAL SCHOOLS ON UNDERREPRESENTED MINORITY RECRUITMENT: THE AMSA DIVERSITY SURVEY. J.R. Agrawal[1]; O. Carrasquillo[2]. [1]Brigham and Women's Hospital, Cambridge, MA; [2]Columbia University, New York, NY. *(Tracking ID #116275)*

BACKGROUND: Despite three decades of initiatives by schools, government agencies, and private organizations, the percentage of medical students who belong to under-represented minority groups (URM) has not substantially improved. Existing studies on this topic have not systematically surveyed medical schools.
METHODS: To obtain the medical school perspective on URM enrollment, we reviewed the literature, obtained input from several student and physician organizations and developed a survey instrument. We pilot tested the instrument at four medical schools and made revisions. The final version contained 100 items, took approximately 20 minutes to complete, and included sections on medical school characteristics, environment, administrative infrastructure, barriers to URM recruitment, and strategies employed. In spring 2002, we mailed the survey to the Deans of Student Affairs of all US allopathic and osteopathic medical schools; in many instances it was forwarded to the Dean of Admissions or Minority Affairs faculty. Confidentiality was assured.
RESULTS: The mean percentage of entering URM at the 60% of responding schools was 10.4%, which is similar to published estimates of all schools. Each of the 11 listed recruitment strategies was present in at least half the schools with pre-admission site visits (91%), preadmission counseling (88%), community outreach programs (83%), financial aid (82%) and URM early identification (77%) being the most common. "Early pipeline" programs were less commonly employed. The only strategies rated as "very effective" by more than half the schools were URM student recruiters and summer enrichment programs. Only the latter was correlated with URM enrollment (12.5% ± 6.1 at schools with such programs versus 7.0% ± 4.8% at schools without, $P < .01$, Bonferoni t test). From a list of 37 potential barriers to URM recruitment, the three items in which over 70% of respondents agreed to as major barriers were low MCAT scores, lack of minority faculty and lack of minority role models. With respect to perceived success at URM enrollment, the median score on a scale of 1 to 10 (10 being best) was 8 (interquartile range 6–10). These scores were weakly correlated with URM enrollment (Spearman coefficient of 0.38, $P < .01$).
CONCLUSION: Schools invest considerable efforts in URM recruitment. While emphasis on MCAT scores remains a large barrier, other areas that can also be addressed include greater faculty diversity and summer enrichment programs. However the largest barrier may be the perception by most schools of already doing a reasonably good job at URM recruitment.

PHYSICAL ACTIVITY PATTERNS IN ADULTS WITH SEVERE MENTAL ILLNESS (SMI). G.L. Daumit[1]; R.W. Goldberg[2]; C.B. Anthony[1]; L.M. Dixon[2]. [1]Johns Hopkins University, Baltimore, MD; [2]University of Maryland at Baltimore, Baltimore, MD. *(Tracking ID #116716)*

BACKGROUND: Although regular physical activity is associated with substantial health benefits, most Americans do not exercise regularly, and a large minority are inactive. People with SMI die earlier than those without SMI due in part to increased cardiovascular deaths. Because of their high burden of obesity, diabetes and smoking, the SMI especially may benefit from exercise to reduce cardiovascular risk, yet little is known about their physical activity patterns. We sought to: 1) characterize the levels and types of physical activity in the SMI; and 2) examine correlates of regular physical activity and inactivity in the SMI.
METHODS: We conducted a cross-sectional survey in 2000 of patients with schizophenia, bipolar disorder or chronic depression at 3 Baltimore psychiatric clinics. We selected patients randomly from information systems by diagnosis. Participants reported frequency and type of leisure time physical activity in the past month using NHANES items. To compare to the general population, we matched each SMI participant with 15 randomly selected NHANES participants by age/race/gender strata. To assess factors associated with regular physical activity and inactivity in SMI participants, we performed multivariate logistic regression.
RESULTS: Seventy-three % of eligible SMI patients participated; non-repondents were similar to respondents. Forty % of both the 185 SMI participants and the 2705 matched NHANES participants were African American; over 1/3 of both groups had some college education. SMI participant diagnoses were: 50% schizophrenia; 25% bipolar disorder and 25% depression. While 35% of both groups reported regular physical activity (≥5 X/week), the SMI reported less physical activity between 1 and 4 X/week (20% vs. 36%, $P < .01$) and more inactivity than the NHANES group (26% vs. 18%, $P < .01$). SMI participants reported lower participation in most activity types including jogging, biking, dancing, competitive sports and gardening than NHANES (all $P < .05$), but reported walking as their sole physical activity more frequently than NHANES (28% vs. 10%, $P < .01$). The relative odds of regular physical activity in SMI for high school grads compared to non-high school grads was 2.9 [95% CI 1.2–7.0] adjusted for demographic and clinical variables. Those SMI without regular social contact had an adjusted relative odds of physical inactivity of 3.0 [95% CI 1.0–9.0] compared to those with social contact.
CONCLUSION: Participants with SMI were less active overall and participated in fewer types of physical activities than the general population. Encouraging walking and marshaling social support should be considered in designing interventions to increase physical activity in this population at high risk for cardiovascular disease.

PHYSICIAN RELIGIOSITY AND APPROACHES TO SPIRITUALITY IN MEDICINE. F.A. Curlin[1]; J. Lantos[1]; S. Sellergren[1]; C. Roach[1]; M.H. Chin[1]. [1]University of Chicago, Chicago, IL. *(Tracking ID #115692)*

BACKGROUND: Religion and spirituality (R/S) are important but controversial components of physician-patient relationships. Prior studies show that religious patients generally want their physician to inquire about R/S and to share spiritual concerns and experiences. Many doctors are unsure about the appropriateness of introducing R/S into clinical encounters, and few studies examine physicians' attitudes and practices regarding these matters. This study examines the relationship between physician intrinsic religiosity (IR) and their beliefs and behaviors related to R/S in patient care.
METHODS: We administered a mailed survey to a stratified random sample of 2000 US physicians. Our response rate was 63%. Survey items included validated measures of intrinsic religiosity (IR) and multiple measures of attitudes toward R/S and health and R/S in medical practice. Where indicated, outcome variables were dichotomized and multivariate analyses were performed using logistic regression.
RESULTS: The average age of our sample was 49 years and 74% were men. On an IR scale of 2 to 8, 22% of physicians had low IR (IR < 4), 61% moderate (IR 4–6) and 16% high (IR > 6). Physicians with higher IR were substantially more likely to believe that: a) R/S has much or very much influence on patients' health (percentages: 29, 60, 89 for low, moderate, and high IR), b) that the influence of R/S is generally positive (72, 88, 92), c) that a supernatural being intervenes in patients' health (17, 61, 89), d) that it is appropriate for a physician to inquire about a patient's R/S (34, 55, 80), and that e) it is appropriate for a physician to talk about his or her own religious beliefs (27, 42, 71) or to pray with a patient (18, 26, 58) whenever the physician senses it would be appropriate. A substantially higher proportion of those with higher IR also reported ever inquiring about R/S issues (32, 50, 79), sharing one's own religious beliefs and experiences (9, 41, 74), and ever praying with patients (26, 53, 76). Multivariate analyses controlling for age, gender, specialization, and race did not substantially alter effect sizes.
CONCLUSION: Intrinsic religiosity is associated with dramatic differences in attitudes and behaviors related to R/S in medicine. This study shows how physicians bring not just science and medical knowledge but also their religiosity to their clinical encounters. Discussions of the doctor-patient relationship or of medical ethics must take physicians' religious beliefs into account. To clarify professional practices related to religion and spirituality in medical practice, we will need more frank discussion of the ways physicians' religious identities inform and shape their beliefs about and approaches to this complex issue.

PHYSICIAN TRUST & AFRICAN—AMERICANS' PARTICIPATION IN HIV RESEARCH. M. Garber[1]; G. Switzer[2]; B. Hanusa[2]; R.M. Arnold[2]. [1]University of Pittsburgh Medical Center, Pittsburgh, PA; [2]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #117061)*

BACKGROUND: Studies report that African-Americans are likely to express distrust of physicians, and this adversely influences their willingness to participate in research. This study assesses how trust influences research participation rates among HIV-infected African-Americans at a university-based clinic.
METHODS: All African-American patients registered at the Pittsburgh AIDS Center for Treatment (PACT), an ambulatory care clinic within the University of Pittsburgh Medical Center, were recruited to complete a one-time only, anonymous questionnaire. The survey asked about knowledge and attitudes about research, actual participation, and willingness to participate in future HIV research. Trust was assessed using the "The Trust in the Medical Profession Scale", an 11-item scale with good psychometric properties that yields a continuous score. The relationship between trust and actual or future participation in research was assessed with a series of analyses of variances using Stata 7.0. (Stata Corporation, TX).
RESULTS: Of 203 patients approached, 2 had dementia 1 declined participation, and 1 did not complete the trust scale. 56% were male and 78.5% were between ages 25–50. 63% had achieved trade school or some college education and 44% had Medicaid. 155 (78%) had known about their disease for over 2 years and 21% were identified as having AIDS based on CD4 count; 122 (61%) had been registered at the clinic for over 2 years. Of 199 respondents, the mean score of the trust variable on a 5 point Likert scale was 3.44, which corresponds to slightly agree. There were no statistically significant differences in the level of trust between research participants, non-participants, and those never asked to participate ($F2,196 = 0.29$, $P = .7$), and between those willing to participate in future research, those who are not, and those who are unsure ($F2,194 = 1.15$, $P = .3$). Honesty of researchers did not appear to be a major deterrent to participating in research: only 16% of those who never agreed to participate or agreed and never completed a research study were concerned about the honesty of researchers, and 13% of those who would refuse or are uncertain about participating in future research were concerned about the honesty of researchers.
CONCLUSION: Contrary to previous research, neither trust in doctors in general nor the honesty of researchers, appears to influence participation rates and willingness to participate in future HIV research in a cohort of HIV-infected African-Americans.

PHYSICIAN-PATIENT COMMUNICATION ABOUT THE DIAGNOSIS AND MANAGEMENT OF PAIN. A. Dhurandhar[1]; G. Makoul[1]. [1]Northwestern University, Chicago, IL. *(Tracking ID #116449)*

BACKGROUND: Pain is one of the major reasons adults visit a physician. This study examines how complaints of pain were assessed and managed at two general internal medicine practices.
METHODS: Data for this study were drawn from a pool of 122 videotaped first-time encounters between patients and general internists at sites in Chicago and Vermont. Videotapes were included in the study if there was discussion of a pain complaint including headache, neck pain, back pain, chest pain, abdominal pain, joint pain or extremity pain. Content analysis was conducted using a modification of the EBPC/SDM Instrument (Makoul et al., 2003); after establishing reliability, all health risk discussions were coded by the primary author.
RESULTS: 26 videotaped encounters of new patient clinic visits to general internists were included for analysis. Pain was the main agenda item in about two-thirds (65.4%) of these visits. Patients presented with the following pain complaints: 19.2% shoulder pain, 19.2% abdominal pain, 15.4% neck pain, 15.4% knee pain, 11.5% headache, 7.7% back pain, 11.5% other pain complaints. Key history elements were discussed with varying frequencies: 96.2% location, 84.6% onset, 80.8% aggravating factors, 76.9% alleviating factors, 65.4% frequency, 65.4% duration, 61.5% quality, 53.8% intensity, 50% severity, 23.1% radiation. Patients often initiated discussion of these elements (75.5%). Interestingly, the 0–10 pain rating scale was not employed in any of these encounters. In terms of other patient perspectives, 80.8% of the visits included the patient's ideas about problem, 57.7% concerns about problem, 46.2% the problem's effect on quality of life, and 34.6% psychosocial factors affecting the problem. These patient factors were frequently raised by the patients themselves (84.4%); physicians initiated discussion of quality-of-life (33.3%) more often than they did the other factors. Regarding management, 65.4% of visits included some talk about solutions for the underlying cause of pain, and 80.8% included mention of some solution to the pain itself. Physicians usually discussed several options for dealing with the pain (84.6%). OTC medications were the most frequently mentioned solution (61.5%), followed by new prescriptions (23.1%), physical therapy (23.1%), procedures (19.2%), and complementary/alternative medicine (15.4%). Self-care options were also discussed: exercises (34.6%), applying heat (23.1%), rest (19.2%). Referral to a specialist was mentioned in 30.8% of the visits.
CONCLUSION: In the assessment of pain, not all of the key history elements were regularly raised. Psychosocial factors were infrequently mentioned; discussion of this topic was rarely initiated by physicians. The numerical pain scale was not used in this sample of everyday clinical practice.

PHYSICIANS AND THEIR PERSONAL PROSTATE CANCER SCREENING PRACTICES WITH PROSTATE SPECIFIC ANTIGEN. E.C. Chan[1]; M.J. Barry[2]; S.W. Vernon[3]; C.W. Ahn[1]. [1]Division of General Internal Medicine, University of Texas-Houston Medical School, Houston, TX; [2]Medical Practices Evaluation Center, Massachusetts General Hospital, Boston, MA; [3]Center for Health Promotion and Prevention, University of Texas-Houston School of Public Health, Houston, TX. *(Tracking ID #117462)*

BACKGROUND: Prostate cancer screening with prostate specific antigen (PSA) is controversial because there is inconclusive evidence that it reduces mortality. Given the uncertain efficacy of PSA screening, caution could have slowed its adoption in clinical practice. Yet it is widespread. If physicians believe that it is beneficial, then physicians would be expected to have undergone PSA screening themselves and support it for patients.
METHODS: In this study we determined the prevalence of personal PSA screening among a national sample of urologists, family physicians, and internists and whether they would support it for asymptomatic men age 50 older with no other risk factors for prostate cancer. We then determined the probability that a physician supporting it for patients would already have had one himself. A nationwide random sample of urologists (response rate 61%, n = 247), internists (response rate 51%, n = 273), and family physicians (response rate 64%, n = 249) stratified by physician specialty from The Official ABMS Directory of Board-Certified Medical Specialists were surveyed by mail in 2000. We used a questionnaire determining whether physicians had undergone PSA screening and whether they would support it in asymptomatic men age 50 or older with no other risk factors for prostate cancer.
RESULTS: Over 78% of male physicians age 50 and older have already had PSA screening and would support it for asymptomatic men age 50 or older with no other risk factors for prostate cancer. Urologists were more likely than nonurologists to have had PSA screening. There was no significant difference in support for PSA screening among urologists and nonurologists age 50 and older. The probability that a urologist supporting PSA screening for patients would already have had one himself was 98%; for nonurologists, it was 90%. White male urologists under age 50 were more likely to support PSA screening than nonurologists. Significantly, more white male urologists than nonurologists under age 50 had undergone PSA testing (40% vs. 13%, $P = .003$)
CONCLUSION: Most physicians have undergone PSA screening and support it for patients. This may reflect physician belief in its efficacy and play a role in its widespread use.

PHYSICIANS' ATTITUDES TOWARDS THEIR PATIENTS' USE OF THE INTERNET. J. Diaz[1]; C. Sciamanna[2]; M. Stamp[1]; T. Ferguson[3]. [1]Brown Medical School, Pawtucket, RI; [2]Center for Behavioral and Preventive Medicine, Providence, RI; [3]Pew Internet and American Life Project, Austin, TX. *(Tracking ID #115787)*

BACKGROUND: Approximately 80% of adult US Internet users (93 million people), have searched for health information online. Previous studies suggest that patients want their health care providers to suggest websites where they can learn more about their health but few physicians discuss such use of the Internet with their patients. The goals of this study were (1) to assess primary care providers' attitudes about patients using the Internet for medical information and, (2) to estimate primary care providers' willingness to refer patients to patient-oriented websites.
METHODS: Between October and November of 2003, we mailed a confidential, 1-page, eight-question survey to 155 community and academic-based general internists and family physicians throughout Rhode Island and southeastern Massachusetts. Using 5-point Likert scales, the survey asked physicians about their attitudes and experiences regarding their patients' use of the Internet for health information.
RESULTS: After three mailings, 104 surveys were returned for a response rate of 67%. Most physicians (70%) were confident in their own ability to use the Internet. Only 9% of physicians felt positively about the quality of patient-oriented health information on the Internet and only 27% of physicians agreed that patients who use the Internet for medical information make better decisions about their health. Although 67% of physicians agreed that doctors should recommend specific health-related web sites to their patients, only 21% stated that they frequently recommend the Internet as a patient education resource. Most physicians (65%) indicated that they would refer patients to specific web-sites that had been shown to improve patients' knowledge, understanding, and decision-making about particular health conditions. Physicians who agreed that patients who use the Internet for medical information make better health-related decisions were more likely to refer patients to evidence-based websites that have been shown to improve knowledge, understanding, and decision-making ($P < .001$) than physicians who did not agree.
CONCLUSION: Our results suggest that primary care physicians have a poor impression of the quality of patient-oriented information on the Internet and infrequently recommend that their patients use the Internet. They strongly support, however, referring their patients to websites that are shown to improve knowledge, understanding and decision-making. Given the great potential the Internet holds for patient education and decision support, tools that identify high-quality patient-oriented websites should be developed.

PHYSICIANS' NEED FOR SUPPORT FOLLOWING MEDICAL ERRORS. A.D. Waterman[1]; J.M. Garbutt[1]; V.J. Fraser[1]; W.C. Dunagan[1]; I.D. Fischer[1]; M.J. Krauss[1]; A.G. Ebers[1]; W. Levinson[2]; T.H. Gallagher[3]. [1]Washington University in St. Louis, St. Louis, MO; [2]University of Toronto, Toronto, Ontario; [3]University of Washington, Seattle, WA. *(Tracking ID #117053)*

BACKGROUND: The experience of making and disclosing a serious medical error can be upsetting for physicians. Little is known about how errors impact physicians and what types of error-related support would be helpful.
METHODS: In July–December 2003, we surveyed 797 practicing physicians in internal medicine/family practice (70%) and surgery (30%) at Washington University/BJC Healthcare (St. Louis), University of Washington, and Group Health Cooperative (Seattle) as part of a larger error disclosure study of 2583 physicians (56% response rate). The mailed survey measured their general attitudes about error disclosure, how they would disclose hypothetical errors, how errors impacted five life domains, and their attitudes about error-related support resources and training. Respondents had a mean age of 47 years, were predominately male (76%), and were in private practice (51%, mean years in practice = 16).
RESULTS: 87% of physicians thought that hospitals did not adequately support physicians with error-related stress and 79% had not received any error disclosure training. When presented with a hypothetical example of a serious medical error, 95% of physicians reported that the error was very or extremely upsetting to them and 83% felt they were very or extremely responsible. Physicians reported that past experiences with medical errors increased their anxiety about future errors (59%) and decreased their confidence as physicians (44%), job satisfaction (41%), and ability to sleep (41%). Physicians reported being somewhat or very interested in coaching by an error disclosure expert following a serious error (88%), general error disclosure education (86%), and counseling after an error (79%). Surgeons were less interested in coaching (83% vs. 90%, $\chi^2 = 7.54$, $P = .02$) and counseling (71% vs. 83%, $\chi^2 = 19.9$, $P = .001$) compared with internal medicine physicians. Barriers to seeking counseling following an error included the inability to take time off work (48%), and concerns about confidentiality of the therapeutic conversation if sued (39%).
CONCLUSION: Physicians are also victims of medical errors, reporting that errors negatively impact their quality of life and job satisfaction. Following a serious error, implementing error disclosure training and improved physician support may enable physicians' and patients' needs to be met more effectively.

PHYSICIANS' COMMUNICATION ABOUT MEDICAL ERRORS WITH THE HOSPITAL AND COLLEAGUES. J.M. Garbutt[1]; A.D. Waterman[1]; V.J. Fraser[1]; W.C. Dunagan[1]; A.G. Ebers[1]; I. Fischer[1]; M. Krauss[1]; W. Levinson[2]; T. Gallager[3]. [1]Washington University in St. Louis, St. Louis, MO; [2]University of Toronto, Toronto, Ontario; [3]University of Washington, Seattle, WA. *(Tracking ID #116134)*

BACKGROUND: Reporting errors to the hospital and discussing errors informally with colleagues are two valuable ways for physicians to prevent future errors and improve patient safety. However, the prevalence of these error prevention actions and physicians' interest in receiving error-related information from the hospital are unknown.
METHODS: From July to December, 2003 we surveyed physicians in St. Louis, Missouri and Seattle, Washington to learn how physicians communicate about medical errors (N = 2,583, 56% response rate). We present preliminary data from 797 attending physicians (70% medicine/family practice, 30% surgery) who completed a

mailed survey asking their attitudes about and behaviors for reporting errors to the hospital and receiving hospital error-related information.
RESULTS: Respondents were predominately male (76%, Mean age: 47 years) and in private practice (51%, Mean years in practice: 16). Although physicians thought that serious errors (92%) minor errors (76%), and near misses (71%) should be reported to the hospital, 70% thought the current physician error reporting systems were inadequate and 45% did not know if their hospital had such a system. To report an error, physicians currently use a formal reporting system (risk management (68%), incident report (61%), patient safety program (8%)), or tell management (a supervisor (43%), physician chief or departmental chairman (40%), or a hospital executive (17%)). They perceived an ideal reporting system to be confidential (89%), non-punitive (86%), resulting in visible system improvement (85%), and fast (65%). Physicians discussed their serious errors (59%), minor errors (64%) and near misses (54%) with physician colleagues to improve patient safety. Most physicians thought that current systems to inform them about errors were also inadequate (91%), with most receiving error-related information from discussions with colleagues (68%), medical literature (50%), and meetings and conferences (49%). Most physicians want information about how to prevent commonly occurring serious errors (81%), minor errors (72%), near misses (68%), and to be informed when any type of error happens with their patients (54% serious errors, 53% minor errors, 49% near misses).
CONCLUSION: Physicians want to participate in hospital error reporting and receive error-related information from the hospital, but believe that current systems to report and share error information between physicians and the hospital are inadequate.

PLASMA CHOLESTEROL AND THE RISK OF INCIDENT HYPERTENSION IN INITIALLY HEALTHY MEN. R. Halperin[1]; H. Sesso[2]; M. Gaziano[1]. [1]Harvard University, Boston, MA; [2]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116383)*

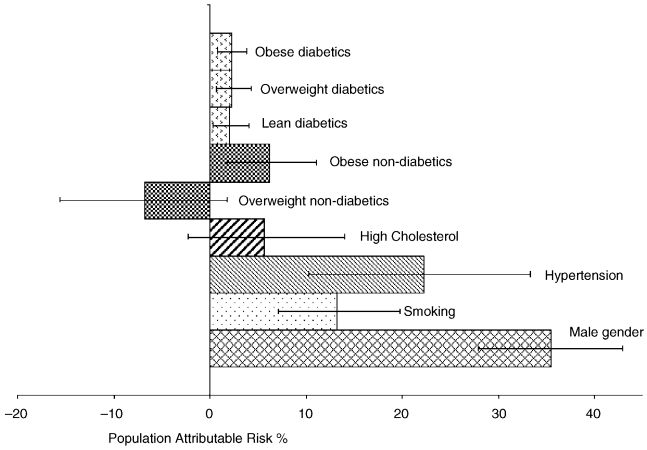
BACKGROUND: Evidence suggests hypertension may be an early manifestation of atherosclerosis. Thus, high cholesterol, a cardiovascular risk factor, may predict incident hypertension.
METHODS: We analyzed 3,134 men free of hypertension, cardiovasculr disease, and cancer from the Physicians' Health Study who provided baseline bloods, from which we measured total cholesterol (TC) and high density lipoprotein (HDL)-cholesterol and calculated the TC/HDL-cholesterol ratio. Risk factor information was provided by self-report questionnaires. Incident hypertension was defined as either the initiation of anti-hypertensive treatment, self-reported systolic blood pressure >140 mmHg, or diastolic blood pressure >90 mmHg. Cox proportional hazards models for the risk of developing hypertension used quartiles of baseline plasma TC (<180, 180 to <205, 205 to <237, and >237 mg/dL), HDL-cholesterol (<34, 34 to <41, 41 to <51, and >51 mg/dL), and the TC/HDL-cholesterol ratio (<4, 4 to <5, 5 to <6.4, and >6.4 units).
RESULTS: Over a mean follow-up of 14.1 years, 1,039 men developed hypertension. The mean age (SD) at baseline was 48.6 (6.7) years. The mean TC levels (SD) at baseline for men remaining normotensive and those developing hypertension were 210.5 (39.8) and 218.8 (41.3) mg/dL, respectively ($P < .0001$). The models show an increasing risk of hypertension with increasing quartiles of TC and TC/HDL-ratio and a decreasing risk of incident hypertension with increasing HDL quartiles. Since the hazard ratios for the age- and multivariate-adjusted models are similar, only the multivariate results are shown in the table below.
CONCLUSION: Plasma lipids may be useful in the identification of men at risk for hypertension. Understanding the role of lipids in the development of hypertension could provide a future direction for research into the prevention of hypertension.

Risk of Incident Hypertension by Lipid Quartile: Hazard Ratio (95% C.I)

	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile
Total Cholesterol	1.00 (ref)	1.07 (0.89, 1.30)	1.27 (1.06, 1.53)	1.34 (1.12, 1.61)
Hdl Cholesterol	1.00 (ref)	0.78 (0.66, 0.93)	0.71 (0.60, 0.84)	0.66 (0.55, 0.79)
Total/Hdl ratio	1.00 (ref)	1.09 (0.90, 1.33)	1.35 (1.12, 1.63)	1.60 (1.33, 1.93)

POPULATION IMPACT OF OBESITY ON FATAL CORONARY HEART DISEASE IN US ADULTS. D.M. Mann[1]; J.D. Lee[2]; Y. Liao[3]; S. Natarajan[1]. [1]New York University, New York, NY; [2]Cornell University Medical College, New York, NY; [3]Centers for Disease Control and Prevention (CDC), atlanta, GA. *(Tracking ID #116487)*

BACKGROUND: Few studies have evaluated the population impact of obesity on coronary heart disease (CHD) mortality. This analysis was designed to evaluate the population impact and implications of the CHD mortality risk associated with obesity.
METHODS: Using the First National Health and Nutritional Examination Survey Epidemiologic Follow-up Study (1971–1992), a diabetes-Body Mass Index (BMI) variable was constructed from diabetes and BMI [<25 (lean), 25 and <30 (overweight), ≥30 (obese)] categories. The hazard ratios (HR) for fatal CHD in the diabetes-BMI categories (adjusting for age, sex, race, exercise, education level, smoking, hypertension, cholesterol, and alcohol use) were determined and the population attributable risk (PAR) estimated using SUDAAN.
RESULTS: Compared to lean non-diabetics, the HR (with 95% confidence intervals) for fatal CHD is 0.8 (0.7, 1.1) in overweight non-diabetics, 1.4 (1.3, 2.0) in obese non-diabetics, 2.2 (1.2, 4.0) in lean diabetics, 2.3 (1.4, 3.9) in overweight diabetics and 3.3 (1.9, 8.9) in obese diabetics. Because PAR's are determined by both relative risk and exposure prevalence, they were higher for categories with high HR's and a greater prevalence of exposure. Male gender, hypertension and current smoking provided the largest PAR estimates (35.4 [27.8, 42.9], 22.2 [10.3, 33.3] and 13.2 [7.1, 19.7] respectively). The PAR is −6.8 (–15.7, 1.8) in overweight non-diabetics, 6.1 (1.7, 11.1) in obese non-diabetics, 2.0 (0.3, 4.0) in lean diabetics, 2.2 (0.6, 4.3) in overweight diabetics, and 2.2 (0.8, 3.8) in obese diabetics.
CONCLUSION: Obesity is an independent risk factor for CHD mortality even after controlling for other confounders. While obese diabetics have a higher HR for CHD death, the PAR for CHD death in obese non-diabetics is greater. The PAR for fatal CHD in the obese non-diabetic group represents the population impact on CHD mortality in obese adults without other cardiovascular risk factors. In order to further lower CHD mortality, practitioners need to aggressively monitor and treat obesity even in those without diabetes or other CHD risk factors.



POPULATION-BASED OVERVIEW OF CHRONIC MEDICAL CONDITIONS IN BIPOLAR AFFECTIVE DISORDER. C. Carney Doebbeling[1]; L.E. Jones[2]; R. Woolson[3]. [1]Indiana University School of Medicine/Regenstrief Institute, Indianapolis, IN; [2]University of Iowa, Iowa City, IA; [3]Medical University of South Carolina, Charleston, SC. *(Tracking ID #117074)*

BACKGROUND: The medical conditions affecting persons with bipolar affective disorder (BPAD) have been inadequately described. Persons with BPAD have barriers to care and have an increased risk factor burden for chronic medical conditions. The objective of this research is to describe the medical conditions for which persons with BPAD received medical care.
METHODS: We analyzed a 100% sample of Wellmark Blue Cross Blue Shield claims data 1996–2001. Subjects were classified into the case group if they had an inpatient stay, a psychiatrist visit, or two outpatient provider visits with a primary or secondary code for bipolar I, bipolar II, or cyclothymic disorder. Controls were age and gender matched and without known history of mental illness. Utilization was measured by summing the non-mental health outpatient visits to primary care providers and non-mental health hospitalization days. Medical conditions occurring during a hospitalization or at least twice in outpatient claims for more than a 30-day period were included. Odds ratios were adjusted for age and health care utilization.
RESULTS: 1,607 men (mean age 39.1 yrs) and 2,502 women (mean age 38.6 yrs) were included in the BPAD group. Men and women with BPAD were significantly more likely than controls to utilize primary care services (Men: 12 vs. 6 visits, $P < .0001$; Women: 18 vs. 8 visits, $P < .0001$), and had more overall medical co-morbidities (Men: 0.70 vs. 0.29 conditions, $P < .0001$; women: 0.91 vs. 0.33 conditions, $P < .0001$). Men with BPAD were significantly more likely than controls to have claims for cardiac arrythmias (OR 1.8), peripheral vascular disease (OR 3.4), neurological disorders (OR 5.6), chronic pulmonary disease (OR 2.3), hypothyroidism (OR 3.1), liver disease (OR 9.5), fluid and electrolyte disorders (OR 3.7), obesity (OR 2.9), and deficiency anemias (1.9). Women with BPAD were significantly more likely than controls to have claims for the same conditions as described for men, and additionally for diabetes mellitus with complications (OR 2.3), and hypertension (OR 1.4).
CONCLUSION: Given the generally young age of these insured men and women, the degree of chronic medical comorbidity and primary care utilization is remarkable. Many of these conditions are related to tobacco use. Since barriers to delivering medical services to persons with mental illness are present in traditional medical settings, these data implicate the need for systems of care, including tobacco cessation programs, designed for persons with chronic mental illness such as BPAD.

POSTMENOPAUSAL HORMONE REPLACEMENT THERAPY AND VENOUS THROMBOEMBOLISM FOLLOWING ORTHOPEDIC SURGERY. D.J. Brotman[1]; J.G. Hurbanek[2]; A.K. Jaffer[1]; N. Morra[1]. [1]Cleveland Clinic Foundation, Cleveland, OH; [2]Henry Ford Hospital Detroit, Detroit, MI. *(Tracking ID #115014)*

BACKGROUND: Hormone replacement therapy (HRT) and orthopedic surgery have both been associated with venous thromboembolism (VTE). However, controversy

exists regarding the appropriate management of HRT in the perioperative setting, since it is unknown whether HRT impacts the risk of VTE following surgery.
METHODS: In this case-control study, cases (VTE present) were identified by searching the Cleveland Clinic Foundation ICD-9 database for women greater than 50 years of age who underwent hip or knee arthroplasty. These patients also had received a second diagnosis of radiographically confirmed deep vein thrombosis (DVT) or pulmonary embolism (PE) during the initial hospitalization or within 45 days following surgery. Controls (VTE absent) were identified in the same manner as cases, except these patients lacked the additional diagnosis of DVT or PE. Controls and cases were matched 2:1 by the following variables: year of surgery, surgeon, age, and surgical joint (hip or knee). Data were obtained by chart review. HRT use was defined as the use of estrogen only (oral or patch), estrogen/progesterone compounds or SERMs (raloxifene or tamoxifen) continued until surgery or stopped within 2 weeks of surgery.
RESULTS: A total of 108 cases and 210 controls had records suitable for analysis. Peri-operative HRT use was no more prevalent in patients with postoperative VTE than those without. Eighteen (16.7%) women with post-operative VTE (cases) had taken peri-operative HRT compared to 49 (23.3%) of controls: odds ratio (OR) = 0.66; (95% CI 0.35–1.18; $P = .17$). After multivariate analysis, the adjusted ORs were similar. Variables predicting post-operative VTE included: prior VTE (OR = 2.3; $P = .02$), rheumatologic disease (OR = 2.2; $P = .03$), and absence of pharmacologic VTE prophylaxis (OR = 13.4; $P = .005$). Cases and controls were otherwise similar. HRT users were similar to non-users except that they were less likely to have coronary disease (OR = 0.34; $P = .03$) or prior VTE (OR = 0.28; $P = .04$), and were younger (median age 67 versus 74; $P < .0001$).
CONCLUSION: We found no association between peri-operative HRT use and post-operative VTE in patients undergoing major orthopedic surgery. Although HRT use appeared to protect patients from VTE (OR = 0.66), the upper bound of the confidence interval crossed 1.0. Since it is unlikely that HRT protects against VTE, we believe our data simply suggest that any additional VTE risk incurred by HRT in the setting of orthopedic surgery is trivial. Routine discontinuation of these medications preoperatively may be unnecessary in patients receiving postoperative pharmacologic VTE prophylaxis. These findings should be confirmed in a prospective trial.

POSTTRAUMATIC STRESS DISORDER IN PRIMARY CARE—A COMMON DIAGNOSIS. J.M. Liebschutz[1]; V. Brower[1]; C. Lloyd-Travaglini[1]; R. Saitz[1]; J.H. Samet[1]. [1]Boston University, Boston, MA. *(Tracking ID #115384)*

BACKGROUND: Despite the potential for primary care (PC) physicians to benefit patients with Post-traumatic Stress Disorder (PTSD) by detection, treatment and referral, limited data exists on the prevalence of PTSD in the PC setting. The primary goal of this study was to measure the prevalence of PTSD in PC patients in an urban population expected to have elevated exposure to traumatic life events.
METHODS: This was a cross-sectional study of PC patients in an urban academic medical center. Research interviewers approached consecutive PC patients waiting to see a PC provider, screened them for eligibility (English-speaking, age 18–65, and with a scheduled appointment), obtained informed consent, and performed an interview with validated instruments including demographic information, the Composite International Diagnostic Interview (CIDI) PTSD module, and a PTSD symptom severity measure (PCL-C).
RESULTS: Subject (n = 215) characteristics were as follows: 53% female; mean age 43 years; 59% Black, 20% White, 7% Hispanic; 34% born outside the US; 26% married or living with a partner; and 56% earned <$20,000 per year. According to the CIDI, 46/209 (22% [95% CI 17–28%]) qualified for a diagnosis of current PTSD. 60/213 (28% [95% CI 22–34%]) scored above 44 on the PCL-C, a score consistent with a diagnosis of current PTSD. 30% of the sample reported 4 or more traumatic events, 46% reported 1–3 traumatic events and 24% reported no traumatic events. Of the 9 specific traumatic events queried by the CIDI, 41% had witnessed someone being badly injured or killed, 39% had been seriously physically attacked or assaulted, 33% had been threatened with a weapon, held captive or kidnapped, 30% had been in a life-threatening accident, 22% had been sexually molested, 20% had been in a fire, flood or other natural disaster, 13% had been raped, 4% had been tortured or the victim of terrorism, and 3% had direct combat experience in a war. 33% reported experiencing trauma because one of the above events happened to someone close to them while 24% experienced a traumatic event not specified on the CIDI.
CONCLUSION: PTSD is remarkably common in this sample of urban primary care patients. These findings should be replicated in other primary care settings. Pragmatic and effective approaches to detection and referral of PTSD should be developed for the primary care setting.

PRACTICING BIOTERRORISM-RELATED PSYCHOSOCIAL SKILLS WITH STANDARDIZED PATIENTS. S. Zabar[1]; A.L. Kalet[1]; E.K. Kachur[2]; M. Triola[1]; M. Yedidia[1]; M. Blaser[1]; N.H. Steigbigel[1]; R. Freeman[1]; M. Lipkin[1]. [1]New York University, New York, NY; [2]Medical Education Development, New York, NY. *(Tracking ID #116281)*

BACKGROUND: Our post 9/11 experience and the literature suggest training for health care practitioners in bioterrorism preparedness and response needs to emphasize the identification and management of enduring psychosocial consequences of terrorism along with knowledge about "bugs, drugs, and bombs."
METHODS: We designed, implemented and evaluatated a 1-day continuing education curriculum on psychosocial consequences of terrorism. Core competencies were identified from the literature. To provide a context, participants were placed in an interactive simulation, a fictional town which experienced a terrorist attack. In one program element, small groups of 4–8 participants, with a trained faculty facilitator, conducted clinical interviews with each of 4 standardized patients (SPs). Cases included a 24 year old male with chief complaint of "feeling run down" (post traumatic stress disorder); a 40 year old male surgical physician assistant complaining of "tremor in his hands" (acute stress disorder); a 20 year old tearful female following-up for migraines (bereavement); and a 52 year old female with multiple health questions (worried well). Key skills practiced were: rapport building, assessment, shared decision-making, treatment and referal. Evaluations included self-reports of the value of the SP exercises, feedback from small group facilitators, a post course focus group, and pre-post, case-based objective testing of learning and attitudes.
RESULTS: 100 participants in 3 courses, (51% MD's, 24% NP/PA , 9% RN, and 16% public health professionals other first responders). The SP sessions received high ratings (N = 53), mean = 3.9 on a 4 point scale with useful (1) to very useful (4). Trainees (n = 91) who were moderately or very comfortable in caring for patients with significant psychosocial needs (based on responses to 4 items) increased from 51.6% pre-training to 86.8% post training. Correct diagnosis on the pre- and post-test knowledge case quiz increased from 81% to 87% for PTSD (n = 58); from 46% to 73 % for sub-diagnostic distress (n = 59); from 44% to 87% for acute stress disorder (n = 59); and from 79% to 83% for bereavement (n = 57). Participants valued learning how to focus on diagnostic data gathering while engaging empathically, to listen actively and to educate and reassure appropriately.
CONCLUSION: Use of standardized patients in case-based, interactive curriculum for psychosocial aspects of bioterrorism is feasible, highly satisfying to participants, and produces significant positive learning.

PRECONCEPTION CARE IN MANAGED CARE: THE TRANSLATING RESEARCH INTO ACTION FOR DIABETES STUDY (TRIAD). C. Kim[1]; A. Ferrara[2]; L. McEwen[1]; D. Marrero[3]; R.B. Gerzoff[4]; W.H. Herman[1]. [1]University of Michigan, Ann Arbor, MI; [2]Kaiser Permanente Division of Research, Oakland, CA; [3]Indiana University, Indianapolis, IN; [4]Centers for Disease Control and Prevention (CDC), Atlanta, GA. *(Tracking ID #115235)*

BACKGROUND: Increasing numbers of women with diabetes are of child-bearing age and are also enrolled in managed care. Previous studies reporting low rates of preconception counseling have not examined managed care organizations that report high performance of other diabetes care measures.
METHODS: We examined the characteristics of women with diabetes and their physicians that are associated with preconception counseling in managed care. Participants included women 18–45 years of age enrolled in Translating Research into Action for Diabetes, a study of diabetes care in managed care. Women were asked if they recalled discussions regarding glucose control before conception (n = 236) and use of family planning until good glucose control was achieved (n = 227). Each preconception question was examined in its own model. First, we modeled the relations between preconception care and patient characteristics in a stepwise logistic regression model that included patient age, gender, race, income, education, body mass index, current smoking, health status, diabetes treatment and duration. Next, we modeled the relations between preconception care and primary care physician characteristics in another stepwise logistic regression model that included physician age, gender, and specialty. Hierarchical regression models including covariates from the stepwise models were then used to account for clustering within health plans and provider groups.
RESULTS: Fifty-two percent of women recalled being counseled about glucose control and 37% recalled family planning advice. In unadjusted analyses, both types of discussions were associated with younger age, lower body mass index, insulin treatment, and longer duration of diabetes. In models adjusting for clustering of participants within health plan and provider groups, patient age (OR 0.91, 95% CI 0.86–0.96) and body mass index (OR 0.96, 95% CI 0.93–0.99) remained significant predictors of glucose control counseling. Similarly, patient age (OR 0.94, 95% CI 0.89–0.99) and body mass index (0.96, 95% CI 0.93–0.99) remained significant predictors of family planning counseling. No physician characteristics were associated with either type of counseling before or after adjustment for clustering.
CONCLUSION: Even in managed care plans that deliver high quality diabetes care, significant improvement needs to made in preconception counseling for women with diabetes; older, heavier women are particularly vulnerable.

PREDICTING MORTALITY AND HEALTH CARE UTILIZATION WITH A SINGLE QUESTION. K.B. Desalvo[1]; V. Fan[2]; M. McDonell[2]; S.D. Fihn[3]. [1]Tulane University, New Orleans, LA; [2]VA Health Services Research and Development, Seattle, WA; [3]University of Washington, Seattle, WA. *(Tracking ID #116893)*

BACKGROUND: Evidence suggests that single-item measures of self-reported health may serve as a reasonable substitute for multi-item measures for identifying high-risk patients in a health system. We compared the ability of a single-item global self-rated health (GSRH) to predict patient outcomes compared to existing, multi-item measures.
METHODS: We analyzed prospective cohort data on 21,732 patients collected as part of the Veteran's Affairs' Ambulatory Care Quality Improvement Project (ACQUIP), a randomized controlled trial investigating quality of care interventions. All patients received a baseline assessment that included a multi-item measure of general health (SF-36) and co-morbid conditions. The predictive and discriminative ability of the GSRH was compared to the Physical Component Score (PCS) of the SF-36 and the Seattle Index of Comorbidity (SIC), a 7-item measure. The GSRH is

an item from the SF-36 and the wording is: "In general, how would you rate your health? Excellent, Very Good, Good, Fair, Poor?" We created an age-adjusted, logistic regression model for each predictor and evaluated mortality, hospitalizations, and high ambulatory use (top 10th percentile of visits) during the year subsequent to baseline evaluation to calculate odd ratios (OR) and associated 95% Confidence Intervals (CI). We compared the discriminative ability of the predictors by developing receiver operator characteristic (ROC) curves and comparing the associated area under the curve (AUC).
RESULTS: In categorical analyses, using "excellent/very good" as the reference category, the age-adjusted OR of death was 1.3 [CI 0.9, 1.8], 2.5 [CI 1.8, 3.5], and 6.8 [CI 4.9, 9.6] for patients reporting "good", "fair" and "poor" health, respectively. The age-adjusted OR for hospitalization was 1.5 [CI 1.3, 1.7], 2.4 [CI 2.1, 2.8], and 3.9 [CI 3.3, 4.5] for patients reporting "good", "fair" and "poor" health, respectively. Those with lower GSRH health were also more likely to be high ambulatory care utilizers in the ensuing year (OR 1.3 [CI 1.1, 1.5], 2.1 [CI 1.8, 2.5] and 2.9 [CI 2.4, 3.5]), for "good", "fair" and "poor" health, respectively. The GSRH, PCS, and SIC had comparable AUC for predicting mortality (AUC 0.74, 0.73, and 0.73, respectively); hospitalization (AUC 0.63, 0.64, and 0.61, respectively); and high outpatient use (AUC 0.61, 0.61, and 0.60, respectively).
CONCLUSION: The GSRH response categories identify patients with varying risks. Patients reporting "poor" health are at significantly greater odds of dying or requiring health care resources compared with their peers. The GSRH, collectable at the point of care, is comparable to more extensive, established risk predictors, which makes it a useful routine, risk prediction tool.

PREDICTION RULE OF OSTEOPOROSIS IN BUENOS AIRES (PROBA), DEVELOPMENT AND VALIDATION. A. Ciapponi[1]; R. Mejia[2]; A. Granel[2]; A. Galich[3]. [1]1. Family Medicine and Preventive Division. Hospital Italiano de Buenos Aires, Argentina, Buenos Aires; [2]Universidad de Buenos Aires, Buenos Aires; [3]Hospital Italiano de Buenos Aires, Argentina, Buenos Aires. *(Tracking ID #116682)*

BACKGROUND: Although the cost of mass bone mass density measurement (BMD) is prohibitive in Argentina, screening programs for high risk patient populations would be useful. The objective of this study was to develop and validate a risk assessment tool to help physicians identify which patients in Buenos Aires would benefit from osteoporosis screening with BMD.
METHODS: In this cross-sectional study we recruited a consecutive sample of women >45 years of age who went for a BMD in Buenos Aires, Argentina. The validation cohort was obtained from the participants of a study about risk factors for osteoporosis in Latin American patients. Participants completed a questionnaire, validated by a prior pilot study, on osteoporosis risk factors. T-score £ –2.5 SD at femoral neck was considered osteoporosis. Logistic regression analysis and receiver operating characteristics analysis were used to identify the simplest algorithm that would identify women at risk for osteoporosis.
RESULTS: The questionnaire was administered to 1,168 women and completed by 1058 (90%). The validation cohort includes 881 women. After processing the variables, age and weight were found to be the strongest predictors of low BMD. This two-item prediction rule has a sensitivity of 95.16%, a specificity of 31.7%, a NPV of 98% and a PPV of 12% to identifying women with low BMD.
CONCLUSION: The PROBA, based on weight and age, successfully identified over 95% of Latin American women with a low BMD at the femoral neck. Furthermore, it selected out one-third of those women who had a normal BMD and would not need densitometry testing.

PREDICTORS OF HOSPITALIZATION FOR INJECTION DRUG USERS WITH SOFT TISSUE INFECTIONS. T.A. Takahashi[1]; I. Binswanger[2]; A. Baernstein[2]; J.O. Merrill[2]; K.A. Bradley[1]. [1]VA Puget Sound Health Care System, University of Washington, Seattle, WA; [2]University of Washington, Seattle, WA. *(Tracking ID #116537)*

BACKGROUND: Soft tissue infections (STIs) from injection drug use are one of the most frequent reasons for admission to some urban, public hospitals, but little is known about factors which may predict the need for hospitalization. The present study sought to identify patient characteristics associated with hospitalization among injection drug users (IDUs) with STIs seeking emergency care for their infections.
METHODS: This cross-sectional study was based on interviews and review of medical records of IDUs with STIs evaluated an urban, public hospital in Seattle, WA from May 2001 to March 2002. In-person, structured interviews assessed subjects' demographics, current infections, drug using history, health status, and previous health care utilization. Clinical features of subjects' current infection, its treatment, and length of hospitalization were obtained from medical records. Bivariate logistic regression evaluated demographic, clinical, and psychosocial variables hypothesized to be associated with hospitalization.
RESULTS: Of the 192 IDUs with STIs contacted, 156 (81%) agreed to participate. The average age of participants was 42 years (SD 8.6 years) and 63% were men. Overall, 35% were admitted for a median of 3 days (range <1 to 23 days). The patient characteristic most strongly associated with hospitalization for the current STI was 2 or more prior hospitalizations in the past year (17% of participants). While 65% of these "high utilizers" were admitted for their current infection, only 28% of other patients were admitted. Subjects hospitalized 2 or more times in the past year were 4 times more likely to be admitted for their current STI compared to those hospitalized 0–1 times (OR 4.1, $P = .002$). Other factors hypothesized but found not to be associated with hospitalization included self-report of delaying care, type and location of STI and self-treatment of the STI. Secondary analyses examined characteristics of the high utilizers, compared to those hospitalized less frequently. On multivariate analysis, high utilizers were more likely to reside in shelters (OR 4.1, $P = .04$), to have required medical care for a drug overdose in the last year (OR 3.2, $P = .04$), and to have more than one infection needing treatment (OR 3.5, $P = .04$) compared to those hospitalized less frequently.
CONCLUSION: Over one third of IDUs seeking emergency department care for STIs were hospitalized. We identified a subpopulation, mostly living in shelters, who had been hospitalized frequently in the past year and who had much higher rates of hospitalization for their current infection compared to others. Since members of this subpopulation may be easily identified and located, they may benefit from focused interventions aimed at reducing their health care utilization.

PREDICTORS OF MENTAL HEALTH SCREENING OF LATINOS BY MEDICAL DOCTORS: AN ANALYSIS OF THE NATIONAL LATINO AND ASIAN AMERICAN STUDY. S.A. Mohanty[1]; M. Alegria[2]. [1]University of Southern California, Los Angeles, CA; [2]Cambridge Health Alliance, Harvard Medical School, Cambridge, MA. *(Tracking ID #116753)*

BACKGROUND: Studies have shown that Latinos have inadequate access to mental health care. Some advocate that medical doctors should screen all their patients for mental health problems. Our study objectives were 1) to see whether medical doctors were asking their Latino patients about mental health problems and 2) to determine which factors influenced the likelihood of screening.
METHODS: We used the 2002–2003 National Latino and Asian American Study (NLAAS), a population-based survey. We analyzed Latinos who had at least one encounter witht he medical profession (n = 1,986) in the past 12 months. Using bivariate χ^2 analysis and multivariate stepwise regression, we explored which characteristics predicted whether Latinos were asked by a medical doctor about their emotions, nerves, or mental health in the past 12 months.
RESULTS: 24% of the Latino sample reported that they were asked their mental health (n = 473). Only 40% of those with a 12-month prevalence of any mental disorder were asked about their mental health by a medical doctor. Using multivariate analysis, we found that being limited English proficient did not affect screening rates. If a Latino was publicly insured, he or she had higher odds of being asked about mental health problems (OR 1.5, 95% CI 1.2, 1.9). Other significant predictors of screening included having a regular medical doctor (OR 1.8, 95% CI 1.4, 2.4), reporting frequent or severe headaches (OR 1.5, 95% CI 1.7, 1.9), or having increased number of medical visits (OR 1.04, 95% CI 1.02, 1.06). Having post-traumatic stress disorder or anxiety disorder increased the likelihood of being screened. Those who were uninsured, lived in Texas, or reported good mental health were less likely to be screened.
CONCLUSION: Many Latinos with a mental disorder were not asked about their mental health during their encounter with a medical doctor. Being insured and having access to a regular doctor improved screening rates. We need to institute specific mental health screening guidelines for the medical profession. Furthermore, facilitating access to care for Latinos may help improve diagnosis of mental health problems.

PREDICTORS OF SUBSTANCE MISUSE IN PATIENTS WITH CHRONIC PAIN. T. Ives[1]; J.S. Perhac[1]; K. Felix[1]; R. Malone[1]; S. Prakken[1]; B. Bryant[1]; C. Hammett-Stabler[1]; J. Ripton[1]; T. Miller[1]; D. DeWalt[1]; M. Pignone[1]; P. Chelminski[1]. [1]University of North Carolina, Chapel Hill, NC. *(Tracking ID #115966)*

BACKGROUND: Substance misuse complicates the management of chronic non-malignant pain. We examined factors predicting substance misuse among participants in a chronic pain disease management program.
METHODS: Primary care providers in an academic general medicine clinic referred patients who had chronic pain (>3 months duration) and who were taking (or being considered for) opioid analgesics. The program included structured clinical assessments, a computer registry to track visits, regular follow-up visits, pain contracts, psychiatric consultation, and referral to substance abuse treatment. Participants were assessed for pain, mood, and function using the Brief Pain Inventory (BPI), the Center for Epidemiological Studies-Depression scale (CES-D) and the Pain Disability Index (PDI), respectively. We monitored substance misuse through review of medications, communication with pharmacies and other providers, and urine toxicological testing (UTS). Substance misuse was defined as stimulant use (cocaine or amphetmines); drug diversion; prescription adulteration; doctor collecting; UTS repeatedly negative for prescribed opioids; and UTS repeatedly positive for non-prescribed opioids. We examined the relationship between patient characteristics and substance misuse using bivariate and multivariate analysis.
RESULTS: One-hundred and sixty-four consecutive patients were enrolled. Mean age was 52 years, 48% were male, 78% were white, and 93% were taking opioids. Twenty-eight percent had a history of ethanol abuse and 20% had a UTS positive for cannabinoids. Substance misuse occurred in 53 (32%) patients: 22 with stimulants (21 with cocaine) on UTS; 13 with negative UTS; 7 with positive UTS for non-prescribed opioids; 7, doctor collecting; 2, prescription adulteration; and 2, diversion. In bivariate analyses, substance misusers were more likely to be male, 60% misusers vs. 41% non-misusers ($P = .023$), or to have a history of ethanol abuse or current cannabinoid use on UTS, 64% misusers vs. 32% non-misusers ($P < .001$). Race, income, education, literacy, pain scores, function, and depression were not associated with substance misuse. Among 94 patients with available data, past cocaine use strongly predicted current substance misuse (51% of misusers vs. 10% of non-misusers, $P < .001$). In multivariate analyses, the association of ethanol or cannabis abuse and substance misuse persisted, OR 3.2 (95% CI 1.5–6.6) as did the relationship between cocaine use and misuse, OR 8.8 (95% CI 2.9–27.1).

CONCLUSION: Substance misuse was common in patients with chronic pain enrolled in a primary care disease management program. Past cocaine use was strongly associated with substance misuse. A history of ethanol abuse or current cannabis use are associated with an increased risk of substance misuse.

PREDICTORS OF THE IMPACT OF CLINICAL TRIAL PUBLICATION ON PHYSICIAN PRESCRIBING PRACTICES. R.S. Stafford[1]. [1]Stanford Prevention Research Center. Program on Prevention Outcomes and Practices, Stanford, CA. *(Tracking ID #116263)*

BACKGROUND: The extent to which clinical trial publication impacts physician prescribing practices is highly variable and the factors leading to successful translation of evidence into clinical practice are not well understood. We assembled a representative series of case-studies to identify prominent features predicting successful dissemination of trial results. A leading hypothesis was that a greater volume of media coverage would be associated with greater shifts in physician prescribing.
METHODS: We selected 10 major clinical trials published in JAMA or NEJM between 1990 and 2002 that involved chronic disease medications. For each trial, we collected a standard set of information regarding the trial's clinical context, features of the trial itself, intensity of media coverage, magnitude of drug promotion, and the subsequent response of physicians. Data on national prescribing practices before and after the trials were derived from published studies, as well as supplemented by prescribing data from IMS HEALTH's National Disease and Therapeutic Index. Media coverage information was obtained via Nexis-Lexis and the intensity of coverage indexed by the number of articles appearing in 6 regional newspapers consistently captured in this database. Drug promotion expenditures were tracked via IMS HEALTH's National Promotion Reports.
RESULTS: Our case-series included prominent trials covering hormone therapy (HERS 1998, WHI 2002), antihypertensives (ALLHAT 2000 and 2002), statins (WOSCPS 1995), metformin (1995), warfarin in atrial fibrillation (SPAF 1990), ACEIs in CHF (SAVE 1992), leukotriene modifiers (1998), and salmeterol (1992). Of these trials, seven had favorable findings, two presented adverse comparisons, and one showed neutral results for the drugs under study. Publication of most of these clinical trials was associated with variable, but modest changes in physician prescribing consistent with trial results. Two trials (early ALLHAT results and WHI), however, were associated with greater shifts in prescribing and were characterized by early trial termination due to adverse effects and more intensive media coverage. Across this diverse set of 10 trials, other features associated with increased impact included: study of a dominant drug in a class, more intensive post-publication drug promotion, and a younger patient population.
CONCLUSION: The intensity of media coverage appears to be a mediator of successful translation of clinical trial findings. Many of the other features associated with successful translation may themselves be associated with greater media attention, however. Researchers and policy-makers should recognize the power of the media to contribute to changes in physician behavior. In addition, alternative mechanisms should be sought to induce evidence-based practices when findings do not garner intensive media attention.

PREFERENCES AND TRADEOFFS FOR PREVENTIVE SERVICES IN HEALTH PLANS. M.M. Davis[1]; J. Thrall[1]; N. Baum[1]; S.D. Goold[1]. [1]University of Michigan, Ann Arbor, MI. *(Tracking ID #116198)*

BACKGROUND: Preventive services are an integral component of clinical care. However, adults' preferences for preventive care benefits versus other benefits in a health plan are not known.
METHODS: Thirty-one groups of citizens (n = 322) recruited through employers and community groups in Minnesota participated in CHAT "Choosing Healthplans All Together," ©, a simulation exercise in which participants choose, as individuals and in groups, health benefits in a hypothetical health plan constrained by limited resources. In this study, participants chose whether to allocate 4% of plan premium for basic preventive services ($10 copay for well-visit care), an additional 2% for expanded services (no co-pay, wellness classes, and discounted eyewear), another 2% (8% total) for comprehensive services (health club membership), or no preventive coverage at all. Group discussions were audiotaped, transcribed verbatim, and analyzed for values, reasons, and justifications pertinent to prevention or related services (e.g., screening, vaccination). Associations between preventive services choices and individuals' attitudes and characteristics were examined (chi-square), and associations with selections of other plan components were measured (correlation coefficients).
RESULTS: Among 294 participants with complete study data, mean age was 42.4 years, 67% were female, 94% white, and 97% had health insurance. Group discussions contained little disagreement related to preventive services. As individuals, only 7% of participants did not choose preventive services; 62% chose basic, 27% chose expanded, and 4% chose comprehensive preventive services. Those with fair or poor health status were more likely to exclude preventive coverage completely (31% v. 6%, $P < .05$). Those who agreed in pre-CHAT questionnaires that prevention was important were more likely to select it. The choice of preventive coverage did not differ by age, gender, marital status, income, or inclination to pay for health expenses now versus later. Selection of more comprehensive preventive services correlated positively with selection of services beyond those "medically necessary" ($r = .23$; $P < .0005$), complementary/alternative medicine benefits ($r = .18$; $P < .005$), and other (primarily rehabilitative) services ($r = .15$; $P < .05$), and correlated negatively with hospitalization benefits ($r = –.16$; $P < .01$) but was not associated with pharmacy, office visits, or long-term care benefits selections.
CONCLUSION: Preventive services are preferred by more than 9 out of 10 adults in an insured population, but are not valued as strongly by individuals with fair or poor health status. Selection of broader preventive services benefits was associated with preference for other non-catastrophic insurance benefits, but not with tradeoffs in more expensive benefits such as pharmacy and office visits.

PRE-OPERATIVE DEPRESSION AND SURGICAL OUTCOMES. F.M. Shrive[1]; H. Stuart[2]; H. Quan[1]; W.A. Ghali[1]. [1]University of Calgary, Calgary, Alberta; [2]Queen's University at Kingston, Kingston, Ontario. *(Tracking ID #116699)*

BACKGROUND: Psychosocial and personality factors are increasingly being recognized as important determinants of health and prognosis. However, the independent association between psychosocial factors, such as depression, and clinical outcomes after surgery has not been fully characterized. We prospectively assessed the association between pre-operative depression and length of stay, in-hospital costs and surgical complication rates in a cohort of patients undergoing surgery in a tertiary care centre.
METHODS: Patients were recruited from the pre-admission clinic of a tertiary care centre, and were asked to complete the Zung Self-Rated Depression Scale (SDS). The Zung SDS includes 20 questions (e.g., "I feel down-hearted, blue and sad") with respondents asked to circle a response from 1 to 4 indicating how often they have been feeling the given statement. The responses are summed to create a total score ranging from 20 to 80. The scores are converted to a 100-point scale by dividing the total score by 0.8. Post-operative outcomes (mortality, post-operative complications, length of stay, and costs) were determined through linkage to hospital discharge data. Multivariate linear regression was used to model risk-adjusted cost and length of stay. Risk-adjusted complication rates were analysed using logistic regression.
RESULTS: Of 1931 patients surveyed, 1,765 patients had complete pre-operative depression scores and were successfully linked to discharge data for outcome assessment. Among these, there were only 15 deaths (0.8%) in our cohort—too few to consider death a primary outcome. 511 (29%) patients had SDS scores of over 50, the recommended cut-point for classifying individuals as exhibiting depressive symptoms. The depressed and non-depressed patients had similar baseline characteristics and demographics, yet the post-operative outcomes of the depressed subjects were less favourable. After risk-adjustment for age, sex and the Elixhauser co-morbidities, the depressed patients had longer mean length of stay compared with patients who did not report depressive symptoms (6.58 days vs. 5.35 days, $P < .01$), and higher mean costs ($9,183 vs. $7,115, $P < .01$). The adjusted post-operative complication rate was also higher for the depressed patients (27.4% vs. 22.8%, $P < .01$).
CONCLUSION: Pre-operative depression is associated with poorer post-operative outcomes. Further research should now explore whether pre-operative screening for depression and targeted interventions are efficacious for modifying the adverse prognosis associated with depression.

PREPAREDNESS OF RESIDENT PHYSICIANS TO DELIVER CROSS-CULTURAL CARE: A QUALITATIVE STUDY. E.R. Park[1]; J. Betancourt[1]; M. Kim[1]; A. Maina[1]; J. Weissman[1]. [1]Massachusetts General Hospital, Boston, MA. *(Tracking ID #117497)*

BACKGROUND: Background: The Institute of Medicine Report "Unequal Treatment" cited cross-cultural training as a mechanism to address racial and ethnic disparities in health care, but little is known about residents' preparedness to provide quality care to diverse populations. Assessing the quality of graduate medical education and residents' preparedness to function effectively is of particular importance, given the increasingly diverse patient population. Objectives: To assess residents' perceptions of 1) challenges they face in delivering quality care to diverse populations, 2) preparedness to deal with these challenges, and 3) recommendations for cross-cultural training.
METHODS: Methods: Seven multi-specialty focus groups and 10 individual interviews were conducted with 58 resident physicians across the country. Groups and interviews were recorded and transcribed. Thematic content analyses were performed.
RESULTS: Results: Challenges existed that impeded the delivery of cross-cultural care. The most common barrier cited was language difficulties. Other challenges included mistrust, family interference, and religious differences. Residents reported wide variability in perceived preparedness to deliver cross-cultural care across specialties. Many residents tended to view cross-cultural care as it relates to language and found it difficult to conceptualize culture and preparedness. Many felt the need to increase their own self-awareness and acquire knowledge about cultural norms, family and religious beliefs. Some residents reported that they had developed verbal skills (e.g. assessing patient comprehension) and nonverbal skills (e.g. visual cues) from clinical experience as a way of coping. Many residents reported they received some informal training, such as learning from other residents and interacting with diverse patients, but little formal training during residency. Residents suggested additional formal training in cross-cultural care (communication/idiom training, insurance types) but expressed concern that culture-specific training can lead to stereotypes. They also recommended informal training mechanisms (diversifying faculty, learning from multidisciplinary staff).
CONCLUSION: Conclusions: Residents cited many challenges to delivering cross-cultural care, but they also cited many ways in which they had developed some skills in this area. Although residents felt that they needed more culturally-specific knowledge, there was a strong sense that they should not engage in culturally-specific treatment. Training environments need to focus on formal and informal

training mechanisms to enhance residents' preparedness. This exploratory study greatly informed us about how to conceptualize and measure preparedness for cross-cultural care and training needs.

PREPARING EMPLOYEES TO PARTICIPATE IN THE DESIGN OF THEIR HEALTH INSURANCE BENEFITS. M. Danis[1]; M. Ginsburg[2]; C. Parise[3]; S.D. Goold[4]. [1]National Institutes of Health, Bethesda, MD; [2]Sacramento Healthcare Decisions, Rancho Cordova, CA; [3]Sutter Institute for Medical Research, Sacramento, CA; [4]University of Michigan, Ann Arbor, MI. *(Tracking ID #116228)*

BACKGROUND: While employees might want to have a voice in the design of their health insurance benefits, they are not necessarily prepared to constructively participate in this process. We examined the impact of a structured group exercise on employees' views and selections before, during, and after the exercise.
METHODS: Sacramento Healthcare Decisions, a nonprofit organization that educates and involves the public in healthcare policy and practice issues, recruited 41 public and private sector employers interested in enhancing employee capacity to set healthcare priorities and provide input into health insurance benefits. Using 'Choosing Healthplans All Together', (CHAT), a computer-based group simulation exercise, participants designed a hypothetical health insurance plan individually and in groups. The simulation included illness scenarios, resource constraints and group discussion. Sociodemographic data and benefit choices were collected automatically during the exercise. Pearson Chi-Square and standardized residuals were used to assess the association and the Test of Independent Proportions was used to examine differences between specific proportions of interest.
RESULTS: Sixty-eight CHAT groups included 698 employees. Mean participant age was 44; 62% were female and 28% were non-Caucasian. At the conclusion of the exercise, participants selected a greater number of benefits with tighter benefit management (e.g., co-payments, formulary restrictions) than in initial CHAT choices (9.3 vs.10.0). Participants also increased selection of services likely to be less familiar to healthy employees, including mental health services (39% vs. 61%), rehabilitation (46% vs. 68%) and organ transplantation (38% vs. 60%). Individual benefit packages tended to be consistent with benefit packages chosen by their group. Asked if it would be reasonable to limit health insurance coverage given the rising cost of health care, 47% agreed initially, while 72% agreed after the exercise. After the exercise, 88% reported wanting to learn more about their health insurance, and 92% agreed "it is important for employees to have a role in deciding about health care coverage."
CONCLUSION: A structured group exercise for prioritizing health insurance benefits, used by interested employers, can enhance employee recognition of the need for insurance coverage limits, help employees anticipate the value of benefits that may be necessary in the event of serious illness, and increase their willingness to accept tight benefit management for the sake of a broader range of benefits.

PRESCRIBERS DEMONSTRATE ADHERENCE TO DOSING RECOMMENDATIONS FOR INPATIENTS IN EXTREME OLD AGE FOR MOST PSYCHOTROPIC MEDICATIONS. L. Rescorl[1]; B. Kornitzer[1]; S. Baharlou[1]; H. Fernandez[1]. [1]Mount Sinai School Of Medicine, New York, NY. *(Tracking ID #116266)*

BACKGROUND: There is reason to believe that elderly patients in the hospital are especially at risk for adverse events due to inappropriate medication selection and dosing practices, especially in certain categories of drugs. Few studies, in fact, have evaluated the utilization of psychotropic medications in hospitalized patients over the age of 85 years.
METHODS: Given this information, we performed a retrospective study based on secondary data analysis of a prospective trial. Our study examined patterns of dosing for patients of different age groups at Mount Sinai Hospital. We evaluated 3,509 patients under age 65, 1,338 patients age 65 and over, and 150 patients age 85 and above. Appropriate doses for geriatric patients were based on a compilation of information from a critical appraisal of literature, the 1997 Beers Criterion, and recommendations from the Geriatric Dosage Handbook. We compared doses prescribed to patients less than 65 years of age, to those given to patients over 65 years and over 85 years to determine whether significant differences occurred between groups. We also examined whether elderly patients received appropriate doses of medications. To do this, we conducted *t* tests on SPSS.
RESULTS: As a whole, benzodiazepines, antipsychotics, and antidepressants were properly prescribed. Our data analysis identified four specific medications, however, that were prescribed inappropriately. A major area of concern raised by our study was the dosing practices associated with two sleeping agents, diphenhydramine and zolpidem. These drugs were prescribed to geriatric patients at doses higher than recommended. While the recommended maximum daily dose for zolpidem is 5 mg, the average daily dose for patients over 65 years was 9.2 mg, and was 7.5 mg for patients over age 85. We also determined that problems existed in the prescription of amitriptyline and digoxin. Despite recommendations to avoid amitriptyline in older adults, 11 patients over age 65 and 1 patient over age 85 received this drug during their hospital stay. For digoxin, not only did prescriptions to elderly patients exceed the recommended dose, but doses to patients over age 85 were similar to doses prescribed to all patients over age 65, indicating a lack of dose reduction for the most elderly patients.
CONCLUSION: It appears that more education to is necessary for prescribers on the appropriate drug selection and dosing guidelines for hospitalized geriatric patients, especially those over the age of 85. Future studies should work to establish consensus criteria to be used by clinicians.

PRESCRIBING PATTERNS OF ANTIHYPERTENSIVES IN DIABETES—DOES PRACTICE REFLECT EVIDENCE ? M.L. Johnson[1]; H. Singh[1]. [1]Baylor College of Medicine, Houston, TX. *(Tracking ID #102571)*

BACKGROUND: Hypertension affects about 60% of patients with type 2 diabetes. Evidence shows that Angiotensin Converting Enzyme inhibitors (ACEI) are better than other antihypertensives in protecting against renal damage leading to end-stage renal disease in patients with diabetes. Studies have suggested that all diabetics with blood pressure over 130/80 mm Hg should begin ACEI treatment, the value of which is proven in cost-benefit analysis. There is limited data in literature regarding practitioners' choice of initial antihypertensive therapy for diabetes and it is unknown to what extent routine practice reflects evidence. The objectives of the study were to evaluate the utilization of ACEI, drugs with most evidence base for use, as agents to treat hypertension in patients with diabetes.
METHODS: A retrospective design was used to collect computerized data from all patients seen for any reason (N = 84,369) at a tertiary care Veterans Affairs hospital longitudinally from October 1, 1998 to March 1, 2001.Patients were identified for inclusion in the study if they had diabetes and hypertension based on a combination of: 1) diagnostic information from ICD-9-CM codes; 2) prescription drug use from pharmacy dispensing records, and 3) clinical parameters from vital signs. Patients with any diagnosis of heart failure (HF) were excluded. Prescriptions of any anti-hypertensive drugs were identified from the computerized pharmacy records and the number being prescribed was tabulated. The proportion of patients with ACEI use in single and multidrug therapy was tabulated.
RESULTS: A total of 9975 patients (11.8%) were studied. Average age(sd) was 61.2(11.5) years; 97% of patients were male. 80.9% (n = 8066) were on drug therapy. ACEI were used overall in 6,167 patients (76.5%). However, as a first line therapy they were used in only 59%. In regimens using two drugs this increased to 76%; with three drugs 85% and in regimens of four or more drugs to 93%. Other drugs used as first line agents were diuretics (9.4%), beta-blockers (11.5%), calcium channel blockers (11.2%).
CONCLUSION: Our study revealed that overall use of ACEI in patients with diabetes and hypertension was high and reflected evidence based practice. However, there was considerable room for improvement. Interestingly, ACEI were underutilized as first line agents inspite of a strong evidence base. Poor tolerance was unlikely to account for underuse since several trials have shown that they are well tolerated by most patients. Our findings are similar to studies documenting underutilization of ACEI in patients with HF. Better strategies to put evidence based medicine into routine practice are still needed. Further research is needed to qualify how these rates of use compare outside the VA setting, and to determine factors associated with variation in use.

PRESCRIPTION MEDICATION SHARING IN PRIMARY CARE. A.W. Shaheen[1]; T. Palker[1]; E.B. Walter[1]; J.A. Galanko[2]; N.J. Shaheen[2]; R.J. Dolor[1]. [1]Duke University, Durham, NC; [2]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #116072)*

BACKGROUND: The sharing of prescription medications is a potentially harmful practice. The prevalence of sharing of medications, as well as the medications most likely to be shared, are unknown. The aim of this study was to define the prevalence of prescription medication sharing in a general clinic population, to assess commonly shared medications, and to quantitate self-reported effectiveness and side effects of sharing.
METHODS: We created a survey assessing prescription-sharing practices. Questions regarding the frequency of sharing, the medications shared, medications received from others, the subject's perception of the effectiveness of the agent, and any perceived side-effects of using the drug were included. Multiple demographic parameters, including age, gender, race, education and socioeconomic status were also obtained. The tool was administered in an anonymous fashion to 1,000 consecutive adult outpatients at a university general internal medicine practice. Exclusion criteria included dementia, quadriplegia, blindness, illiteracy, or medical urgency or emergency precluding participation. Data were analyzed using SAS (Cary, NC). Simple frequencies and proportions were calculated. Bivariate analyses were performed comparing sharers with non-sharers using Fisher's exact test and Student's *t* tests. Logistic regression was performed to assess demographic variables associated with sharing.
RESULTS: The response rate was 96% (n = 963). Ninety percent (n = 864) had been prescribed at least one medication in the last year. Of these, 147/864 (17%) reported sharing their prescription with someone else and 16% (158/963) reported using someone else's prescription medication. One quarter of respondents (n = 239), reported either giving away or receiving a prescription drug in the previous year. Seven percent of subjects both gave and received drugs. In bivariate analysis, those who shared were younger than non-sharers (46.4 vs. 54.1 yo, $P < .0001$), and more likely to have insurance that covered medications ($P < .028$). In logistic regression, age and race were the most significant predictors of sharing ($P < .05$ for both) and higher levels of education trended toward increased sharing ($P = .08$). The most commonly shared drugs were for allergies, arthritis, migraines, pain, rash, and asthma. Of those using someone else's medication, 147 (93%) reported it was effective. Only 7% reported an adverse side effect.
CONCLUSION: Sharing of prescriptions is ubiquitous in primary care. Although self-recognized side effects were low, shared medications included many potentially dangerous agents. Physicians should question patients about their sharing behaviors.

PREVALENCE OF POTENTIALLY INAPPROPRIATE MEDICATION USE AMONG ELDERLY GENERAL MEDICINE PATIENTS IN 26 ACADEMIC MEDICAL CENTERS. R. Behal[1]. [1]Northwestern University, Chicago, IL. *(Tracking ID #117525)*

BACKGROUND: Use of long-acting benzodiazepine medications among older patients is associated with a high risk of adverse events. Prevalence of long-acting benzodiazepine use among hospitalized general medicine patients is not known.
METHODS: Pharmacy billing files linked with inpatient discharge UB92 data were used to identify patients discharged with general medical DRGs from twenty-six academic medical centers between July 1 2002 and June 30 2003. Revised Beers criteria for potentially inappropriate medications (PIM) were applied to estimate use of long acting benzodiazepine (LA-BDZ, defined as diazepam or chlordiazepoxide) in two distinct age groups: a) non-elderly, age 18 to 64 years; and b) elderly, age 65 or older. Average length of therapy with LA-BDZ and prevalence of LA-BDZ use were assessed in the two groups for each of the twenty-six medical centers.
RESULTS: A total of 665 patients in the elderly group and 2,435 patients in the non-elderly group were identified as recipients of LA-BDZ. The elderly therefore accounted for 21.5% of the overall LA-BDZ use. Overall, prevalence of LA-BDZ use in elderly patients hospitalized in 26 medical centers ranged from 0% to 5% (median 2%); prevalence of LA-BDZ use among non-elderly patients ranged from 1% to 7% (median 3%). Median length of therapy was 2.5 days for both groups.
CONCLUSION: Among general medicine patients in academic medical centers, patients older than 65 years account for over one-fifth of usage of long-acting benzodiazepines. Prevalence and average length of therapy of use of these medications were similar in the non-elderly and the elderly patients, possibly indicating a lack of systemic mechanisms to restrict use among older patients. Considering the risk of adverse events when these medications are used inappropriately, targeted interventions by general internists to reduce and monitor utilization are required.

PREVALENCE OF TORTURE SURVIVORS AMONG FOREIGN-BORN PATIENTS AT AN URBAN AMBULATORY CARE PRACTICE. S.S. Crosby[1]; M. Norredam[1]; L. Piwowarczyck[1]; M. Paasche-Orlow[1]; G. Michael[1]. [1]Boston University, Boston, MA. *(Tracking ID #116604)*

BACKGROUND: The prevalance of torture among foreign-born patients presenting to urban medical clinics is not well documented. The objectives of this study are to determine the prevalence of torture, as defined by U.N. criteria, among foreign-born patients presenting to the Primary Care Clinic at Boston Medical Center, the rate of prior disclosure of torture to healthcare providers, and the association between torture and duration in the U.S.
METHODS: To fulfill these objectives, we conducted a survey on a convenience sample of patients presenting to the Boston Medical Center Primary Care Clinic who were, according to adminstrative data not born in the U.S. or its territories. The survey was modified from the instrument developed by Eisenman et al. Patients reporting a positive history of torture were subsequently referred to The Boston Center for Refugee Health and Human Rights. Subjects who required translation were excluded if no professional translator was present.
RESULTS: Of the 267 potential subjects screened, 100 were deemed ineligible due to being born in the U.S. or due to lack of a professional translator. Of the 167 eligible subjects, 116 (69%) chose to participate in the survey. This population had a mean age of 46 years (range 19–75), was mostly female (67/116, 58%), had been in the U.S. for an average of 12.7 years (range 1 month ¨C 53 years), and came from 24 different countries. Fully 29/116 (25%) reported a history of being personally tortured or having a family member tortured. Among these patients 24 (83%) reported a history of being personally tortured, 5 (17%) reported a history of torture experienced by a family member only, and 19 (66%) reported both personal and family member experience of torture. The U.N. definition of torture was met in 26/29 (90%) of these cases. While most patients (16/29, 55%) reported discussing their experience of torture with a health care provider, 11/29 (38%) reported that this survey was their first disclosure to anyone in the U.S. Subjects in the U.S. for ¡Ü3.5 years had a significantly higher rate of reporting a history of torture than subjects who had been in the U.S. >3.5 years (50% versus 14.6%, respectively, $P < .001$).
CONCLUSION: Among foreign-born patients presenting to an urban primary care center approximately 1/4 met the definition established by the U.N. Convention Against Torture. More than a third of these subjects had never disclosed prior to this survey. As survivors of torture may have significant psychological and physical sequelae these data underscore the necessity for primary care physicians to screen for a torture history among foreign-born patients.

PREVENTING MEDICATION ERRORS IN AMBULATORY CARE: THE IMPORTANCE OF ESTABLISHING REGIMEN CONCORDANCE. D. Schillinger[1]; E. Machtinger[1]; F. Wang[1]; M. Rodriguez[1]; A.B. Bindman[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115233)*

BACKGROUND: Medication miscommunication between patients and providers can have serious consequences. Because oral anticoagulants are associated with preventable adverse events at disproportionately high rates, we used the model of anticoagulant care to examine the extent to which regimen discordance between patient and provider contributes to unsafe medication management.
METHODS: We performed a study among 220 chronic warfarin users in an anticoagulation clinic to characterize the importance of two components of medication assessment. We measured (1) adherence to warfarin by asking patients to report missed doses in the prior 30 days and (2) concordance between patients' and providers' reports of patients' prescribed warfarin regimen. We categorized patients as having complete adherence if they reported missing no doses, and regimen concordance if there was patient-provider agreement in the total weekly dosage. We then examined the independent relationship between (a) adherence and anticoagulant outcomes and (b) concordance and anticoagulant outcomes. We characterized anticoagulant outcomes as unsafe if INR values were either <2.0 (at risk for thrombosis) or > 4.0 (at risk for hemorrhage) over 90 days, using repeated measures analysis.
RESULTS: One hundred and eighty-three patients (83%) reported never missing a warfarin dose over the prior 30 days. After adjusting for patient age, language, health literacy score and comorbidities, poor adherence was associated with under-anticoagulation (AOR 2.38, $P < .001$) but not with over-anticoagulation (AOR 0.74, $P = .38$). One hundred and ten patients (50%) reported warfarin regimens that were discordant with clinicians' report. Among adherent patients, discordance was associated with both under-anticoagulation (AOR 1.67, $P = .05$) and over-anticoagulation (AOR 3.44, $P = .01$). There was no association between patients' reports of adherence and concordance (OR 1.07, $P = .86$).
CONCLUSION: Discordance between clinicians and patients regarding warfarin regimens is unsettlingly common and places patients at risk for thrombo-embolic and hemorrhagic events. Simply asking patients about their adherence can overlook those adherent to incorrect regimens. To promote safe and effective care, clinicians should sequentially determine adherence (missed doses) and regimen concordance during routine medication assessment.

PRIMARY CARE CLINICIAN ATTITUDES TOWARD COMPUTER-BASED CLINICAL REMINDERS. A. Agrawal[1]; M. Mayo-Smith[2]. [1]Harvard Medical School, Boston, MA; [2]VA New England Healthcare System, Bedford, MA. *(Tracking ID #116501)*

BACKGROUND: Computer-based clinical reminders (CRs) have been shown to improve quality and cost effectiveness and decrease undesirable variation in clinical practice. Understanding clinicians' attitude toward CRs is important to ensure the success of CRs system implementation. The objective of our study is to measure clinicians' attitude toward CRs in a large integrated healthcare network.
METHODS: A cross-sectional survey of 239 primary care clinicians (62.3% physicians, 26.3% NPs and 11.3% PAs) was conducted in 49 primary care clinics in the VA New England Healthcare Network. All clinicians in the network utilize a single computer-based patient record system including 18 standardized CRs for preventive care (e.g. Pneumovax), therapeutics (e.g. beta-blockers after MI), and diagnostic tests (e.g. hepatitis C screening). The survey used a 5-point Likert scale, asking for degree of agreement with 10 statements (1 = strongly disagree, 5 = strongly agree), assessment of current number of CR (1 = too many, 5 = too few) and "overall attitude regarding CRs" (1 = very unfavorable, 5 = very favorable).
RESULTS: The overall response rate was 53%. Mean Likert scores for all questions are as the following. Overall attitude regarding CRs: 3.25, Overall number of CRs currently in place: 2.00, CRs improve overall quality of care: 3.68, CRs improve preventive health care: 4.04, CRS improve quality of documentation: 3.78, CRs save time it takes a provider to complete a visit: 2.31, CRs save time it takes a provider to document: 2.76, Adequate support staff in clinic for CRs work: 2.8, I have received adequate training about CRs: 3.50, CRs do not reduce provider autonomy: 3.00, CRs compliance important in my evaluation: 3.66, I complete CRs at every patient visit: 4.33.
CONCLUSION: Primary care clinicians had overall favorable attitude toward CRs, believed CRs improve quality of overall care (particularly preventive care), and made completion of CRs a routine part of every visit. However, most clinicians expressed concern about the time it takes to complete CRs during a patient visit and in our system, a majority felt that there were too many CRs. If CRs are to attain their full potential as a tool to improve patient care, attention must be paid to minimizing clinician time they take to complete, and the syndrome of "reminder fatigue" should be avoided. It would also be worthwhile to investigate how variation in clinician attitude towards CRs influences CR adherence.

PRIORITIZING YOUR INPATIENT TEACHING AND FEEDBACK ACTIVITIES. D. Torre[1]; D.E. Simpson[1]; J. Sebastian[1]; B. Konicek[1]; R. Geck[1]; S. Schwantes[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #115929)*

BACKGROUND: Previous research with third year medical (M3) students has shown that receiving high quality feedback is associated with students' perception of high quality teaching. Using real-time data collected from student PDA logs, we sought to identify specific teaching venues and feedback activities that are associated with the perception of high quality teaching among M3 students during their required internal medicine (IM) clerkship.
METHODS: From July to October 2003, seventy M3 students who were rotating on their two-month IM clerkship used daily PDA logs to record information on 1281 inpatient teaching encounters. Univariate (chi-squared) and multivariate (stepwise multiple logistic regression) analyses were performed to assess the association between various clerkship-related activities and student perceptions of high quality teaching.
RESULTS: Students reported that feedback from faculty during encounters was provided for specific clerkship-related teaching/learning activities as follows: formulating a differential diagnosis(DDX) 47%, presenting an oral case summary 46%, teaching/learning at the bedside 37%, preparing a written H&P 36%, writing a progress notes 23%. Univariate analysis showed that: (1) receiving feedback at the bedside, (2) receiving feedback on H&Ps, oral presentations, DDX, or progress notes and, (3) participating in mini-lectures, x-ray rounds or ECG teaching sessions were all associated with a perception of high quality teaching ($P < .05$). In multivariate analysis, receiving feedback at the bedside, receiving feedback on oral presentations, and teaching that incorporated x-ray and/or ECG findings remained strong predictors of high quality teaching ($P < .01$).

CONCLUSION: Providing feedback at the bedside and after case presentations as well as teaching test interpretation skills (x-rays and ECGs) are perceived by M3 students as high quality teaching activities. As the time to teach becomes more compressed, this information may help clinician educators prioritize their teaching activities. Further research is needed to determine if these findings can be generalized to other learners, other teaching venues and other institutions.

PROFESSIONALISM IN HOUSE OFFICERS: SURVEY OF INTERNAL MEDICINE RESIDENCY PROGRAM DIRECTORS. M.T. Hughes[1]; R.S. Hebert[2]; T. Rice[1]; D.M. Levine[1]. [1]Johns Hopkins University, Baltimore, MD; [2]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116900)*

BACKGROUND: Professionalism is a topic that has received greater attention in medical training over the past decade. We sought to determine how professionalism is taught in internal medicine residency programs and the attitudes of program directors about such instruction.
METHODS: A cross-sectional, self-administered survey was sent to all U.S. English-speaking internal medicine program directors (PDs) listed at the ACGME website. Three mailings occurred between April and June 2003, with follow up phone calls to nonresponders until September 2003. Descriptive statistics were used to analyze the data, and *t* tests, chi square tests, or odds ratios were performed for comparisons.
RESULTS: The survey was completed by 140/375 (37%) of PDs. Of the responders, the majority (60%) were based at a community hospital that was affiliated with a medical school and 30% were at a university hospital with a medical school. Most programs (81%) make an explicit attempt to teach professionalism, and nearly half provide an explicit statement of expectations. Only 21% of programs provide faculty development in teaching or evaluating professionalism. Residents receive less than 20 hours of exposure to professionalism over 3 years of training in 85% programs (54% have 0–10 hours). Among the variety of methods used to teach professionalism, the most common are role modeling (99%), during orientation (89%), integrated into other courses (62%), as a component to multiple courses (49%), or organized self-awareness courses (49%). Non-university programs are more likely to have a single course (OR 1.73, 95% CI 1.00–3.01). PDs rated role modeling as the most effective method for teaching professionalism. In a Likert scale of importance in teaching (1 = utmost importance, 5 = no importance), the highest rated elements of professionalism were honesty/integrity (1.12) and putting patients' needs first (1.43); the lowest rated elements were ethical business practice (2.58) and volunteerism (2.76). Most PDs (93%) agreed that residency training has a major influence on physicians' professional values and attitudes. A global rating by faculty was felt to be the most effective method for evaluating professionalism, followed by nurse assessment and peer assessment. Clinical demands on both residents and faculty were considered the biggest obstacles to professionalism among house officers.
CONCLUSION: PDs recognize the importance of professionalism and its elements in the development of physicians in training. Despite this, 19% of programs make no explicit attempt to teach it. Few programs have faculty development in professionalism or devote significant time to teaching professionalism to residents. Future research should examine whether the goals of education in professionalism are being met.

PROVIDER RECOMMENDATION FOR MAMMOGRAPHY: DOES BREAST CANCER RISK MATTER? S.A. Sabatino[1]; E.P. McCarthy[1]; R.B. Davis[1]; R.S. Phillips[1]; R.B. Burns[1]. [1]Beth Israel Deaconess Medical Center, Boston, MA. *(Tracking ID #116749)*

BACKGROUND: Provider recommendation and increased breast cancer risk are associated with higher mammography rates. However, the relation between provider recommendations for mammography and risk is unclear. We examined the association between breast cancer risk and provider recommendation for mammography in unscreened women.
METHODS: We studied 2407 women aged 40–75 years without prior cancer or mammography in the past 2 years in the 2000 National Health Interview Survey. We assessed breast cancer risk by 5-year Gail score (>1.66% defined increased risk), and individual risk factors (age, age at menarche, age at 1st birth, prior biopsy, family history, prior abnormal mammogram). Other factors included access to care, sociodemographics and cancer risk perception. We used multivariable logistic regression to examine the effect of risk on provider recommendation for mammography within the prior year after adjusting for age and race. We used SUDAAN for all analyses.
RESULTS: Of 2407 unscreened women (representing 13.5 million women nationwide), 21% reported a provider recommendation in the prior year. Of women with >1 healthcare visit in the prior year (n = 1,726), 27% reported a provider recommendation vs.1% of women with no visit. Women at increased risk by Gail score (n = 262) were less likely to report a recommendation than average-risk women (19% vs. 22%, $P > .05$). In unadjusted analyses, we found no significant difference in provider recommendation for any breast cancer risk factor. After adjustment, women at increased risk by Gail score were less likely to report a recommendation than average-risk women although this was not significant (adjusted OR 0.72, 95% CI [0.44, 1.19]). No individual breast cancer risk factors entered the final model. Women with no PCP or GYN contact in the prior year (0.49, [0.30, 0.82]) and women with no healthcare visit in the prior year (0.04, [0.01, 0.12]) were less likely to report a provider recommendation, whereas women with income >$65,000 (1.58, [1.05, 2.37]), contact with a PCP and GYN (1.68, [1.19, 2.36]), and >3 healthcare visits in the prior year (1.41, [1.00, 1.97]) were more likely to report a recommendation.
CONCLUSION: Most unscreened women reported no provider recommendation for mammography. Even among women who saw a provider, only 27% reported a recommendation. Breast cancer risk did not influence recommendations, as women at increased risk for breast cancer were no more likely to report a recommendation than average-risk women. Unscreened women should be targeted for screening recommendations, especially women at high risk for breast cancer.

PROVIDING HEALTH CARE SERVICES TO THE FORMERLY HOMELESS: A QUASI-EXPERIMENTAL EVALUATION OF OUTCOMES. A.L. Ciaranello[1]; R.L. Kravitz[1]; F. Molitor[2]; M. Leamon[1]; C. Kuenneth[1]; D.J. Tancredi[1]; A. Diamant[3]. [1]University of California, Davis, Sacramento, CA; [2]ETR Associates, Sacramento, CA; [3]University of California, Los Angeles, Los Angeles, CA. *(Tracking ID #103901)*

BACKGROUND: Transitional housing programs are designed to re-integrate homeless individuals into the community, but housing alone is unlikely to alleviate chronic health problems acquired during homelessness. Using a quasi-experimental design, we evaluated the effects of a focused health care intervention (the HEALTH Project) on access to needed care, delivery of preventive services, and health status for residents of transitional housing facilities (THFs) in one northern California city.
METHODS: Beginning in Fall, 1999, a multidisciplinary team provided direct services (comprehensive physical examinations, diagnostic studies, referrals, social services, and counseling) to residents at 4 intervention THF sites. Survey and physical examination data were collected from residents of the 4 intervention sites and 2 control sites at baseline and 6 and 18 months later. Outcomes were evaluated using mixed effects models that accounted for missing observations and clustering by site and estimated the effects of the program (intervention vs. control) over time while adjusting for residents' baseline sociodemographic characteristics.
RESULTS: Survey and physical examination participation rates exceeded 70% at all sites. HEALTH Project staff delivered services to 511 THF residents in more than 2400 clinical encounters. The Project significantly reduced the odds of "not receiving medical care when needed" (adjusted OR 0.42, 95% CI 0.26–0.69, $P < .05$). There was also a significant improvement in the receipt of gynecologic preventive services: Papanicolaou tests within the past year among female residents 18 years of age or older (AOR 7.52; 95% CI 2.37–23.86) and mammograms within the preceding two years among women aged 40 years or older (AOR 9.54, 95%CI 1.36–67.02). The intervention had no effect on access to specialists, dentists, or optometrists; on frequency of emergency department visits or hospital admissions; on timeliness of care; on self-reported health status; or on blood pressure or vision ($P > .05$ in all cases).
CONCLUSION: The HEALTH Project reflected successful community collaboration and met several clinically relevant goals in improving access to care. The intervention had robust effects on proximal outcomes (those directly provided or easily arranged by the on-site health care team) but failed to impact more distal outcomes. These results highlight the challenges of implementing health care outreach for residents of transitional housing programs and may inform the design of future interventions.

PROVIDING MEDICAL CARE IN A RETAINER PRACTICE: WHO DOES IT, AND FOR WHOM? M. Wynia[1]; G. Alexander[1]; J. Matiasek[2]; S. Arekapudi[3]; S. Taub[2]; J. Kurlander[2]. [1]University of Chicago, Chicago, IL; [2]American Medical Association Institute for Ethics, Chicago, IL; [3]Northwestern University School of Medicine, Chicago, IL. *(Tracking ID #116841)*

BACKGROUND: Retainer practices in medicine, wherein patients pay an up-front fee for special amenities, are becoming increasingly common despite raising some concerns. We conducted the first-ever national survey of physicians, oversampling those in retainer practice, to better understand the physicians and patients involved in this trend.
METHODS: Mail survey conducted in late 2003 of a national random sample of 1,096 physicians (44% response rate) and an additional 172 physicians in retainer practice (42% response rate). Retainer physicians were obtained using snowball sampling in all major US cities.
RESULTS: Compared to other physicians, those in retainer practice are more often male (84% v 73%, $P = .03$), earlier in their careers (16.8 v 19.1 years, $P = .04$), have much smaller patient panels (mean 830 v 2,552, $P < .001$) and fewer patient encounters/day (11.4 v 23.1, $P < .001$). They have been in retainer practices for a mean of only 17 months (median 12). These practices are more likely to offer services such as accompanied visits to specialists (34% v 0.9%), house calls (70% v 16%), direct access to physicians via pager/cellphone (93% v 42%), same-day appointments (97% v 79%) direct coordination of inpatient care (91% v 54%) and private waiting areas (31% v 4%, all $P < .001$). Patients in these practices have diabetes, hypertension, and coronary disease approximately as often as do patients of non-retainer internists and family physicians, but fewer are in fair or poor health (29% v 37%, $P = .01$) and they are much less likely to be African American, Hispanic or on Medicaid (69% have <5% African American patients, 80% have <5% Hispanic patients, and 78% have <5% Medicaid patients, all $P < .001$ compared to non-retainer physicians). Relatively few of physicians' patients remain when practices convert to a retainer system (mean 12%, median 10%). Most physicians (80%) in retainer practices have kept some patients who do not pay the retainer fee (mean 15%, median 10%). Physicians in retainer practice may spend less time providing charity care (8.5 v 11.1 hours/month, $P = .059$).
CONCLUSION: Physicians entering retainer practices see far fewer patients—on average, 88% of their former patients do not join the retainer practice. These

physicians care for very few ethnic minority patients or patients on Medicaid. Since these practices are relatively new and most retainer physicians have not made a complete conversion, these trends may increase over time.

PROVIDING PREVENTIVE HEALTH CARE TO LOW INCOME UNINSURED WOMEN USING A COMMUNITY PARTNERED MOBILE VAN PROGRAM. R. Singhal[1]; A.Y. Chan[2]; E. Eidem[3]. [1]VA Greater Los Angeles HSR&D Center of Excellence, Sepulveda, CA; [2]Data Collection and Analysis Unit, Los Angeles County Department of Health Services, Los Angeles, CA; [3]Office of Women's Health, Los Angeles County Department of Health Services, Alhambra, CA. *(Tracking ID #117160)*

BACKGROUND: Providing preventive health care to uninsured women is one of the foremost challenges facing many urban communities. The health of these women has large impacts on their families and communities, but they often do not access needed services. Transportation difficulties, long work hours, crowded health care settings, and the demands of caring for children are among the many barriers they may experience. This study describes a unique method that overcomes these barriers to provide access to preventive care for this population in Los Angeles County.
METHODS: The Los Angeles County Office of Women's Health worked with community partners to develop a mobile van program that provided preventive health care to low income, uninsured women in a mobile setting. Venues were selected using input from community organizations and included religious institutions, consulates, recovery homes, adult schools and health fairs. Health screenings for hypertension, hyperlipidemia, diabetes, cervical and breast cancers were provided at no cost for all women. A survey administered by a multilingual staff collected demographic, socioeconomic and access data from program participants. Women with detected abnormalities were contacted by mail and telephone, and follow-up appointments were made in community and county clinics.
RESULTS: 822 women with a mean age of 46 years were seen over 10 months at 47 events. 94% of the women came from families living at less than 200% of the federal poverty level and 75% were born outside of the United States. Only 25% reported having a regular source of care and over 90% were uninsured. Self reported receipt of preventive services indicated that 24% and 20% of the women had never been screened for diabetes and hyperlipidemia respectively. 33% of the women had not seen a physician in over 2 years. In addition, 10% had never had a Pap smear and 22% had not received a Pap smear in over 3 years. 38% of women over 50 years had not received a mammogram in 2 years or more. Of those that were screened, results indicated that 25% of participants were found to have an elevated blood pressure, 28% were found to have hyperlipidemia, and 15% screened positively on the diabetes screen. An abnormal breast exam was found in 5% of the women and 6% had an abnormal Pap smear.
CONCLUSION: A community partnered mobile van program can effectively provide preventive health care to a population of low income, uninsured women in an urban setting by overcoming access barriers. Additionally, the data suggests that the disease burden in the relatively young population served was substantial.

PSYCHIATRIC DISEASE AND HYPERCHOLESTEROLEMIA IN A HOSPITAL-BASED PRIMARY CARE CLINIC. R.A. Kaplowitz[1]; M.J. Fagan[2]. [1]Boston Veterans Affairs Healthcare System, Boston, MA; [2]Brown University, Providence, RI. *(Tracking ID #116618)*

BACKGROUND: Although several national clinical guidelines recommend screening for and treatment of hypercholesterolemia to reduce the risk of cardiovascular events, disparities in rates of cholesterol testing and treatment associated with psychiatric disease have not been well studied.
METHODS: We completed a cross-sectional study of patients in a primary care setting, with data acquired by chart review. Eligible subjects were adult patients of a hospital-based primary care clinic who had at least 3 visits with a physician or nurse practitioner over a 5-year period. We reviewed medical records for documentation of current demographic information, cardiovascular risk factors, substance abuse, psychiatric disease, and prescription for cholesterol-lowering medication. Using laboratory data in the medical record, we identified the most recent serum total cholesterol value for subjects who received a cholesterol test within a 5-year period. We compared all categorical data of subjects with and without a psychiatric diagnosis using Pearson's Chi-square, and compared the mean ages and mean serum total cholesterol values of the two groups using the independent samples t test.
RESULTS: Of 450 eligible subjects, 238 randomly selected outpatient charts were requested, and 197 medical records were available for review. The mean age (±SD) of subjects was 58 ± 15, 45% of subjects were White, 63% were female, and 5% had no medical insurance. 39% of subjects had a documented psychiatric disease; 29% had a mood disorder, 10% had an anxiety disorder, 7% had a thought disorder, and 8% had more than one psychiatric diagnosis. Subjects with and without psychiatric disease had similar demographic characteristics, rates of cardiovascular risk factors, and rates of substance abuse. 33% of subjects with psychiatric disease and 32% of the control group had a clinical diagnosis of hypercholesterolemia ($P = 1.00$). 33% of subjects with psychiatric disease and 26% of the control group were prescribed cholesterol-lowering medication ($P = .34$). 92% of subjects with psychiatric disease had been tested for hypercholesterolemia within 5 years, and 93% of subjects without a psychiatric diagnosis had been tested ($P = .91$). The mean serum total cholesterol was 198 ± 36 for patients with psychiatric disease, and was 183±41 for those without psychiatric disease ($P = .02$).
CONCLUSION: In a hospital-based primary care clinic population, psychiatric disease was not associated with different rates of testing for hypercholesterolemia, clinical diagnosis of hypercholesterolemia, or prescription for a cholesterol-lowering medication. We observed higher mean serum total cholesterol levels in subjects with psychiatric disease. Further study is needed to examine the implications of these findings.

PSYCHOSOCIAL RISK FACTORS FOR ADVERSE OUTCOMES IN PATIENTS WITH NONVALVULAR ATRIAL FIBRILLATION RECEIVING WARFARIN. D.P. Schauer[1]; M.H. Eckman[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #116370)*

BACKGROUND: Warfarin has been shown to decrease the rate of thromboembolic events in patients with nonvalvular atrial fibrillation (AF) but is frequently underprescribed. Our goal was to establish whether psychosocial risk factors for nonadherence, previously identified as negative predictors of warfarin prescribing, are in fact predictors of adverse events for patients with nonvalvular AF receiving warfarin.
METHODS: A retrospective cohort was identified of Ohio Medicaid recipients with nonvalvular AF receiving warfarin. Substance abuse, psychiatric illness and social factors were identified as conditions perceived to be barriers to adherence. Adverse events including stroke, intracranial hemorrhage, and gastrointestinal bleeding were identified from the database. Multivariate hazard ratios were calculated for each risk factor using a Cox Proportional Hazard model.
RESULTS: 9,068 patients were identified as having nonvalvular AF and receiving two or more warfarin prescriptions between 1997 and 2002. Substance abusers had the highest adjusted hazard ratio of 3.1 (95% CI: 2.0, 4.9) for an intracranial hemorrhage while receiving warfarin, followed by psychiatric risk factors with an adjusted hazard ratio of 2.4 (95% CI: 1.8, 3.2). Substance abusers also had an adjusted hazard ratio of 1.8 (95% CI: 1.4, 2.4) for a stroke. Patients in all identified risk categories were at an increased risk of any event (stroke, intracranial hemorrhage or gastrointestinal bleed).
CONCLUSION: Patients with nonvalvular AF treated with warfarin who have psychosocial risk factors suggesting non-adherence have an increased risk of adverse events. This suggests that if patients with these risk factors are anticoagulated, more cautious monitoring of their International Normalized Ratio is required to decrease the risk of both thromboembolic and hemorrhagic events.

QUALITY OF EDUCATION LITERATURE ON CULTURAL COMPETENCE TRAINING OF HEALTH PROFESSIONALS. E.G. Price[1]; M.C. Beach[1]; T. Gary[2]; K. Robinson[2]; A. Gozu[1]; A.M. Palacio[1]; C. Smarth[1]; M.W. Jenckes[1]; C. Feuerstein[1]; E.B. Bass[1]; N.R. Powe[1]; L.A. Cooper[1]. [1]Johns Hopkins University School of Medicine, Baltimore, MD; [2]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD. *(Tracking ID #115829)*

BACKGROUND: Medical education accreditation bodies mandate cultural competence training of health professionals. However, to date there has been limited examination of the rigor of the evidence on which cultural competence interventions might be based.
METHODS: We systematically reviewed English language articles published from 1980–2003 to examine characteristics of cultural competence interventions targeted at health professionals associated with high quality. We used a standardized instrument to assess five domains of study quality (representativeness, intervention description, bias and confounding, outcome assessment, and analytic approach).
RESULTS: Of 64 eligible articles, most articles were published recently (1980–89, n = 5; 1990–1999, n = 30; 2000–2003, n = 29). The study designs included trials (n = 10), pretest-posttest (n = 22), posttest only (n = 27) and qualitative (n = 5). Targeted providers were nurses (n = 32), physicians (n = 19) and other/mixed (n = 13). Sample size varied widely (<50 subjects, n = 25; 50–200 subjects, n = 21; >200 subjects, n = 8; not specified, n = 10). With a maximum possible score of 100, 44 studies had total quality scores <50%, 18 had scores between 50–79%, and only 2 had scores >80%. By domain, 21 articles described provider representativeness, 22 completely described interventions, 11 had appropriate comparison groups, 27 used objective evaluations, and 15 had complete statistical analyses. Articles published in 2000–2003 were somewhat more likely to completely describe the intervention ($P = .061$) than earlier publications. Trials and pretest-posttest studies more often completely described targeted providers and control groups, reported objective evaluations and conducted complete statistical analyses (all $P < .05$) than studies employing other designs. Studies targeted at physicians more often described providers ($P = .007$) and interventions completely ($P = .026$) than trials targeted at other providers. Studies with smaller numbers of subjects (<50) more often reported blinding of outcome assessors ($P = .035$) than larger studies. There were no associations of quality with the intervention length, location of study or type of journal.
CONCLUSION: The quality of the evidence from interventions to improve cultural competence is generally poor, but it may be improving over time and better in studies targeted at physicians. Large sample size is not necessarily an indicator of study quality. Cultural competence interventions need evaluation strategies that adhere to basic principles of study design and performance.

QUALITY OF MOTIVATIONAL INTERVIEWING AND ANTIRETROVIRAL ADHERENCE. A.D. Thrasher[1]; C.E. Golin[1]; J.L. Earp[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #117461)*

BACKGROUND: Motivational interviewing (MI) is a client-centered counseling style shown to effectively improve the health behavior of individuals. Although research explicitly linking MI to behavior change exists, few studies report on the quality of MI or discuss how that quality influences its effectiveness. This study examines the relationship between the quality of MI and adherence to antiretroviral therapy (ART) in the context of the PACT study, a randomized, controlled trial of an MI-based intervention.

METHODS: The PACT trial, among 158 HIV-infected patients failing their current regimen, tested the effectiveness of a theory-based, multi-component intervention to improve ART adherence compared with educational control sessions. Among the first 50 people randomized to receive the MI-based intervention, we evaluated the quality of the audiotaped, professionally transcribed MI sessions using the Motivational Interviewing Skill Code (MISC), a standardized MI coding scheme. The MISC both globally assesses patient-counselor interactions and counts specific, defined, communication behaviors of therapist and client. Using the MISC, we measured the proportion of interactions that achieved a standardized quality level for 22 specific, counseling behaviors and 6 global measures. We assessed ART adherence using electronic bottle cap monitor and pill count data, at 4, 8, and 12 weeks follow-up. We evaluated the correlation between ART adherence and specific MI counseling behaviors.
RESULTS: The sample (n = 48) was predominantly male (70%) and minority (90%), with an average age of 40 years. The average adherence level at exit was 85% (range: 5–100%). On 4 of 5 behavioral indicators, the majority of MI sessions achieved the targeted quality level: 66.7% achieved it for global therapist rating; 87.5% for reflections to questions ratio; 33.3% percent for open questions; 95.8% percent for complex reflections; 100% for MI-consistent statements. On a 7-point scale, the interviewers were rated highest on "genuineness" (5.3) and "warmth" (5.3), and lowest on "egalitarianism" (4.0). (3) Interviewer behaviors significantly associated with or trending towards an association with ART adherence were: total number of facilitative comments (r = .42, P = .026); total number of paraphrases (r = 35, P = .069); number of open-ended questions asked (r = 34, P = .077); and ratio of reflections given to questions asked (r = .32, P = .097).
CONCLUSION: These results suggest that high quality MI can be conducted within the structure of a randomized, controlled trial and that MI quality may influence its effectiveness. Further studies are needed to tease out the specific counseling behaviors most closely associated with behavioral change.

QUALITY OF PREVENTIVE CARE AND USE OF THE INTERNET FOR HEATH INFORMATION IN THE USA. C. Sciamanna[1]; M.L. Rogers[2]; J. Diaz[3]; B. Lewis[1]. [1]Brown University, Providence, RI; [2]The Miriam Hospital, Providence, RI; [3]Brown University, Pawtucket, RI. *(Tracking ID #116610)*

BACKGROUND: More than half of Americans have used the Internet to look for health information, yet little is known about the impact of these activities. We undertook the following analysis to understand the association between use of the Internet for health care information and the quality of preventive care. We hypothesized that Internet users would have greater access to information about preventive services, which would make them more likely to seek out and receive preventive health services, such as pap testing, mammography and colon cancer screening.
METHODS: A telephone survey was conducted in 2001, among a nationally representative sample of 6,722 adults in the USA. Subjects were asked about their use of the Internet for health information, their use of selected preventive services and other demographic and health-related measures. Weighted analyses were performed using SUDAAN and logistic regression was used to adjust for potential confounders. For each preventive screening test, age and gender subgroups were based on consensus recommendations from the United States Preventive Services Task Force.
RESULTS: The survey response rate was 72.8%. Overall, 46.7% of respondents reported using the Internet for health information and 17.0%, 18.6%, 33.3% and 16.9% were not up to date with recommended pap testing, mammography, colon cancer screening and cholesterol testing, respectively. Subjects who reported using the Internet for health information "very often" or "not too often" were 1.7 [95% Confidence Interval (CI); 1.0–2.7] and 1.6 [95% Confidence Interval (CI); 1.0–2.3] times more likely, respectively, to report cholesterol testing in the previous 5 years than those who reported not using the Internet for health information. Using the Internet for health information was not associated with reporting a pap test, mammogram or colon cancer screening, after adjusting for potential confounders.
CONCLUSION: Use of the Internet as a source of health information is associated with receipt of some, but not other, preventive services.

QUANTIFYING THE PREVALENCE OF OSTEOPOROSIS AMONG INDIVIDUALS WITH SICKLE CELL DISEASE. R.G. Miller[1]; S. Lanzkron[1]; J.B. Segal[1]; B. Ashar[1]; S. Leung[1]; S. Siddique[1]; S. Ahmed[1]; T. Rice[1]. [1]The Johns Hopkins University School of Medicine, Baltimore, MD. *(Tracking ID #117210)*

BACKGROUND: Sickle cell disease is a common genetic disorder affecting 1 in 400 African-Americans. Accelerated marrow turnover due to hemolytic anemia and poor blood flow from capillary sludging are hypothesized to adversely affect bone mineral density. Osteopenia and osteoporosis have been demonstrated in children with sickle cell disease, but there are minimal data on bone mineral density in adults. We aimed to establish the prevalence of osteopenia and osteoporosis in adults with sickle cell disease and to identify clinical features associated with low bone mineral density.
METHODS: Adult participants with sickle cell disease were recruited from the Johns Hopkins Sickle Cell Clinic and from posted advertisements. Consenting participants completed a questionnaire eliciting details of their sickle cell disease, medications, traditional risk factors for osteoporosis, and fracture history. We measured central and peripheral bone mineral density with a Hologic DEXA scanner and assayed blood and urine samples for markers of bone turnover and disease activity. Comparisons between groups were performed with t-tests, Wilcoxon rank sum tests, and Fischer's exact test as appropriate.
RESULTS: The mean age of the 12 men and 17 women with sickle cell disease was 35 years with a range from 18 to 51 years. Nineteen had SS disease, 8 had SC disease, and 1 had S—thalessemia. Of these 29 patients, 70% [95% C.I. 49 to 85%] had low bone mineral density; 10 had osteoporosis and 10 had osteopenia at one or more sites. The prevalence of osteoporosis was greatest in the lumbar spine (34.5% of participants). In these young patients, the Z-scores and T-scores were highly correlated at each site of measurement (correlation coefficient >0.95 at each site). The mean age did not differ significantly between patients with and without low bone mineral density (P = .73). The proportion of men with a diagnosis of osteopenia or osteoporosis exceeded the proportion of women (92% versus 53%, P = .043). The mean body mass index among patients with osteopenia or osteoporosis was lower (22.3 kg/m^2) than among patients without this diagnosis (28.2 kg/m^2, P = .04). The proportions of patients with low bone mineral density did not differ between patients with SC and patients with SS disease (P = 1.00). There were no significant differences in the concentrations of osteocalcin and N-telopeptide between patients with normal bone density and those with osteopenia or osteoporosis (P = .90 and P = .80, respectively).
CONCLUSION: African-Americans with sickle cell disease have a high prevalence of osteopenia and osteoporosis. Future research is needed to evaluate the fracture risk in this population and assess responsiveness of bone density to therapies.

RACE AND THE FAMILY HISTORY ASSESSMENT FOR BREAST CANCER IN PRIMARY CARE. H. Murff[1]; J.S. Haas[2]; A. Puopolo[2]; T. Brennan[2]. [1]Department of Veterans Affairs, Tennessee Valley Healthcare System, Nashville, TN; [2]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116056)*

BACKGROUND: Numerous studies have demonstrated disparities in breast cancer screening care between ethnic groups. Knowledge of a woman's family history of breast cancer can be important for initiating early screening interventions and genetic testing. No data exists which examines if differences are present in the collection of family history information based on patient race.
METHODS: Cross-sectional patient survey and medical record review conducted from August 1996 to September 1997 of women seen in one of eleven primary care practices in the Greater Boston area. Data was collected from the patient concerning self-reported race and education level, and from the patients medical record concerning the family history interview for breast cancer and breast cancer screening interventions.
RESULTS: One thousand seven hundred and eighty-nine women were included in the analysis. Seventy-two percent of the sample described themselves as white, 12% as African-American, and 12% of Hispanic descent. Twenty-six percent (470/1,789) of the sample had documentation within their medical record of a family history for breast cancer being recorded. Of women asked about their family breast cancer history, 84% were white, 7% African-American, and 6% of Hispanic descent. Patients with a positive family history of breast cancer were more likely to have a clinical breast exam performed, (73% versus 66%, P-value = 0.02) be taught self-examination skills, (41% versus 32%, P-value = 0.003) and have had mammogram screening (65% versus 50%, P-value < 0.0001) than patients with no family history of breast cancer. On multivariate analysis, after adjusting for patient age, education, personal history of breast cancer, number of years seen in the provider's practice, language, and presentation with a breast complaint, white women were more likely to be asked a family history of breast cancer when compared to non-white women (odds ratio = 2.51, 95% confidence interval 1.82 to 3.46, P-value < 0.0001).
CONCLUSION: The majority of women seen by primary care providers are not asked whether breast cancer is present within their family. White women were more likely to be asked if they have a family history of breast cancer by their primary care provider than non-whites even after adjusting for patients education and language.

RACE/ETHNICITY-SPECIFIC MORTALITY AND COMPLICATION RATES AFTER KNEE REPLACEMENT. S. Ibrahim[1]; R. Stone[2]; X. Han[3]; S. Khuri[4]; W. Henderson[5]; K. Kwoh[2]. [1]Veterans Administration, Pittsburgh, PA; [2]University of Pittsburgh, Pittsburgh, PA; [3]VA Pittsburgh, Pittsburgh, PA; [4]VA Boston Healthcare System, West Roxbury, MA; [5]University of Colorado, Aurora, CO. *(Tracking ID #117047)*

BACKGROUND: Knee osteoarthritis (OA) is leading cause of disability among the elderly. Knee replacement is an effective treatment option for end-stage disease. There is marked and unexplained racial disparity in the utilization of knee replacement. Compared to whites, African-American (AA) patients expect poor outcomes from joint replacement surgery and consequently are less willing to consider this option. There is limited data on racial/ethnic differences on knee replacement. We utilized the VA National Surgical Quality Improvement Program database (NSQIP) to examine racial/ethnic differences in 30-day mortality and complication rates following elective knee replacement.
METHODS: The study population consisted of 12,108 patients in the VA National Surgical Quality Improvement Program database who underwent elective knee replacement surgery between 1995 and 2000. Using variables from a previously validated risk adjustment model for orthopedic surgery, we modeled the probability of infectious complications, non-infectious complications, and no complications following elective joint replacement. We used multinomial logistic regression with hospital as a random effect. Predictors included in the model were race/ethnicity, gender, age, functional status, American Society of Anesthesiologist class, chronic obstructive lung disease and smoking status.
RESULTS: The overall 30-day mortality rate following knee replacement was 0.6%, and did not differ significantly by race or ethnicity (P = .4). Overall, 6.7% of patients had at least one complication, including 3.8% with at least one infectious complication

and 2.9% with only non-infectious complications. Compared to whites, AAs had significantly higher odds of both infectious complications (OR = 1.42; 95% CI = 1.06–1.90) and non-infectious complications (OR = 1.48; 95%CI = 1.06–2.07). Compared to whites, Hispanics had significantly higher odds of infectious complications (OR = 1.64; 95% CI = 1.08, 2.50) but not of non-infectious complications (OR = 1.10; 95% CI = 0.62–1.95).
CONCLUSION: Compared to white patients, both AAs and Hispanics experience higher rates of infectious complications following knee replacement, and AAs experience higher rates of non-infectious complications as well. Improving quality of care by reducing racial/ethnic differences in outcomes may provide an opportunity to reduce documented disparity in the utilization of knee replacement for OA.

RACIAL DIFFERENCES IN BLOOD PRESSURE CONTROL RATES IN THE VA MEDICAL CENTER. S.U. Rehman[1]; B.M. Egan[2]; F.N. Hutchison[2]. [1]Ralph H. Johnson V.A. Medical center/Medical University of S, Mount Pleasant, SC; [2]Medical University of South Carolina, Charleston, SC. *(Tracking ID #103178)*

BACKGROUND: African Americans (AA) have lower rates of hypertension control and more adverse outcomes than Caucasians. The explanation for ethnic variations in hypertension control and outcomes has not been fully understood but includes differential access to care and medications. Ethnic differences in hypertension control rates in The Veterans Administration healthcare system, which minimizes access barriers, could be instructive.
METHODS: We compared blood pressure (BP) control rates in AA and Caucasian hypertensive patients in a large V.A. Medical center using computerized medical records during the previous year.
RESULTS: 25,871 hypertensive veterans were identified (97% male, mean age 64.6 years, 50% Caucasian, 28% AA, ethnicity unknown 21.5%). Caucasian hypertensives (N = 12,917) were older than AA hypertensives ([N = 7,215) 66.2 vs. 61.2 years, $P < .05$). BP was 137.3/75.5 in Caucasian hypertensives and 137.9/80.1 mmHg in AA hypertensives (P = NS/ < 0.05). Among Caucasians, 54.3% had a BP <140/90 mmHg on their last visit compared to 48.4% among AA ($P < .05$). AA and Caucasian hypertensive patients received a similar number of BP drugs 2.4 and 2.0 respectively, P = NS. AA were more likely than Caucasians to receive diuretics (58% vs 49%, $P < .01$) and calcium channel blockers (39% vs. 32%, $P < .01$) and less likely to receive beta-blockers (22% vs. 31%, $P < .01$). The two groups were equally likely to receive ACE inhibitors (54% vs. 52%). A very high proportion of both AA (67.8%) and Caucasians (75.4%) hypertensives met criteria for JNC VI Risk Group C.
CONCLUSION: The findings indicate that BP control is lower among AA than Caucasian hypertensive patients in a large VA Medical Center. The lower control rates in AA appear to reflect differences in diastolic rather than systolic BP and do not represent a less intensive therapeutic effort or more comorbidities in AA than C hypertensives. The ethnic differences in BP control in this VA patient population are less than those in a recent national survey and may point to advantages of the VA healthcare system for reducing health disparities.

RACIAL DIFFERENCES IN THE METABOLISM OF ENVIRONMENTAL TOBACCO SMOKE AMONG CHILDREN WITH ASTHMA. S.E. Wilson[1]; R.S. Kahn[2]; J. Khoury[1]; B. Lanphear[2]. [1]University of Cincinnati, Cincinnati, OH; [2]Cincinnati Children's Hospital Medical Center, Cincinnati, OH. *(Tracking ID #116365)*

BACKGROUND: Asthma is more prevalent and more severe among African American children than among White children, though the reasons remain unclear. Environmental tobacco smoke (ETS) is a major contributor to asthma severity. Recent evidence suggests that African Americans have higher cotinine levels than Whites, adjusted for ETS exposure, and that cotinine appears to be biologically active. The objective of of this study is to test whether African American children with asthma have significantly higher serum and hair cotinine levels when compared with White children with asthma, and to examine whether these racial differences are explained by reported ETS exposure or housing characteristics.
METHODS: We employed a cross-sectional study of 227 children, 5 to 13 years of age, who had moderate-to-severe asthma and who were exposed to >5 cigarettes per day. We surveyed the study participants for their age, gender, ETS exposure, and amount of time spent in the home. We collected detailed information on the participants' primary residence (e.g., size, temperature, humidity and number of residents). We used t-tests to compare differences in means, and multivariable linear regression to examine the relationship between race and cotinine, adjusted for ETS exposure, housing characteristics, and demographic factors.
RESULTS: Of the 227 children, 57% were African American. African American children had significantly lower reported ETS exposure (14.8 cigs/day vs. 18.8 cigs/day, $P < .013$), but higher levels of serum cotinine (1.5 ng/ml vs. 0.3 ng/ml, $P < .03$) and hair cotinine (0.3 ng/mg vs. 0.1 ng/mg, $P < .001$) when compared with White children. Serum and hair continine levels remained significantly higher in African American children when compared with White children (B = 0.4, $P = .01$ and B = 1.2, $P < .001$, respectively) after adjusting for parent-reported ETS exposure, housing size, time spent indoors, and other demographic factors. Increased serum cotinine was associated with an increased likelihood of 2 or more asthma-related health care contacts in the prior 3 months (1.83 ng/ml vs. 1.26 ng/ml, $P = .03$).
CONCLUSION: African American children with asthma have higher serum and hair cotinine levels for a given amount of ETS exposure that persist after adjusting for differences in housing characteristics and demographic factors. Higher levels of serum cotinine were associated with an increased number of health care contacts. Further research is needed to understand racial differences in ETS exposure and cotinine, and their potential contribution to racial disparities in childhood asthma and other serious health outcomes.

RACIAL DISPARITIES IN UNDERUSE OF EFFECTIVE BREAST CANCER TREATMENTS. N.A. Bickell[1]; M. Kim[1]; J. Wang[1]. [1]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #115965)*

BACKGROUND: Despite the fact that African American women are less likely to develop breast cancer, they are more likely to die of it. Adjuvant radiation (RT) and systemic (ST) therapy can improve disease-free and overall survival for women with early-stage breast cancer. While racial disparities in underuse of RT have been described, little is known about disparities in systemic treatment underuse.
METHODS: Of the 1,042 of women with breast cancer operated in 1999–2000 at 6 hospitals in New York City, 681 had primary stage 1 or 2 breast cancer and had their definitive surgery at that hospital. In & outpatient charts were abstracted for staging and treatment information. Underuse, defined by breast cancer experts and evidence-based guidelines, included omission of RT following breast conserving surgery (BCS); omission of systemic treatment for tumors ≥1 cm (stage 1b+): hormonal therapy for hormone receptor positive tumors or chemotherapy for hormone receptor negative tumors. Logistic regression was used to identify factors associated with underuse of beneficial adjuvant therapies.
RESULTS: The mean age of the 681 women was 59.7y (24–101); 21% were African American, 15% Hispanic, 40% White, 5% Asian and 11% were of unknown race. Compared with White women, Black & Hispanic women were more likely to have all recommended treatments omitted: RT following BCS (10%, 27% & 18%; $P < .01$); hormonal therapy (15%, 29% & 30%; $P < .05$); and chemotherapy (13%, 31% & 18%; $P < .05$). Multivariate models controlling for insurance and clinical stage found that women who are Black or Hispanic (OR = 1.8; 95% CI: 1.1– 3.1) and those who are treated at hospitals without RT available (OR = 2.4; 95% CI: 1.3–4.3) [model c = 70; $P < .0001$] are more likely to experience underuse of beneficial adjuvant treatments. Women referred to an oncologist are less likely to have such treatments omitted (OR = 0.23; 95% CI: 0.1–0.4).
CONCLUSION: Racial disparities in treatment of early-stage breast cancer persist. However, some of the disparity may be due to remediable factors such as undergoing surgery at a hospital with RT facilities and obtaining a referral to an oncologist.

RACIAL SEGREGATION, SOCIAL ISOLATION, AND THE RISK OF OBESITY. V.W. Chang[1]. [1]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #115604)*

BACKGROUND: Sociological theory posits that racial residential segregation concentrates poverty in space, creating a distinctive social and economic milieu for the segregated group. While prior studies have shown that segregation increases the risk of mortality among blacks, the relationship between segregation and potential mediators such as obesity has not been investigated. Concentrated poverty leads to conditions such as higher crime rates (which discourage outdoor activity) and a lower quantity and quality of local amenities, which include food retail options, recreational facilities, and medical services. Moreover, the social isolation of segregation is known to foster cultural norms formed in opposition to mainstream values. Given that educational aspirations as well as marriage and fertility preferences in highly segregated neighborhoods have grown increasingly distant from their normatively-sanctioned counterparts, segregation may affect weight-related preferences as well. This study investigates the relationship between weight status and racial segregation in U.S. metropolitan areas.
METHODS: Metropolital-level data from the 2000 U.S. Census are linked to nationally representative individual-level data from the 2000 Behavioral Risk Factor Surveillance System. Metropolitan area segregation is measured with the isolation (P) index for blacks, which can effectively capture the social isolation dimension of segregation and ranges from 0 to 1, with higher values indicating greater segregation. Individual-level weight status outcomes are body mass index (BMI) and obesity (BMI ≥ 30). Multi-level regregression analysis is used to assees the effect of segregation on weight status adjutsing for individual- and metropolitan-level covariates. Analyses are stratified by race-sex groups and limited to non-Hispanic blacks (N = 7,807) and whites (N = 30,945) in the 130 metropolitan areas where blacks consitute at least 10% of the total population.
RESULTS: The P index ranges from 0.25 to 0.83 with a mean of 0.53 (SD 0.13) among the 130 metropolitan areas. There is a significant positive association between segregation and weight status among black women. A 0.1 unit increase in segregation is associated with 1.13 times higher odds for being obese (95% CI: 1.04–1.23) and a 0.38 unit increase in BMI (95% CI: 0.11–0.65), despite adjustments for age, educational level, household income, metropolitan area median income, metropolitan area population size, and census region. No significant association is found among black men and whites.
CONCLUSION: The lack of associtaion among whites is consitent with the fact that segregation confers disadvantage to the segregated minority group. Among black women, black social isolation may increase the risk of obesity, independently of individual socioeconomic factors. These results suggest that research on the social determinants of obesity may benefit from a focus on risk factors understood in spatial terms, as spatial-level factors may ultimately structure known risk behaviors at the individual-level.

RACIAL/ETHNIC DIFFERENCES IN PHYSICAL ACTIVITY LEVELS AMONG ADULTS WITH DIABETES. L.E. Egede[1]; M. Poston[1]. [1]Medical University of South Carolina, Charleston, SC. *(Tracking ID #116778)*

BACKGROUND: Minority individuals with diabetes have poorer glycemic control, higher complication rates, and higher mortality rates than non-minorities. Physical activity improves insulin sensitivity; lowers hemoglobin A1C, triglycerides, and blood pressure; and prevents development of cardiovascular disease. Studies indicate that

adults with diabetes do not follow recommended guidelines for physical activity. Data from the 1998 National Health Interview Survey (NHIS) was analyzed to determine racial differences in physical activity levels among adults with diabetes.
METHODS: 32,440 adults were surveyed in NHIS 1998. Among 1,906 adults with diabetes, analysis was restricted to 1,787 adults in three ethnic groups—White, Black, and Hispanic. Physical activity level was calculated as kilocalories/kg/day and categorized as sedentary (0.0–1.4), moderately active (1.5–2.9), and very active (3.0+) (Stephen and Craig 1989). Physical activity levels were compared across racial/ethnic groups and multiple logistic regression was used to determine the likelihood of having moderate to very active physical activity levels across racial groups controlling for covariates (age, sex, education, income, employment, perceived health status, body mass index, activity limitations, and comorbidity). STATA was used for statistical analyses to account for the complex sampling design of the NHIS.
RESULTS: 6.5% of Blacks were very active compared to 13.0% of Hispanics and 14.6% of Whites ($P = .007$). Similarly, Blacks (19.2%) were less likely to be moderately or very active compared to Hispanics (25.9%) or Whites (27.0%) ($P = .012$). Controlling for covariates, Blacks were significantly less likely than Whites to be moderately or very active (OR 0.61 CI 0.40, 0.93) but Hispanics did not differ significantly from Whites (OR 0.95 CI 0.63, 1.43).
CONCLUSION: Suboptimal physical activity levels seen in adults with diabetes are more pronouced in Blacks. The need for culturally appropriate interventions to increase physical activity levels among patients with diabetes must be viewed as a high priority.

RANDOMIZED CONTROLLED TRIAL OF A PRIMARY CARE-BASED HEART FAILURE DISEASE MANAGEMENT PROGRAM FOR PATIENTS WITH LOW LITERACY. D.A. DeWalt[1]; M. Pignone[1]; R.M. Malone[1]; B. Bryant[1]; K. Felix[1]; K. Corr[1]; M.C. Kosnar[1]; C. Rawls[1]; N. Rogers[1]; R. Rothman[2]; B.F. Angel[1]; C.A. Sueta[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]Center for Health Services Research, Nashville, TN. *(Tracking ID #116136)*

BACKGROUND: Disease management programs for patients with heart failure (HF) reduce rehospitalizations and may reduce mortality. However, few programs have enrolled patients from a primary care ambulatory setting and no programs have targeted low literacy populations.
METHODS: We designed a HF disease management program for patients with low literacy, and performed a randomized controlled trial in our university-based internal medicine practice. Intervention patients received a one-hour education session on self-care including daily weight measurement and diuretic dose adjustment, and received picture-based educational materials and a digital scale. They also received scheduled telephone follow-up to reinforce adherence. Control patients received usual care. Outcomes included self-care behavior, knowledge, self-efficacy, HF-related quality of life (HFQOL) and a combined endpoint of hospitalization or death. HFQOL was assessed with the Minnesota Living with Heart Failure Questionnaire. We performed a subgroup analysis on patients with inadequate literacy based on testing using the short Test of Functional Health Literacy in Adults (TOFHLA).
RESULTS: From November 2001 to April 2003, we enrolled and randomized 129 patients. To date, 114 (88%) patients (60 control, 54 intervention) have completed 6 months follow-up and 66 (51%) 12 month follow-up. Mean age is 63 years, 50% are female, 56% African American, 41% have inadequate literacy, and 68% report an income less than $15,000/yr. At 6 months follow-up, more patients in the intervention group reported monitoring weights daily (88% vs. 21%, $P < .01$). Intervention patients also had greater improvement in HF-specific knowledge score (+10% vs. –2%, $P < .01$) and self-efficacy score (1.3 vs. –0.5, $P < .01$ on a 22 point scale). After adjusting for baseline demographic and treatment differences, we found no difference in change of HFQOL at 6 months (difference = 2, CI–6, 11). The adjusted incidence rate ratio (IRR) for hospital admission or death was 0.68 (CI 0.36, 1.32). Fifty-three patients (28 intervention, 25 control) scored in the inadequate range on the TOFHLA. For patients with inadequate literacy, the adjusted incidence rate of admission or death was reduced by 65% for the intervention group (IRR = 0.35, CI 0.13, 0.94).
CONCLUSION: A primary care-based HF disease management program designed for patients with low literacy improves self-care behavior, knowledge, and self-efficacy, but does not change HFQOL. The intervention appears to reduce the risk of hospitalizations or death, particularly for patients with low literacy.

RANDOMIZED CONTROLLED TRIAL OF A TELE-HEALTH INTERVENTION FOR HOME CARE PATIENTS: UTILIZATION AND PATIENT SATISFACTION. U. Subramanian[1]; F. Hopp[2]; P.A. Woodbridge[3]; L. Copeland[4]; D. Smith[5]; J. Lowery[2]. [1]Indiana University Purdue University Indianapolis, Indianapolis, IN; [2]VA Ann Arbor Healthcare System, Ann Arbor, MI; [3]Roudebush VAMC, Indiana University, Indianapolis, IN; [4]Ann Arbor VA Healthcare System, Ann Arbor, MI; [5]Regenstrief Institute, Indianapolis, IN. *(Tracking ID #117165)*

BACKGROUND: Although home tele-health has been reported to be an important adjunct to home care for the elderly, there are few studies to demonstrate its efficacy. This study sought to determine whether patients receiving home care services plus tele-health, compared with patients receiving usual home care, had: 1) higher levels of health-related quality of life (HRQOL) and satisfaction with home care services; 2) lower use of inpatient and outpatient health care services.
METHODS: Prospective, randomized trial. Patients receiving VA home care services who had a high level of health services utilization, a care plan specifying two or more home care visits per month, and who were expected to stay in the home care program for a month or more, were randomized into Intervention and Control groups. Intervention patients received video-based home tele-health services plus usual care. Control patients received usual home care. Baseline and six-month follow-up surveys examined patient satisfaction and HRQOL. Inpatient and outpatient service use for the six-month study period and prior six-month period were obtained from administrative databases. Linear regression compared intervention and control groups in terms of changes in HRQOL and satisfaction with homecare; negative binomial regression analyzed resource utilization controlling for survival, and prior service use.
RESULTS: Of 370 HBPC patients reviewed, 252 (68%) patients did not meet the inclusion criteria, 81 (22%) declined to participate and 37 (10%) were randomized (18 experimental and 19 control). The two groups did not differ in terms of demographic factors, baseline comorbidity, or survival and mortality. Intervention patients had shorter unadjusted hospital stays (mean = 2.83, SD = 4.12) than the control group (mean = 7.1, SD = 12.9), but these differences were not significant in the negative binomial regression adjusting for overdispersion. No group differences were detected in the number of in-person home care visits, hospital admissions, the use of primary and specialty outpatient clinic visits, in terms of changes in HRQOL or patient satisfaction. Intervention patients reported high levels of satisfaction with the equipment (means exceeded 4.0 on six measures ranging from 1–5).
CONCLUSION: Patients receiving tele-health reported favorably on the tele-health equipment, and there was a trend towards fewer hospital days of care among intervention group members compared with controls. Results suggest that home tele-health is a promising technology, but further research, utilizing larger sample sizes, is needed to investigate the relationship between tele-health services and the use of healthcare resources.

REACH-OUT: COMMUNITY-BASED PARTICIPATORY RESEARCH TO DECREASE OVERWEIGHT AND DIABETES RISK IN AFRICAN AMERICAN YOUTH. D.L. Burnet[1]; A. Plaut[1]; S. Radovick[1]; M.H. Chin[1]. [1]University of Chicago, Chicago, IL. *(Tracking ID #117094)*

BACKGROUND: Overweight and type 2 diabetes are rising, especially in minorities. Lifestyle changes can decrease diabetes risk in adults. Culturally appropriate, family-based interventions are most effective at changing behavior in youth. We used community-based participatory research to develop and pilot an intervention to decrease overweight in African American youth at high risk for diabetes.
METHODS: To gain insight into practices and beliefs regarding nutrition and exercise in our community, we conducted 13 focus groups with overweight children and their parents and interviews with leaders from the African American community on Chicago's South Side. Focus group participants (n = 67) were recruited through flyers in community sites and clinics; interview participants (n = 9) were indentified through prior relationships and community referrals. Themes arising from this qualitative research were used to inform development of a family-based intervention for overweight children and their parents. Families with at least one overweight child aged 9–12 and a family history of type 2 diabetes were recruited. Investigators led sessions for the first cohort of 10 families. Four lay health leaders were recruited from the community and received 8 hours of training including role play, group dynamics and other skills development prior to leading the second group of 9 families. The intervention consisted of 14 weekly sessions alternating focus on nutrition and physical activity. Physical activity sessions occurred at a local YMCA and nutrition sessions at a local grocery store. Quality and consistency of sessions were monitored with checklists, and we conducted iterative process assessment involving feedback from participants and lay leaders. Monthly follow-up sessions began after completion of the 14 week program. Outcomes for children and adults included BMI, body fat, BP, glucose tolerance, lipids, and nutrition and exercise behaviors measured at baseline, after 14 weeks, and at 1 and 2 year (planned) intervals.
RESULTS: Overall attendance by families was 66% for the investigator-led group and 84% for the lay leaders' group. Weights were stable; however, children slightly decreased BMI percentile for age. Children's mean systolic and diastolic BP fell by 7 mm each. Constructive group dynamics appeared to be enhanced in the cohort facilitated by lay leaders from the community.
CONCLUSION: The REACH-OUT program developed through qualitative study of and input from the local African American community has proved feasible and acceptable. Lay health leaders have been able to establish effective relationships with families and facilitate their engagement in this lifestyle intervention. Enrollment and follow-up of additional families is planned to assess sustained effects on BMI and glucose tolerance.

RECENT INCREASE IN SMOKING IN YOUNG PREGNANT WOMEN ENROLLED IN MEDICAID IN TENNESSEE. U.P. Whalen[1]; M.R. Griffin[1]; E. Mitchel[1]; R. Cruz-Gervis[1]; B.L. Forbes[1]; T.V. Hartert[1]. [1]Vanderbilt University, Nashville, TN. *(Tracking ID #116367)*

BACKGROUND: After determining time trends in smoking during pregnancy in Tennessee 1990–2001, we determined characteristics of groups in which smoking is common and/or increasing that might be targeted for smoking cessation interventions.
METHODS: We identified all pregnant women in TN from birth and fetal death certificates generated during 12 consecutive years 1990 through 2001. Maternal demographics and self-reported smoking during pregnancy were obtained from vital records. Enrollment in Medicaid was determined by linkage with Medicaid files.
RESULTS: We identified 965,683 pregnant women over the study period, of whom 47% were aged <25 years, 22% were black; 47% were enrolled in Medicaid at the time of birth. Smoking during pregnancy declined from 22% in 1990 to 17% in 1998, and remained stable thereafter. Among women 25 years of age and older, smoking steadily declined from 20% to 13% over the 12 year period. Tobacco use

decreased in women 25+ years among both whites and blacks, regardless of insurance status, but was consistently higher among those enrolled in Medicaid (Figure A). The decline in tobacco use was more dramatic for black women (29% to 14%) than for white women (45% to 35%) enrolled in Medicaid. For pregnant smokers younger than 25, smoking fell from 24% to 20% between 1990 and 1995, but steadily increased to 22% from 1995 to 2001. Smoking rates of women younger than 25 were higher in whites than blacks and were highest in those enrolled in Medicaid for both races. Among those enrolled in Medicaid, smoking during pregnancy increased during 1995–2001 following a decline from 1990 to 1995 (Figure B).
CONCLUSION: Smoking rates among pregnant women aged 25 years and older are declining regardless of race or Medicaid status, but remain very high in whites enrolled in Medicaid. Smoking rates among black and white pregnant women aged <25 years enrolled in Medicaid have started to increase in the last 5 years. Educational efforts designed to target low income women of child-bearing age are needed.

RECURRENT VENOTHROMBOEMBOLISM IN PATIENTS WITH AND WITHOUT ANTICOAGULATION AFTER INFERIOR VENAL CAVAL FILTER PLACEMENT. S.H. Yale[1]; J.J. Mazza[1]; K. Bruney[2]. [1]Marshfield Clinic and Marshfield Clinic Research Foundation, Marshfield, WI; [2]Marshfield Clinic Research Foundation, Marshfield, WI. *(Tracking ID #116934)*

BACKGROUND: Interruption of the inferior vena cava (IVC) with a filter is a commonly performed procedure in patients with recurrent deep venous thrombosis of the lower extremities. It is currently unknown whether patients with an IVC filter should receive lifelong anticoagulation therapy to prevent recurrent venothromboembolism (VTE). Clinical studies on IVC filters do not clearly report data on the subset of patients who are receiving long-term anticoagulation therapy. The primary objectives of this study was to determine the rate of thromboembolic events and factors contributing to them in patients with IVC filters on chronic anticoagulation to those whom anticoagulation was discontinued. We evaluated whether certain filters pose a higher risk for recurrent venothromboembolic events with or without anticoagulation.
METHODS: A retrospective cohort study was performed on the computerized medical records and charts of 353 patients seen at the Marshfield Clinic from 1985–2002 in whom an IVC filter was placed. Patients were selected if they had an IVC filter and were followed for a minimum of one year after their IVC filter placement.
RESULTS: Anticoagulation status was available for 307 patients (107 on long-term coumadin anticoagulation and 200 without long-term anticoagulation therapy). Recurrent VTE occurred in fewer patients with IVC filters receiving long-term anticoagulation (15 vs. 36; adjusted person-time rate ratio of 0.5). Trapease filters had a higher rate of VTE (0.2 per person/year) compared to Greenfield filters (0.06 per person/year). The rate of recurrent VTE was independent of age, gender, smoking status, underlying medical condition and type of filter.
CONCLUSION: Among those with IVC filters, the rate of recurrent VTE may be lower when anticoagulation therapy is employed. Long-term anticoagulation therapy in these patients may be important in preventing recurrent VTE.

REDEFINING CONCORDANCE: PATIENTS' PERCEPTIONS OF RELATIONAL SIMILARITY. P Haidet[1]; K. O'Malley[2]; L.A. Cooper[3]; R.L. Street[4]. [1]Houston VA Medical Center, Baylor College of Medicine, Houston, TX; [2]Pearson Educational Measurement, Austin, TX; [3]Johns Hopkins University, Baltimore, MD; [4]Texas A&M University, College Station, TX. *(Tracking ID #115983)*

BACKGROUND: The term 'concordance' has been used to indicate shared identities between patients and physicians. This phenomenon underlies studies of race and culture in the patient-physician relationship. However, most studies use researcher-specified parameters, such as race and gender, to define concordance. In this study, we explored the effects of concordance as determined by patients rather than researchers.
METHODS: Using the Federal Register 2000 definition of culture, we developed 10 items in 2 dimensions ('culture' and 'communication') to measure how similar patients think that they and their doctor are. Scores on the items are summed into a 'similarity score' than can range from 10 (low) to 100 (high). We recruited 28 physicians and 272 patients from primary care practices in Houston, Tx, to complete a survey that measured patients' and physicians' demographic characteristics. Patients completed our 'similarities scale' and rated trust, satisfaction, and perceptions of physicians' participatory decision-making style (PDM). We examined associations of perceptions of similarity with trust, satisfaction and PDM.
RESULTS: Confirmatory factor analysis for the similarities scale revealed the presence of 2 factors with eigenvalues greater than 1.0 that corresponded to our intended dimensions. Factors accounted for 66 percent of total variance. Cronbach Alphas were 0.90 and 0.79 for the culture and communication dimensions, respectively. Patients' and physicians' mean ages were 57 (SD 15) and 43 (SD 9). Race/ethnicity among patients included African American (49%), Hispanic (10%), and Caucasian (39%); among physicians included Asian (38%), African American (26%), and Caucasian (36%). 40% of patients and 58% of physicians were female. 75 patient-physician dyads (28%) were concordant by race, and 115 dyads (43%) were concordant by gender. There was a wide range of similarity scores within concordant and discordant patient-physician dyads when concordance was determined by either gender or race. In linear regression models controlling for age, gender, race, and racial/gender concordance, patient perceptions of higher similarity were associated with higher trust ($P < .001$), higher satisfaction ($P = .03$), and greater participatory decision-making ($P < .001$). Race concordance was significantly associated with higher trust ($P = .01$). Gender concordance was not significantly associated with trust, satisfaction, or PDM.
CONCLUSION: The similarities scale has good psychometric properties and may measure an aspect of relational concordance not captured by either race or gender. Future research on concordance in the patient-physician relationship should include patient perceptions of relational similarity with their physicians.

RE-ENGINEERING SYSTEMS FOR THE PRIMARY CARE TREATMENT OF DEPRESSION. J.W. Williams[1]; A.J. Dietrich[2]; T.E. Oxman[2]; H.C. Schulberg[3]; M. Bruce[3]; P.W. Lee for the RESPECT-D Investigators[3]. [1]Duke University, Durham, NC; [2]Dartmouth College, Hanover, NH; [3]Cornell University School of Medicine, New York, NY. *(Tracking ID #117009)*

BACKGROUND: Strategies are needed to translate and sustain depression management models from research to community settings. We evaluated the impact of one such evidence-based model implemented in community practices through affiliated quality improvement (QI) programs.
METHODS: Practices were randomized to the intervention or usual care. Five health care organizations (HCOs) participated including 59 community primary care practices and 180 clinicians from five states. Clinicians referred 987 patients age ≥18 years who were starting or changing treatment for depression. Of these, 405 (41%) met eligibility criteria including a diagnosis of major depressive disorder or dysthymia. In intervention practices, primary care clinicians used a systematic approach to depression management, called the "Three Component Model (TCM)." Through 5 scheduled telephone contacts, care managers reinforced treatment plans and monitored symptom status. HCO psychiatrists supervised care managers and advised on treatment plans. Implementation occurred through one to two hours of training for clinicians, a 45 minute in-service for their practice staff, and HCO capacity building for care management and psychiatry support. Main outcomes were assessed at 3 and 6 months. Treatment response was defined as a ≥50% decrease on the Hopkins Symptom Checklist-20 (HSCL20); remission was defined as HSCL-20 ≤ 0.5. Mixed model repeated measures analyses were used for the main outcomes.
RESULTS: Participant characteristics were: 83% white, 80% women, and mean age 41.9 ± 14.6. Mean HSCL20 was 2.01 ± 0.65 indicating moderately severe depression; 41% screened positive for generalized anxiety disorder and 21% for panic disorder. Patients in TCM practices had more PCC visits for depression care in the initial 3 months after the index visit (1.77 vs. 1.43 UC, $P = .03$) but not in months 4–6 (1.16 TCM vs. 0.90 UC, $P = .08$). More TCM patients received telephone support (64.1% vs. 8.1% $P < .0001$). At six months, 59.9% of patients in TCM practices had

responded compared with 46.6% in UC practices ($P = .021$); remission rates were 37.3% vs. 26.7% ($P = .014$). More TCM patients rated depression care as excellent or good (90% vs. 74%, $P = .0004$). All five HCOs have taken steps to disseminate TCM to additional practices.
CONCLUSION: HCO QI programs can support implementation of depression management models to improve outcomes. All intend to disseminate further and sustain TCM.

REGIONAL VARIATION IN FALSE POSITIVE MAMMOGRAM RATES. G.C. Lamb[1]; R. Sparapani[1]; P. Laud[1]; A.B. Nattinger[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #116267)*

BACKGROUND: A number of factors such as age, hormone status and individual radiologist characteristics are known to contribute to variations in false positive (FP) rates in mammography screening. However, although regional variation in medical practice has been well described in this country, it has not been clearly demonstrated with regard to mammogram interpretation. We used a Medicare database to study geographic and other patient factors potentially related to rates of FP screening mammography.
METHODS: The cohort was derived from the cancer-free control group of the SEER/Medicare linked database. This database is constructed of a 5% sample of Medicare patients living within the 11 regions that make up the National Cancer Institute's SEER tumor registry, purged of patients with cancer via a linkage to the SEER registry. All women in this control group who received bilateral screening mammograms during the years 1994–1996 were identified. Exclusions included women with records that did not extend at least 2 years before and 1 year after the index mammogram, a prior mammogram less than 11 months before the index test or evidence of breast cancer treatment within 1 year of the mammogram. FP were defined as any mammogram followed within 3 months by a breast ultrasound, needle aspiration, biopsy or a repeat mammogram within 9 months. All others were defined as true negatives. Patient factors recorded included age, race, comorbidity by Charlson score, Medicaid status, year of index mammogram and SEER region. Predictors of FP status were identified by performing a logistic regression using the above patient factors as the independent variables.
RESULTS: 14,432 patients met the inclusion criteria of whom 1,532 (9.6%) met the criteria for false positives. Only age and SEER region achieved statistical significance ($P < .05$). As expected, increasing age was associated with a decreasing FP rate. Patients in the SEER regions with the highest FP rate (Hawaii, New Mexico) had nearly a two-fold chance of a FP compared to those with the lowest rates (Iowa, Connecticut). For example, a 65 yo woman from HI had a 17.6% risk of a FP versus a 9.3% chance if she lived in CT. A 90 yo from HI had a 12% risk versus 6.1% in CT.
CONCLUSION: The likelihood of having a false positive result from a screening mammogram varies widely between regions in the US. The reasons for this are unclear, but the variation is significant and should be considered in research addressing screening mammography and in patient counseling especially in areas with high FP rates.

RELATIONSHIP OF SURGEON VOLUME OF BREAST CANCER CASES WITH FIVE-YEAR MORTALITY. J. Neuner[1]; M. Gilligan[1]; R. Sparapani[1]; X. Zhang[1]; P. Laud[1]; A.B. Nattinger[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #116717)*

BACKGROUND: To investigate the link between cancer volume and outcomes, we compared overall and disease-specific mortality for patients of breast cancer surgeons.
METHODS: We examined 12,339 women aged >64 years with an operation for stage 1 or 2 breast cancer in 1994–96 recorded in the linked Surveillance, Epidemiology and End Results (SEER)-Medicare population-based tumor registry in 11 geographic areas. Annualized physician Medicare volumes were calculated and death certificates reviewed. Three survival models of the relationship between physician volume and mortality were developed. All included propensity scores to adjust for selection bias, frailty modeling for clustering by surgeon, and adjustment for age, comorbidity, socioeconomic status, race, extent of disease, and hospital volume.
RESULTS: There were 3,162 deaths (764 breast cancer and 976 cardiovascular) during a mean of 61 months follow-up. The cohorts' 1,892 surgeons had a median annualized physician Medicare volume of 2.67 and operated at 457 hospitals. Patients of higher volume surgeons had better overall and cardiovascular-specific 5-year survival (Table) but not improved breast cancer-specific survival.
CONCLUSION: Surgeon volume is associated with 5-year overall and cardiovascular, but not breast cancer-specific mortality. Overall mortality differences by volume may be attributable to differences in case-mix or non-breast cancer quality of care.

Characteristic		Overall Mortality	Breast Cancer	Cardio-vascular
MD Volume	<5 annually	—	—	—
	5 to <10	0.94(0.87–1.02)	1.01(0.85–1.20)	0.87(0.75–1.02)
	>10	0.81(0.72–0.90)	0.91(0.73–1.14)	0.77(0.62–0.94)
Tumor Size	<4 mm	—	—	—
	4–20 mm	1.37(1.04–1.80)	2.13(0.95–4.80)	1.16(0.73–1.84)
	20–50 mm	2.16(1.64–2.84)	5.18(2.30–11.7)	1.54(0.97–2.46
	>50 mm	2.34(1.63–3.37)	8.55(3.49–21.0)	1.12(0.56–2.22)
Lymph Nodes	Positive	1.42(1.24–1.62)	2.60(2.08–3.27)	1.10(0.83–1.44)
ER/PR	Positive	0.73(0.66–0.81)	0.46(0.39–0.55)	0.87(0.71–1.06)

RELIGIOUS IMPORTANCE, RELIGIOUS COPING, AND PSYCHOLOGICAL WELL-BEING IN FRAIL ELDERLY. K.G. Scandrett[1]; R. Jones[1]; S.L. Mitchell[1]. [1]Hebrew Rehabilitation Center for Aged, Boston, MA. *(Tracking ID #116730)*

BACKGROUND: Maximizing quality of life for the frail elderly is of primary importance. An individual's religious background may provide resources for coping with illness and late life losses, thereby comprising an important component of quality of life. However, the importance of religion and use of religious coping is not well understood in the frail elderly population. This study describes the importance of religion in a population of frail elderly, and examines the association between religiosity, religious coping, and psychological well-being.
METHODS: This is a cross-sectional study of English-speaking, cognitively intact long-term care residents living in two nursing facilities in Boston. Data were collected using an interviewer-administered questionnaire. Outcome variables included the Bradburn Affect Balance Scale and a Self-Rated Physical Health Uniscale. The main independent variable, religious importance, was assessed using a single, three-response item. Religious coping was assessed using the Brief RCOPE. Covariates included demographic and social variables, comorbidity, functional status, and mental status.
RESULTS: Data were obtained from 140 subjects. Median age was 85 years, and the median length of residence in either facility was 1,135 days. 71% of subjects were female. Forty-nine per cent identified themselves as Jewish, while 43% were Roman Catholic. Subjects rated the importance of religion as follows: very important (54%), somewhat important (27%), and not important (19%). The majority of subjects rated their health as either poor or fair (57%). Psychological well-being ranged from 2 (poor) to 9 (good), with a median score of 6. Viewing religion as somewhat or very important was significantly associated with better psychological well-being ($P = .004$) on bivariate analysis. After controlling for all covariates, the importance of religion remained a significant predictor of psychological well-being ($P = .0028$). Subjects for whom religion was important were more likely to utilize positive religious coping resources ($P < .001$).
CONCLUSION: Religion is important to many individuals in later life, including those confined to long-term care facilities. Those who view religion as somewhat or very important are more likely to utilize positive religious coping resources, and to have better psychological well-being.

RENAL FUNCTION, DIGOXIN THERAPY AND HEART FAILURE OUTCOMES—EVIDENCE FROM THE DIGOXIN INTERVENTION GROUP TRIAL. M.G. Shlipak[1]; G.L. Smith[2]; S.S. Rathore[2]; B.M. Massie[1]; H.M. Krumholz[3]. [1]University of California, San Francisco, San Francisco, CA; [2]Yale University School of Medicine, New Haven, CT; [3]Yale University, New Haven, CT. *(Tracking ID #103206)*

BACKGROUND: Chronic renal insufficiency (CRI) is common in heart failure, but its association with clinical outcomes has not been fully characterized. We evaluated the association of glomerular filtration rate (GFR) with heart failure survival, and the effect of digoxin on heart failure outcomes across subgroups based on GFR.
METHODS: We conducted a secondary analysis from the Digitalis Intervention Group (DIG) trial of 6,800 outpatients with systolic heart failure. Renal function was categorized as estimated GFR (expressed in mL/min/1.73 m^2). Multivariate proportional hazards models were used to determine the independent effect of GFR on heart failure survival. Intention-to-treat analysis evaluated the efficacy of digoxin by level of GFR.
RESULTS: Crude all-cause mortality during follow-up (mean 3 years) was inversely proportional to GFR (GFR > 60: 31% mortality; GFR 30–60: 46% mortality, GFR < 30: 62% mortality, $P < .001$). Among patients with a GFR < 60, lower GFRs were associated with higher mortality hazards (GFR <30 HR 2.06, 95% CI 1.69–2.51; GFR 30–40–1.42, 1.22–1.67; GFR 40–50–1.22, 1.07–1.39, GFR 50–60 HR 1.00, referent). In contrast, participants with GFR 60–70 had similar mortality hazards (1.00; 95% CI 0.88–1.14) compared with participants with GFR 50–60, and those with GFR > 70 had only a slightly lower mortality hazard (0.89; 0.78–1.00). Linear spline analyses confirmed that a GFR of 50 was an appropriate threshold; above 50, renal function was not associated with mortality, whereas below 50 mortality risk increased sharply with declines in renal function (spline coefficient—$P < .0001$). Digoxin efficacy did not differ by level of GFR (p for interaction = 0.19).
CONCLUSION: Renal dysfunction is associated with mortality in the setting of heart failure, notably in patients with an estimated GFR less than 50. The efficacy of digoxin, as prescribed in the DIG trial, did not differ by level of renal function.

RESIDENTS' PERCEPTIONS AND ATTITUDES TOWARDS A NIGHT FLOAT SYSTEM. H. Jasti[1]; B.H. Hanusa[2]; G. Switzer[2]; R. Granieri[2]; M. Elnicki[2]. [1]Univ of Pittsburgh*, Pittsburgh, PA; [2]Univ of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116690)*

BACKGROUND: Increasing concern about residents' work hours has led to many institutions implementing a Night Float (NF) system. Few recent studies have examined the perceptions and attitudes of residents towards a NF system.
METHODS: A 115-item questionnaire, with 6 categories of questions, was developed to assess residents' perceptions of the NF rotation as compared with a regular call month. The categories included patient care, the working environment, medical errors, education and learning environment, interpersonal skills, and satisfaction. For this abstract, we focused on 3 areas, namely patient care, education, and overall satisfaction. Internal Medicine housestaff (post-graduate years 1–3) from 3 different hospitals settings completed the questionnaire.
RESULTS: The response rate was 90% (n = 149). Of these, 74 had completed the NF rotation. Both interns (PGY 1) and residents (PGY 2 and 3) felt that the quality

of patient care was improved because of NF (41% agreed and 18% disagreed). While 46% felt that better care was provided by a rested physician in spite of being less familiar with the patient, 21% disagreed, and 33% remained neutral. Conversely, 25% felt that better care was provided by a tired physician who was more familiar with the patient. Most (65%) felt there was less emphasis on education and more emphasis on service (52%), as compared to a regular call month. A lack of conferences and an absence of an attending physician (54% and 60% respectively) were felt to impair education. Both interns and residents felt more rested during their call months (83%). However, interns stated they were "happier" than residents during their call months as a result of the NF rotation (82% and 71% respectively, $P = .02$). Interns felt more strongly than residents that their call month experience was improved by NF (87% and 59% respectively, $P = .001$). Overall, 64% of the interns and 37% of the residents felt that the NF rotation was a valuable rotation ($P = .002$). Only 19% of the interns preferred the traditional overnight call system. Both groups strongly supported the 80-hr workweek requirement (77% overall). Although differences were noted between the intern and resident groups, there were no differences between the groups that had completed NF and those that had not.
CONCLUSION: Housestaff felt that the overall quality of patient care was improved by a NF system and that a rested physician played more of an important role than a tired physician in ensuring good care. The lack of emphasis on education can perhaps be addressed by structured night-time conferences and night-time attendings. The housestaff felt more rested during their call months and strongly supported the 80-hr workweek requirement.

RETURN TO WORK FOR BREAST CANCER SURVIVORS. R.R. Bouknight[1]; C.J. Bradley[1]; J.C. Gardiner[1]; Z. Luo[1]. [1]Michigan State University, East Lansing, MI. *(Tracking ID #116026)*

BACKGROUND: Return to work after treatment for cancer is an objective measure of functional capacity. The literature indicates that breast cancer survivors with physically demanding jobs are less likely to return to work but other factors such as concentration or analysis, job benefits, attitudes towards the job and the employer's willingness to accommodate patients' needs are less well studied and may play an important role in job return. The purpose of this research was to determine if these factors impact the ability of breast cancer survivors to return to work six months following diagnosis.
METHODS: An inception cohort of women newly diagnosed with breast cancer were identified and interviewed for a period corresponding to 3 months prior to diagnosis and 6 months following diagnosis. Questions regarding job demands, employer accommodation, attitude towards work, and health status were asked. Multiple imputation methods were used to impute missing interview data. With return to work at six months as the outcome, logistic regression analysis was used to identify independent predictors of return to work.
RESULTS: The study enrolled 337 White and 99 Black previously employed women with newly diagnosed breast cancer. Six months after diagnosis, 31% of patients had not returned to work. Forty-eight percent of women with advanced disease failed to return to work compared to 25% of women with insitu or local disease ($P < .001$). Black women returned less often than White women (52.5% vs. 72.5%, $P < .001$) who indicated more job demands for concentration ($P < .001$) and data analysis ($P < .002$) when compared to Black women. In the adjusted logistic regression model advanced cancer stage, physical effort, concentration, and Black race were negative predictors and being unmarried, and a union member were positive predictors for return to work.
CONCLUSION: Employers may need to provide accommodations for the cognitive as well as physical needs of returning breast cancer patients. Women with early stage tumors are less likely to experience difficulties returning to work, thus improved screening with identification and treatment of tumors at an earlier stage will minimize functional limitations imposed by breast cancer treatment. Black women may experience a delay in return to work relative to White women but it is unclear if this is a short term or long term occurrence. Future additional longitudinal data will address this issue.

RISK FACTORS ASSOCIATED WITH "NO-SHOWS" AT GENERAL MEDICINE CLINIC VISITS AFTER HOSPITAL DISCHARGE. J. Kim[1]; P.R. Yarnold[2]; R. Soltysik[1]; S.D. Lee[3]; T. Khan[1]; S. Kurup[1]; A.M. Arozullah[1]. [1]VA Chicago Healthcare System, University of Illinois at Chicago, Chicago, IL; [2]Northwestern University, Chicago, IL; [3]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #117228)*

BACKGROUND: This study determined patient risk factors for missing General Medicine Clinic (GMC) appointments following hospital discharge.
METHODS: Patients admitted to the general medicine service between 8/1/01–4/1/03 at a University-affiliated VA Hospital were eligible. Patients with dementia, blindness, deafness, or VA care for <6 months were excluded. Patients were interviewed during hospitalization to assess health literacy, health status (SF-12), health habits (Health-Promoting Lifestyle Profile), medication compliance, and social support (MOS Social Support Questionnaire). A reviewer, blinded to questionnaire results, recorded attendance at the first GMC appointment within six weeks post-discharge. A non-linear model, constructed using hierarchically optimal classification tree analysis, was used to determine risk factors for "no-shows" at GMC visits.
RESULTS: There were 400 patients enrolled with 288 patients (72%) that had GMC appointments within six weeks post-discharge with a "no-show" rate of 33%. Significant risk factors included lower emotional social support ($P < .002$), poor nutrition habits ($P < .014$), forgetting to take medications ($P < .005$), lower body mass index (BMI) ($P < .005$), and younger age ($P < .035$). The Table displays patient subgroups classified by these risk factors.
CONCLUSION: Assessing emotional support, medication compliance, and nutrition habits prior to discharge may detect patients likely to miss GMC follow-up visits.

N (%)	Emotional Support	Age (years)	Nutrition (4–24)	Forget Meds	BMI (Kg/M^2)	No-Show Rate
20 (7%)	High	≤54	≥12	—	≤25.1	65%
65 (23%)	Low	—	—	Ever	—	55%
35 (12%)	High	—	<12	—	—	46%
27 (9%)	Low	≤62	—	Never	—	44%
21 (7%)	High	≤54	≥12	—	>25.1	14%
26 (9%)	Low	≤62	—	Never	—	12%
79 (27%)	High	≤54	≥12	—	—	8%

RISK FACTORS ASSOCIATED WITH "NO-SHOWS" AT MEDICAL SUBSPECIALTY CLINICS AFTER HOSPITAL DISCHARGE. J. Kim[1]; P.R. Yarnold[2]; R. Soltysik[1]; S.D. Lee[3]; T. Khan[1]; S. Kurup[1]; A.M. Arozullah[4]. [1]VA Chicago Healthcare System, University of Illinois at Chicago, Chicago, IL; [2]Northwestern University, Chicago, IL; [3]University of North Carolina at Chapel Hill, Chapel Hill, NC; [4]University of Illinois at Chicago, Chicago, IL. *(Tracking ID #117369)*

BACKGROUND: Patients admitted to general medicine services are often assigned follow-up appointments in medical subspecialty clinics. This study determined patient risk factors for missing medical subspecialty clinic visits following hospital discharge.
METHODS: Patients admitted to the general medicine service between 8/1/01–4/1/03 at a University-affiliated VA Hospital were eligible. Patients with dementia, blindness, deafness, or VA care for < 6 months were excluded. Patients were interviewed during hospitalization to assess health literacy, health status (SF-12), health habits (Health-Promoting Lifestyle Profile), medication compliance, and social support (MOS Social Support Questionnaire). A reviewer, blinded to questionnaire results, recorded attendance at the first medical subspecialty appointment within six weeks post-discharge. A non-linear model, constructed using hierarchically optimal classification tree analysis, was used to determine risk factors for "no-shows" at medical subspecialty visits.
RESULTS: There were 400 patients enrolled with 231 patients (58%) that had medical subspecialty appointments within six weeks post-discharge with a "no-show" rate of 59%. Significant risk factors for "no-shows" included less than 2 organization or club memberships ($P < .045$), dissatisfaction with medical care ($P < .012$), and poor nutrition habits ($P < .009$). The Table displays patient subgroups classified by these risk factors.
CONCLUSION: Nearly all patients that were dissatisfied with medical care and had less structural social support were "no-shows" for follow-up visits to medical subspecialty clinics. Formal assessment of patient structural social support, satisfaction with medical care, and nutrition habits prior to hospital discharge may enhance assessment of patient likelihood to miss medical subspecialty follow-up visits.

N (%)	Organization or Club Memberships	Satisfied with Medical Care	Nutrition (4–24)	No-Show Rate
24 (10%)	<2	No	—	87.5%
89 (39%)	<2	Yes	>13	70.8%
83 (36%)	<2	Yes	≤13	48.2%
33 (14%)	≥2	—	—	48.2%

RISK FACTORS FOR 9 YEAR MORTALITY IN OLDER WOMEN. J. Tice[1]; A. Kanaya[1]; T. Hue[1]; S. Rubin[1]; D. Buist[2]; J. Lacey[3]; D. Bauer[1]. [1]University of California, San Francisco, San Francisco, CA; [2]Group Health Cooperative of Puget Sound, Seattle, WA; [3]National Institutes of Health, Bethesda, MD. *(Tracking ID #117347)*

BACKGROUND: Many factors contribute to mortality in older women, but their relative importance and independent contribution has been poorly characterized. Identification of modifiable risk factors may guide therapy and public policy.
METHODS: In 1992 and 1993, we screened 22,695 women in 10 US metropolitan areas for participation in the Fracture Intervention Trial, a clinical trial of alendronate for the prevention of osteoporotic fractures. We assessed over sixty measurements, including demographic information, lifestyle factors, prevalent disease, medication use, anthropometrics, vital signs, physical function, and bone mineral density on all women. We used the National Death Index Plus to ascertain cause-specific mortality through December 2001. Proportional hazards modeling with forward stepwise regression was used to select predictor variables for the final model ($P \leq .05$ for inclusion). We divided participants into deciles using risk scores derived from this model.
RESULTS: At inception, the mean (SD) age of participants was 68.3 (6.1) years and 95% were Caucasian. There were 2,450 deaths (10.8%) during 9 years of follow-up. The primary causes were cardiovascular disease (CVD) (911/2450, 37%) and cancer (865/2450, 35%). The characteristics that were independently associated with mortality were age, diabetes, cardiovascular disease, breast cancer, current smoking, pack-years of smoking, alcohol consumption, self-reported health status, body mass index, waist-to-hip ratio, systolic blood pressure, heart rate, blocks walked per day, timed up-and-go test, and grip strength. After multivariable adjustment, the relative hazard (RH) of death was 1.5 (95% CI 1.5–1.6) per 5 years of age, 2.0 (95% CI 1.6–2.4) among those with a history of breast cancer, and 1.4 (95% CI 1.2–1.5) among those with a history of CVD. The major modifiable risk factors associated with mortality were smoking (RH 3.1, 95% CI 2.7–3.7 for current

smokers with ≥40 pack-year history; 2.0, 95% CI 1.7–2.4 for current smokers with <40 pack-year history) and systolic blood pressure (RH 1.04, 95% CI 1.02–1.06 per 10 mmHg). The timed get-up-and-go test, a measure of physical functioning, was also strongly associated with mortality (RH 1.65, 95% CI 1.4–2.0, 5th vs. 1st quintile). Bone mineral density was not associated with mortality. The crude mortality rate of women in the highest decile of predicted risk (44 per 1,000 person-years) was more than 17-fold higher than that of women in the lowest decile (2.5 per 1,000 person-years).
CONCLUSION: Simple measures available on most patients seen in a primary care physician's office are sufficient to stratify post-menopausal women into groups at high and low risk of dying. Smoking, blood pressure, and physical function are modifiable risk factors that can be targeted to decrease mortality in older women.

RISK FACTORS FOR NOSOCOMIAL URINARY TRACT-RELATED BACTEREMIA: A CASE-CONTROL STUDY. S.K. Saint[1]; S.R. Kaufman[2]; M. Rogers[2]; P. Baker[3]; E.J. Boyko[3]; B.A. Lipsky[3]. [1]Ann Arbor VAMC, Ann Arbor, MI; [2]University of Michigan, Ann Arbor, MI; [3]University of Washington, Seattle, WA. *(Tracking ID #116479)*

BACKGROUND: Urinary tract infection, the most common hospital-acquired infection in the US, is a common cause of nosocomial bacteremia. Previous studies have defined the risk factors for nosocomial bacteriuria, but clinicians usually minimize the importance of this finding. In contrast, urinary tract-related bacteremia is universally recognized as important, but risk factors for this complication are unknown. Since only a small proportion (~3%) of those with nosocomial bacteriuria develop bacteremia, identifying independent risk factors from prospective studies is difficult. Given the morbidity and costs associated with nosocomial bacteremia, determining risk factors could enhance the safety of hospitalized patients. We thus investigated the risk factors for developing nosocomial urinary tract-related bacteremia in patients with nosocomial bacteriuria.
METHODS: We conducted a case-control study within the Seattle VA Medical Center. A patient hospitalized between 1984 and 1999 from whom a urine culture and a blood culture grew the same organism >48 hours after admission was considered a case. Control patients were those with significant bacteriuria detected >48 hours after admission who did not have a positive blood culture. The medical records of each case and control were abstracted by study personnel blinded to study hypotheses. We used logistic regression to determine independent risk factors for bacteremia.
RESULTS: There were 95 cases and 142 controls. Significant independent predictors of bacteremia were immunosuppressant therapy within 14 days of bacteriuria (OR = 8.1); history of malignancy (OR = 1.9); male gender (OR = 1.9); smoking within five years (OR = 1.3); number of hospital days before bacteriuria (OR = 1.03); and antibiotic use within three days of bacteriuria (OR = 0.8). Corticosteroid use within seven days of bacteriuria predicted bacteremia in patients <70 years old (OR = 14.2). Similarly, patients <70 years old were more likely to develop bacteremia if they had diabetes mellitus (OR = 6.2).
CONCLUSION: We found both patient- and provider-modifiable risk factors for urinary tract-related bacteremia, including cigarette smoking, lack of antibiotic therapy, use of immunosuppressant medications or corticosteroids, and duration of hospitalization. While awaiting confirmatory studies, we believe physicians may want to use these results to identify and manage hospitalized patients at high risk for urinary tract-related bacteremia. Delineating modifiable risk factors could help define proper infection control practices, while ascertaining non-modifiable risk factors will allow inpatient physicians to target high-risk individuals for specific interventions aimed at decreasing the risk of nosocomial urinary tract-related bacteremia.

RISK FACTORS FOR OUTPATIENT ADVERSE DRUG EVENTS. N.R. Shah[1]; E.G. Poon[1]; A.C. Seger[1]; J. Fiskio[1]; M.D. Murray[2]; J.M. Overhage[2]; D.W. Bates[1]; T.K. Gandhi[1]. [1]Brigham and Women's Hospital, Boston, MA; [2]Indiana University/Regenstrief Institute, Indianapolis, IN. *(Tracking ID #115486)*

BACKGROUND: Adverse drug events (ADEs) are common in the outpatient setting, with the incidence reported to be as high as 25%. However, identifying patients at high risk for an ADE is difficult, and few studies have examined patient factors for ADEs. To direct prevention efforts toward high-risk patients, we sought to identify patient-level risk factors for ADEs.
METHODS: We identified patients with ADEs using a computerized ADE monitor to screen for possible ADEs followed by detailed chart review to confirm the presence of an ADE. The ADE monitor is a program consisting of 237 rules (such as drug-symptom, drug-lab, and drug-drug combinations) that can be applied to outpatient electronic medical record data (clinic notes, medication, and lab data) to identify patients with possible ADEs. The ADE monitor was applied to 6 months (1/1/01–6/31/01) of data from 11 Boston-area clinics. A maximum of 50 possible ADEs per rule was randomly selected for chart review to determine whether an ADE had occurred. We then used multiple logistic regression to assess the correlates of ADEs; factors examined included age, gender, race, number of active medications, and the Charlson comorbidity score.
RESULTS: Of 3,456 patients and 6,867 possible ADEs in the chart review subset, 472 patients had an ADE. The median age for the study population was 56 years; 70% were male, 50% white, 21% black, and 12% hispanic. The median number of medications per patient was 5 and the median Charlson comorbidity score 1. Independent risk factors for an ADE included age (OR 1.008, 95% CI [1.002, 1.014), and number of actively prescribed medications (OR 1.025, 95% CI [1.003, 1.048]). Patients with a Charlson comorbidity score ≥6 were at higher risk compared to patients with a Charlson score = 0 (OR 1.64, 95% CI [1.10, 2.43]). Race was also a significant risk factor, with patients of black race having a higher risk than patients of white race (OR 1.64, 95% CI [1.29, 2.10]).
CONCLUSION: Several readily available factors were independently correlated with increased risk of an ADE in outpatients. While these results should be prospectively validated, ADE prevention efforts may be most beneficial if targeted at older patients, patients on multiple medications, patients with high comorbidity score, and black patients.

RISK OF BREAST CANCER FROM SEQUENTIAL VS. CONTINUOUS PROGESTINS IN MENOPAUSAL HORMONE THERAPY: META-ANALYSES OF OBSERVATIONAL STUDIES. N.R. Shah[1]; G.A. Rojas[1]; A. Tailor[1]; D. Mukherjee[1]. [1]New York University, New York, NY. *(Tracking ID #116664)*

BACKGROUND: Randomized trials have found increased breast cancer risk in women taking continuous regimens of progestins in menopausal hormone therapy. Risk from sequential (a.k.a. cyclic) use of progestins has not been examined in trials. We sought to investigate the specific and relative relationships of sequential vs. continuous regimens of progestins in menopausal hormone therapy (HT) and the incidence of breast cancer.
METHODS: We conducted computerized searches of Medline and CancerLit through September 2003 and examined reference lists of retrieved studies. Inclusion criteria identified English-language studies that: 1) report associations for non-contraceptive hormone use; 2) describe risks for sequential and continuous regimens of estrogen-progestin HT and breast cancer incidence; 3) are case-control, cohort, or experimental design; 4) report an odds ratio, relative risk, or hazard ratio with confidence intervals. At least two investigators were involved during title, abstract, and full text study selection. Four authors independently extracted all data selected for meta-analysis.
RESULTS: From 2,500 citations identified, 8 reports of cohort and case-control studies met all inclusion criteria. Meta-analysis of 8 studies of sequential estrogen-progestin HT and breast cancer incidence (520,000 women) resulted in an odds ratio (OR) of 1.37 (95% Confidence Intervals 1.10, 1.69). Meta-analysis of 8 studies of continuous estrogen-progestin HT and breast cancer incidence (490,000 women) resulted in an OR of 1.58 (95% CI 1.31, 1.90). Using event rates from the Million Women study, these ORs can be translated into Numbers Needed to Harm (NNH): one additional case of breast cancer would result from treating 957 women with sequential HT for one year or from treating 611 women with continuous HT for one year.
CONCLUSION: Observational studies show that continuous HT regimens are associated with greater risks of breast cancer than sequential HT regimens. These results should be considered as women and their clinicians make highly individualized decisions on the use of menopausal hormone therapy.

RISK OF INTRACRANIAL HEMORRHAGE IN PATIENTS WITH ATRIAL FIBRILLATION WHO ARE PRONE TO FALL. B.F. Gage[1]; E. Birman-Deych[1]; R. Kerzner[1]; M.J. Radford[2]; D. Nilasena[3]; M.W. Rich[1]. [1]Washington University in St. Louis, St. Louis, MO; [2]Yale University School of Medicine, New Haven, CT; [3]Center Medicare & Medicaid Services, Dallas, TX. *(Tracking ID #117073)*

BACKGROUND: Elderly patients (PTS) at high risk for falls are often presumed to be at increased risk for intracranial hemorrhage (ICH) when treated with warfarin, and fall risk is frequently cited as a contraindication to long-term anticoagulation in older adults with atrial fibrillation (AF). Data substantiating this concern are lacking.
METHODS: Using structured medical record reviews compiled by Peer Review Organizations representing all 50 US states, we identified 1222 Medicare beneficiaries hospitalized with AF with a documented history of falls. These PTS were matched to 4781 hospitalized AF PTS with similar characteristics (mean age 83 yrs, 61% female, 34% prescribed warfarin, 37% prescribed aspirin, 29% with a prior bleed) but without a documented history of falls. Both cohorts were followed for a median of 11 months, and the primary endpoint was the occurrence of ICH, based on recently validated ICD-9 codes.
RESULTS: During the follow-up period, there were 19 traumatic and 2 non-traumatic ICHs in the high-fall-risk cohort (1.8 ICHs per 100 pt-yrs). Compared to PTS without prior falls, PTS in the high-risk group were 5 times more likely to suffer a traumatic ICH [hazard ratio (HR) = 5.2, 95% CI 2.6–10.8] and 1.3 times more likely to have an ischemic stroke (HR = 1.3, 95% CI 1.0–1.6), but no more likely to suffer non-traumatic ICH. Other independent risk factors for ICH included neuropsychiatric disease and prior history of stroke, but anticoagulant therapy prescribed at hospital discharge was not an independent risk factor.
CONCLUSION: Elderly PTS hospitalized with AF who have a prior history of falls are ~5 times more likely to suffer a traumatic ICH than similar PTS without a prior fall history. However, the overall risk of ICH is still low. This suggests that anticoagulants should be used judiciously in elderly AF patients at high risk of falling, but a history of falls does not preclude the use of anticoagulants in elderly AF patients at high risk for ischemic stroke.

SATISFACTION IN PATIENTS WITH COMORBID DEPRESSION AND PAIN. M.J. Bair[1]; K. Kroenke[2]; H. Harris[3]; C.A. McHorney[1]. [1]Regenstrief Institute/Roudebush VAMC, Indianapolis, IN; [2]Regenstrief Institute/Indiana University, Indianapolis, IN; [3]RTI International, Research Triangle Park, NC. *(Tracking ID #116348)*

BACKGROUND: Although the combination of depression and pain is associated with greater morbidity than either condition alone, their combined effect on patient satisfaction has not been previously explored. Therefore, we investigated the association between comorbid depression and pain on patient satisfaction with care.

METHODS: Cross-sectional data were analyzed from the Medical Outcomes Study (MOS). We identified 3,361 patients from a variety of outpatient clinics. The primary outcome was the Patient Satisfaction Questionnaire (PSQ) and its seven domains: general satisfaction, technical competence, interpersonal manner, communication, time with doctor, access to care, and financial issues. All satisfaction domains were scored from zero (worst) to 100 (best). Depressive disorders {i.e. major depression (MD) and subthreshold depression (Sub-D)} were identified using the Diagnostic Interview Schedule. Pain was assessed using the pain severity item from the SF-36 bodily pain subscale. Pain severity was classified into four categories: none, mild, moderate, or severe. We categorized patients into eight groups by their combined depression diagnosis (MD or Sub-D) and pain severity (none to severe). Multivariate linear regression was used to explore the independent effect of comorbid depression and pain on patient satisfaction, while controlling for demographics and other medical conditions.
RESULTS: Patients were 62% female, 79% white, and had a mean age of 54 years. Major depression (MD) and subthreshold depression (Sub-D) were present in 15% and 23% of the sample, respectively. Of the patients with MD, 17% had no pain compared to 83% with pain (41% mild, 28% moderate and 14% severe). Similar pain prevalences were observed in Sub-D patients. The relationship between comorbid depression and pain was statistically significant and monotonic differences were observed across the eight groups. Patients with MD and severe pain were the least satisfied (–12.6, $P < .0001$), followed by MD and moderate pain (–11.6, $P < .0001$), and MD and mild pain (–10.9, $P < .0001$). Similar decrements in satisfaction (although not of the same magnitude) were observed in Sub-D patients. The magnitude and statistical significance of these findings were consistent across all satisfaction domains.
CONCLUSION: The combined effect of comorbid depression and pain on patient satisfaction is large. Future studies should assess the reasons for patients' dissatisfaction with care and whether patients with comorbid depression and pain receive less quality care.

SCHIZOPHRENIA IS ASSOCIATED WITH INCREASED MEDICAL DISEASE BURDEN. C. Carney Doebbeling[1]; L.E. Jones[2]; R. Woolson[3]; K. Kroenke[4]. [1]Indiana University School of Medicine and Regenstrief Institute, Indianapolis, IN; [2]University of Iowa College of Public Health, Iowa City, IA; [3]Medical University of South Carolina, Charleston, SC; [4]Indiana University Purdue University Indianapolis, Indianapolis, IN. *(Tracking ID #117040)*

BACKGROUND: Generalists perform medical assessments of schizophrenics in a variety of settings. Given barriers to care such as impaired communication of symptoms, it is important to understand the breadth of conditions affecting schizophrenics. The objective of this research is to describe the medical conditions for which a population-based sample of schizophrenics received care.
METHODS: We analyzed a 100% sample of Wellmark Blue Cross Blue Shield claims data 1996–2001. A subject was classified into the schizophrenia group if he/she had an inpatient stay, a psychiatrist visit, or two outpatient provider visits with a primary or secondary code for schizophrenia or schizoaffective disorder. Controls were age and gender matched and without history of mental health claims. Utilization was measured by summing the non-mental health outpatient visits to primary care providers and non-mental health hospitalization days. Medical conditions coded during a hospitalization or at least twice in outpatient claims for more than a 30-day period were included. Odds ratios were adjusted for age, rural residence, and health care utilization.
RESULTS: 407 men (mean age 37 yrs) and 463 women (mean age 43 yrs) met criteria for schizophrenia. Men and women with schizophrenia were significantly more likely than controls to utilize primary care services (Men: 11 vs. 6 visits, $P < .0001$; Women: 17 vs. 8 visits, $P < .0001$), and had more overall medical co-morbidities (Men: 0.71 vs. 0.29 conditions, $P < .0001$; women: 0.97 vs. 0.33 conditions, $P < .0001$). Schizophrenic men were significantly more likely than controls to have claims for cardiac arrhythmias (OR: 3.1), peripheral vascular disease (OR 5.1), neurological disorders (OR 11.2), chronic pulmonary disease (OR 2.2), diabetes without complications (OR 1.8), hypothyroidism (OR 4.3), liver disease (OR 18.0), and fluid and electrolyte disorders (OR 7.5). Women with schizophrenia were significantly more likely to have claims for neurological disorders (OR 9.4), chronic pulmonary disease (OR 2.2), hypothyroidism (OR 2.6), renal failure (OR 3.8), liver disease (OR 5.1), obesity (OR 3.1), and fluid and electrolyte disorders (OR 4.3).
CONCLUSION: Given the young age of these men and women with schizophrenia, the degree of chronic medical co-morbidity and utilization is noteworthy. The findings underlie the need for careful assessment of medical conditions when assessing patients with schizophrenia. Given barriers to care, these data implicate the need for systems of care designed for persons with chronic mental illness.

SCREENING FOR CHRONIC KIDNEY DISEASE WITH MICROALBUMIN IN HYPERTENSIVE PATIENTS: A COST-EFFECTIVENESS ANALYSIS. E. Berbano[1]; K. Abbott[2]; P. O'Malley[2]. [1]Walter Reed Army Medical Center, Bethesda, MD; [2]Walter Reed Army Medical Center, Washington, DC. *(Tracking ID #117430)*

BACKGROUND: The National Kidney Foundation recommends microalbumin (MA) screening in patients with hypertension, though the cost-effectiveness of such recommendations are not known. This decision analysis assesses if MA screening in older (>60yo), nondiabetic, hypertensive patients is cost-effective.
METHODS: Using a societal perspective, we constructed a decision analysis with TREEAGE 3.5 software, the U.S. Renal Data System, NHANES III, CMS cost information, and other estimates from the literature and our institution, to evaluate between a strategy of MA screening versus no screening in older, nondiabetic, hypertensive patients. Outcomes of cost and life expectancy were used. Direct laboratory costs were derived from the 2003 CMS laboratory fee schedule (direct cost for MA $10/test) and pharmacy costs from our facility (ACEI $50/year). The baseline penetrance of ACEI/ARB was assumed to be 30%, and the prevalence of microalbuminuria, 21%. The incidence of ESRD development with MA in untreated versus treated patients was assumed to be 20% and 10%, respectively. We assumed that if a patient was found to have early kidney disease with a positive MA, then an ACEI/ARB would be initiated and continued in upto 90% of patients. The impact of ACEI on life expectancy was assumed to be a 40% increase in patients with near ESRD and CHD and 15% increase in patients at high risk for CHD based on the HOPE trial. Sensitivity analyses were done to determine the robustness of the results when varying multiple variables across a range of estimates.
RESULTS: A strategy of screening for MA in older, hypertensive patients would result in increased penetrance of ACEI/ARB use among previously undetected patients with microalbuminuria, resulting in increased life expectancy from 15.83 to 15.97 years. This strategy would also result in a cost savings of $281 per patient screened. Sensitivity analyses revealed that the strategy of screening was cost-saving when considering all variables across a wide range of assumptions.
CONCLUSION: Using conservative assumptions, MA screening for chronic kidney disease in older, nondiabetic, hypertensive patients results in substantial cost-savings, largely attributable to the impact of the efficacy of ACEI/ARB on decreasing the mortality associated with ESRD and CHD.

SCREENING FOR LIMITED HEALTH LITERACY IN DIABETICS: A RANDOMIZED, CONTROLLED TRIAL. H.K. Seligman[1]; F. Wang[1]; J. Palacios[1]; C. Daher[1]; D. Schillinger[1]. [1]University of California, San Francisco, San Francisco, CA. (*Tracking ID #115258*)

BACKGROUND: Patients with limited health literacy (HL) are more likely to have poor chronic disease knowledge and self-management skills, and to report communication problems with their physicians. Because of the prevalence and difficulty identifying patients with limited HL, some have advocated for HL screening in primary care settings. It is not known how HL screening affects physicians' communication and effectiveness, the physician-patient relationship, or health outcomes.
METHODS: We conducted a randomized, controlled trial of HL screening and physician feedback in 2 primary care practices of an urban, academic, medical center. We randomized physicians and assigned patients to intervention or control groups based on their physician's randomization status. Patients were eligible if they had type II diabetes, spoke English or Spanish, had a primary care provider, and had limited HL (s-TOFHLA score <23). Just prior to their visit, intervention physicians were notified of their patients' limited HL but received no other instructions. Control physicians were not notified of their patients' limited HL. After the visit, physicians completed a survey assessing their visit-specific communication strategies, satisfaction, and self-rated effectiveness. Patients were asked (a) to rate their satisfaction with the visit using the Patient Enablement Instrument (PEI), and (b) whether they found screening to be acceptable and useful. Finally, we examined the change in HgA1c in intervention and control groups over the subsequent 9 months. All analyses accounted for the clustering of patients by physician.
RESULTS: We enrolled 71 physicians and 182 patients. Intervention physicians were more likely to employ tailored communication strategies (OR 4.8, $P = .005$), such as using pictures or diagrams and engaging patients' family or friends. However they were less likely to be satisfied (OR .20, $P = .002$) and less likely to report feeling effective (OR .45, $P = .02$) in the visit. While nearly all patients found screening with physician notification acceptable (93%), intervention patients were no more likely to feel empowered after their visit (PEI scores 12.9 vs 12.6, $P = .5$). HgA1c fell by 0.3% more in the intervention group (95% CI –.8% to .3%, $P = .32$).
CONCLUSION: Primary care physicians who are notified of their patients' limited HL appear responsive to the information, but their lower satisfaction and self-rated effectiveness suggest that they are poorly prepared to integrate this information into their practice. While screening appeared acceptable to patients, the lack of improvements in patient-centered outcomes suggests that more comprehensive strategies toward overcoming the health care barriers of patients with limited HL need to be identified.

SCREENING OF METABOLIC SYNDROME IN HIGH-RISK POPULATION: A SIMPLE MEASUREMENT OF WAIST CIRCUMFERENCE. J. Huang[1]; R. Parish[1]; H. Yu[2]; P.F. Bass[1]; I. Mansi[1]; E. Marin[1]; T. Davis[1]; D. Carden[1]. [1]Louisiana State University Medical Center at Shreveport, Shreveport, LA; [2]Yale University School of Medicine, New Haven, CT. (*Tracking ID #116876*)

BACKGROUND: Metabolic syndrome (MS) is associated with risk factors for type 2 diabetes and cardiovascular disease. Currently, 24% of U.S. adults have MS. Identifying high risk patients is important since MS can be managed with lifestyle modification and pharmacologic intervention. Although there are several diagnostic criteria for MS, the National Cholesterol Education Program (NCEP) guidelines are the most convenient and acceptable criteria. However, because the NCEP criteria require blood testing, a simple, non-invasive screening method may be preferable. The current study compared the diagnostic performance of a single measurement of waist circumference (WC), body mass index (BMI), or waist to hip ratio (WHR), or their combination to that of the NCEP criteria among high-risk patients in a public, teaching hospital.
METHODS: A chart review was conducted on 928 outpatients in July 2002. Anthropometric parameters were measured with patients wearing one layer of light clothing without shoes. Data from 720 patients with complete clinical parameters were used

for analysis. Sensitivity (Sen), specificity (Spc), positive predictive value (PosPred), and negative predictive value (NegPred) were calculated. The diagnostic performance of WC, BMI, and WHR, alone or in combination, was based on the overall profile of the above four values. A range of cutoff points of WC in inches, BMI calculated as weight(kg)/height(m^2), and WHR covering the recommended cutoff points by NCEP or WHO (WC: 40 M, 35 F; BMI: 30; WHR: 0.9 M, 0.85 F) were tested as single predictors. The best cutoff points from each range were then used for combination analysis.
RESULTS: Seventy percent of patients were black and 68% were female. Sixty-four percent of patients had MS based on the NCEP criteria. WC demonstrated the best diagnostic performance for MS. The lower cutoff points of WC and WHR were indicated for men and women, respectively; while the lower cutoff points of BMI were suggested for both men and women. The combination of WC with BMI or WHR did not improve diagnostic performance (see table below).
CONCLUSION: In this patient population, WC is a simple, cost-effective, and powerful screening tool for MS. Cutoff points allowing high Sen and NegPred should be chosen since a false positive result may only require additional blood testing while a false negative result may have devastating long term health consequences. Routine measurement of WC may be indicated for health maintenance. The variation of WC should be taken into consideration among different ethnic and gender groups in setting the WC threshold.

		Men/Women			
Variable	**Cutoff**	**Sen**	**Spc**	**PosPred**	**NegPred**
WC	38/35	.85/.89	.69/.55	.81/.79	.74/.72
BMI	28/28	.77/.82	.61/.51	.76/.77	.63/.59
WHR	.90/.80	.86/.90	.35/.33	.67/.72	.61/.63
WC + BMI	38 + 28/35 + 28	.74/.80	.75/.63	.82/.81	.65/.62
WC + WHR	38 + .90/35 + .80	.77/.82	.73/.61	.82/.81	.67/.64

SELF-ACCOUNTABILITY: A POWERFUL TOOL THAT IMPROVES LEARNER SKILLS. R.C. Anderson[1]; L.S. Blust[1]; J. Zebrack[1]; D.E. Simpson[1]. [1]Medical College of Wisconsin, Milwaukee, WI. *(Tracking ID #117328)*

BACKGROUND: Although physicians must understand "the need to engage in lifelong learning" per the AAMC Medical School Objectives Project's report, this training rarely is a formal part of medical school curricula.
METHODS: During the month-long M4 student elective, "Apprenticeship with a Master Clinician," 8 students focus on improving core knowledge and skills in areas such as interviewing, physical examination, disease knowledge, evidence-based medicine, data interpretation (such as ECG or chest x-ray interpretation) and effective teaching of peer students. Students list 3–4 objectives to achieve by the conclusion of the rotation (e.g. recognize aortic stenosis murmur). Then, for each objective, students write down specific actions they will take to achieve the objective. (e.g. review audiotapes characterizing murmurs). Next, students develop indicators for progress relative to each objective. (e.g. correct identification of murmurs on a heart sound simulator). Last, for each objective, students list tangible evidence indicates achievement of objectives (e.g. attending confirmation of aortic stenosis murmur).
RESULTS: Over the last 4 years, 130 students have participated in this M4 elective. At the conclusion of the month, students rate self-confidence in their chosen areas of self-accountability (Likert Scale, 1 = not confident, 6 = very confident). Students then retrospectively rate their confidence in these same areas at the beginning of the month. A *t* test was utilized to compare mean ratings of self-confidence before and after the self-accountability intervention. Mean ratings were grouped into the 6 categories in Table 1.
CONCLUSION: Students significantly gained increased confidence in all key skill and knowledge areas by using a self-accountability process. They expressed satisfaction with the process itself. Self-accountability fosters life-long learning and provides the means to fill gaps by defining self-directed goals, methods and specific outcomes.

Table 1: Self-Accountability

SELF-ACCOUNTABILITY	**PRE**	**POST**	***P* value**
Interviewing (n = 64)	3.1	5.0	<.05
Physical Examination (n = 118)	2.3	4.5	<.05
Disease Knowledge (n = 34)	2.3	4.5	<.05
Teaching Strategies (n = 95)	2.7	4.8	<.05
Evidence-based Medicine (n = 39)	2.5	4.5	<.05
Data Interpretation (n = 17)	2.4	4.7	<.05

SELF-CONFIDENCE IN AND PERCEIVED UTILITY OF THE PHYSICAL EXAMINATION: A COMPARISON OF MEDICAL STUDENTS, INTERNAL MEDICINE RESIDENTS, AND FACULTY INTERNISTS. E.H. Wu[1]; M.J. Fagan[1]; S.E. Reinert[2]; J. Diaz[3]. [1]Brown University, Providence, RI; [2]Lifespan, Providence, RI; [3]Brown University, Pawtucket, RI. *(Tracking ID #115823)*

BACKGROUND: Little is known about how confident medical students, residents, and practicing internists are in their ability to perform specific components of the physical examination, or about the perceived utility of these components in generating clinically important information.
METHODS: Based on JAMA's Rational Clinical Examination series, we developed a questionnaire concerning 14 components of the physical examination. Using a Likert-type scale, respondents were asked to indicate how confident (1 = Not at all Confident, to 5 = Very Confident) they were in their overall physical examination skill, as well as in their ability to perform each skill, and how useful (1 = Not at all Useful, to 5 = Very Useful) they felt the overall physical examination, and each skill, to be for yielding clinically important information. Relationships between self-confidence scores and training level were assessed using the Spearman rank correlation. Differences in self-confidence scores among the training levels were determined using one-way analysis of variance (ANOVA) with Scheffe's multiple comparison test.
RESULTS: The overall response rate was 73% (277/376), including 65 3rd-year medical students, 47 4th-year medical students, 47 PGY-1 residents, 81 PGY-2 through PGY-4 residents, and 37 general internal medicine faculty. Of the 14 physical examination skills, measuring blood pressure had the highest mean self-confidence (4.65) and perceived utility (4.85) scores. The fundoscopic exam yielded the lowest mean self-confidence (2.50), while detecting clubbing had the lowest mean perceived utility (3.52). The physical examination skills with the greatest differences between mean self-confidence and perceived utility were distinguishing between a mole and melanoma, detecting a thyroid nodule, and interpreting a diastolic murmur. There was a statistically significant correlation between mean overall self-confidence score and training level (rs = 0.24, $P = .0001$), and similar correlations were exhibited for most individual skills. While 4th-year medical students had significantly greater overall confidence than 3rd-year medical students (mean score 3.76 vs. 3.33, $P = .019$), PGY-1 residents did not have significantly higher overall confidence than 3rd-year students (mean score 3.41 vs. 3.33, $P = .975$).
CONCLUSION: PGY-1 residents did not have greater physical diagnosis self-confidence than 3rd-year medical students. The differences we found between perceived utility and self-confidence for a number of basic physical examination skills suggest potential areas for educational interventions.

SELF-ESTEEM, CONFIDENCE, AND RELATIONSHIPS IN MEN WITH ERECTILE DYSFUNCTION TREATED WITH SILDENAFIL: AN INTERNATIONAL STUDY. J.C. Cappelleri[1]; S. Duttagupta[2]; N. Sherman[3]; V.J. Stecher[2]; R.L. Siegel[2]; L. Tseng[3]; S. Glina[4]. [1]Pfizer Global Research & Development, Groton, CT; [2]Pfizer, Inc., New York, NY; [3]Pfizer Inc, New York, NY; [4]Instituto H. Ellis, Sao Paulo, SP. *(Tracking ID #117352)*

BACKGROUND: We used the validated, patient-reported, erectile dysfunction (ED)-specific Self-Esteem And Relationship (SEAR) questionnaire to assess changes in self-esteem, confidence, and relationships in men with ED after sildenafil treatment.
METHODS: This was a 12-week, placebo-controlled, flexible-dose, multicenter trial in men aged ≥18y with clinically documented ED. Change scores from baseline to end of treatment on 2 domains (Sexual Relationship [SR], Confidence [CON]), CON domain subscales (Self-Esteem [SE], Overall Relationship [OR]), and Overall score of the SEAR were analyzed using linear regression. Pearson's correlation coefficients were obtained on changes in SEAR scores with changes in the erectile function (EF) domain of the International Index of Erectile Function (IIEF).
RESULTS: 149 and 151 patients (mean age 55y) were randomized to placebo and sildenafil, respectively. Sildenafil offered significantly greater improvements vs placebo on all SEAR components and all 5 IIEF domains ($P < .001$). Changes in SEAR scores (range, –100 [worst] to 100 [best]) showed moderate-to-high correlations with changes in EF domain scores.
CONCLUSION: In men with ED, sildenafil treatment resulted in significant improvements in SE, CON, SR, and OR as assessed by the SEAR. Changes in SEAR scores correlated significantly with efficacy as determined by changes in the IIEF EF domain.

SEAR Component	**Overall Baseline (N = 283)**	**Change Placebo (n = 139)**	**Change Sildenafil (n = 144)**	**EF domain Correlation**
SR domain	38.46	13.05	37.09†	0.73‡
CON domain	38.28	16.63	39.49†	0.74‡
SE subscale	36.57	17.44	41.44†	0.71‡
OR subscale	41.67	14.99	35.78†	0.65‡
Overall score	38.40	14.51	38.18†	0.78‡

† $P < .0001$; ‡ $P < .0001$

SELF-ESTEEM, CONFIDENCE, AND RELATIONSHIPS IN MEN WITH ERECTILE DYSFUNCTION TREATED WITH SILDENAFIL CITRATE. J.C. Cappelleri[1]; S. Duttagupta[2]; N. Sherman[3]; R.L. Siegel[2]; A. Crowley[2]; L. Tseng[3]; M. O'Leary[4]; S.E. Althof[5]. [1]Pfizer Inc, Groton, CT; [2]Pfizer, Inc., New York, NY; [3]Pfizer Inc, New York, NY; [4]Brigham and Women's Hospital, Boston, MA; [5]Case Western Reserve University, Beachwood, OH. *(Tracking ID #117379)*

BACKGROUND: We used the validated, erectile dysfunction (ED)-specific Self-Esteem And Relationship (SEAR) questionnaire to assess changes in self-esteem (SE), confidence (CON), sexual relationships (SR), and overall relationships (OR) in men with ED treated with sildenafil.
METHODS: This was a 12-week, US-based, placebo-controlled, flexible-dose trial in men aged ≥18y with clinically documented ED. Change scores (score range, –100 [worst] to 100 [best]) from baseline to end of treatment on the SEAR were analyzed using linear regression. Change scores on the 14 SEAR items were analyzed using a Wilcoxon rank-sum test. Pearson's correlation coefficients were obtained on changes in SEAR components with changes in the erectile function (EF) domain of the International Index of Erectile Function (IIEF).
RESULTS: 125 and 128 patients were randomized to double-blind treatment with placebo or sildenafil, respectively. Compared with placebo, sildenafil produced significantly greater improvements in all SEAR components (Table), 13 of 14 SEAR items ($P < .005$), and all 5 IIEF domains ($P < .0005$). Changes in SEAR scores showed moderate correlations with changes in EF domain scores ($P < .0001$).

CONCLUSION: In men with ED, sildenafil produced significant improvements in SE, CON, SR, and OR. Changes in these psychosocial factors correlated significantly with efficacy as determined by changes in EF domain scores.

SEAR Component*	Overall Baseline (N = 228)	Change Placebo (n = 115)	Change Sildenafil (n = 113)	EF Domain Correlation
SR domain	38.8	4.40	25.9†	0.69‡
CON domain	46.1	4.80	24.8†	0.47‡
SE subscale	42.1	8.23	27.7†	0.45‡
OR subscale	53.8	−0.35	18.5†	0.34‡
Overall score	41.9	4.65	25.4†	0.63‡

† $P < .0001$; ‡ $P < .0001$

SELF-RATED HEALTH OF PRIMARY CARE HOUSE OFFICERS. M.S. Yi[1]; S.E. Luckhaupt[2]; J.M. Mrus[2]; C.V. Mueller[1]; A.H. Peterman[3]; C.M. Puchalski[4]; J. Tsevat[2]. [1]University of Cincinnati Medical Center, Cincinnati, OH; [2]University of Cincinnati and Veterans Affairs Medical Centers, Cincinnati, OH; [3]Northwestern University, Evanston, IL; [4]George Washington University, Washington, DC. *(Tracking ID #116655)*

BACKGROUND: The stressful and arduous nature of residency training may impact the health of house officers. We sought to determine the self-rated health (SRH) of housestaff in primary care residencies, and factors that are associated with SRH in housestaff.
METHODS: All pediatric (PED), internal medicine (IM), family medicine (FM), and combined medicine-pediatric (IMPED) residents at a major Midwestern teaching program were asked to complete a questionnaire after their in-service examinations. Self-rated health (SRH) was determined with a rating scale (range 0–100; 0 = dead and 100 = perfect health). Predictor variables included demographics, residency program type, post-graduate level (PGY), current rotation, depressive symptoms (CESD-10; range 0–30; higher scores represent greater depressive symptoms), religious affiliation, spirituality (FACIT-SpEx; range 0–92; higher scores represent greater spiritual well-being), religiosity (Duke Religion Index), and religious coping (RCOPE). We performed univariate analyses and linear regression for multivariable analyses.
RESULTS: We collected data from 227 subjects (92% of eligible house officers). Their mean (SD) age was 28.7 (3.8) years; 130 (58%) were female; 166 (74%) were white; 106 (48%) were PED residents, 62 (27%) were IM residents, 27 (12%) were FM residents, and 26 (11%) were IMPED residents. The overall mean (SD) SRH score was 87 (10) with a range of 40–100, with only 4 subjects reporting a score of 100. SRH scores were significantly associated ($P < .05$) with program type (mean SRH = 81 for IM residents, 88 for FM residents, 89 for PED residents, 89 for IMPED residents) and PGY level (87 for PGY-1, 84 for PGY-2, 88 for PGY-3 or above), and lower SRH scores were associated with greater depressive symptoms, poorer spiritual well-being, coping through religion poorly, and seeking religious support. In multivariable analyses, SRH was associated with residency program type, depressive symptoms, and spiritual well-being.
CONCLUSION: SRH was poorer than might be expected in a cohort of relatively young primary care house officers. Program type, depressive symptoms, and spiritual well-being are associated with SRH scores. Future studies should examine whether treating depressive symptoms and attending to religious and spiritual needs can improve the overall health and well-being of primary care housestaff.

SELF-REPORTED HEALTH CARE DISCRIMINATION, INTERPERSONAL PROCESSES OF CARE, AND HEALTH STATUS AMONG PATIENTS WITH DIABETES. J.D. Piette[1]; K. Bibbins-Domingo[2]; D. Schillinger[2]. [1]Ann Arbor VAMC and the University of Michigan, Ann Arbor, MI; [2]University of California, San Francisco, San Francisco, CA. *(Tracking ID #101796)*

BACKGROUND: Whether intentional or unintentional, clinician behaviors may lead some patients to perceive discrimination within health care settings. We examined the extent to which diabetes patients report health care discrimination on the basis of their race/ethnicity, socioeconomic status, age, and gender. We also examined the extent to which problems with interpersonal processes of care (IPC) contribute to patients' reports of discrimination and the association between discrimination reports and patients' health.
METHODS: 810 diabetes patients were enrolled from county-based, university-based, and VA health care systems. Patients with mental illness, substance abuse disorders, or a life expectancy of less than 12 months were excluded. Study participants completed telephone surveys administered by staff who were unaffiliated with patients' medical care. Surveys included validated measures of patients' IPC, questions regarding perceived discrimination by doctors or staff, and health status measures. Surveys were linked to hemoglobin A1c (A1C) and total cholesterol test results obtained at enrollment.
RESULTS: Overall, 14% of participants reported some form of discrimination in the prior year, including discrimination due to their race (8%), education or income (9%), age (7%), and gender (10% of women). Controlling for their sociodemographic characteristics (age, race, gender, income, education, primary language, and country of origin), diabetes health status (insulin use, A1C, and body mass index), and mental health, patients with poorer than average ratings of their IPC had 3–12 times greater odds of reporting health care discrimination. Controlling for multiple potential confounders, patients reporting health care discrimination had A1C levels that were 0.6% higher than other patients ($P = .002$), more symptoms ($P < .01$), and poorer physical functioning ($P = .007$).
CONCLUSION: A significant number of diabetes patients report discrimination within health care settings. Patients' reports of health care discrimination are strongly linked to the quality of their interactions with providers as well as multiple health outcomes. Physicians should consider the possibility that conscious or unconscious stereotyping may influence their interpersonal style. Clinicians also should recognize that a less congenial manner may be interpreted as discrimination by historically disenfranchised patients, even if care is equitable. Addressing perceived health care discrimination may improve health outcomes for socioeconomically vulnerable populations.

SHADES OF GRAY: THE SPECTRUM OF MEDICAL ERROR DISCLOSURE AND ITS INFLUENCES. S.P. Fein[1]; L.H. Hilborne[1]; E.M. Spiritus[2]; G.B. Seymann[3]; C.R. Keenan[4]; K.G. Shojania[5]; M. Kagawa-Singer[1]; N.S. Wenger[1]. [1]University of California, Los Angeles, Los Angeles, CA; [2]University of California, Irvine, Irvine, CA; [3]University of California, San Diego, San Diego, CA; [4]University of California, Davis, Davis, CA; [5]University of California, San Francisco, San Francisco, CA. *(Tracking ID #115988)*

BACKGROUND: Critical steps toward improving the quality of our healthcare system include the recognition of errors in order to implement effective remedies and timely disclosure of errors that are meaningful to patients. These steps require that healthcare providers appreciate and disclose their mistakes. Prior work has focused on whether or not providers would disclose medical errors, with qualitative studies demonstrating a discrepancy between patients' wishes for disclosure and physicians' behavior. In order to better understand this difference and the process of error disclosure, we aimed to define the details of disclosure practices by conducting focus groups with relevant stakeholders.
METHODS: We conducted separate focus groups with residents (N = 50), attending physicians (N = 55), nurses (N = 45), patients (N = 36) and hospital administrators (N = 54) at five different academic medical centers in one university healthcare system. The protocol consisted of standardized, open-ended questions designed to elicit participants' ethical perceptions and expectations, as well as specifics of disclosure behaviors to the institution and to the patient. Audiotapes of the 25 focus groups were transcribed verbatim and analyzed using Atlas ti software. Codes were assigned to the text in an iterative fashion and themes were identified.
RESULTS: Disclosure to patients was not a dichotomous phenomenon. Error disclosure was nearly universally supported, but the decision process about how and what to disclose was complex, and took into account patient, physician and institutional needs. There was little variation among groups in perceived ethical responsibility to disclose, yet participants described five categories of disclosure behaviors; determined by whether the provider acknowledged the error, the provider's willingness to disclose and if so, whether details were revealed to the patient in a way that portrayed the relationship of the mistake to outcomes. Administrators and physicians had mixed views about whether disclosure should "connect the dots." Patients, in general, felt that the provider should "explain the reasons that [the error] happened and, of course, apologize for it." Situational, patient and provider factors influenced disclosure behaviors. More complete disclosure was likely if the patient suffered significant harm, if the patient was aware of the error and if good patient-provider rapport had been established. Disclosure was less likely if providers feared patient and institutional reactions. Most cases contained competing influences, which led to the shades of gray noted in disclosure behaviors.
CONCLUSION: Understanding the context of and influences on the disclosure patterns of healthcare providers and their ethical and practical underpinnings will facilitate targeting interventions to promote disclosure consistent with stakeholders' values and the realities of medical practice.

SHOULD ALL OLDER INDIVIDUALS WITH DIABETES BE TREATED WITH AN ACE-INHIBITOR? ARE THEY? A.B. Rosen[1]. [1]Division of General Medicine, Beth Israel Deaconess Medical Center, Boston, MA. *(Tracking ID #116164)*

BACKGROUND: Angiotensin converting enzyme-inhibitors (ACE) and angiotensin receptor blockers (ARB) prevent both renal and cardiac end-organ damage in patients with diabetes. Despite their marked morbidity and mortality benefits, the percentage of elderly patients with diabetes who would benefit from ACE or ARB (ACE/ARB) is unknown; as is the prevalence of receipt of this important preventive therapy. This study measured the proportion of older diabetics with risk factors conferring proven benefit from ACE/ARB therapy; and generated national estimates of the prevalence of ACE/ARB use.
METHODS: I used the National Health and Nutrition Examination Survey (NHANES) 1999–2000, a national survey of the non-institutionalized civilian population conducted by the National Center for Health Statistics, to identify respondents with self-reported non-gestational diabetes. Within this group, we examined the prevalence of risk factors with trial-supported evidence of benefit from ACE/ARB, and estimated national rates of ACE/ARB use in the at-risk population. Risk factors with evidence of benefit from ACE/ARB in individuals with diabetes over age 55 included proteinuria (microalbuminuria or clinical proteinuria), hyperlipidemia, hypertension, smoking, and cardiovascular disease (coronary artery disease, stroke, or congestive heart failure). ACE/ARB use was determined by interviewer review of current medications at the time of the household survey. To obtain US population estimates, analyses were performed using SUDAAN software to account for the complex design of the NHANES survey.
RESULTS: A sample of 376 respondents, representing 7.3 million non-institutionalized U.S. adults ≥ 55years, had diagnosed diabetes. Over 98% of the cohort had at least one risk factor making them eligible to benefit from ACE/ARB therapy. 42.3% had proteinuria, 77.0% hyperlipidemia, 81.2% hypertension, 14.8% were smokers,

and 34.8% had cardiovascular disease. Only 1.4% of patients had no risk factors, while 84.5% had two or more risk factors. Only 39.2% were on an ACE/ARB; this rate was unchanged when the 1.4% of patients without risk factors were excluded. CONCLUSION: ACE/ARB is indicated in virtually all older (≥55) individuals with diabetes. Despite clear indications for therapy, national rates of ACE/ARB use among older persons with diabetes are disturbingly low. Targeted efforts to increase use of ACE/ARB in all older diabetics could improve quality of care by reducing both ESRD incidence and cardiovascular morbidity and mortality. Policymakers might consider use of ACE/ARB for inclusion in diabetes performance measurement sets.

SHOULD WE STUDY ULTRASOUND FOR BREAST CANCER SCREENING? A VALUE OF INFORMATION ANALYSIS. M.D. Schleinitz[1]; J. Blume[1]; W. Berg[2]. [1]Brown University, Providence, RI; [2]Berg Enterprises, Lutherville, MD. *(Tracking ID #117238)*

BACKGROUND: Observational series have suggested that the addition of annual whole breast ultrasound to routine mammographic screening may improve the detection of early stage breast cancers, particularly for women with mammographically dense breasts. The potential value of a prospective study of screening breast US is unclear. We used value of information analysis to determine the maximal value of such a trial.
METHODS: We constructed a Markov model from a societal perspective comparing screening with mammography plus ultrasound to mammography alone for women over 45 years old with mammographically dense breasts and a 25% or greater lifetime risk of breast cancer and assumed that 500,000 women would meet these criteria during the technology lifetime of US. We determined the value of perfect information by calculating the average difference between the expected net economic benefit given perfect information on all model variables and the expected net economic benefit given current data in 5,000 Monte Carlo simulations. As net economic benefit and the value of information are functions of society's cost-effectiveness threshold we made each comparison at a series of thresholds ranging from zero to $200,000 per quality adjusted life year (QALY). We also independently assessed the value of information on the effectiveness of ultrasound, cost of ultrasound, quality of life measures, efficacy of mammography and variables describing disease progression and treatment.
RESULTS: The addition of ultrasound to mammography improved quality adjusted life expectancy by an average of 0.054 QALYs at an incremental cost of $4,050, or $75,000 per QALY. The maximum value of simultaneous, perfect information on all variables was $480 million. Considered individually, data on the incremental efficacy of ultrasound had a maximum value of $285 million, perfect information on the cost of ultrasound had a value of $245 million and data on quality of life had a value of $195 million.
CONCLUSION: Screening breast US may improve the lives of eligible women, but there is considerable uncertainty about its cost-effectiveness. Further research would decrease this uncertainty and has a maximum expected value of $480 million dollars. This value is concentrated in three areas, the incremental efficacy of ultrasound compared to mammography, the cost of ultrasound and women's utilities for breast cancer related health states, which should be the focus of a prospective trial.

SMOKING AND THE INCIDENCE OF GLUCOSE INTOLERANCE IN YOUNG ADULTS: THE CARDIA STUDY. T.K. Houston[1]; S. Person[1]; M. Pletcher[2]; K. Liu[3]; C. Iribarren[4]; C.I. Kiefe[1]. [1]University of Alabama at Birmingham, Birmingham, AL; [2]University of California, San Francisco, San Francisco, CA; [3]Northwestern University, Evanston, IL; [4]Kaiser Permanente, Oakland, CA. *(Tracking ID #116871)*

BACKGROUND: Smoking has been hypothesized to increase insulin resistance potentially through fat redistribution and direct pancreatic toxicity. Although tobacco smoking has been associated with incidence of cardiovascular disease, less is known regarding the risk of developing diabetes among smokers.
METHODS: We identified smokers (N = 1,437), former smokers (N = 645), second-hand-smokers (as evidenced by low-level cotinine 1–15 mg/dl, N = 695), and never-smokers (N = 1,927) at baseline (1985–86) in the Coronary Artery Risk Development in Young Adults (CARDIA) Study, excluding those with baseline impaired fasting glucose (glucose > 110). Our primary outcome was time to development of impaired fasting glucose (IFG) during follow-up.
RESULTS: Baseline age was 18–30 (median 25), 45% were female, and 51% African-American. During 15 years of follow-up, 241 developed impaired fasting glucose. In Kaplan-Meier analysis, the 15-year incidence of IFG was highest among smokers, followed by those with ETS exposure, then prior smokers and was lowest for never-smokers with no ETS, (see Table). Overall, after using Cox proportional hazards models to adjust for race, age, sex, baseline systolic blood pressure, HDL, waist circumference, body mass index, alcohol consumption, and smoking cessation during follow-up, current smokers were again more likely to develop IFG compared with never-smokers with no ETS exposure (Table). This association was similar among Whites (HR = 1.67 (95% CI 0.93–3.0) and African-Americans (HR = 1.39, 95% CI 0.97–1.97).
CONCLUSION: Baseline smokers were at increased risk for developing impaired fasting glucose over 15 years. ETS in non-smokers also may predispose to impaired fasting glucose.

Table: Unadjusted 15-Year Kaplan-Meier Incidence and Adjusted Relative Hazards of Impaired Fasting Glucose among 4,811 African-Americans and Whites

	15-Yr Incidence	Adjusted Hazard	(95% CI)
Never Smoker, No ETS	4.8%	1.0	Referent
Never Smoker, ETS	6.5%	1.3	(0.9–1.9)
Prior Smoker	5.2%	1.2	(0.8–1.9)
Current Smoker	7.2%	1.6	(1.1–2.2)

SOUTHERN REGIONAL RESIDENT AWARD WINNER: USING ANALYTIC HIERARCHY PROCESS (AHP) TO ASSESS DIABETES QUALITY. M. Long[1]; R.M. Centor[1]; J.J. Allison[1]. [1]University of Alabama at Birmingham, Birmingham, AL. *(Tracking ID #115727)*

BACKGROUND: Although the importance of summary quality measures is well recognized, current methodology lags behind the need. This study used analytic hierarchy process (AHP) to examine how practicing physicians perceived the relative importance of four diabetes quality measures.
METHODS: We used AHP software to calculate the relative quality weights of four quality measures from HEDIS 2000: control of HgbA1C to <7.0, LDL control to <100, receipt of a dilated eye exam, and performance of a foot exam. To derive a quality weight for each measure, 30 residents and attending physicians performed a series of pairwise comparisons. Quality weights were averaged across physicians. Next, we applied the quality weights to four separate quality measures from a multi-state database of more than 300 primary care physicians and more than 6,000 patients with diabetes. To examine quality of care in this diabetes data base we considered: measurement of HbgA1c and LDL cholesterol and receipt of dilated eye exam and foot exam. Combining the diabetes database data with the derived quality weights, we calculated weighted and unweighted summary quality measures at the physician level. Finally, we ranked physicians by the weighted and unweighted summary performance scores.
RESULTS: Of the four measures (values represent average quality weights), the academic physicians judged HgbA1c <7.0 as most important (0.4717) followed by LDL of <100 (0.2631), eye exam (0.1423) and foot exam (0.1228). We found no difference in weighting among three levels of training. Using the diabetes database, average physician performance was: HgbA1c 40.8%; lipids 68.3%; dilated eye exam 17.3%; foot exam 42.4%. There was a small, but statistically significant difference between the unweighted and weighted overall summary scores (42.2%, 44.9%, $P = 0.000$). Comparing individual physician rankings using first the weighted and then unweighted summary scores revealed that 18.1% of physician rankings changed greater than 30 positions.
CONCLUSION: Using AHP pairwise comparisons, we developed quality weights that can cause important changes in relative quality rankings (for individual physicians). Further quality evaluation research should incorporate a broad array of physician and patient perspectives in deriving quality weights.

SPECIALTY INTERNIST GENDER AND PATIENT CARE. A. Arouni[1]; J. Bramble[1]; E.C. Rich[1]. [1]Creighton University, Omaha, NE. *(Tracking ID #117195)*

BACKGROUND: Data from primary care, Obstetrics and Gynecology, and surgery indicate that patients receive different services depending on their physician's gender. No similar data are available from Internal Medicine subspecialties, despite the steady increase in the number of women entering these fields in the last 3 decades. This study examines if comparable patients receive different care based on their physician's gender, to better understand potential implications of changing physician demographics within Cardiology, and Pulmonary Medicine.
METHODS: A quasi-experimental cross-sectional study tested the hypotheses that patients of female Cardiologists and Pulmonologists have longer lengths of stay, higher laboratory and imaging costs and fewer discretionary procedures than patients of male physicians within these subspecialities. We combined Arizona hospital discharge data from year 2001 with physician characteristics and hospital characteristics data to create a unique data set. Patients over 18 with a length of stay >1 day diagnosed with angina (n = 674), or acute respiratory failure (n = 526) were included in the study. Hierarchical regression models tested the hypotheses controlling for patient, physician, and hospital characteristics.
RESULTS: Not surprisingly, compared with female Cardiologists and Pulmonologists, the male specialists had practiced more years since medical school graduation ($P < .0001$ and $P < .001$, respectively). Patients treated for angina had relatively similar lengths of stay (1.8 days) irrespective of physician gender. However, patients with acute respiratory failure treated by male Pulmonologists had an average LOS of 14.4 days, compared to 12.4 days for patients treated by female Pulmonologists. Preliminary evidence suggests that there is no difference in discretionary procedures as measured by the percent of cardiac catheterizations and bronchoscopes preformed.
CONCLUSION: It appears that as, in the primary care setting, similar hospitalized patients may receive different care based on the gender of their specialist physician. Further research will be required to confirm these findings and to identify the factors underlying these seeming variations in care.

STANDARDIZED PATIENTS AS EXPERT WITNESSES. D.A. Paterniti[1]; C.E. Franz[1]; R.L. Kravitz[1]; M.D. Feldman[2]; R.M. Epstein[3]. [1]University of California, Davis, Sacramento, CA; [2]University of California, San Francisco, San Francisco, CA; [3]University of Rochester, Rochester, NY. *(Tracking ID #117528)*

BACKGROUND: Standardized patients (trained actors) are increasingly used to assess quality of care in medical settings, as part of medical education, and in research. Standardized patients (SPs) have an advantage over patients in witnessing the delivery of care for the same condition with a variety of physicians and in various contexts. Yet, SPs must deal with the dual role of both "patient" and actor. The purpose of this study was to assess whether SPs can be trained to "observe" with an ethnographic eye the context and quality of physician visits.
METHODS: We undertook an ethnographic study of physician office visits using standardized patients (SPs) to provide an understanding of "patient" views of the context and quality of physician visits. SPs trained in specific roles were instructed on making ethnographic observations of all aspects of their visit. SPs were provided

a literature-generated list of visit aspects they might consider as important to observation; however, SPs were instructed to reflect on all aspects of their visit and to describe those aspects that were most salient to them as "patients." Twelve SPs scheduled and attended new patient visits with 52 different physicians at both fee-for-service and HMO practice settings. SPs dictated field notes immediately following each visit. Transcripts of the notes were reviewed for persistent and recurring themes related to SP perceptions of the context and quality of their visit and its effect on them as "patient."
RESULTS: Analysis of 58 field notes from office visits reveals the impact of the dual role of "patient" and actor on SP perspectives of the visit. SP perceptions of their role as actor impacted their "patient" perspectives on satisfaction with the visit and trust in physician recommendations for treatment (e.g., having the physician probe into SP occupational status or familiar relationships in town, delving too much into the "patient's" personal life). SPs were careful to note the behaviors they tried to avoid as actors that they believed might jeopardize their role as an authentic patient in their relationship with the physician (e.g., accepting a "dirty" thermometer, being younger than the average age of waiting room patients, reporting back pain and bending improperly in the waiting room). SPs also reported tolerating or accepting behaviors in the role of actor that they believed they would not accept as an authentic patient.
CONCLUSION: Our findings reveal the potential impact of the dual role on the use of SPs as "expert witnesses" of the medical encounter. Potential conflict between the roles of patient actor and authentic patient may be a barrier to using SPs as ethnographic observers. Understanding such conflict, however, may be useful in designing more directive training for SPs who may have an opportunity to be an "expert witness."

STAR POWER: CELEBRITY ENDORSEMENTS OF CANCER SCREENING. R.J. Larson[1]; S. Woloshin[2]; L. Schwartz[2]. [1]Dartmouth Medical School, White River Junction, VT; [2]Dartmouth College, White River Junction, VT. *(Tracking ID #116762)*

BACKGROUND: Celebrities often promote cancer screening by relating personal anecdotes of their own diagnosis (e.g. General Schwarzkopf) or that of a loved one (e.g. Katie Couric regarding her late husband). The objective of this study was to see whether Americans have seen and have been influenced by celebrity endorsements of screening mammography, PSA testing and colonoscopy.
METHODS: We used data from a national random digit dialing survey conducted from December 2001 through July 2002 (response rate 71%). Five hundred individuals (women >40 and men >50; without a history of cancer) responded to questions related to screening for breast (women only), prostate (men only) and colon cancers (all respondents).
RESULTS: Most respondents reported they "had seen a celebrity talk about" either mammography (74%), PSA testing (63%), or colonoscopy (56% of women; 43% of men). A substantial proportion of those who had seen a celebrity endorsement said that it made them more likely to undergo screening—mammography (25%), PSA testing (31%) or colonoscopy (39%)—fewer than 5% said celebrity endorsements made them "less likely to undergo" screening. The effect of education on both having seen a celebrity endorsement and having been influenced by one varied across the three screening tests.
CONCLUSION: Celebrity endorsements of cancer screening tests reach over half of American adults and increase the likelihood that they will undergo screening.

STRESS AS A NEGATIVE INFLUENCE ON HEALTH: AN AFRICAN-AMERICAN MALE PERSPECTIVE. J.E. Ravenell[1]; W.E. Johnson[2]; E.E. Whitaker[3]. [1]Weill Medical College-Cornell University, New York, NY; [2]School of Social Service Administration-University of Chicago, Chicago, IL; [3]Illinois Department of Public Health, Chicago, IL. *(Tracking ID #116844)*

BACKGROUND: African-American men have the worst health status of any group in the United States as evidenced by the second lowest life expectancy and highest death rate from all causes. However, few studies have addressed African-American men's perceptions of what affects their health status. We sought to determine what factors influence African-American men's health in their own words.
METHODS: We conducted eight focus groups with 110 African-American men from an urban community in Chicago. Each focus group represented a subset of African-American men including adolescents, elderly men, men who have sex with men, substance abusers, trauma survivors, HIV-positive men, church-affiliated men and a cross-sectional group. Each group was asked the key question "What factors affect African-American men's health?" Focus groups were audio taped, transcribed verbatim and analyzed using grounded theory and Ethnograph, a qualitative data analysis software.
RESULTS: Responses to the key question fell into two major categories: negative influences on African-American men's health and positive influences on African-American men's health. Across all groups, psychological stress was cited as a dominant negative influence on both physical and mental health. Four major stressors were identified: 1) lack of income, resulting in the lack of insurance and the inability to afford quality medical care, 2) experiences of racism-at work, in the community and in the health care setting, 3) living in "unhealthy" neighborhoods, characterized by the stress of being a possible crime victim, the inability to exercise outdoors and reduced access to healthy foods, and 4) relationships and family interactions, including family conflict and domestic violence. Positive influences included a supportive social network and feeling valued by loved ones.
CONCLUSION: African-American men perceive stress as a major negative influence on their health. The stressors that negatively impact health are multidimensional and include inability to afford medical care, perceived racism, living in an unhealthy physical environment and interpersonal conflict. In addition to causing psychological stress, these stressors may also impact African-American men's health by limiting their ability to engage in positive health behaviors such as seeking medical care, exercising and eating healthy foods.

STROKE AMONG THE VERY OLD IN U.S. COMMUNITY HOSPITALS. P. Tabereaux[1]; D. Bravata[1]; J. Concato[1]; L.M. Brass[1]. [1]VA Connecticut Healthcare System and Yale University School of Medicine, New Haven, CT. *(Tracking ID #116642)*

BACKGROUND: Age is an important risk factor for stroke, but little is known about stroke among the very old. The objective of this study was to identify age-related differences in patient-, facility-characteristics, procedure utilization, or outcomes for patients hospitalized with acute ischemic stroke in U.S. community medical centers.
METHODS: We used the 2000 Healthcare Cost and Utilization Project data, a 4% sample of discharges from 1,000 U.S. community hospitals in 28 states. We included acute ischemic stroke hospitalizations (principal International Classification of Diseases, 9th Revision, codes 434 or 436) for patients ≥45 years, with ≥1 procedure code, a length of stay ≥24 hours, and not transferred from another acute care facility. Student's *t* tests and chi-square tests were used to compare characteristics and outcomes for younger (≥45<85 years) versus older (≥85 years) patients. Multivariable logistic regression was used to identify independent predictors of death and discharge to long-term care facilities. Because outcome rates >10%, we converted odds ratios to relative risks.
RESULTS: Among 5938 acute ischemic stroke hospitalizations; 17.4% (n = 1,031) were for older patients. Stroke hospitalizations for older, as compared with younger patients (n = 4,907), included patients with more comorbid conditions (7.7 ± 2.6 vs. 7.4 ± 2.8; $P < .0001$); involved fewer procedures (2.1 ± 1.5 vs. 2.5 ± 1.8; $P < .0001$); and were more likely to occur at small (13.4% vs. 11.0%; $P = .04$), rural (17.4% vs. 13.3%; $P = .0007$), and non-teaching hospitals (34.5% vs. 41.7%; $P < .0001$). Although few patients were admitted from a long-term care facility (≥85 years: 3.1%, vs. <85 years: 1.6%, $P = .001$), the majority of stroke hospitalizations for the very old ended with discharge to a long-term care facility (61.9%, vs. 37.0%, $P < .0001$). In-hospital mortality was also more common in hospitalizations for the very old (11.3% vs. 7.7%; $P = .0001$). Independent predictors of discharge disposition to a long-term care facility included: female gender (RR 1.3, 95% CI 1.1–1.5), total number of diagnoses (RR 1.1, 95% CI 1.0–1.1), and small hospital size (RR 1.5, 95% CI 1.2–1.9), but not age (RR 1.0, 95% CI 0.98–1.03). Independent predictors of in-hospital mortality included: atrial fibrillation (RR 1.4, 95% CI 1.1–1.7), congestive heart failure (RR 1.5, 95% CI 1.2–1.8), and respiratory failure (RR 3.5, 95% CI 2.5–5.0), but not age (RR 1.0, 95% CI 0.98–1.0).
CONCLUSION: These findings provide the first description of acute ischemic stroke hospitalizations for very old patients in the U.S. Modest differences exist in patient and hospital characteristics for older compared with younger patients. However, very old patients have higher in-hospital mortality and are much more likely to be discharged to long-term care facilities. These findings predict a substantial burden to the U.S. healthcare system given the aging of the U.S. population.

SUFFERING AT THE END OF LIFE IN THE SETTING OF LOW PHYSICAL SYMPTOM DISTRESS. A. Abraham[1]; B. Beaty[1]; J.S. Kutner[1]. [1]University of Colorado Health Sciences Center, Denver, CO. *(Tracking ID #115785)*

BACKGROUND: Alleviation of suffering is one of the fundamental aims of medicine, especially at the end of life. Although physical distress is a component of suffering, other determinants likely play a role. This study attempts to elucidate some of these other components, in an effort to better understand the nature of suffering.
METHODS: Prospective cohort study conducted in the Population-based Palliative Care Research Network (PoPCRN) among English-speaking adults. Data were collected at hospice admission and at frequent intervals until death or discharge. This abstract presents patient-reported data collected at the first available assessment after admission, using the Condensed Memorial Symptom Assessment Scale (MSAS—0 = not distressing, 4 = very distressing), the McGill Quality of Life Questionnaire (MQOL—0 = worst QOL, 10 = best QOL)) and 2 suffering scales, overall suffering and suffering due to physical symptoms (0 = not suffering, 10 = extreme suffering). The study population is limited to those with a mean score of less than 2.4 on the MSAS-PHYS, indicating physical symptoms were less than "somewhat" distressing over the preceding seven days. Respondents were divided into two groups: no-mild overall suffering (0–3) and moderate-severe overall suffering (4–10) and compared based on demographics, MQOL scores, MSAS-PSYCH scores and suffering due to physical symptoms.
RESULTS: Of 52 patients, 48 had a MSAS-PHYS mean score less than 2.4. Mean age 70 years (range 33–91), mean Karnofsky score 46, 46% married, 54% male, 71% cancer, 93% non-Hispanic white. Compared to patients reporting no-mild overall suffering, patients reporting moderate-severe overall suffering were more likely to have a diagnosis other than cancer (83% vs. 57%, $P = .05$), be younger (65 vs. 75 yrs, $P = .02$) and have lower scores on the MQOL-psychological subscale (6.4 vs 8.0, $P = .02$) and overall QOL scale (6.2 vs. 7.2, $P = .04$). No significant differences were noted with respect to gender, marital status, MSAS-PSYCH or MQOL existential and support subscales. Study patients reporting worse overall suffering also reported worse suffering due to physical symptoms (6.3 vs. 2.1, $P<0.0001$). There was little association between the MSAS-PHYS score and either overall suffering (correlation coefficient = 0.18, $P = .21$) or suffering due to physical symptoms (correlation coefficient = 0.22, $P = .13$).

CONCLUSION: Patients reporting lack of distress due to physical symptoms did not necessarily indicate lack of suffering due to physical symptoms or lack of overall suffering. Factors other than physical symptom distress, such as diagnosis, age and QOL, appear to affect the perception of suffering. In order to better address suffering at the end of life, care must be taken to understand differences between physical symptom distress, suffering due to physical symptoms and overall suffering.

SURROGATE DECISION-MAKERS' OBSERVATIONS REGARDING PERCUTANEOUS GASTROSTOMY TUBE USAGE: A QUALITATIVE STUDY. N. Phifer[1]; T.S. Carey[2]; J.M. Garrett[2]; A.M. Jackman[2]; L.C. Hanson[2]; J. Darter[2]. [1]Moses H. Cone Memorial Hospital, Greensboro, NC; [2]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #117381)*

BACKGROUND: Percutaneous gastrostomy tubes (PGT) are commonly used to provide nutrition for patients who cannot maintain adequate nutrition otherwise. Despite reductions in procedural complications, the short-term mortality rate for patients receiving PGT remains substantial. Because of physical or mental limitations of the patient, the decision for tube placement is often made by a surrogate. The purpose of this study is to summarize perceptions expressed by surrogates as they observed PGT function in their loved ones over time.
METHODS: We surveyed PGT surrogate decision-makers at a university and a community hospital. A trained research assistant administered a questionnaire at baseline, 3 months and 6 months. The survey included open-ended questions asking the surrogates' impression of the best and worst aspects of having the PGT, from the perspective of their loved one. This report focuses on the answers to the open-ended questions at baseline and 3 months. Responses were grouped by themes using qualitative methodology.
RESULTS: Two hundred and eighty-eight surrogates were surveyed at baseline. One hundred and ninety-five provided answers to the open-ended questions. Of these initial participants, 127 responded to these questions at 3 months. Of the surrogates, 38% were patients' spouses and 27% daughters. The mean age for patients was 65 years. Fifty-four percent were men, 61% white and 36% African American. Surrogates felt that guaranteed nutrition (80 of 195) and improved health/longevity (35 of 195) were the best aspects of the PGT. Conversely, 68 surrogates felt the presence of the tube would be perceived as painful, irritating, or a physical nuisance. Loss of independence (30 of 195) and the inability to enjoy food (30 of 195) were other negative perceptions. At 3 months, the most positive aspects, guaranteed nutrition (61 of 127) and improved health/longevity (34 of 127), were again cited frequently. However, the proportion of surrogates who felt their loved ones would experience pain and irritation was greater (66 of 127) while the themes of loss of independence (17 of 125) and the inability to enjoy food (24 of 127) remained constant.
CONCLUSION: At the time of gastrostomy tube placement as well as at 3 month follow up, improved nutrition and health/longevity were the most positive aspects of PGT. While the former concept is true, the latter is not supported by the gastrostomy literature. The worst aspect about the PGT was the pain/irritation/physical nuisance perception, a belief expressed increasingly over time. Loss of the pleasure of eating and loss of independence were also consistently sited. Surrogates need to be aware of the limitations and possible consequences of PGT's prior to making decisions about tube placement.

TAKING HIV MEDICATIONS OPENLY AT HOME: DOES IT HELP EXPLAIN GENDER DIFFERENCES IN HAART USE? J.N. Sayles[1]; W.E. Cunningham[1]; T. Nakazono[1]. [1]University of California, Los Angeles, Los Angeles, CA. *(Tracking ID #115948)*

BACKGROUND: Previous studies have shown that HIV+ women underutilize highly active antiretroviral therapy (HAART), however the reasons for this gender disparity are not known. We examined whether one reason for this disparity is that women fear taking medications openly where they live because others may learn of their HIV status.
METHODS: To address this issue, we used data from the HIV Cost and Utilization Study (HCSUS), a prospective national cohort study of 2267 adults in the United States receiving HIV care who completed baseline, first follow up and second follow up interviews from 1996 to 1998. We asked respondents "Can you take your HIV medications openly at home?" in the second follow-up questionnaire. Responses were on a 5-point scale: all of the time, most of the time, some of the time, a little bit of the time and none of the time and were dichotomized for those who reported "all of the time" versus all the other response options, because of skewed responses. We used bivariate and multivariate logistic regression to examine the effect of the ability to take medications openly on the relationship between gender and HAART use at second follow-up. Baseline control variables included baseline CD4 count, HIV stage, viral load, age, race, education, annual income, insurance status and region of the country.
RESULTS: Among the 2267 individuals who participated in the second follow up survey, 11.8% reported they cannot take HIV medications openly at home. Those who cannot take medications openly were more likely than others to be women, black, living in the northeast or south United States, to have no health insurance and to have an annual income under $5,000. In bivariate analysis, women were half as likely to report being able to openly take HIV medications at home compared to men who have sex with men (MSM) [OR 0.48, $P < .05$] and half as likely as MSM to ever be on HAART by the second follow up interview [OR 0.47, $P < .0001$]. When we added the variable 'can take meds openly' to the model, the OR for female gender using HAART moved from 0.47 to 0.53 ($P < .01$). After the addition of clinical and sociodemographic variables to this model, the association between female gender and HAART use was no longer significant, and the ability to take meds openly at home remained strongly associated with HAART use [OR 1.47 $P < .01$]. Black race, a low CD4 count, meeting criteria for AIDS, and having a detectable viral load were all associated with decreased HAART use in the final model.
CONCLUSION: The ability to take medications openly in the home is one factor contributing to gender disparities in HAART use among HIV infected individuals. Addressing the fear of taking medications openly where women live may be a useful part of interventions to improve care for HIV positive persons.

TEACHING AMBULATORY SKILLS IN PRIMARY AND SPECIALTY CARE: LONGITUDINAL CLINICAL EXPERIENCE FOR THIRD-YEAR MEDICAL STUDENTS. M.A. Wamsley[1]; C.S. Hodgson[1]; M.H. Vener[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116485)*

BACKGROUND: Gaining the knowledge and skills necessary to provide effective outpatient care is a crucial part of becoming a physician. Many medical schools have established longitudinal ambulatory care experiences in primary care fields to address this need. We broadened the range of preceptors in our required longitudinal clinical experience (LCE) to include non-primary care specialties. We hypothesized this would increase student satisfaction and facilitate mentoring without impacting achievement of course objectives.
METHODS: Student preferences were solicited and 137 third-year medical students were placed with preceptors in the outpatient setting; fifty-five percent with a primary care physician (internal medicine, pediatrics, family practice, ob-gyn, and psychiatry) and 45% with a specialist physician. Students spent one-half day per week for 24 weeks with their assigned preceptors. Students were surveyed at the middle and end of the clerkship. Four categories of students were devised: (a) primary care placement, in chosen career field, (b) specialty placement, in chosen career field, (c) primary care placement, not in chosen career field and (d) specialty placement, not in chosen career field. Outcome variables included meeting clerkship objectives (continuity, follow-up on labs/studies, performing initial history and physicals, increased interest in ambulatory care, role modeling/mentorship), perceived effect on other clerkships, self-reported skills and overall evaluation of course. A Multivariate Analysis of Variance (MANOVA) was used to evaluate differences in the outcome variables by placement type.
RESULTS: Students placed in specialty settings that were not in a field of career interest reported significantly lower attainment of clerkship objectives, specifically fewer initial history and physicals (mean = 3.00 on a five-point scale compared with means of 4.35, 4.15 and 4.45, for students in groups (a), (b), and (c), respectively, $P < .05$). These students also perceived less sufficient time with patients (mean = 4.08 on a five-point scale compared with means of 4.57, 4.58 and 4.50 for students in groups (a), (b), and (c), respectively, $P < .05$). There was no effect of site placement on achievement of other course objectives, overall clerkship evaluation, self-reported development of clinical skills, or perceived impact on other clerkships.
CONCLUSION: Our results suggest that ambulatory care skills can be effectively taught in non-primary care settings provided students are carefully matched with preceptors in an area of career interest. Of importance, students were able to achieve perceived continuity of care despite placement in non-primary care settings. Assignment to a primary care setting may be optimal for students uncertain about their career choice.

TEACHING MOTIVATIONAL INTERVIEWING IN CHRONIC CARE: A WORKSHOP APPROACH. J.D. Voss[1]; A.M. Wolf[1]. [1]University of Virginia, Charlottesville, VA. *(Tracking ID #116608)*

BACKGROUND: Strategies such as patient centered care, motivational interviewing (MI) and use of the chronic care model (CCM) offer clinicians tools for chronic care but require practice to use effectively. MI training for chronic illness behavioral change in the general medical setting has not yet been extensively evaluated.
METHODS: We developed a 3.5 hour workshop for internal medicine residents (RES) consisting of 1) didactic teaching about the CCM 2) review of stage of change and decisional balance theories 3) the principles of MI 4) video review of faculty engaged in unrehearsed MI use, and 5) resident role-plays to practice MI.
RESULTS: 8 workshops with 44 residents were conducted. 100% of RES completed anonymous evaluative questionnaires. 90% of RES noted moderate or strong agreement that the workshop effectively taught the fundamental principles of MI. RES also indicated high levels of agreement (Likert scale 1 = strongly disagree ... 5 = strongly agree) with the other workshop ratings listed below. There was no relationship between RES gender, year of training, categorical vs. primary care track or subspecialty vs. primary care career plans and RES rating of MI conceptual understanding, comfort with MI techniques or workshop methods.
CONCLUSION: A workshop focused on MI principles plus video demonstration and role playing transmits short term knowledge and comfort with MI behavior change techniques. Research evaluating the long term value of this MI teaching approach is warranted.

MI WORKSHOP RESULTS

Question	Mean	SD
Understand MI principles	4.6	0.50
Comfort negotiating behavior change	3.9	0.68
Comfort W/MI techniques	3.9	0.79
Faculty video valuable	4.6	0.59
Gained skill w/role play	4.3	0.85
Comfort w/chronic care	4.2	0.76

THE AGREE INSTRUMENT: CRITICAL APPRAISAL OF COMMUNITY-ACQUIRED PNEUMONIA GUIDELINES BY PHYSICIANS. J.B. McCausland[1]; D.M. Yealy[1]; M.J. Fine[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #116636)*

BACKGROUND: The AGREE collaboration (The Appraisal of Guidelines, Research and Evaluation in Europe) has validated a critical appraisal instrument for clinical practice guidelines (CPGs). No prior work has objectively compared the quality of community-acquired pneumonia (CAP) CPGs using a validated appraisal instrument. We assessed CAP guidelines using the AGREE instrument and compared appraisals by academic guideline experts (GE) with practicing guideline end-users (GEU).
METHODS: This prospective observational study uses the AGREE instrument to evaluate eight widely used international English-language CAP CPGs. Four GE and GEU each reviewed the following CAP CPGs; American College of Emergency Physicians, American Thoracic Society, British Thoracic Society, Center for Disease Control (CDC), Canadian Thoracic Society, European Respiratory Society (ERS), Institute for Clinical Systems Improvement, Infectious Disease Society of America. We surveyed physicians to assess CPG attitudes (composite score) and the AGREE instrument (Likert scale). The AGREE instrument has six domains which cannot be aggregated within CPGs; scope and purpose, stakeholder involvement, rigor of development, clarity and presentation, applicability and editorial independence. A mean domain score of >50% is considered adequate quality. Data were tabulated for means (±SD), percentages and proportions. Physicians commented on each CPG for use in clinical practice.
RESULTS: Mean years in practice for both groups was the same (17 ± 1.1 GE vs 19 ± 4.6 GEU). GE spent more of their time in research and education than GEU and less time working clinically and administratively. GE were much more likely to have experience with all aspects of CPGs and positive composite attitudes (26.8 GEvs 22.8 GEU). Overall domain scores for stakeholder involvement, applicability and editorial independence were inadequate (<50%) in 5/8 CPGs. One CPG was >50% in all domains. Most GE and GEU differed by only one domain(5/8) and by no domains (1/8). Six of the CPGs were recommended by >75% of physicians. The CDC and ERS were less likely to be recommended. The majority (>75%) would use the AGREE instrument again and found it easy to use, time-efficient and enhanced critical appraisal skills.
CONCLUSION: Users found the AGREE instrument helpful in assessing CPGs. Based on this tool, the CDC and ERS were less likely to be recommended. GE and GEU rarely disagreed regarding AGREE domains or overall findings.

THE ANKLE BRACHIAL INDEX AND SPECIFIC LEG SYMPTOMS PREDICT DECLINE OF LOWER EXTREMITY FUNCTIONING IN PERIPHERAL ARTERIAL DISEASE. M.M. McDermott[1]; K. Liu[1]; P. Greenland[1]; J.M. Guralnik[2]; M.H. Criqui[3]; C. Cheeling[1]; W.H. Pearce[1]; L. Ferrucci[2]; L. Celic[1]; G.J. Martin[1]. [1]Northwestern University's Feinberg School of Medicine, Chicago, IL; [2]National Institute on Aging, Bethesda, MD; [3]University of California, San Diego, La Jolla, CA. *(Tracking ID #115642)*

BACKGROUND: In patients with peripheral arterial disease (PAD), distinct types of leg symptoms and the ankle brachial index (ABI) are cross-sectionally related to the extent of functional impairment. However, relations between these clinical characteristics and objectively-measured functional decline are unknown.
METHODS: We prospectively followed 676 participants (417 with PAD) age 55 and older over two-year follow-up. The ABI was measured at baseline. Functional assessments were measured at baseline and annually. Participants with PAD were categorized according to baseline leg symptoms as follows: 1. Classical intermittent claudication (IC) (n = 137); 2. Leg pain on exertion and rest (n = 78); 3. Atypical leg symptoms/carry on (exertional leg pain that does not begin at rest and does not cause one to stop walking) (n = 39); 4. Atypical exertional leg pain/stop (exertional leg pain that does not begin at rest and causes one to stop walking but is not otherwise consistent with IC (n = 83); 5. Asymptomatic (no exertional leg symptoms) (n = 80).
RESULTS: All results are adjusted for age, sex, race, prior year functioning, comorbidities, body mass index, pack-years of cigarette smoking, and patterns of missing data. Baseline ABI was associated inversely and significantly with average annual decline in 6-minute walk performance ($P = .019$). Among the 470 participants able to walk continuously for 6 minutes at baseline, those with ABI <0.50 at baseline were 18.5 times more likely to become unable to walk continuously for 6 minutes at follow-up vs. those with ABI 1.10–1.50 at baseline (95% Confidence Interval (CI) = 5.5–63.9, $P < .001$). Compared to those without PAD, PAD participants with leg pain on exertion and rest had significantly greater annual decline in 6-minute walk performance (–111.0 vs. –8.7 feet/year, $P < .01$), usual paced 4-meter walking velocity (–0.056 vs. –0.011 m/sec/year, $P < .05$), and fastest 4-meter walking velocity (–0.069 vs. –0.024 m/sec/year, $P < .05$). Compared to those without PAD, asymptomatic PAD was associated with significantly greater decline in 6-minute walk performance (–76.8 vs. –8.7 feet/year, $P < .05$) and an increased odds ratio for becoming unable to walk for 6 minutes continuously at follow-up (3.7, 95% CI = 1.6–8.7, $P < .002$).
CONCLUSION: Among men and women age 55 and older, the ABI and nature of leg symptoms reported at baseline each predicted the degree of functional decline at 2-year follow-up. Even asymptomatic PAD patients have greater functional decline than patients without PAD.

THE ANNUAL PHYSICAL EXAMINATION: ESTIMATES FROM THE NATIONAL AMBULATORY MEDICAL CARE SURVEY. D. Kast[1]; A. Prochazka[2]; T.J. Miyoshi[1]; C. Bublitz[1]; S.K. Oboler[3]; G.E. Fryer[1]; R.J. Anderson[1]. [1]University of Colorado Health Sciences Center, Denver, CO; [2]Denver VA, Denver, CO; [3]Denver VAMC, Denver, CO. *(Tracking ID #116140)*

BACKGROUND: Major medical organizations have not recommended an annual physical exam (PE) in asymptomatic adults for many years. However, we recently completed two national surveys that indicate high patient desire for an annual PE and strong primary care physician belief in the value of such exams. The present analysis was therefore undertaken to obtain an estimation of the national medical workload attributable to annual PEs and the content of the annual PE.
METHODS: The National Ambulatory Medical Care Survey (NAMCS) collects data on the utilization of medical care services provided by office-based physicians in the United States. It is a stratified random sample of non-federal physician practices and uses weighted data to produce annual estimates. We selected episodes from 1999 to 2001 that included patients 18 years of age and older visiting a primary care provider whose reason for visit was general medical examination and not for an acute or chronic condition. We excluded administrative exams, pre-operative visits, prenatal care, follow-up visits for prior examination, general psychological examinations and workman's compensation episodes. Data were analyzed using SUDAAN 8.0 software to provide weighting of the survey estimates.
RESULTS: For the study period, 1999–2001, a total of 107 million episodes of PE were recorded, an average of 35.6 million annually. This comprised 4.4% of all visits. Sixty nine percent of patients were under 65 years of age, 63% were female. Nearly all (95%) visits included one or more diagnostic tests, but only 40% included counseling or education. The most common procedures performed included urinalysis (25%), hematocrit (15%), cholesterol test (25%), EKG (10%), Xrays (4.3%) and ultrasound (2%). Among male patients, 21% received a PSA test. Among female patients, 40% received a Pap smear and 22% received a mammogram. For all PEs during the study period, 25% involved counseling for diet and nutrition, 19% for exercise and only 5% had counseling regarding tobacco use.
CONCLUSION: The annual PE is common among episodes of care for US adults and contributes significantly to the national medical workload. Many annual PEs include tests of unproven value while several recommended tests are often not done. There is an urgent need to educate the public and physicians regarding best practices in preventive care.

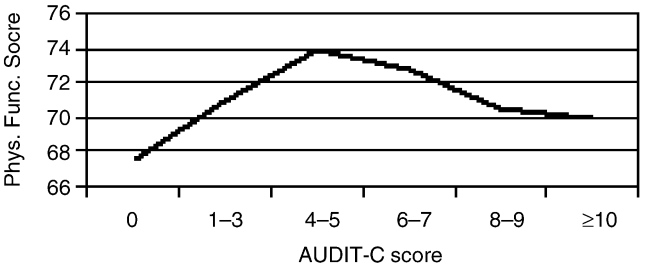
THE ASSOCIATION BETWEEN ADVERSE OUTCOMES AND IN-HOSPITAL URINARY CATHETERIZATION WITHOUT CLEAR MEDICAL INDICATION. J.M. Holroyd-Leduc[1]; S. Sen[1]; D. Bertenthal[1]; L.P. Sands[2]; S.R. Counsell[3]; R.M. Palmer[4]; D.M. Kresevic[5]; C.S. Landefeld[1]. [1]UCSF/SFVAMC, San Francisco, CA; [2]Purdue U, West Lafayette, IN; [3]Indiana U, Indianapolis, IN; [4]Cleveland Clinic, Cleveland, OH; [5]Louis Stokes Cleveland VAMC, Cleveland, OH. *(Tracking ID #115943)*

BACKGROUND: Indwelling urinary catheterization (UCATH) is often performed without medical indication and can lead to urinary tract infections and bacteremia. UCATH may simplify patient care, however, it is unknown whether UCATH worsens patient outcomes. We hypothesized that in hospitalized patients (pts) ≥70 years old without clear medical indication for UCATH, UCATH is associated with decline in activities of daily living (ADL), increased hospital length of stay (LOS), new nursing home (NH) admission, and death.
METHODS: We studied 535 hospitalized pts ≥70 years without a clear indication for UCATH based on status at admission. We assessed whether UCATH was performed, and determined dependence in 5 ADL on admission and discharge, LOS, new NH admission, and survival. Hypotheses about the associations between UCATH and outcomes were tested in bivariate analyses and in multivariable models adjusting for confounders.
RESULTS: The mean age of the 535 pts was 80 (range, 70–100). 69% were female. 76 pts (14%) underwent UCATH within 48 hours of admission without a clear medical indication. Pts with UCATH were older (mean age, 82 vs. 79; $P = .009$) and sicker on admission, as indicated by mean number of dependent ADL (3.0 vs. 1.7; $P < .0001$), mean APACHE score (10.5 vs. 9.7; $P = .006$), and mean Charlson score (2.0 vs.1.4; $P = .005$). Pts with UCATH had longer LOS (median, 6 vs. 4 days; $P = .001$) and somewhat more frequent discharge to a NH (17% vs. 9%; $P = .08$) or discharge with ADL decline (28% vs. 19%; $P = .2$). However, these differences may have been due to confounding bias. In multivariate analyses adjusting for 9 patient characteristics (age, gender, admission ADL function, APACHE score, Charlson score, cognitive impairment, urinary incontinence, bedrest orders, and reason for admission), UCATH was not associated with longer LOS (HR 0.9; 95% CI 0.7–1.1), discharge to NH (OR 0.9; 95% CI 0.3–2.3), or ADL decline (OR 1.0; 95% CI 0.5–2.3). However, pts with UCATH were more likely to die in hospital (6.6% vs. 1.5%; $P = .006$) and within 90 days of discharge (25% vs. 10%; $P < .0001$). In a Cox proportional hazard model adjusting for the 9 patient characteristics, pts with UCATH remained at higher risk for death (HR 2.8; 95% CI 1.5–4.9).
CONCLUSION: In hospitalized older pts without a clear medical indication for UCATH, UCATH increased risk of death independent of 9 other patient risk factors but was not independently associated with other adverse outcomes. These findings indicate that UCATH may hasten the death of hospitalized older pts, underscoring the importance of minimizing UCATH without clear medical indication.

THE ASSOCIATION BETWEEN AUDIT-C SCORES AND HEALTH STATUS. I. Peytremann Bridevaux[1]; C.L. Bryson[2]; D.H. Au[2]; M.B. McDonell[3]; S.D. Fihn[2]; K.A. Bradley[2]. [1]Health Services Unit, University Institute of Social and Preventive Medicine, Lausanne, Switzerland; [2]HSR&D VA Puget Sound Health Care System and University of Washington, Seattle, WA; [3]HSR&D VA Puget Sound Health Care System, Seattle, WA. *(Tracking ID #115056)*

BACKGROUND: The 3 alcohol consumption questions of the Alcohol Use Disorder Identification Test (AUDIT-C) effectively screen for hazardous drinking and alcohol use disorders. The AUDIT-C score (0–12) is also strongly associated with the severity of problem drinking, but little is known about the relationship between AUDIT-C

scores and health status. The objective of this study was to evaluate the association between AUDIT-C scores and health status as measured by the SF-36.
METHODS: We performed cross-sectional analyses of 24,301 male patients who received primary care at 7 Veterans Affairs medical centers. Participants were eligible for the analyses if they completed the AUDIT-C and SF-36 (69% response). We used 6 categories based on AUDIT-C scores: 0, 1–3, 4–5, 6–7, 8–9, 10–12. Higher AUDIT-C categories indicate increasing alcohol consumption and risk of alcohol use disorders. Linear regression was used to estimate adjusted mean SF-36 domain scores across AUDIT-C categories, adjusting for education, marital status, ethnicity, income, site of care, age, smoking (past and current) and 7 self-reported comorbid conditions.
RESULTS: Relatively few patients were in higher AUDIT-C categories: AUDIT-C 0, 44%; AUDIT-C 1–3, 33%; AUDIT-C 4–5, 13%; AUDIT-C 6–7, 5%; AUDIT-C 8–9, 3% and AUDIT-C 10–12, 3%. Patients with higher AUDIT-C scores were more likely to be younger, non-Caucasian, unmarried, and less educated. They also reported lower incomes and were more likely to be smokers. After adjustment, all 8 SF-36 domain scores exhibited a significant inverted-U shaped relationship with AUDIT-C scores ($P = .000$), with the best health status reported by patients with AUDIT-C scores of 4–5 (data for mean adjusted Physical Function score shown).
CONCLUSION: AUDIT-C scores were associated with health status. Patients with low-level drinking reported better health status than non-drinkers or heavier drinkers.



THE ASSOCIATION BETWEEN STATIN AND ACE INHIBITOR USE AND MORTALITY FOR PATIENTS HOSPITALIZED WITH COMMUNITY-ACQUIRED PNEUMONIA. E. Mortensen[1]; M. Restrepo[1]; A. Anzueto[1]; J. Pugh[1]. [1]Audie L. Murphy VA hospital and The University of Texas Health Science Center at San Antonio, San Antonio, TX. *(Tracking ID #115842)*

BACKGROUND: Community-acquired pneumonia (CAP) is the leading infectious cause of death in the United States. Recent studies suggest that cytokines play an important role in host defense mechanisms for patients with CAP but under certain conditions may lead to septic shock or acute respiratory distress syndrome. Several clinical studies have demonstrated that statins and ACE inhibitors blunt systemic inflammation due to cytokines; however, only one study has shown that statins are associated with improved outcomes in bacteremic patients. The primary aim of this study is to examine the impact of outpatient statin and ACE inhibitor use at presentation upon 90-day mortality for patients hospitalized with CAP.
METHODS: A retrospective, observational study was conducted at two tertiary teaching hospitals: a VA medical center and a county-run hospital. Eligible patients were admitted with a diagnosis of CAP between 1/1/1999 and 12/31/2001, had a chest x-ray consistent with CAP, and had a discharge ICD-9 diagnosis of pneumonia. Patients were excluded if they were "comfort measures only" or transferred from another acute care hospital. Severity of illness was quantified using the Pneumonia Severity Index (PSI). To assess the individual association of each medication with mortality separate logistic regression analyses were performed using 90-day mortality as the dependent measure; and the PSI, ACE inhibitor or statin use at presentation, and previously validated quality of care markers as the independent variables.
RESULTS: Information was obtained on 787 patients with CAP. The median age was 60 years, 79% were male, and 20% were initially admitted to the ICU. By PSI, 55% were low risk, 32% were moderate risk, and 13% were high risk. Mortality was 13% at 90-days. Statins were used by 14% of patients at presentation, and ACE inhibitors by 25%. In the separate regression models, statin use was associated with decreased mortality (OR 0.4, 95% CI 0.2–0.9) as was ACE inhibitor use (OR 0.5, 95% CI 0.3–0.9).
CONCLUSION: Statin and ACE inhibitor use at presentation were associated with decreased mortality in patients hospitalized with CAP though one would expect that them to be associated with increased mortality due to the comorbid illnesses these medications treat. Further study is needed to assess the mechanism of this protective effect: immunomodulatory and/or cardio-protective.

THE ASSOCIATION OF DEPRESSIVE SYMPTOMS WITH C-REACTIVE PROTEIN: THE CARDIA STUDY. B.K. Britt[1]; C.I. Kiefe[1]; S. Person[1]; K.A. Matthews[2]; M.A. Whooley[3]; C.E. Lewis[1]. [1]University of Alabama at Birmingham, Birmingham, AL; [2]University of Pittsburgh, Pittsburgh, PA; [3]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117490)*

BACKGROUND: While the relationship between depressive symptoms and cardiovascular disease (CVD) is well established, we lack information on pathways linking depression and CVD. The emergence of inflammation as a factor in the pathogenesis of CVD raises the possibility that inflammation may be related to depression, and mediate the depression-CVD relationship. We therefore explored the relationship between depressive symptoms and the inflammatory marker C-reactive protein (CRP).
METHODS: We measured depressive symptoms with the Center for Epidemiologic Studies Depression (CES-D) Scale at years 5 (1990/91), 10 and 15 in all participants from the Coronary Artery Risk Development in Young Adults (CARDIA) Study. Participants were dichotomized as having depressive symptoms if they had a CES-D score >=16 at one or more of the 3 exam years. CRP was measured at year 15 and stratified into quintiles. Using logistic regression, we examined the relationship between depressive symptoms over a 10 year period and elevated CRP at year 15.
RESULTS: Among 3612 CARDIA participants examined, 37.4% had a CES-D >= 16 at one or more exams. The mean age was 40.2; with 54.5% female, 48.5% white, and 51.5% African American. Prevalence of CES-D >= 16 in the 5 quintiles of CRP is listed in the table below. Adjusting for age, race and gender, we found that for individuals with depressive symptoms, odds of CRP in the highest vs. lowest quintile were 1.48 (CI 95% 1.15, 1.89). This association persisted with adjustment for high cholesterol, hypertension, diabetes, smoking and coronary artery disease (OR 1.44, CI 95% 1.12, 1.86). With further adjustment for BMI, odds of highest quintile CRP were 1.33 (CI 95% 0.98, 1.80).
CONCLUSION: Presence of depressive symptoms over a 10-year period is significantly associated with elevated CRP at the end of that period. Further studies should explore the role of inflammation and obesity as mediators in the depression-CVD association.

	Quintile of CRP				
	1	2	3	4	5
% CES-D ≥ 16	32	32	38	39	46
P for trend	<0.0001				

THE ASSOCIATION OF RESIDENT WORKLOAD AND FATIGUE WITH OMISSIONS IN PATIENT CARE. C.A. Feddock[1]; A.R. Hoellein[1]; D.W. Victor[1]; J.C. Webb[1]; J.F. Wilson[1]; T.S. Caudill[1]; C.H. Griffith[1]. [1]University of Kentucky, Lexington, KY. *(Tracking ID #116630)*

BACKGROUND: Recent studies have shown that medical errors are a very common occurrence in today's hospitals. Anecdotally, we have noted that resident physicians who are fatigued and who have high workloads seem to make more mental mistakes. We hypothesized that residents with greater workloads and with insufficient sleep would more frequently omit certain patient care duties (discussions with patients, test ordering, follow-up on test results, etc).
METHODS: Over a three month period, interns on our inpatient internal medicine ward service were approached daily by a research assistant and asked to complete a brief questionnaire. Residents were asked to subjectively rate their current workload (light, medium, heavy or extremely heavy), to rate their last night's sleep (sufficient vs. insufficient), and to answer whether there was anything they had not gotten done for a patient on that day (yes or no). For the purposes of analysis, workload was subdivided into low (light or medium) and high (heavy or extremely heavy). Multiple regression approaches assessed the effect of workload and sleep on self-reported omissions in patient care.
RESULTS: Forty-three different residents returned a total of 222 surveys. Overall, 17% reported high workload, 32% reported insufficient sleep, and 11% reported that they had omitted some aspect of patient care that day. Only 8% reported omissions with low workload versus 27% with high workload ($P = .0003$). Likewise, 5% reported omissions with sufficient sleep compared to 23% with insufficient sleep ($P < .004$). Even more impressive, if residents had both high workload and insufficient sleep, 38% made omissions compared to only 7% in all other groups ($P < .0001$). In the regression analysis, independent predictors of omissions were high workload, insufficient sleep, and the interaction of high workload and insufficient sleep. To put this another way, if a patient is being taken care of by a resident physician with high workload and insufficient previous night's sleep, the odds ratio that a physician will omit an issue in patient care is 8.125 (95% CI 3.114–12.199; $P < .001$).
CONCLUSION: High workloads and insufficient sleep are associated with a dramatic increase in the numbers of omissions resident physicians make in routine patient care. Further research is needed to better understand the impact that physician duties may have on the quality of their patient care. Residency programs should consider the effects of workload and fatigue on patient care when supervising resident physicians.

THE ATTITUDES AND CONFIDENCE OF PHYSICIANS AND NURSES IN DISCUSSING DO NOT RESUSCITATE ORDERS—HOW DO THEY COMPARE? W.A. Ury[1]; R. Sood[1]; D.P. Sulmasy[1]. [1]New York Medical College, Valhalla, NY. *(Tracking ID #116944)*

BACKGROUND: Since Do Not Resuscitate (DNR) orders require consent, which only a physician can obtain, DNR discussions traditionally have been viewed as a physician responsibility. However, nurses can also play an important role. Although attitudes and confidence are important in the development of practice patterns, physicians' and nurses' confidence and attitudes about discussing DNR have not been assessed and compared.
METHODS: An anonymous survey of 217 Attending Internists (ATs), 132 Medical House Officers (HOs), and 219 Medical Nurses (RNs) at two northeastern U.S. teaching hospitals about their beliefs, attitudes, and confidence regarding DNR discussions using cognitively pre-tested 5-point Likert scale items.

RESULTS: Response rates were 58%, 85% and 68% for ATs, HOs, and RNs, respectively. Compared with ATs and HOs, RNs were more likely to be white, female, Catholic, and educated/trained in the United States ($P < .001$ for all comparisons). There was no difference in the mean number of DNR patients that each group reported caring for in the past month ($P = .34$), and no relationship between the number of DNR patients cared for and confidence in having DNR discussions within any of the three groups. More ATs (11.6%) than HOs (6.9%) or RNs (3.2%) agreed strongly that nurses should never initiate DNR discussions ($P = .01$). All three groups had significantly lower confidence in discussing DNR orders than in discussing medical procedures ($P < .001$ for each group). HOs (38.6%) were less likely than either RNs (47.7%) or ATs (68%) to be strongly confident in their ability to discuss DNR orders with patients or surrogates ($P < .001$). By contrast, RNs (57.4%) were less likely than either HOs (65.2%) or ATs (85.7%) to be strongly confident in their ability to discuss consent for medical procedures ($P = .01$). In a multivariate ordered logit model, RNs were more confident than HOs in their ability to discuss DNR ($P = .04$), but no less confident than ATs ($P = .53$), when controlling for race, gender, year of graduation, and confidence in discussing consent for medical procedures. In both univariate and multivariate analysis, religion and country of training were not associated with confidence in discussing DNR orders.
CONCLUSION: Nurses were more likely than their physician colleagues to believe they should be allowed to initiate DNR discussions; had greater confidence regarding their ability to discuss DNR than houseofficers; and were no less confident than attendings in discussing DNR. While it is not known to what extent or how nurses actually participate in DNR discussions, these results suggest the need for further research that explores nurses' and physicians' current practices and the potential contribution nurses could make to the DNR process.

THE BARRIERS AND FACILITATORS OF PHYSICIAN RECOMMENDATION OF COLORECTAL CANCER SCREENING. C.E. Guerra[1]; J.S. Brown[1]; S. Schwartz[1]; J.A. Shea[2]. [1]University of Pennsylvania, Philadelphia, PA; [2]Society of Directors of Research in Medical Education, Philadelphia, PA. *(Tracking ID #117092)*

BACKGROUND: Colorectal cancer screening (CRCS) has been demonstrated to be effective, and is consistently recommended by clinical practice guidelines. However, less than 50% of Americans have ever received screening with either fecal occult blood tests or a lower endoscopy. Patients cite physician recommendation as the most important motivator of screening. This study explored the barriers and facilitators of physician recommendation of CRCS.
METHODS: Qualitative study involving in-depth, semi-structured interviews with 11 purposively-sampled, community and academic based general internists about the barriers and facilitators to recommendation of CRCS. Grounded theory techniques of analysis were used. In addition, actual barriers of and facilitators to physician recommendation of screening were evaluated using chart-stimulated recall.
RESULTS: All the participating physicians were aware of and recommended CRCS. Physicians identified the following barriers to recommendation: 1. Lack of time to address screening because of too many other active patient issues/concerns, 2. Patient comorbidities, 3. Patient old age (defined as 80–90 years old), poor functional status, or poor life-expectancy, 4. Forgetfulness, 5. Inability to track down of dates of prior screening and 6. Medications which pose a risk if stopped such as anticoagulants and antiepileptics. Physicians also identified facilitators to recommendation of CRCS: 1. Patient age >50, 2. Annual physical as the reason for visit, 3. Healthy individuals who are highly motivated about preventive health, 4. Patient requesting screening, 5. Reminders such as flow sheets, health maintenance section in notes and computerized reminder systems and 6. Easy accessibility to endoscopists. Using chart-stimulated recall, 51 encounters were reviewed with physicians. CRCS was not offered in 22 of those encounters. The reasons for not offering screening were: patient was seen for acute visit for more pressing issue(s) than screening/lack of time (15), forgetfullness (5), comorbidities (4), old age (2), and prior refusal of screening (2). The reasons for offering screening were the scheduling of an annual physical (10), the presence of a reminder (8), patient bringing it up (3), age over 50 (3), no acute issues to address (2), other (3).
CONCLUSION: Physicians cite patient and system barriers to recommending CRCS. Chart-stimulated recall shows that old age and comorbidites are less common barriers and that annual physicals and reminders are associated with a recommendation for screening. Potential feasible interventions to increase physician recommendation of CRCS include the scheduling of annual physicals, the use of chart or electronic reminder systems, and improved patient education.

THE COSTS AND BENEFITS OF COMPUTERIZED PHYSICIAN ORDER ENTRY. R. Kaushal[1]; A. Jha[1]; C. Franz[2]; J. Tonushree[1]; D.W. Bates[1]. [1]Brigham and Women's Hospital, Boston, MA; [2]ERG, Inc., Lexington, MA. *(Tracking ID #116909)*

BACKGROUND: Computerized physician order entry (CPOE) significantly reduces the rates of serious medication errors. Yet, adoption by hospitals across the nation has been slow. A major barrier is financial as these systems are very costly without clearly delineated financial benefits.
METHODS: We determined the costs and benefits of the Brigham and Women's Hospital (BWH) CPOE system over the last ten years. Using this benefit data and costs derived from data published by the First Consulting Group, we performed a cost benefit analysis of CPOE for a model 700-bed adult hospital at 6 and 11 years. We then determined the effects of varying levels of decision support on the net benefits. We next calculated the break even costs for CPOE. Finally, we varied the level of prospective reimbursement to determine the effects of payor mix on net benefits to the hospital.
RESULTS: Since 1992, the CPOE system at BWH resulted in net savings of $23.8 million ($3.2 million annualized). Over 6 years, a model 700 bed adult hospital should have a net benefit of $2.2 million with a basic decision support system and $28.3 million with an advanced decision support system. At 11 years, the savings would be $9.8 million and $55.1 million respectively. A hospital could spend up to $10.8 million for a basic and $38.0 million for an advanced CPOE system and remain cost neutral 6 years after purchase. A model hospital would break even at 6 years if the percentage of prospectively reimbursed patients is 86% or higher for a basic decision support system and 37% or higher for an advanced decision support system.
CONCLUSION: Over 11 years, the CPOE system at BWH has resulted in remarkable savings. A model hospital with advanced decision support can expect to accrue even greater savings since BWH introduced decision support elements in increments. Hospitals realize higher net benefits from CPOE with increasing levels of decision support, length of time since implementation and rates of prospective reimbursement. Hospitals should invest in CPOE to make health care safer and to save money.

THE EFFECT OF COMPUTERS ON CLINICIAN-PATIENT COMMUNICATION IN OUTPATIENT VISITS: AN EXAMPLE OF DIGITAL AMPLIFICATION. R.M. Frankel[1]; A. Altschuler[2]; S. George[3]; N. Robertson[4]; C.J. Kinsman[2]; J. Hsu[2]. [1]Indiana University Purdue University Indianapolis, Indianapolis, IN; [2]Kaiser Permanente Division of Research, Oakland, CA; [3]University of California, Los Angeles, Cerritos, CA; [4]Kaiser Foundation Health Plan, Portland, OR. *(Tracking ID #115624)*

BACKGROUND: There is a dearth of information on how computers affect clinician-patient relationships, especially with regard to communication in the outpatient exam-room. Understanding these effects is vital given the central role of clinician-patient communication in medical care.
METHODS: We conducted a longitudinal, qualitative study on the impact of introducing exam-room computers on clinician-patient communication in a large, managed care, integrated delivery system. We collected videotapes during regularly scheduled, primary care visits from three points in time: two months before, one month after, and seven months after the introduction of computers into the exam-room. Two members of the research team independently created detailed descriptive narratives for each visit, within a random sample of two visits per clinician per period (54 total visits for nine clinicians). Using a pragmatic variant of grounded theory, the research team conducted skeptical peer reviews, discussed journal notes, developed hypotheses, and challenged hypotheses.
RESULTS: The introduction of computers into the exam room had variable effects on clinician-patient communication. Analysis of the study videotapes revealed four broad factors that appeared to influence whether the presence and use of the computer had a positive or negative effect on interpersonal communication: clinician organizational skills, clinician interpersonal skills, clinician technical skills, and the spatial organization of the exam-room. In clinicians with strong baseline skills as assessed by expert observers and a standard checklist of skills (Based on The Four Habits of Highly Effective Clinicians), computer use enhanced existing communication skills. In contrast, computer use created barriers to communication for clinicians with poor baseline skills. This amplification effect persisted seven months after the computer introduction.
CONCLUSION: This is the first systematic assessment of the impact of exam-room computer use on clinician-patient communication. We found that the presence of the computer exerts differential effects on communication and does not automatically create a barrier to the relationship between clinician and patient. Larger multi-method studies of the effects of new technologies on clinical communication and relationships are warranted.

THE EFFECT OF CUTS IN MEDICARE REIMBURSEMENT ON QUALITY OF HOSPITAL CARE. M. Seshamani[1]; K.G. Volpp[2]. [1]University of Pennsylvania, Philadelphia, PA; [2]Philadelphia VA Medical Center, Philadelphia, PA. *(Tracking ID #116234)*

BACKGROUND: The Balanced Budget Act (BBA) of 1997 was introduced as a cost-saving measure designed to reduce Medicare reimbursements by $116.4 billion from 1998 to 2002. There is concern that resulting financial strain could adversely affect hospital quality. This study seeks to determine if hospitals under different levels of financial strain from the BBA had differential changes in 30-day mortality for a variety of conditions, and whether vulnerable patient populations such as the uninsured or minorities were disproportionately affected.
METHODS: Pennsylvania hospital discharge data was obtained from 1997 to 2001 for six conditions identified by the Agency for Health Care Research and Quality as Inpatient Quality Indicators, divided into conditions for which admission is non-discretionary (e.g., acute myocardial infarction) and for which admission may be discretionary (e.g., pneumonia). The hospital impact of the BBA was estimated using an American Hospital Association simulator that projected Medicare reimbursements with and without the BBA effects. A patient-level logistic regression analysis (n = 807,723) examined the likelihood of dying within 30 days of admission in relation to fiscal year and hospital BBA impact (top quartile, bottom quartile, and middle 50%), controlling for other hospital and patient characteristics. To illustrate the effects of the BBA on health outcomes, the likelihood of death was estimated for the different hospital impact groups for insured and uninsured patients and for whites and blacks.
RESULTS: The average magnitude of Medicare payment reduction on overall hospital net revenues was estimated at 2.0% for the low impact group and 4.1% in the high impact group in 1998, worsening to 2.9% and 5.2%, respectively, by 2000. Insured patients from high impact hospitals were found to have an increased likelihood of dying for conditions with non-discretionary admission (from 18.1% in 1997–98 to 19.4% in 2001) in contrast to insured patients from low impact hospitals, whose

mortality risk declined from 19.1% to 18.5%. Differences in the rate of change were significant ($P < .01$). Uninsured patients had larger increases in the likelihood of dying than insured patients, particularly in the high impact hospitals (from 22.8% to 30.2%). The difference between the insured and uninsured patients in the high impact hospitals was significant ($P < .05$). There was no differential effect between whites and blacks, nor were there any significant effects of the BBA for conditions with discretionary admission criteria.
CONCLUSION: Increased financial strain in hospitals may adversely affect quality of patient care, particularly within vulnerable patient groups such as the uninsured. This may exacerbate existing disparities in care and should be considered in the evaluation of cost-saving policy reforms.

THE EFFECT OF EXECUTIVE WALK ROUNDS ON SAFETY CLIMATE. E.J. Thomas[1]; J.B. Sexton[1]; T.B. Neilands[2]. [1]University of Texas Health Science Center at Houston, Houston, TX; [2]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116096)*

BACKGROUND: Expert groups suggest that hospitals create a "culture of safety" to improve patient safety. Hospitals are using Executive Walk Rounds (EWRs) to meet this goal, but their effect on safety culture has not been measured.
METHODS: We randomized 24 clinical units in one hospital to receive EWRs or usual patient safety activities. 6 executives participated. Each unit was visited once a month for 3 months and provider suggestions to improve safety were recorded. Our primary outcome was provider attitudes measured by the 19 item Safety Climate Survey. We report results from nurses (physicians were excluded a-priori). We calculated the mean safety climate scores (SCS) on a 100 point scale for each unit. Because nurses often worked in both EWR and control units and not every nurse in the EWR units participated in EWRs, we also stratified by self-reported participation in an EWR. Additionally, we hypothesized that 5 items on the survey would be most sensitive to EWRs. Differences in SCS were tested using t tests and mixed effect linear models to account for the non-independence of research participants nested within clinical units. Model assumptions were verified by examining univariate histogram and residual skewness and kurtosis values, and by generation of residual-by-predicted value plots.
RESULTS: 1119 providers (67%) completed the baseline survey and 1,000 (55%) the post EWRs survey. Baseline mean SCS were similar in the EWR and control units (75.3 vs 77.8, $P = .075$). Providers' suggestions during EWRs were grouped into 12 themes and 8 were addressed prior to the follow-up survey. Mean SCS differed between nurses in experimental and control groups stratified by participation in EWRs (experimental group EWR YES = 81.0, control group EWR NO = 74.9, $P = .02$). In other words, 72.9% of nurses in the experimental EWR YES group versus only 52.5% in the control group EWR NO agreed that safety climate was positive. Experimental EWR YES nurses also responded more favorably than control EWR NO nurses to 4 of 5 items hypothesized to be most sensitive to EWRs: 1) This institution is doing more for patient safety now, than it did one year ago ($P < .001$); 2) the senior leaders in my hospital listen to me and care about my concerns (.02); 3) patient safety is constantly reinforced as the priority in this clinical area (.02); 4) leadership is driving us to be a safety-centered institution (.03). After EWRs, mean SCS were similar in the EWR units and control units (77.5 vs 75.2, $P = .075$).
CONCLUSION: EWRs improved safety attitudes among nurses who participated in the EWRs. The effect of EWRs conducted in this manner may not diffuse beyond individual participants in a clinical unit.

THE EFFECT OF FEEDBACK ON TEACHING ATTENDINGS' EVALUATIONS. C.A. Smith[1]; A.T. Evans[2]; A.B. Varkey[2]; B.M. Reilly[3]. [1]Cook County Hospital/Rush Medical College, Chicago, IL; [2]Rush University / Rush- Presbyterian-St. Luke's Medical Center, Chicago, IL; [3]Cook County Hospital, Chicago, IL. *(Tracking ID #115661)*

BACKGROUND: Over a 3-year period from 2000–2003 we used a new, validated, reliable attending evaluation instrument to assess the performance of our teaching faculty on inpatient medicine ward rotations. The instrument assess performance in 9 skill domains (evidence-based medicine, bedside teaching, patient care, professionalism, rounding, patient-based teaching, number of teaching sessions, clinical reasoning skills and feedback). We tested whether providing simple feedback of individual scores to the attendings after 1.5 years would lead to change in subsequent performance over the next 1.5 years.
METHODS: 2092 anonymous evaluations of 144 attendings were analyzed over a 3-year period. Feedback to the attendings consisted of 2 components. Initially, the first year of evaluation data was presented to the whole department at Grand Rounds midway through the 2nd year. Secondly, each attending then received his or her individual scores in the 9 domains and also their percentile rank for each domain score within the department. The databases were pooled and then scores were divided into pre-feedback or post-feedback scores for each of the skill domains. The data were then aggregated by attending, allowing a paired t-test analysis of pre-post feedback performance.
RESULTS: 83 attendings had paired data available for analysis. For eight of the nine domains there was no change in performance. However the domain measuring the amount of teaching demonstrated a significant decrease: a mean decrease of 0.34 on a 5-point scale, $P = .004$.
CONCLUSION: Providing simple feedback to attendings about their performance in inpatient ward rotations did not improve performance. In fact, on average the amount of teaching appeared to decrease. There was no evidence of general temporal trends because there was no change for 8 domains. Improving attending performance will likely require interventions more intensive than simple feedback from residents' evaluations.

THE EFFECT OF FINANCIAL INCENTIVES ON SMOKING CESSATION PROGRAM ATTENDANCE AND COMPLETION. K.G. Volpp[1]; A. Gurmankin[1]; D.A. Asch[1]; J.J. Murphy[1]; A. Gomez[1]; H.C. Sox[2]; C. Lerman[3]. [1]Center for Health Equity Research and Promotion—Philadelphia VA Medical Center, Philadelphia, PA; [2]Annals of Internal Medicine, Philadelphia, PA; [3]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #116637)*

BACKGROUND: Approximately 70 percent of smokers want to quit smoking, but only about 3 percent of smokers quit each year. Smoking cessation programs are an underutilized cost effective way to help people quit smoking. Our objective was to determine whether modest financial incentives increase the rate of smoking cessation program enrollment, completion, and quit rates.
METHODS: 179 patients who reported smoking at least 10 cigarettes per day were randomized into incentive and non-incentive groups. Both groups were invited to join a 5-class smoking cessation program held at the Philadelphia Veterans Affairs Medical Center at no out-of-pocket cost. In addition, the incentive group was offered $20 for each class attended and $100 if they quit smoking (biochemically confirmed). Subjects were blinded as to the existence of the other group. Intention to treat analysis was used for each of the outcome variables. Chi-Square tests were used to test for significant differences in enrollment and completion between the two groups.
RESULTS: Subjects had smoked an average of 29.8 years, with a mean consumption of 23.4 cigarettes per day. There were no significant differences between the incentive and enrollment groups in the number of cigarettes smoked per day, the length of time patients had been smoking, degree of addiction, quitting intentions, risk perception of smoking-related risks, sociodemographic characteristics, and distance from the VA hospital. The incentive group had higher rates of program enrollment (43.3% vs. 20.2%, $P < .001$) and program completion (25.8% vs. 12.2%, $P = .02$). Data on quit rates 30-days post-program completion will be collected for the entire cohort by the end of January, 2004.
CONCLUSION: Modest financial incentives are associated with significantly higher rates of smoking cessation program enrollment and completion. The use of financial incentives could be an effective strategy for increasing tobacco cessation rates.

THE EFFECT OF FINE ART CURRICULUM IN IMPROVING OBSERVATIONAL SKILLS. C. Gamballa[1]; C. Lyons[2]; J. Wiese[3]. [1]University of Chicago, New Orleans, LA; [2]Yale University, New Orleans, LA; [3]Tulane University Health Sciences Center, New Orleans, LA. *(Tracking ID #117550)*

BACKGROUND: Teaching physical examination maneuvers is the sole focus of most physical diagnosis courses. The focus on correctly performing the skill, however, often prevents the student from developing the observational skills critical to successful physical examination. We developed an instructional program using fine art to improve the observational skills of medical students.
METHODS: Forty-four second-year medical students were randomly assigned to receive either a six-hour fine art observational curriculum (n = 22) or further instruction in physical examination (n = 22). Prior to randomization, all students interviewed and examined a standardized patient as part of one of the seven standardized patients sessions in the physical diagnosis curriculum. After leaving the room, each student completed a description of the patient. This was completed on a second occasion four months later. On both occasions, students were not told of the observational task prior to the patient interview. Two senior physicians observed the standardized patients and recorded their observations. An observational accuracy score was calculated as the percentage of student to physician observations. The curriculum consisted of two, two-hour interactive group sessions led by the curator of the New Orleans Museum of Art. Students studied fine art paintings, and were coached to observe details and surmise the context of each painting. Following each session, a senior clinician led a one-hour interactive discussion session during which students were coached to use a similar observational method in observing photographs of actual medical patients. The control group received additional instruction in physical examination techniques.
RESULTS: Mean (± SD) baseline observational accuracy scores were similar in the two groups (intervention group: 34% ± 6; control group: 33% ± 4; $P = .74$). Observational accuracy increased by 42% in students who were taught the fine art curriculum and 21% in the control group. The difference in the changes between the groups was statistically significant (mean difference = 21%; 95% confidence interval: 14% to 29%; $P < .001$).
CONCLUSION: A curriculum using fine art in combination with standard clinical diagnosis instruction improves medical students' observational skills in evaluating standardized patients simulating clinical encounters.

THE EFFECT OF MEDICAL INTERPRETERS ON CLINICAL CARE: A SYSTEMATIC REVIEW OF THE LITERATURE. L.S. Karliner[1]; A.H. Chen[2]; E.A. Jacobs[3]; S. Mutha[1]. [1]University of California, San Francisco, San Francisco, CA; [2]Asian & Pacific Islander American Health Forum, San Francisco, CA; [3]John H. Stroger, Jr. Hospital of Cook County & Rush Medical College, Chicago, IL. *(Tracking ID #116908)*

BACKGROUND: Patients with limited English proficiency are known to have worse health outcomes than English speaking patients. We conducted a systematic review of the medical literature to determine to what degree medical interpreters improve the processes, utilization, and clinical outcomes of care for these patients.
METHODS: We systematically searched PubMed, PsycINFO, and the World Wide Web; and consulted experts to obtain additional references. This strategy yielded 642 references, of which 80 were relevant and peer-reviewed, and 28 addressed the topics of interest. For each reference, two investigators abstracted data on the study design and population, analytic methods, and main findings.

RESULTS: Eleven articles addressed communication errors, 11 addressed utilization of clinical care, and 7 addressed clinical outcomes. Only 3/28 articles (11%) used a standardized measure of language proficiency to define the group being studied. Only 9/28 articles (29%) controlled for confounding in their analyses. Five of the 7 clinical outcome studies showed clear benefit, particularly with professional interpreter use, for outcomes ranging from comprehension of diagnoses on a palliative care unit, to HbA1C values for diabetic outpatients, to labor induction rates for pregnant women; and 2 had mixed outcomes. In the 2 studies that had mixed outcomes, the majority of the interpreters were not professionals. In 5 of 11 utilization articles, interpreter use was associated with significant benefit, such as increased rates of influenza vaccination and adherence to follow-up office visits, and decreased rates of return ED visits and hospital admissions. Four of the 11 studies had mixed results for utilization of care; again, these studies used mostly ad hoc (non-professional) interpreters. The communication error studies showed that a high rate of errors occurred when ad hoc interpreters were used, that errors increased with increasing complexity both of speech and of the clinical situation, and that use of professional interpreters decreased error rates.
CONCLUSION: Published studies report positive benefits of interpreters on the processes, utilization and clinical outcomes of care, particularly when professional interpreters are used. However, higher quality studies, which clearly define the group being studied using standardized measures, separate the effects of professional and ad hoc interpreters, and control for potential confounding, are needed to quantify the actual impact of interpreters on the health of patients with limited English proficiency.

THE EFFECT OF PHYSICIAN SOLICITATION APPROACHES ON UNDERSTANDING OF PATIENT CONCERNS. D.M. Swiderski[1]; L. Dyche[2]. [1]Montefiore Medical Center, Yonkers, NY; [2]Montefiore Medical Center, Bronx, NY. *(Tracking ID #116562)*

BACKGROUND: Prior studies of the physician survey of patient concerns during routine medical interviews identified frequent early interruption of patients but did not link these interruptions to specific interview outcomes. The objective of this study was to validate the assumption that physician understanding of patient concerns is linked to whether physicians solicit an agenda of patient concerns, and to whether they allow a complete expression of such an agenda if it is solicited.
METHODS: Design: Cross-sectional survey involving conversational analysis of a convenience sample of 70 patient-physician interviews combined with separate patient and physician exit surveys regarding patient agenda. Setting: Inner-city adult ambulatory care clinic affiliated with teaching hospital. Participants: Resident and attending physicians with English speaking adult patients. Outcome measures: Frequency with which physicians solicited a statement of patient concerns, allowed completion of such statements, the amount of time prior to interruption when completion was not allowed, and the number of concerns listed by patients in exit surveys that the physician could correctly specify following the encounter.
RESULTS: 37% of physicians studied did not solicit patient concerns in the first 5 minutes of the interview. 26% solicited an agenda and allowed patients to complete their opening statement without interruption. 37% sollicited an agenda and interrupted patients prior to completion of their statement, in a mean time of 16.5 seconds. Physicians who did not solicit the patient agenda were able to match 59% of patient concerns correctly, while those who solicited but interrupted matched 82% and those who solicited and allowed completion matched 85%.
CONCLUSION: These data validate the assumption that non-solicitation reduces physician comprehension of patient concerns. However, interruption does not seem to affect levels of physician understanding if solicitation has occured.

THE EFFECT OF PRESCRIPTION SIZE ON ADHERENCE TO PHARMACOLOGICAL TREATMENT OF HYPERLIPIDEMIA. H. Batal[1]; S. Stantejsky[2]; P.S. Mehler[1]; J.F. Steiner[3]. [1]Denver Health and Hospital Authority, Denver, CO; [2]Colorado Prevention Center, Denver, CO; [3]University of Colorado Health Sciences Center, Denver, CO. *(Tracking ID #116748)*

BACKGROUND: Many pharmacies, delivery systems, and payers limit chronic medications to a 30-day supply to reduce wastage and maximize co-payment collection. The purpose of this study was to determine the effect that prescription size (defined as the days' supply of medication dispensed) had on adherence to treatment for hyperlipidemia.
METHODS: We identified a retrospective cohort of patients receiving treatment for hyperlipidemia through any Denver Health Medical Center clinic from 1/1/2000–12/31/2002. We selected patients that had received more than one prescription for a HmGCoA Reductase Inhibitor and abstracted pharmacy records for the total number of such prescriptions, the days' supply dispensed for each, co-payment required, and a list of all other prescriptions filled during patients' time in the study. Patient demographics were also gathered, and laboratory data was used to determine associated cholesterol levels. As a measure of comorbidity, the pharmacy-based Chronic Disease Score (CDS) was calculated for each patient. Multiple logistic regression analysis was used to determine the relationship between adherence score (measured as the number of days of medication obtained divided by the number of days in the study) and prescription size (60 vs. 30 days) controlling for the other factors. In a separate analysis, cholesterol was used as the dependent variable.
RESULTS: 3,384 patient records met inclusion/exclusion criteria and were available for analysis. 47.9% of patients had obtained more than 80% of their cholesterol-lowering drugs. In univariate analysis an adherence score ≥0.8 was significantly associated with a 60-day medication supply rather than a 30-day supply (50.3% vs. 41.8%, $P < .01$). Adherence was also positively associated with male gender ($P < .01$), white race/ethnicity ($P < .01$), insurance status ($P < .01$) and older age ($P < .01$). Adherence was not associated with the presence of a co-pay or CDS. In multiple logistic regression analysis, days' supply of medication remained statistically significantly ($P < .01$) associated with adherence when controlling for other factors (OR 1.55 for 60 vs. 30 days, 95% CI 1.32, 1.81). A bit over half of the study population, 1709 patients, had cholesterol levels available. As can be expected, in multiple logistic regression analysis adherence score ≥0.8 was more strongly associated with having a final cholesterol less than 200 when controlling for other factors ($P < .01$; OR 2.53, 95% CI 2.03, 3.15).
CONCLUSION: Results of this study show that supplying patients with a greater amount of medication will enhance adherence thus leading to a higher rate of achievement of target lipid levels. Pharmacy policies limiting patients to smaller prescription sizes for financial or other reasons may be shortsighted.

THE EFFECTS OF AN EDUCATIONAL INTERVENTION ON MEDICAL STUDENT ORDER WRITING SKILLS. T. Defer[1]; J. Garbutt[1]; G.R. Highstein[1]; P.E. Milligan[2]; C. McNaughton[1]; V.J. Fraser[1]. [1]Washington University in St. Louis, St. Louis, MO; [2]Washington University School of Medicine, St. Louis, MO. *(Tracking ID #117445)*

BACKGROUND: Prescribing errors are frequent & represent 56% of preventable medication errors. Errors at the ordering stage are most common. One strategy to reduce errors is to change prescribing behavior early. The objective of this study is to determine if an educational intervention will have an effect on medical students' performance on a verbal orders transcription test.
METHODS: Study subjects were 28 3rd year medical students beginning the medicine clerkship in March 2003. Intervention consisted of 2 1-hour sessions to raise awareness of the problem of medication errors. 1st hour focused on general statements of the problem & statistics regarding errors at our local hospital. Safe prescribing habits were reviewed in detail. 2nd hour consisted of discussion of the transtheoretical model of behavior change. A 102-item attitude survey & a 10-item verbal order transcription test were administered prior to first intervention & at the end of the 12-week clerkship. A small control group of 7 students did not receive the educational intervention but did complete the attitude survey & transcription test over the same time period. Intervention group was evaluated for changes in verbal transcription skills. Primary outcome was error free order rate. Before & after intervention differences for study group were determined by paired analysis using Fisher's exact test. 2 independent evaluators systematically scored orders. Differences between intervention group & the control group were not calculated due to the small size of the control group.
RESULTS: 34 students completed the attitude survey prior to the intervention. 62% reported receiving "some training" in safe prescribing. The most common training reported (94%) was copying others' orders. 9% believed training was adequate. 280 orders before & 250 after were analyzed. Before & after error free order rates respectively were 6% & 45%, $P < .0001$. Orders were judged to be absolutely complete 18% before & 65% of the time after the intervention, $P < .0001$. A dangerous abbreviation was present 43% & 19% of the time after the intervention, $P < .0001$. Before & after serious prescribing error rates respectively were 5% & 1%, $P = .0042$.
CONCLUSION: The large majority of medical students feel their training to prevent prescribing errors is inadequate. Most medical students copy other physicians' orders as a means of "learning" to properly write medication orders. A simple two part intervention can result in significant changes in students' verbal order transcription skills, increase the error free order rate & order completeness, & reduce the use of dangerous abbreviations.

THE EFFICACY AND SAFETY OF BUPROPION SR IN SMOKERS HOSPITALIZED WITH ACUTE CARDIOVASCULAR DISEASE: A RANDOMIZED CONTROLLED TRIAL. A.N. Thorndike[1]; N.A. Rigotti[1]; S. Regan[1]; S. Swartz[2]; N. Torres-Finnerty[3]; R. Pasternak[1]; Y. Chang[1]; K.M. Emmons[4]; D.E. Singer[1]. [1]Massachusetts General Hospital, Boston, MA; [2]Maine Medical Center, Portland, ME; [3]Boston Medical Center, Boston, MA; [4]Dana-Farber Cancer Institute, Boston, MA. *(Tracking ID #116946)*

BACKGROUND: Hospitalization for acute cardiovascular disease (CVD) represents an excellent time for initiating smoking cessation. Bupropion SR is a safe and effective treatment for smoking cessation in healthy outpatients. Behavioral counseling interventions are effective in patients hospitalized with CVD, but cessation rates need improvement. Pharmacotherapy for smoking cessation has not previously been tested in this population of patients.
METHODS: We conducted a randomized, double-blind, placebo-controlled trial of the safety and efficacy of bupropion SR in adult smokers admitted to the hospital with acute CVD. We enrolled 248 smokers admitted with myocardial infarction, unstable angina, or peripheral vascular disease. Drug was started in the hospital and continued for 12 weeks after discharge. All subjects received smoking counseling in the hospital and follow up telephone counseling at 48 hours and at 1, 3, 8, and 12 weeks post-discharge. Smoking outcomes were assessed at 3 and 12 months and verified by saliva cotinine. All subjects lost to follow-up were considered to be smoking. Safety was assessed at 3 and 12 months by comparing cumulative cardiac endpoints (admission for myocardial infarction, angina, cardiac death, arrhythmias, congestive heart failure, and other vascular diagnoses). We used a chi-square test to compare quit rates and poisson regression to compare differences in cardiac endpoints.
RESULTS: At 3 months (end of drug treatment), 36% of patients taking bupropion and 26% of patients taking placebo quit smoking ($P = .08$). At 12 months, the quit rates dropped to 24% and 21%, respectively ($P = .58$). At 3 months, there were 21 cardiac endpoints in the drug group and 18 in the placebo group ($P = .66$), and at 12 months there were 37 and 24 endpoints, respectively ($P = .11$).

CONCLUSION: There was no difference between the bupropion and placebo groups in quit rates at one year. Despite the intensive therapy, nearly 80% of subjects returned to smoking one year after hospitalization for an acute CVD event. The 3 month (end of drug treatment) quit rates are suggestive of some marginal benefit of the drug over counseling, and it is possible that longer term drug therapy could improve one year quit rates. There were no significant differences in the number of cardiac endpoints at either 3 or 12 months.

THE GENDER GAP IN ACCESS TO HIGHLY ACTIVE ANTIRETROVIRAL THERAPY (HAART): EFFECT OF TREATMENT FOR MENTAL HEALTH DISORDERS AND SUBSTANCE ABUSE. N. Thomas[1]; J.A. Fleishman[2]; B.J. Turner[1]. [1]University of Pennsylvania, Philadelphia, PA; [2]Agency for Healthcare Research and Quality, Rockville, MD. *(Tracking ID #117104)*

BACKGROUND: Women are less likely than men to receive highly active antiretroviral therapy (HAART), as are individuals with mental health and substance abuse disorders. We sought to explore the effect of these disorders and treatment for these conditions on HAART use in women and men.
METHODS: We used the HIV Cost and Services Utilization Study to examine HAART use in 1997 in a national probability sample of HIV+ persons in care with a CD4 count <500. Patient interview data were used to identify HAART use, sociodemographics, social support, clinical status, drug abuse, and health care services including ambulatory care, psychotherapy, antidepressant use, and substance abuse (SA) treatment. Using the CIDI, we identified affective disorders including dysthymia and depression. We estimated logistic regression models, predicting HAART use for the entire cohort and separately by gender.
RESULTS: Of 590 women, 56% received HAART versus 65% of 1,463 men ($P = .02$). Women and men were equally likely to have depression (27 vs 30%) but women had more dysthymia (29 vs 17%, $P < .01$). Receipt of psychotherapy and antidepressant use did not differ by gender. Men were more likely to abuse drugs (69 vs 48%) but equally likely to have SA treatment (15 vs 12%). In separate models by gender, women with dysthymia were less likely to use HAART (adjusted odds ratio (AOR) 0.43, CI 0.21–0.91), while men with dysthymia were more likely (AOR 2.06, CI 1.19–3.59). Women taking antidepressants had an increased likelihood of HAART use (AOR 1.87, CI 1.07–3.23), but antidepressants showed no effect in men. Women with minimal SA had higher odds of HAART than those denying any SA (AOR 2.30, CI 1.46–5.99) but in men the odds were similar (AOR 0.92, CI 0.68, 1.24). In both genders, depression, psychotherapy, and SA treatment were not associated with HAART.
CONCLUSION: Women have a higher prevalence of dysthymia than men and dysthymia is associated with poorer receipt of HAART only among women. Antidepressant therapy is positively associated with HAART use only among women. These data emphasize the need to address mental health issues in women to promote receipt of antiretroviral therapy.

THE HEALTH STATUS OF WOMEN BEFORE, DURING, AND AFTER PREGNANCY. J.S. Haas[1]; R. Jackson[2]; E. Fuentes-Afflick[2]; A. Stewart[2]; M. Dean[2]; P. Brawarsky[1]; G.J. Escobar[3]. [1]Brigham and Women's Hospital, Boston, MA; [2]University of California, San Francisco, San Francisco, CA; [3]Kaiser Permanente Division of Research, Oakland, CA. *(Tracking ID #115954)*

BACKGROUND: While pregnancy is a common event for reproductive age women, our understanding of the physical and emotional changes that occur is limited. Characterization of health status during pregnancy and post-partum could: help women better prepare for these changes; inform public policies; and provide insights for interventions aimed at women at risk for important declines in health.
METHODS: Pregnant women planning to deliver at 1 of 6 hospitals in the San Francisco Bay area (n = 1,809) were eligible. Women who agreed to participate were asked to complete four telephone surveys: 1) prior to 20 weeks gestation, 2) 24 to 28 weeks, 3) 32 to 36 weeks, and 4) 8–12 post partum. During each interview, women were asked to report their health status using standardized instruments, as well as a variety of other demographic, medical and obstetrical factors.
RESULTS: Substantial changes in health status occurred around the time of pregnancy. For example, physical function declined substantially over the course of pregnancy, from a mean of 95 prior to pregnancy to 58 during the third trimester (0 – 100 scale, where 100 represents better health), and improved during the post-partum period (mean score 91). The prevalence of depression rose from 12% prior to pregnancy to 24% during the third trimester, and then declined post-partum to 14%. Insufficient money for food or housing and lack of exercise were strongly and consistently associated with poor health status before, during, and after pregnancy. During pregnancy, the presence of specific symptoms was associated with poor health status. In the post-partum period, lack of social support was the most consistent predictor of poor health. Pregnancy factors, especially Cesarean section, also contributed to poor health status post-partum.
CONCLUSION: Women experience substantial changes in health status around the time of pregnancy. These data should guide the expectations of women, their health care providers, and public policy.

THE IMPACT OF A COLLABORATIVE CARE INTERVENTION FOR PANIC AND GENERALIZED ANXIETY DISORDER (PD/GAD) ON ANXIETY SYMPTOMATOLOGY, HEALTH-RELATED QUALITY OF LIFE, AND WORK OUTCOMES AT 12-MONTH FOLLOW-UP. B.L. Rollman[1]; B. Herbeck Belnap[1]; S. Mazumdar[1]; F. Zhu[1]; H.C. Schulberg[2]; M. Shear[1]. [1]University of Pittsburgh, Pittsburgh, PA; [2]Cornell University School of Medicine, Riverdale, NY. *(Tracking ID #116080)*

BACKGROUND: PD and GAD are prevalent in primary care practice, often inadequately treated by PCPs, and associated with poorer functional outcomes. We performed a clinical trial to test the effectiveness of a telephone-based collaborative care strategy for PD/GAD and examined its impact on work outcomes.
METHODS: We used the PRIME-MD to identify patients with PD and/or GAD at four clinics sharing a common electronic medical record (EMR) system. Protocol-eligible patients reported a baseline Hamilton Rating Scale for Anxiety (HRS-A) >13 or Panic Disorder Severity Scale (PDSS) >6. We informed patients' PCPs of these findings via EMR and randomized patients to either telephone-based care management for PD/GAD, or to a "usual care" control condition. The care manager assessed patient's treatment preferences (pharmacotherapy, counseling, or specialty referral), imparted self-management skills using a workbook, and provided periodic feedback and treatment recommendations to the PCP via EMR. Anxiety symptomatology (HRS-A and PDSS), health-related quality of life (HRQoL: SF-12 MCS), and work outcomes were assessed via telephone up to 12 months following recruitment.
RESULTS: Between 7/00 and 4/02, we recruited 181 patients who met all study eligibility criteria (43% GAD, 11% PD, 46% PD/GAD). Their mean age was 44 (range 19–63), 82% were female, 97% Caucasian. At baseline, mean scores for PDSS, HRS-A, and SF-12 MCS were 8.2, 19.9, and 30.3, respectively, and 67% were employed. At 12-month follow-up, our intervention produced effect sizes of 0.38–0.41 on our anxiety and quality-of-life measures (all $P = .01$). Of those working at baseline and who completed a 12-month assessment (N = 90), intervention patients were more likely to remain working (94% vs. 79%; $P = .04$), work more hours per week (40.5 vs. 30.8; $P = .02$), and report fewer days absent from work in the past month (1.0 vs. 2.9; $P = .04$) than "usual care" patients.
CONCLUSION: Compared to PCPs' usual care, a telephone-based collaborative care intervention for PD and GAD can improve anxiety symptomatology, HRQoL, and work outcomes at 12-month follow-up.

THE IMPACT OF A SERIES OF WORKSHOPS TO IMPROVE EVIDENCE BASED CLINICAL PRACTICE. R.S. Mangrulkar[1]; K. Lencoski[2]; M. Gerrity[3]; R.S. Hayward[4]; S. Straus[5]; T. SGIM EBM Task Force[2]. [1]University of Michigan, Ann Arbor, MI; [2]SGIM, Washington, DC; [3]Portland VA Medical Center, Portland, OR; [4]University of Alberta, Edmonton, Alberta; [5]University of Toronto, Toronto, Ontario. *(Tracking ID #117300)*

BACKGROUND: Evaluating the effect of Evidence-Based Medicine (EBM) instruction on performance has been hampered by a lack of standardized interventions, multi-institutional studies, and important outcome measures. We sought to assess the impact of a combined online and face-to-face workshop on the knowledge, attitudes, skills, and performance required for evidence-based practice by practicing clinicians.
METHODS: We used a pre-post uncontrolled trial study design. Subjects were 35 practicing clinicians who participated at one of 3 sites in a standardized face-to-face workshop developed and implemented by the SGIM EBM Task Force. Using a computer lab as the setting, instruction centered on formulating structured clinical questions, searching evidence-based databases, interpreting the results of searches, and applying them to patient care. As part of the workshop, learners were given 2 months access to a web-based desktop that contained curricular materials and electronic information resources. Outcomes were assessed using (1) an electronic survey administered immediately before and after the workshop, and (2) monitored desktop use after the workshop. Survey questions included (1) self-reported use of information resources and comfort with EBM skills, (2) demonstration of resource preferences, question formulation, and interpretation skills in case scenarios. Analysis of the change in scores after the workshop was performed using the Wilcoxon signed ranks test.
RESULTS: At baseline, the participants most frequently used textbooks, colleagues, and consultants to answer questions, compared to computer-based resources ($P < .05$). After the workshop, participants expressed higher comfort levels with all 4 EBM skills ($P < .05$), and were more likely to use Cochrane, ACP Journal Club, Up-To-Date and Clinical Evidence in case scenarios ($P < .001$). Learners' demonstration of these skills improved as well, specifically (1) formulating components of a clinical question, (2) calculating risk reductions and number-needed-to-treat, and (3) applying likelihood ratios and risk reductions to simulated clinical decisions (all $P < .05$). After the workshop, participants' use of the desktop peaked during the first month, then declined in month 2. The most frequently accessed databases were those used in the workshop, including Up-to-Date and ACP Journal Club (average 3 times per user for each resource), correlating with stated increased comfort levels with these resources on the survey.
CONCLUSION: After participating in this standardized workshop, practicing clinicians were more comfortable with, and better at performing EBM skills in simulated cases, and used evidence-based resources in their own setting.

THE IMPACT OF AN ELECTRONIC CLINICAL REMINDER SYSTEM ON QUALITY OF CARE. T.D. Sequist[1]; T.K. Gandhi[1]; A.S. Karson[2]; J. Fiskio[1]; M. Sperling[1]; D. Bugbee[1]; D.W. Bates[1]. [1]Brigham and Women's Hospital, Boston, MA; [2]Massachusetts General Hospital, Boston, MA. *(Tracking ID #115124)*

BACKGROUND: Well-documented gaps in health care quality for chronic diseases suggest the need for innovative quality improvement strategies. We evaluated a patient-specific electronic clinical reminder system for diabetes and coronary artery disease (CAD) management within an electronic medical record (EMR).
METHODS: We conducted a 6 month randomized trial involving 255 eligible primary care physicians (PCPs) at 17 clinics using an outpatient EMR. Intervention PCPs received patient-specific electronic reminders, with recommendations for overdue screening tests and medication initiation. We constructed Cox proportional hazards models to assess for differences in receipt of recommendations after adjusting for

patient age, gender, race, insurance, and clustering within clinics. Surveys were mailed to 128 intervention physicians to assess attitudes towards this reminder system. The survey response rate was 63% (n = 80).
RESULTS: We enrolled 189 PCPs caring for 4,578 patients with diabetes and 178 PCPs caring for 2,327 patients with CAD. Reminders resulted in action in 19.1% of intervention patients versus 14.4% of controls. Among patients with diabetes, reminders were effective for monitoring of overdue annual cholesterol testing (HR 1.45, 95% CI 1.11–1.89) and initiation of ACE inhibitor therapy among those with hypertension (HR 1.47, 95% CI 1.05–2.07). Reminders for monitoring of overdue hemoglobin A1c, overdue dilated eye examinations, and statin therapy initiation in the presence of elevated LDL cholesterol (≥130 mg/dL) were not effective for patients with diabetes. Among patients with coronary artery disease, reminders were effective for initiation of statin therapy in patients with LDL cholesterol ≥130 mg/dL (HR 1.97, 95% CI 1.43–C 2.73), and for initiation of aspirin therapy (HR 2.32, 95% CI 1.37–2.73). Reminders for overdue annual cholesterol monitoring and initiation of beta blocker therapy were ineffective for patients with coronary artery disease. Only 39% of intervention PCPs reported noticing reminders, and 36% reported acting on them. Overall, 66% felt that diabetes reminders were useful, 49% felt that CAD reminders were useful, and 73% felt that electronic reminders improved health care quality.
CONCLUSION: Electronic clinical reminder systems modestly improved some, but not all, aspects of diabetes and CAD care. Though many physicians were supportive of the reminders delivered overall, future work is needed to understand how to best improve quality using electronic clinical decision support.

THE IMPACT OF COMPUTERIZED PROVIDER ORDER ENTRY ON MEDICAL STUDENT EXPERIENCES DURING TRAINING. A.M. Knight[1]; M.G. Harper[1]; S.J. Kravet[1]; B.A. Leff[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #116923)*

BACKGROUND: Many hospitals are implementing computerized provider order entry (CPOE), but little is known about the impact of CPOE on students' learning experience during clinical clerkships.
METHODS: An anonymous survey was administered to all Johns Hopkins University medical students that began their two-month Basic Medicine Clerkship in March, June or September 2003. The 68 students were surveyed one month into the rotation. Half of the students spent the first month at a hospital utilizing CPOE and the other half spent it at one of two hospitals using paper orders. Comparisons between the two groups were made using t-tests and Chi-square tests.
RESULTS: Students at the hospital using CPOE reported placing significantly fewer of their patients' follow up orders than those at the hospitals using paper orders (27% vs. 45%, $P = .01$). There was no significant difference between the two groups in the reported percentage of orders reviewed with them by their intern or resident (59% vs. 70%) or by their attending (11% vs. 13%). More students at the hospital using CPOE reported that a barrier to placing orders was that "the resident or intern didn´t want me to write or enter orders" (62% vs. 35%, $P < .05$). Students at the hospital using CPOE were less likely than those at the hospitals using paper to "strongly agree" that they "felt like part of the medical team in the care of my patients" (18% vs. 53%, $P < .01$). They were also less likely to "agree" or "strongly agree" that "my intern and resident thought it was important for me to have opportunities to place orders on my patients" (29% vs. 58%, $P < .05$) or that they were "receiving adequate preparation for being an intern" (38% vs. 63%, $P < .05$). There was no difference between the two groups in the percent that "agreed" or "strongly agreed" that "placing orders is an important way to increase my sense that I am a caregiver for my patients" (47% vs. 55%) and "placing orders is an important way to learn way tests and treatments are needed by patients with certain problems" (44% vs. 52%). There was also no significant difference in the percent that "strongly disagreed" or "disagreed" with the statements "entering orders by computer promotes 'cookbook medicine' and discourages thinking" (65% vs. 42%) and "writing orders by hand is cumbersome and encourages medical errors" (24% vs. 33%).
CONCLUSION: Students at the hospital utilizing CPOE reported placing fewer orders and were less likely to feel like they were being adequately prepared for being an intern. Teaching hospitals implementing CPOE systems should be mindful of their potential impact on medical student education.

THE IMPACT OF HIGHER SPENDING ON HEALTH CARE QUALITY: PHYSICIANS' PERCEPTIONS. B.E. Sirovich[1]; D.J. Gottlieb[2]; H.G. Welch[1]; E.S. Fisher[2]. [1]VA Outcomes Group, Dartmouth Medical School, White River Junction, VT; [2]Center for the Evaluative Clinical Sciences, Dartmouth Medical School, Hanover, NH. *(Tracking ID #117205)*

BACKGROUND: Previous research has documented dramatic differences in per capita Medicare spending across regions that are similar in terms of patient illness levels and outcomes. We compared physicians across regions in order to determine whether those in high spending regions—regions with more physicians, specialists, and hospital beds—felt better able to provide high quality care than physicians in low spending regions.
METHODS: We used data from the Community Tracking Study, a telephone survey of a nationally representative sample of 10,576 physicians providing care to adults in 1998 and 1999 (response rate 61%). Based on practice location, we assigned each participating physician to one of 306 U.S. Hospital Referral Regions, which were in turn assigned to quintiles based on average per capita Medicare spending—ranging from $5,163 in the low spending quintile to $8,265 in the high spending quintile (using 2000 data).
RESULTS: Although high spending regions have 32% more hospital beds and 65% more specialists per capita, physicians in these regions reported substantially greater difficulty obtaining needed services for their patients –67% in high spending regions felt able to obtain high quality specialist referrals vs. 80% in low spending regions. Physicians in high spending regions also felt less able to maintain good ongoing patient relationships (65% vs. 72% in low spending regions), less free to make clinical decisions that met their patients' needs (74% vs. 83%), and less satisfied with their level of communication with other physicians (74% vs. 83%). Finally, physicians in high spending regions felt less able to provide high quality care to their patients (63% v. 68% for physicians in low spending regions). These differences persisted after adjustment for managed care penetration, practice type, and physician specialty.
CONCLUSION: Despite substantially higher levels of resources, physicians in high spending regions report greater difficulty in obtaining needed services and providing high quality care.

THE IMPACT OF LOW LITERACY ON HOSPITAL AND AMBULATORY CARE UTILIZATION. A. Khan[1]; S.D. Lee[2]; T. Khan[1]; S. Kurup[1]; A.M. Arozullah[1]. [1]VA Chicago Healthcare System, University of Illinois at Chicago, Chicago, IL; [2]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #117329)*

BACKGROUND: Previous studies of low literacy have focused solely on hospital utilization, but not on ambulatory care use. This study determined the relationship of low literacy with the utilization of both hospital and outpatient care over a two year period.
METHODS: Patients admitted to the general medicine service between 8/1/01–4/1/03 at a University-affiliated VA Hospital were eligible. Patients with dementia, blindness, deafness, VA care <6 months, and/or being too ill were excluded. Participants were interviewed to assess health literacy, health status, health habits, health service access and utilization, and social support. Participants were classified as inadequate literacy (less than 4th grade), marginal literacy (between 4th and 8th grades), and adequate literacy (greater than 9th grade) using the Rapid Estimate of Adult Literacy in Medicine. Hospital admissions and ambulatory care visits for the two years prior to the current admission were determined from electronic medical records. The dependent variables were the number of hospital admissions in the previous 2 years (0 vs. 1 or more) and the number of outpatient visits in the previous year (≤20 visits vs. >20 visits). Multivariate logistic regression was used to determine the independent association of literacy level with each dependent variable.
RESULTS: We enrolled 400 participants with a mean age was 60.5 years (SD, 13.2) and 58% had <9th grade literacy. The mean number of hospitalizations was 1.5 (SD, 2.0) and 58% had 1 or more hospitalizations. The mean number of outpatient visits was 29 (SD, 28) and 52% had greater than 20. After adjusting for age, race, income, education, health status and predicted utilization, participants with inadequate literacy had an odds ratio (OR) of 3.6 (95% CI 1.1–11.5) for hospital admission compared to those with adequate literacy. Other significant risk factors for hospital admission included age, income, alternative hospital visits, past hospitalizations, and greater health responsibility. Conversely, participants with inadequate literacy had an OR of 0.24 (95% CI 0.06–0.99) for having greater than 20 outpatient visits compared to adequate literacy, after adjusting for age, race, income, education, health status and predicted utilization. Other significant risk factors for high ambulatory care utilization included having a personal doctor (OR 2.4, 95% CI 1.1–5.0), greater health responsibility (OR 1.1, 95% CI 1.0–1.2), and lower emotional social support (OR 0.98, 95% CI 0.96–1.0).
CONCLUSION: Inadequate literacy (<9th grade) is associated with higher risk of prior hospital admissions but lower ambulatory care use. Future interventions focused on encouraging ambulatory care usage among patients with inadequate health literacy may reduce hospital admissions.

THE IMPACT OF METHADONE INDUCTION ON CARDIAC REPOLARIZATION AND CONDUCTION IN OPIOID USERS. B. Martell[1]; J.H. Arnsten[2]; M.J. Krantz[3]; M.N. Gourevitch[4]. [1]Yale University School of Medicine, New Haven, CT; [2]Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY; [3]University of Colorado Health Sciences Center, Denver, CO; [4]Montefiore Medical Center, Bronx, NY. *(Tracking ID #115665)*

BACKGROUND: Oral methadone has been associated with prolongation of the corrected QT interval (QTc) and torsade de pointes in case series; intravenous methadone has been associated with bradycardia and QRS interval widening in anecdotal reports. We assessed electrocardiographic (ECG) changes associated with initiation of methadone maintenance treatment, as this has not been previously reported.
METHODS: We prospectively assessed 160 heroin-dependent patients with 12-lead electrocardiography (ECG) immediately before and then 6 and 12 months following initiation of oral methadone maintenance. Baseline clinical characteristics, serum chemistry values, and urine toxicology were obtained. The mean (+ SD) of the difference between baseline and follow-up QTc was evaluated using the Wilcoxon signed rank test for non-normally distributed data. Additional univariate associations were assessed using Pearson or Spearman correlation coefficients for continuous variables, and the Student's t or Wilcoxon signed rank test for categorical variables, depending on normality of the distribution of data. Multivariate associations with the magnitude of the QTc at baseline and the change in QTc were assessed with linear regression models.
RESULTS: After 6 and 12 months of methadone treatment the mean QTc increased by 12.4 + 23 msec and 10.7 + 30 msec, respectively (both $P < .001$). Daily methadone doses ranged from 30–200 mg. Only 6 month methadone dose was significantly associated with the magnitude of the QTc interval change from baseline to

6 months in univariate analysis. In multivariate analysis, factors associated with greater QTc prolongation from baseline to 6 months were: male gender, HIV-seropositivity, and 6 month methadone dose. Methadone dose at 12 months was marginally associated with the magnitude of the QTc change from baseline to 12 months ($P = .08$). Significant correlations were found between the QTc change from baseline to 12 months and both methadone trough level (R = +0.37, $P = .008$) and methadone peak level (R = +0.32, $P = .03$). Neither bradycardia nor QRS widening were noted at either time interval, and no cardiac arrhythmias were observed.
CONCLUSION: Methadone induction is associated with mild QTc interval prolongation in opioid dependent patients. The increase in QTc interval is modestly associated with methadone dose and serum methadone concentration. No bradycardia or QRS widening was noted, and no case of torsade de pointes was observed during the study.

THE IMPACT OF ORAL PSEUDOEPHEDRINE AND PHENYLPROPANOLAMINE ON BLOOD PRESSURE: A META-ANALYSIS AND REVIEW OF THE LITERATURE. S.M. Salerno[1]; J.L. Jackson[2]; E. Berbano[2]. [1]Tripler Army Medical Center, Honolulu, HI; [2]Uniformed Services University of the Health Sciences, Bethesda, MD. *(Tracking ID #115694)*

BACKGROUND: Oral sympathomimetic agents are commonly used to treat congestion and obesity. The purpose of our systematic review was to assess whether these drugs cause reproducible and clinically meaningful elevations in pulse or blood pressure.
METHODS: We searched MEDLINE (1966–2003), Embase, the Cohcrane library and reviewed article references. Inclusion criteria included English-language, randomized placebo-controlled trials of oral sympathomimetic agents in adults, with extractable data on pulse or blood pressure. Because of a recent systematic review, articles on ephedrine were excluded. The primary extracted data were systolic and diastolic blood pressure and heart rate. Additional extracted data included demographics, year, study design, study duration, drug dose and frequency, duration of washout and country. Study quality was assessed using the methods of Jadad and Chalmer and data were synthesized using a random effects model using weighted mean differences.
RESULTS: Besides ephedrine, only 2 drugs, phenylpropanolamine and pseudoephedrine, met inclusion criteria, with 55 trials reporting 92 treatment arms. Phenylpropanolamine increased systolic blood pressure (SBP) (5.5 mm Hg, 95% CI: 3.1–8.0) and diastolic blood pressure (DBP) (4.1 mm HG, 95% CI: 2.2–6.0) with no effect on pulse. Pseudoephedrine had a slight increase in SBP (1.7 mm Hg, 95% CI: 0.3–3.1) and pulse (3.4 beats/minute, 95% CI: 2.0–4.8) with no effect on DBP. Patients with controlled hypertension had no effect on blood pressure with either drug. For both drugs, immediate release preparations had greater effects than sustained release ones. Higher doses and shorter duration use also had greater increases.
CONCLUSION: Phenylpropanolamine significantly elevated systolic and diastolic blood pressure while pseudoephedrine had a small effect on systolic pressures only. The effect was more pronounced with higher doses of medication, immediate release formulations and with shorter term administration. Both medications do not cause clinically significant changes in blood pressure and pulse among patients with known, treated hypertension

THE IMPACT OF SEVERE ACUTE RESPIRATORY DISTRESS SYNDROME ON MEDICAL HOUSESTAFF. G.M. Rambaldini[1]; K. Wilson[2]; D. Rath[2]; Y. Lin[3]; W. Gold[1]; M. Kapral[2]; S. Straus[1]. [1]University of Toronto, Toronto, Ontario; [2]University Health Network, Toronto, Ontario; [3]University of British Columbia, Vancouver, Ontario. *(Tracking ID #116083)*

BACKGROUND: Severe Acute Respiratory Distress Syndrome (SARS) raised the issues of duty to care and personal safety of medical residents in the context of a new infectious disease. Universities and training programs had to respond to the occupational and psychological challenges of a public health threat. The SARS outbreak provides an opportunity to explore the impact of a new, emerging health threat on housestaff and to derive principles for professional training programs to develop generalizable approaches in dealing with future similar crises.
METHODS: The study was conducted using grounded theory methodology amongst medical housestaff working in two university-affiliated hospitals in Toronto, Canada during the SARS outbreak in 2003. Participants included residents who were allocated to a General Medicine Clinical Teaching Unit, Infectious Diseases consultation service or the Intensive Care Unit. Semi-structured interviews were conducted by an experienced nurse-interviewer. Two investigators who were blinded to the partcipant's identity independently coded and analysed the data.
RESULTS: Seventeen medical housestaff participated in the study and described their experiences during the outbreak. The major topics that affected housestaff included: (1) Personal Safety and Risk; (2) Education and Training; (3) Care of patients with and without SARS; (4) Personal and Professional Well-being. All Participants outlined the fundamental importance of good communication and strong leadership.
CONCLUSION: The ability of residents to cope with the stress of the SARS outbreak was enhanced by the communication of relevant information and by the strong leadership of their supervisors and infection control officers. It is hoped that training programs for health care professionals will be able to implement these tenants of crisis management as they develop strategies for dealing with future health threats.

THE IMPACT OF SOCIOECONOMIC STATUS ON TRIAL PARTICIPATION FOR ELDERLY BREAST CANCER PATIENTS. C.P. Gross[1]; G. Filardo[1]; S.T. Mayne[1]; H.M. Krumholz[1]. [1]Yale University School of Medicine, New Haven, CT. *(Tracking ID #116741)*

BACKGROUND: Although there has been a recent emphasis on identifying barriers to trial participation for elderly cancer patients, little is known about the impact of socioeconomic status (SES) on trial enrollment.
METHODS: We performed a case-control study, matching elderly breast cancer trial participants with patients in the community using a 1:4 ratio. We used the National Cancer Institute's (NCI) Clinical Data Update System database to identify the "cases", who were patients enrolled in breast cancer trials during 1996 through 2001. Population-based data regarding elderly patients diagnosed with breast cancer in 1996 ("control patients") were obtained from the linked SEER-Medicare database. We restricted the sample to women 65 years of age and older who were living in SEER areas. Proxies for SES included the % of the population below poverty level (by zip code), % unemployed (by county) and Medicaid insurance coverage. Covariates included age, race, distance to nearest center participating in NCI clinical trials, and county characteristics (population density, managed care penetration, presence of a teaching hospital). Bivariate analyses were performed using *t* tests and chi-square. A multivariate logistic regression was used to identify factors independently associated with trial participation.
RESULTS: Of a total of 37,191 subjects enrolled in breast cancer trials, 5,025 (13.5%) resided in SEER areas, and 760 of these women were 65 years of age and older. The control (SEER-Medicare) group consisted of 3,040 patients who were randomly selected from 7,951 eligible women. In bivariate analysis, women residing in zip code areas in the highest quartile of poverty (more than 13.9% of the population below poverty) were significantly less likely to enroll in trials (odds ratio (OR): 0.74; 95% CI: 0.61–0.90) than women in the remaining quartiles. Similarly, women who had Medicaid insurance or who resided in counties in the highest quartile of % unemployed were less likely to enroll in trials (odds ratios, (95% CI): 0.25 (0.16–0.40) and 0.65 (0.53–0.79), respectively) than women without these characteristics. After adjusting for race, age, and county characteristics in multivariate analysis, trial participation remained inversely related to residing in areas with high poverty (OR: 0.74; 0.58–0.93) or unemployment rates (OR: 0.25; 0.15–0.43), and having Medicaid insurance (OR: 0.28; 0.17–0.46).
CONCLUSION: Several indicators of low socioeconomic status are associated with lower trial participation rates. Future efforts to enhance enrollment of elderly women in cancer research should identify specific barriers related to education and socioeconomic status that may be amenable to intervention.

THE IMPACT OF THE STANFORD FACULTY DEVELOPMENT PROGRAM ON AMBULATORY TEACHING BEHAVIORS. E. Berbano[1]; J.L. Jackson[2]; R. Browning[3]. [1]Walter Reed Army Medical Center, Bethesda, MD; [2]Uniformed Services University of the Health Sciences, Bethesda, MD; [3]NNMC, Bethesda, MD. *(Tracking ID #117380)*

BACKGROUND: Most previous evaluations of the impact of faculty development have relied on indirect measures, such as teacher or learner satisfaction of teaching quality. Our purpose was to assess the impact of a popular 21-hour, 7-part interactive faculty development program, Stanford Faculty Development Program (SFDP), on teaching behaviors.
METHODS: Before and within 1 month after participating in the SFDP, teachers were audio-taped interacting with a standardized learner, trained to reliably portray three ambulatory clinical teaching scenarios: a medical student, an intern and a senior medicine resident. These audio-tapes were independently and randomly coded using the Teacher-Learner Interaction Analysis System (TELIAS) by one of two coders who was blinded to the timing of the encounter relative to the seminar series. TELIAS is a qualitative coding system, previously demonstrated to be reliable, comprehensive and sensitive to small changes in teaching behaviors.
RESULTS: Eight faculty members participated for a total of 48 teaching encounters (24 before, 24 after). Coders achieved a high degree of inter-rater agreement (Spearman 0.85). Overall there were a total of 6732 utterances, with each encounter averaging 146 utterances; 11% of the encounter time was spent on the history, 15% on the physical examination and 75% on discussion of the assessment and plan. There were 636 feedback statements, of which 96% were positive and 90% were low quality feedback statements, such as "right" or "I agree." There was no difference in the overall number of utterances after the intervention (146 vs. 142, $P = .74$), or in the number uttered by either the teacher ($P = .72$) or student ($P = .86$). After the intervention, there were fewer low-quality, non-integrative statements made by the teacher (18.6/encounter vs. 13.7, $P = .03$). Teachers asked more analytic questions (7.3/encounter vs. 5.6) and fewer recall questions (1.8 vs. 2.3). While there was no difference in overall feedback provided, the proportion of specific and interactive feedback increased (from 6% to 15%) after the intervention. Teacher questions were more focused on eliciting a commitment from the learners (1.8 vs. 3.2, $P = .03$) and produced a greater number of learner utterances of commitment to diagnosis, management or prognosis (3.8 vs. 5.8, $P = .05$).
CONCLUSION: Participation in the Stanford Faculty Development Program produced a number of objective improvements in the quality of ambulatory teaching. Teachers asked better questions, received higher quality student responses and provided better quality of feedback.

THE IMPACT OF THE WOMEN´S HEALTH INITIATIVE FINDINGS ON MANAGEMENT OF WOMEN ON HRT. M.A. Schonberg[1]; R.B. Davis[1]; C.C. Wee[1]. [1]Beth Israel Deaconess Medical Center, Boston, MA. *(Tracking ID #116677)*

BACKGROUND: The Women's Health Initiative (WHI), published in 7/02, found that the overall health risks of hormone replacement therapy (HRT) exceeded the benefits. Little is known about how these findings affected the management of women on HRT and of menopausal symptoms.
METHODS: Between 7/03 and 9/03, we perfomed a telephone survey of female pts randomly selected from a large academic primary care practice who were >50 years and taking systemic HRT (estrogen or estrogen plus progesterone [E+P]) as of 7/

09/02. We obtained data on sociodemographics, past and current hormone use, WHI awareness, reasons for continuing or stopping HRT, risk perceptions for several diseases, and use of other therapies. For pts who stopped HRT, we evaluated how they stopped (gradually/abruptly), and symptom management after stopping. In bivariable and multivariable analyses, we identified factors associated with the decision to stop using HRT. We included as possible correlates of stopping HRT, age, race, education, insurance, WHI awareness, provider sex, duration and type of HRT, and risk perception for disease.
RESULTS: Of 315 eligible women, we interviewed 204 pts (response rate 65%). Their mean age was 61 years, 70% were white, 56% had at least a college degree. Most (75%) were on HRT for >5 years, 54% began HRT for menopausal symptom treatment, and 53% were on E+P. Almost all were aware of the WHI (94%). The 62 women who chose to continue HRT did so primarily for symptom management (48%), general well being (28%), or osteoporosis prevention (16%); but the majority (52%) continued at a lower dose. Among the 142 (70%) who stopped HRT, 81% stopped due to the WHI findings; 42% stopped on their own and 53% stopped abruptly. The majority (82%) who discontinued HRT suffered from some menopausal symptom, mainly hot flashes. Among the 117 women with symptoms, 49% visited a doctor for this symptom, 60% tried a treatment (44% used soy, herbs, vitamins, or relaxation techniques, 21% restarted HRT [42% at a lower dose], and 7% tried clonidine, venlafaxine, or gabapentin). Among those with symptoms, 89% who restarted HRT found it helpful in symptom management, compared to 39% who tried an alternative to HRT. In both bivariable and multivariable analyses, being non-white (aOR 3.7, 95% CI [1.6–8.5]) and being on E+P (3.5, [1.8–6.9]) were significantly associated with stopping HRT.
CONCLUSION: Most women on HRT in a large academic practice discontinued HRT within a year after publication of the WHI. Among those still taking HRT, many continued on a lower dose. White women and those on estrogen alone were more likely to continue HRT. Although, many suffered from some menopausal symptom after stopping HRT, few found alternatives to HRT effective in symptom management.

THE INCIDENCE OF VENOUS THROMBOEMBOLISM AND EFFICACY OF PROPHYLAXIS FOR MEDICAL INPATIENTS: A SYSTEMATIC REVIEW. A. Brenner[1]; E.A. Halm[1]; A.S. Dunn[1]. [1]Mount Sinai School of Medicine, New York, NY. *(Tracking ID #116786)*

BACKGROUND: Though venous thromboembolism (VTE) is a serious complication of surgery, its impact for hospitalized general medical patients is unclear. We conducted a systematic review to assess the incidence of asymptomatic and symptomatic VTE and the relative efficacy of prophylaxis with unfractionated heparin (UFH) and low-molecular-weight heparin (LMWH) in hospitalized medical patients.
METHODS: We performed a MEDLINE search of English language literature (1966–June 2003) to identify studies examining VTE incidence and efficacy of prophylaxis in medical inpatients. The search strategy included terms related to DVT, PE, and prophylaxis and excluded terms related to surgery, trauma, stroke and MI. Studies examining acute MI, stroke, and ICU populations were excluded.
RESULTS: A total of 831 articles were identified, 14 of which were included in the analysis. Two RCTs were peer reviewed and examined symptomatic events; a large trial (n = 11,693) found UFH to decrease VTE incidence from 1.3% to 0.6% ($P < .05$) compared with control, and a study (n = 1,358) showed UFH to reduce mortality (10.9% to 7.8%, $P < .05$) compared with control. Five RCTs examining asymptomatic VTE compared LMWH (n = 1,733) and UFH (n = 1,667). All found no difference in VTE incidence (overall rates: 2.3% LMWH and 2.8% UFH). Of three RCTs comparing prophylaxis with control for asymptomatic events, two found LMWH to significantly decrease DVT incidence by 2/3 (from 9% to 3%, and 15% to 5%), and a small trial (n = 100) found that UFH significantly reduced DVT incidence from 26% to 4%. A prospective study (n = 101) found the incidence of asymptomatic DVT without prophylaxis to be 12.8%, and a cross-sectional study (n = 1,194) examining patients with and without prophylaxis reported a 1.4% overall incidence of symptomatic VTE. Two non-peer reviewed RCTs, both examining symptomatic events, were identified; a large trial (n = 2,472) found no difference in mortality for LMWH and placebo, and a study (n = 100) comparing LMWH and UFH found no difference in VTE incidence (2%).
CONCLUSION: In unprophylaxed medical inpatients, the incidence of asymptomatic VTE ranged from 9–26% and the incidence of symptomatic VTE was approximatley 1%, indicating that asymptomatic events are 10–20 fold more common than clinically relevant events. Both UFH and LMWH prevent VTE for hospitalized medical patients; the relative risk reduction was 50–66% for all but one study. Neither strategy has been shown to be superior to the other for this population. Further research is needed to identify high-risk medical patients who are likely to achieve a clinically important benefit from anticoagulant prophylaxis.

THE MENTAL HEALTH IMPACT OF LIVING WITH A SPOUSE WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE. W.P. Witt[1]; T.A. Lee[1]; J. Xu[1]; D. Baker[1]; K.B. Weiss[1]. [1]Northwestern University, Chicago, IL. *(Tracking ID #116656)*

BACKGROUND: Chronic obstructive pulmonary disease (COPD) is a major cause of morbidity and mortality in the US. COPD impacts the functioning and well-being of the patient and the level of informal caregiving in the family. However, there is a paucity of research on the mental health impact of COPD on spousal caregivers.
METHODS: This study uses data from the 1992 Health and Retirement Study (HRS) population. The HRS is a nationally representative longitudinal study of individuals, aged 51–61, and their spouses (regardless of age) at the time of the interview. Spouses and their partners with COPD ("proband dyads") were selected (n = 503). Proband dyads were matched to couples without COPD (1-to-3 ratio) on the basis of age and gender of the proband (n = 1,507). Spousal depressive symptoms were measured using an 8-item version of the Center for Epidemiologic Studies–Depression scale (CES-D), with the endorsement of four or more items indicative of the threshold for depressive symptoms. Probands had poor health status if they reported at least one limitation in their activities of daily living, a limitation caused by COPD, or reported a heath condition other than or in addition to COPD. The association between spousal depressive symptoms and having a spouse with COPD was evaluated using bivariate comparisons and logistic regression.
RESULTS: Bivariate analyses show 6.2% of spouses of probands report symptoms of depression as compared to only 3.5% of non-proband spouses ($P < .03$). For probands who reported poor health status, we found that 10.7% of spouses reported depressive symptoms as compared with 3.1% ($P < .001$) of spouses of probands in good health. Even when controlling for partner health status, spouses of probands were 1.6 (CI: 1.1–2.2) times more likely to report depressive symptoms, as compared with spouses of non-probands.
CONCLUSION: Spouses of patients with COPD are more likely to report depressive symptoms as compared with spouses of individuals without COPD. Poor health status of patients with COPD is associated with an increased report of spousal depressive symptoms. Providers should be aware of the strain that COPD places on caregivers' mental health and consider methods for screening caregivers for depressive symptoms and referring them for therapy if needed.

THE METABOLIC SYNDROME IS ASSOCIATED WITH DIABETES RISK: THE HEART AND ESTROGEN/PROGESTIN REPLACEMENT STUDY. A. Kanaya[1]; D.M. Herrington[2]; E. Vittinghoff[1]; F. Lin[1]; V.A. Bittner[3]; J.A. Cauley[4]; D.G. Grady[1]; E. Barrett-Connor[5]. [1]University of California, San Francisco, S.F., CA; [2]Wake Forest University, Winston-Salem, NC; [3]University of Alabama, Birmingham, AL; [4]University of Pittsburgh, Pittsburgh, PA; [5]University of California, San Diego, La Jolla, CA. *(Tracking ID #116203)*

BACKGROUND: The metabolic syndrome (MS) is a cluster of heart disease risk factors that has also been associated with increased risk of type 2 diabetes in men. No studies have examined whether the MS is an independent risk factor for diabetes in women.
METHODS: We conducted a prospective cohort analysis using data from HERS, a trial among 2,763 postmenopausal women with heart disease randomized to daily estrogen/progestin therapy or placebo for a mean of 4.1 years. We excluded 734 women who had diabetes at baseline defined by self-report, use of diabetes medication, or fasting glucose ≥126 mg/dl. Women with ≥3 of the following criteria were classified with the MS: waist circumference >88 cm, HDL <40 mg/dL, triglycerides ≥150 mg/dL, fasting glucose ≥110 mg/dL, or hypertension (≥130/85 mm Hg or use of an antihypertensive drug). Incident diabetes was defined as fasting glucose ≥126 mg/dl at the first annual visit or trial closeout, by initiation of hypoglycemic medication, or an early diabetes complication. We assessed the association of baseline MS and incident diabetes using multivariable Cox proportional hazards models adjusted for age, ethnicity, BMI, physical activity, and hormone therapy assignment.
RESULTS: Of the 2,029 women in our analysis, 1,004 (49.5%) had the MS at baseline. The most common criterion for MS was hypertension (95.7%), and the least common was an elevated fasting glucose (19.0%). During 4.1 years of follow-up, 160 women developed diabetes. The incidence of diabetes was significantly higher among women with the MS compared to those without (29.5 vs. 10.5 cases per 1,000 women-years, $P < .001$). In adjusted analyses, the MS was associated with a doubling of risk of incident diabetes (hazard ratio (HR) 2.40, 95% confidence interval 1.66–3.46). This association did not differ significantly by age, race/ethnicity, BMI category, or hormone therapy group. In a separate model where we included each of the five criteria for the metabolic syndrome as continuous variables, fasting glucose (HR 1.10, 1.08–1.12 per mg/dL increase) and HDL cholesterol (HR 0.85, 0.74–0.98 per 10 mg/dL increase) were most highly associated with diabetes.
CONCLUSION: The metabolic syndrome is a common disorder among postmenopausal women with heart disease. Women with the MS, especially those with elevated fasting glucose and low HDL, are at increased risk for type 2 diabetes.

THE NEIGHBORHOOD AND INDIVIDUAL DETERMINANTS OF LEISURE TIME PHYSICAL ACTIVITY AMONG U.S. ASIANS. N.R. Kandula[1]; M. Wen[2]; D.S. Lauderdale[1]. [1]University of Chicago, Chicago, IL; [2]University of Utah, Salt Lake CIty, UT. *(Tracking ID #117392)*

BACKGROUND: There is a growing literature examining the effects of neighborhood characteristics, such as income inequality, social capital, racial composition, and segregation on health. Understanding how neighborhood characteristics affect health behaviors is key to addressing barriers beyond the individual level and designing targeted interventions. Regular leisure time physical activity (LTPA) reduces the risk of many chronic diseases. Asian Americans (the majority of whom are immigrants) are at risk for being sedentary, and data from the U.S. Census 2000 shows they are becoming increasingly geographically segregated. We hypothesized that LTPA in Asian Americans would vary significantly according to individual factors, such as ethnicity, nativity, language of survey, and years in the U.S. We also hypothesized that neighborhood characteristics, particularly neighborhood ethnic composition, would exert an influence on physical activity in Asians.
METHODS: We used newly available individual level data from the 2001 California Health Interview Survey, linked to neighborhood-level variables derived from the 2000 U.S. Census to determine which neighborhood and individual factors affected LTPA in Asian American men and women. The sample included 962 Chinese, 766 South Asians, 667 Filipinos, 658 Vietnamese, 623 Koreans, and 550 Japanese (ages 18–59).

RESULTS: For Asian American women, the strongest individual level predictors of meeting national recommendations for LTPA were increasing duration of residence in the U.S. or being U.S.-born, and increasing levels of education. Among Asian American men, ethnicity and immigration status were significant individual predictors of LTPA, with Chinese men and recent immigrants being the least physically active. After controlling for individual and other neighborhood characteristics, Asian women were less likely to participate in LTPA if they lived in heterogeneous neighborhoods with high racial dissimilarity (OR = 0.07, 95% CI: 0.01, 0.49). Asian men living in neighborhoods with higher proportions of immigrants and Asians were less likely to participate in LTPA, whereas Asian men living in neighborhoods with a higher proportion of Whites were significantly more likely to participate in LTPA (OR = 5.80, 95% CI: 2.19, 15.36).
CONCLUSION: Neighborhood ethnic composition, after adjusting for individual and other neighborhood characteristics, impacts physical activity in Asian Americans. However, these effects are quite different for Asian women compared to Asian men. The underlying social mechanisms and dynamic processes that underlie ethnic composition vary in how they effect physical activity in Asian men and women. Interventions targeted at increasing physical activity in this population must consider these differences.

THE PALLIATIVE CARE CLINICAL EVALUATION EXERCISE (CEX): AN EXPERIENCE-BASED INTERVENTION FOR TEACHING END-OF-LIFE COMMUNICATION SKILLS. P.K. Han[1]; L.A. Keranen[2]; D. Lescisin[1]; R.M. Arnold[1]. [1]University of Pittsburgh, Pittsburgh, PA; [2]University of Colorado at Boulder, Boulder, CO. *(Tracking ID #115655)*

BACKGROUND: Formal clinical training in communication skills is an underdeveloped area of housestaff education. The "Palliative Care Clinical Evaluation Exercise (CEX)" is a new experience-based intervention to teach skills in communicating with seriously ill patients—e.g., giving bad news, discussing code status. The intervention allows faculty to observe, evaluate, and give feedback to housestaff in their discussions with patients and families. The purpose of this study was to evaluate the intervention's feasibility and perceived educational value.
METHODS: The intervention was implemented among the entire cohort of 60 interns in the categorical Internal Medicine Residency Programs at the University of Pittsburgh. Palliative Care Service clinicians observed interns' discussions and provided counseling before and afterward. Feasibility measurements were collected at the time of intervention, and interns' attitudes were measured 1 week after intervention and at the end of the intern year.
RESULTS: 44/60 eligible interns (73%) completed the intervention. Discussions averaged a total of 49.5 minutes (SD 24.1), divided among 12.7 minutes (SD 7.5) for pre-review, 25.6 minutes (SD 16.1) for the discussion, and 12.1 minutes (SD 5.7) for post-discussion feedback. Mean patient age was 68 years; most patients had cancer and estimated life expectancies less than 6 months. 85% of discussions occurred on inpatient wards, 15% in ICU settings. Before intervention, interns gave modest self-ratings (4-point Likert scale) of their competence in giving bad news (2.90, SD .67), and discussing code status (2.83, SD .80). A trend towards improved ratings was observed after the exercise: competence in giving bad news (3.48, SD .48; $P = .04$), competence in discussing code status (3.43, SD .62; $P = .09$). Most interns rated the Palliative Care CEX highly (mean scores > 4 on 5-point Likert scale) among several dimensions (educational value; improving comfort with discussions; value of preceptor feedback). 50% of interns reported the exercise interrupted their work flow, although only 14% believed it took too much time. Most interns reported that the experience was easy to arrange, faculty were accessible, and that their prior training in communication was inadequate. Faculty ratings of the discussions suggested several targets for educational efforts.
CONCLUSION: The Palliative Care CEX appears to be feasible and positively valued by interns, who perceive training in end-of-life communication as an unmet need. The Palliative Care CEX may improve interns' perceived competence in communicating with seriously ill patients, while allowing faculty to identify particular educational needs at individual and program levels.

THE PREDICTIVE ACCURACY OF THE NEW YORK CORONARY BYPASS REPORT CARD AND ITS IMPACT ON VOLUME AND SURGICAL PRACTICE. A.K. Jha[1]; A.M. Epstein[2]. [1]Brigham and Women's Hospital, Boston, MA; [2]Harvard University, Boston, MA. *(Tracking ID #116801)*

BACKGROUND: New York State's public reporting of coronary artery bypass surgery mortality has been operating for nearly 15 years and is widely heralded as an important quality improvement tool. Yet, its usefulness to patients in choosing providers, its impact on hospital and surgeon volume, and surgical practice patterns are unknown.
METHODS: We used data reported by New York State to assess whether the latest available report would allow consumers to choose providers with better than average outcomes; whether better performance was associated with increased volume subsequent to the report card release; Finally, we used repeated measures logistic regression, adjusting for age, gender, and experience, to determine whether performance was associated with subsequent decisions by surgeons to retire or leave practice.
RESULTS: From 1989 through 1999, we found that potential users who picked a top performing surgeon or hospital from the last available report card would have had a better than average outcome in the year they used the data 75% and 92% of the time respectively. Through 1999, there was no evidence of performance driving subsequent changes in volume for hospitals. However, poor performing surgeons were more likely to retire or leave practice in New York (Table 1).
CONCLUSION: The New York State reporting system can help guide patients' choice of providers. However, there is no evidence that it is being used for this purpose. Physicians with poor performance on the reporting system are more likely to retire or leave practice in New York.

Table 1. Surgeons leaving practice in NY within 2 years of release of each public report card

	Report Released 1992	Report Released 1995	Report Released 1997	All Years
Performance In Report	Left 1993–94	Left 1996–97	Left 1998–99	
1st Quartile	0%	0%	4%	3.0% (n = 67)
2nd Quartile	5%	0%	8%	4.4% (n = 67)
3rd Quartile	0%	4%	4%	2.7% (n = 67)
4th Quartile	15%	12%	25%	18.2% (n = 68)
OR (95%CI), 4th vs rest	9.9 (0.85–116)	5.0 (0.8–32.1)	1.7 (0.4–8)	3.2 (1.8–6.8)

THE PREFERRED ROLE OF PHYSICIAN AND FAMILY IN MEDICAL DECISION-MAKING AMONG TERMINALLY ILL PATIENTS. M.T. Hughes[1]; M.T. Nolan[1]; D.P. Narendra[2]; J.R. Sood[2]; P.B. Terry[1]; J. Kub[1]; R.E. Thompson[1]; D.P. Sulmasy[2]. [1]Johns Hopkins University, Baltimore, MD; [2]St. Vincent's Hospital, New York, NY. *(Tracking ID #117460)*

BACKGROUND: In advance care planning, patients are asked how they want medical decisions to be made when they cannot speak for themselves and who should make those decisions. This study compares the role that terminally ill patients prefer that their physician and family play in making health care decisions when the patients are able to make these choices and when they are too ill to speak for themselves.
METHODS: Cross sectional interviews of 130 adult patients within 8 weeks of being diagnosed with advanced cancer, amyotrophic lateral sclerosis, or advanced congestive heart failure at two academic medical centers. Patients were asked about their preferences for control over a recently made health care decision using a modification of the method of Degner. Patients rated their preferences ranging from independent to reliant on the physician or family when both conscious and unconscious. In addition, patients indicated how they weighed the input of their physician and family relative to each other in both scenarios. Descriptive statistics were used to summarize categorical variables, and the marginal homogeneity test was used to compare conscious and unconscious scenarios.
RESULTS: Patients' decision control preferences when conscious showed wide variation, but most patients preferred shared decision-making with their physicians (52%) and a more independent role with their family (50%). More patients (39%) would defer to their physician's judgments about what would be best for them when unconscious than those (15%) who would defer to the physician when conscious ($P < .001$). Similarly, only 6% of patients would defer to family when conscious but 21% would defer to family when unconscious. When asked to rate the physician's input relative to the family's input, many patients weighed both equally in both the conscious scenario (51%) and the unconscious scenario (48%). Weighting that favored the family shifted between conscious and unconscious scenarios: only 7% weighed the family's input more heavily when conscious but 33% favored the family's opinion when unconscious ($P = .05$). Weighting that favored the physician's opinion decreased between the conscious (42%) and the unconscious scenario (19%) ($P = .05$).
CONCLUSION: Terminally ill patients vary widely in their preferences for control over decisions and the weighting of input from physicians and family. Should they become unconscious, patients shift towards weighing family input more heavily than physician input, although there is a tendency for patients to prefer more reliance on physician input than their own previously stated wishes . The results suggest that deciding for patients who cannot speak for themselves may be a far more complex process than has previously been reflected in law, policy, or clinical ethics.

THE PREVALENCE AND IMPACT OF ALCOHOL PROBLEMS IN MAJOR DEPRESSION: A SYSTEMATIC REVIEW. L.E. Sullivan[1]; D.A. Fiellin[1]; P.G. O'Connor[1]. [1]Yale University, New Haven, CT. *(Tracking ID #116975)*

BACKGROUND: Forty to 60% of individuals with major depression in the United States receive their depression treatment from primary care providers. Despite major depression and alcohol problems being common disorders managed in primary care settings, no systematic evaluation of the prevalence of alcohol problems in major depression or alcohol's effect on major depression outcomes has been performed. The purpose of this systematic review was to determine the prevalence and impact of alcohol problems in patients with major depression.
METHODS: We obtained English language studies from searches of MEDLINE (1980 to 2002), PsychINFO (1984 to 2002), and Cochrane Controlled Trial Registry (through the 4th quarter of 2002). Studies were selected using predefined criteria if they reported on the prevalence of alcohol problems in persons with major depression or the effect of alcohol on major depression outcomes. Two reviewers independently abstracted quantitative and qualitative data and evaluated study quality, according to established guidelines.
RESULTS: Only 35 studies met criteria and of them, 34 (97%) were of alcohol abuse and/or dependence and 25 (71%) were in psychiatric inpatients. In patients with major depression, the median prevalence of current alcohol problems was 15.5% (range = 2–67%) and of lifetime alcohol problems was 30% (range = 10–60%). Three randomized clinical trials (RCTs) and 2 case series found that antidepressants were

effective in treating major depression in persons with alcohol dependence. Six observational studies reported that alcohol problems were associated with significantly worse outcomes including: suicidal/death ideation, mortality, depression relapse/recovery, psychosocial functioning, and hospitalization/outpatient visits. The quality of 2 of 3 RCTs was rated as excellent while 9 of 12 observational studies received less than half of 31 possible points.
CONCLUSION: There are few studies examining the effects of alcohol on patients with major depression. The existing data focus on alcohol abuse and dependence, examining psychiatric inpatients, not primary care patients. Alcohol problems are common in major depression, and RCTs and case series support the efficacy of antidepressant treatment in the presence of alcohol dependence. Observational studies suggest that alcohol problems are associated with adverse clinical and health care utilization outcomes in patients with major depression. These data support the need for research in varied clinical settings, especially primary care, on alcohol problems in persons with depression.

THE PREVALENCE OF LOW HEALTH LITERACY. M.K. Paasche-Orlow[1]; J.A. Gazmararian[2]; R.M. Parker[2]. [1]Boston University, Boston, MA; [2]Emory University, Atlanta, GA. *(Tracking ID #116990)*

BACKGROUND: The Institute of Medicine has identified health literacy along with self-management as a national priority area for the promotion of health care quality. No study, however, has systematically evaluated the prevalence of low health literacy reported in the medical literature or the methods used for this research.
METHODS: We conducted a review of the literature to summarize the methods and findings of studies that examine the prevalence of low health literacy conducted in the United States and to synthesize these findings by comparing the characteristics of studies with similar and dissimilar results. Articles and abstracts pertaining to health literacy were identified by experts active in the field and through MEDLINE, CINAHL, PsychInfo, and Sociological Abstracts database searches for the period 1963 through October 2003. Of 1376 abstracts reviewed, 81 studies met specified criteria: presentation of primary data on the prevalence of health literacy; description of the study population, identification of a measurement instrument, and data collection methods; study conducted in the United States with >25 adult subjects. Low literacy was defined as the rate of subjects scoring at an Inadequate level on TOFHLA or 6th and below on other measures. Weighted analysis of variance was used to compare the mean rates of low literacy according to quartiles of demographic characteristics.
RESULTS: The studies reviewed include data on 30,351 subjects, and report a weighted mean prevalence of low health literacy of 25%, 95% CI 22% to 29% (range, 0 to 54). Subjects in 34/81 studies were excluded if they did not speak English; vision and cognitive function were mentioned as selection criteria in 15 and 7 studies, respectively. While 16 different instruments were used to evaluate literacy, 68% (55/81) of the studies used either the REALM or the TOFHLA and had similar rates of low literacy. Literacy was not associated with the rate of female ($P = .14$) or Caucasian subjects ($P = .26$). Low literacy was associated with higher rates of failure to complete high school ($P = .02$), African American subjects ($P = .04$), and older subjects ($P = .0002$). Data for Spanish language testing was separately reported for 5% (1,504/30,351) of subjects and revealed a higher rate of low literacy than for those tested in English (44% versus 25%, $P = .002$).
CONCLUSION: One in four subjects tested were found to be low literate. The instruments used to measure literacy, populations sampled, and study methods varied across the reviewed studies and influence the prevalence estimates presented. Despite significant methodological differences, low literacy is consistently associated with level of education, ethnicity, and age. As low literacy is pervasive, patient education and efforts to simplify the healthcare system must be advanced.

THE QUALITY OF MEDICAL CARE PROVIDED TO OLDER PATIENTS IN SKILLED NURSING FACILITIES OR RECEIVING HOME CARE. D.S. Zingmond[1]; C. MacLean[1]; D. Saliba[2]; K. Wilber[3]; N.S. Wenger[1]. [1]University of California, Los Angeles, Los Angeles, CA; [2]Rand Corporation, Santa Monica, CA; [3]University of Southern California, Los Angeles, CA. *(Tracking ID #117337)*

BACKGROUND: Older patients receiving medical care in skilled nursing facilities (SNFs) and from home care providers have complex medical conditions and commonly have functional deficits. However, there has been no comprehensive evaluation of the quality of medical care delivered to older patients in SNFs and by home care. The Assessing Care of Vulnerable Elders (ACOVE) project developed process of care quality indicators (QIs) for community-dwelling vulnerable elders and patients receiving long-term care using a formal process that combines systematic reviews of the literature with multiple levels of multidisciplinary expert clinical judgment. We adapted these QIs to measure quality of care using administrative data available for SNF and for home care patients.
METHODS: We used linked eligibility files identify all persons 65 years and older enrolled in both Medicare and Medicaid in one large urban county in California. The sample was limited to individuals who lived in a SNF or received home care paid for by Medicaid in the last 6 months of 1996 and who were alive at the beginning of 1997. Using Medicaid and Medicare claims, performance on QIs for 11 conditions (heart failure, stroke, hypertension, ischemic heart disease, medication use, diabetes, osteoarthritis, osteoporosis, prevention, dementia and depression) was assessed –47 QIs for SNF patients and 46 QIs for home care patients. We calculated summary measures of care for each condition and overall.
RESULTS: In 1997, 3,238 and 5,555 individuals lived in a SNF or received home care, respectively, in the county of interest. Among SNF occupants, 77% were female and 83% were 75 years or older. Among home care recipients, 76% were female and 62% were 75 years or older. SNF patients received indicated care for 74% of 15,525 QIs and home care patients received indicated care for 68% of 35,421 QIs for which they were eligible. There was wide variation in pass rates, ranging from a high of 91% and 88% in SNF and home care, respectively, for medication use to a low of 6% for screening in SNF residents and 7% for dementia care in patients receiving home care. Fewer than half of quality indicators were passed in either venue for care of heart failure, stroke care, diabetes or ischemic heart disease.
CONCLUSION: Quality of care provided to older patients in SNFs and by home care for common conditions is inadequate and requires improvement.

THE QUALITY OF PHARMACOLOGICAL CARE FOR COMMUNITY-DWELLING VULNERABLE OLDER PATIENTS. T. Higashi[1]; P.G. Shekelle[2]; D.H. Solomon[2]; E. Knight[3]; C.P. Roth[2]; J.T. Chang[1]; C. Kamberg[4]; M. Catherine[1]; R.T. Young[1]; J.L. Adams[2]; D.B. Reuben[1]; J. Avorn[3]; N. Wenger[1]. [1]University of California, Los Angeles, Los Angeles, CA; [2]RAND, Santa Monica, CA; [3]Brigham and Women's Hospital, Boston, MA; [4]RAND, Washington, DC. *(Tracking ID #116241)*

BACKGROUND: Although pharmacotherapy is critical to the medical care of older patients, medications can have considerable toxicity in this age group. To date, research has focused on inappropriate prescribing and policy efforts—including the recent Medicare legislation—have aimed at access, but no comprehensive measurement of the quality of pharmacologic management throughout the continuum of care using explicit criteria has been performed.
METHODS: Based on a systematic literature review and formal consensus processes of clinical experts, the Assessing Care of Vulnerable Elders (ACOVE) project developed a quality measurement system for the care of vulnerable older patients, which included 43 quality indicators pertaining to medication management. The quality indicators covered four pharmacologic care domains: 1) prescribing indicated medications; 2) avoiding inappropriate medications; 3) education/continuity/documentation; and 4) medication monitoring. Quality of care over a 13-month period was measured for a random sample of community-dwelling high-risk older patients continuously enrolled in two senior managed care organizations. Information was obtained by medical record abstraction and patient interview. We compared quality of care across domains of pharmacologic care.
RESULTS: Of 475 sampled patients, 372 (78%) consented to participate and had abstractable medical records. The mean age was 81 years (range: 65–98) and 64% were female. Patients started a mean of 1.2 new chronic medications during the study period. The percentage of appropriate pharmacologic management ranged from 10% for documentation of non-steroidal anti-inflammatory drug risks to 100% for avoiding short-acting calcium channel blockers in heart failure and avoiding beta-blockers in asthma. Pass rates for quality indicators in the "avoiding inappropriate medications" domain (97%, CI, 96% to 98%) were significantly higher than for "prescribing indicated medications" (50%, CI, 45% to 55%), "education/continuity/documentation" (81%, CI, 79% to 84%) and "medication monitoring" (64%, CI, 60% to 68%).
CONCLUSION: Failure to prescribe indicated medications; monitor medications appropriately; and manage medications (i.e., document necessary information, educate patients and maintain continuity) are more common prescribing problems than use of inappropriate drugs in older patients.

THE RELATIONSHIP BETWEEN EARLY MEDICAL SCHOOL EXPERIENCES AND ATTITUDES TOWARDS END-OF-LIFE CARE. M.W. Rabow[1]; C.S. Hodgson[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #117354)*

BACKGROUND: Studies suggest that medical students receive poor training in end-of-life care (EOLC) and efforts are being made to expand student exposure to it. Little is know about the impact of such classroom and clinical experiences during the first years of medical school. This descriptive study examines the relationship between EOLC experiences and attitudes among 2nd year students.
METHODS: At the end of their 2nd year, the UCSF Class of 2005 was given a confidential, self-administered questionnaire about their EOLC attitudes and experiences. Response options included 1–5 Likert scale and yes/no responses. The questionnaire was distributed by faculty at the end of a required small group session. Questionnaire responses were double-entered into an Excel database and analyzed using SAS statistical software. Chi-square statistics were calculated with significance taken as $P < .05$. The study received Institutional Review Board approval.
RESULTS: Completed surveys were returned by 127 of 141 students (response rate = 90.1%). Students' medical school experiences with EOLC (discussing, observing or providing care) were related to beliefs that their personal development was being enriched by medical training ($P = .012$), guilt about how they had treated patients ($P = .011$), and feelings about the impact of loved ones' deaths on their medical training ($P = .009$). Student attitudes about the importance of EOLC were related to experiences observing a preceptor break bad news ($P = .02$) and discussing dying patients with preceptors ($P = .004$). Students' sense of their emotional preparedness to provide EOLC was related to their experiences discussing both the medical details ($P = .032$) and emotions ($P = .005$) regarding patients who had died. Additionally, student belief that there was a discordance between what was taught in the classroom and what they learned in their preceptorships was related to their sense of being supported emotionally by preceptors ($P = .041$), the frequency of EOLC discussions with preceptors ($P = .029$), discussing the preceptor's emotions ($P = .009$), and the experience of observing a pronouncement ($P = .004$). Students' evaluation of the quality of their EOLC education was related to the frequency EOLC

discussions with preceptors ($P = .018$) and whether those discussions included talking about the emotions of the preceptor ($P = .006$) or other clinicians ($P = .004$).
CONCLUSION: Early medical student experiences talking about patients who died and discussing their preceptors' emotions are related to student attitudes about both EOLC and the quality of their EOLC education.

THE RELATIONSHIP BETWEEN LABOR INPUTS AND IMPROVEMENT IN A1C AMONG PATIENTS IN A DIABETES DISEASE MANAGEMENT PROGRAM. R. Rothman[1]; S. So[1]; R.M. Malone[2]; B. Bryant[2]; D.A. DeWalt[2]; R.S. Dittus[1]; M. Pignone[2]. [1]Vanderbilt University, Nashville, TN; [2]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID #116855)*

BACKGROUND: Little is known about the relationship between labor inputs and improvement of care in disease management programs. We examined the relationship between labor inputs and improvement in glycated hemoglobin (A1C) in a successful primary care-based, diabetes disease management program.
METHODS: We performed a randomized controlled trial of a diabetes disease management program for 217 patients with poor glucose control in an academic primary care practice. The intervention group received intensive management from clinical pharmacists and a diabetes care coordinator who: provided diabetes education; applied algorithms for treating glucose and decreasing cardiovascular risk, and addressed barriers to care. Control patients received a one-time management session from pharmacists followed by usual care from their primary care provider. Primary outcome was improvement in A1C at 12 months. Process outcomes included number of actions/contacts with patient, time spent with patient, number of glucose medication additions or titrations. To examine the relationship between labor inputs and improvement in A1C, we also stratified patients to those who obtained goal A1C ≤ 7.0% at 12 months, and those who did not. We also performed multivariate logistic regression to examine the relationship between labor inputs and achieving goal A1C.
RESULTS: For the 194 (89%) patients with 12-month data, the intervention group had significantly greater improvement than the control group for A1C (–2.7% points vs. –1.5% points, $P = .01$). At 12 months, 32% of intervention patients achieved goal A1C ≤ 7.0% compared to 20% of control patients (RR 1.6, 95% CI 0.96, 2.6). Among intervention patients, patients achieving goal A1C had similar labor inputs than patients not achieving goal A1C including: median number of contacts (49 vs. 43, $P = .91$), median minutes for care-related activities (440 vs. 460, $P = .65$), and median glucose medication titrations/additions (3 vs. 4, $P = .30$). There were also no differences between labor inputs and baseline patient characteristics including age, race, gender, income, literacy status, baseline diabetes knowledge, and baseline A1C. In multivariate logistic regression, labor inputs were not significantly associated with obtaining goal A1C when adjusted for these covariates.
CONCLUSION: Among intervention patients in a successful disease management program, improvement in A1C was not significantly correlated with labor inputs. Labor inputs were similar regardless of patient characteristics including age, race, gender, and clinical status and may reflect the nondiscriminatory nature of providing algorithm-based care.

THE RELATIONSHIP BETWEEN MALPRACTICE CONCERN AND PHYSICIAN DECISION MAKING IN PATIENTS WITH POSSIBLE ACUTE CARDIAC ISCHEMIA. D. Katz[1]; T. Aufderheide[2]; M. Bogner[3]; P. Rakho[3]; R. Brown[3]; H. Selker[4]. [1]University of Iowa, Iowa City, IA; [2]Medical College of Wisconsin, Milwaukee, WI; [3]University of Wisconsin, Madison, WI; [4]TUFTS-New England Medical Center, Boston, MA. *(Tracking ID #116727)*

BACKGROUND: The extent to which "defensive medicine" drives physicians' decisions is unclear. The objective of this study was to evaluate the relationship between malpractice concern and emergency physicians' (EPs) decisions in the triage and work-up of patients with symptoms suggestive of acute cardiac ischemia (ACI).
METHODS: We surveyed 34 EPs of two University hospitals during the pre-intervention phase of an implementation trial of the AHRQ Unstable Angina guideline in 1140 study patients (pts). The survey included a 6-item instrument that addressed concerns regarding the threat of malpractice and a measure of general risk aversion, the modified Jackson Personality Index. All items were rated using a 6-point Likert scale; the sum of responses was calculated. We used hierarchical logistic regression to model decisions to discharge pts from the emergency department (ED) and to obtain chest radiography (a discretionary test in the evaluation of ischemic symptoms) as a function of malpractice concern score. We report odds ratios adjusted for patient covariates, predicted probability of ACI (based on the TIPI score), study site, and clustering by EP.
RESULTS: Cronbach's alpha for the internal reliability of the 6 items was 0.88. Younger EPs (<40 years) had greater malpractice concern (score 20 vs. 15, $P = .007$). Compared to EPs in the bottom tertile, ED discharge rates for the upper and middle tertiles of malpractice concern were significantly lower (45 and 46 vs. 54%, $P = .02$). Patients seen by EPs in the upper tertile were less likely to be discharged from the ED (adj OR = 0.56, 95% CI = 0.4–0.9, $P = .01$) and more likely to receive chest radiography (adj OR = 1.9, 95% CI = 1.2–3.0, $P = .009$). In a subgroup analysis, there was a tendency for fewer low risk pts (TIPI score < 10%) to be discharged by EPs in the upper tertile of malpractice concern (adj OR = 0.33, 95% CI = 0.1–1.2, $P = .09$). Results were similar after adjustment for risk aversion.
CONCLUSION: Our data suggest that malpractice concern accounts for significant variability in ED decision making that is not explained by general risk aversion, and is associated with increased hospitalization of low risk pts. This topic should be considered in interventions to change ED triage and test ordering behavior.

THE ROLE OF CULTURAL DIVERSITY CLIMATE IN RECRUITMENT, PROMOTION AND RETENTION OF FACULTY IN ACADEMIC MEDICINE. E.G. Price[1]; A. Gozu[1]; N.R. Powe[1]; D.E. Kern[1]; G.S. Wand[1]; S. Golden[1]; L.A. Cooper[1]. [1]Johns Hopkins School of Medicine, Baltimore, MD. *(Tracking ID #115918)*

BACKGROUND: Academic institutions are challenged to increase ethnic diversity among their physician workforce. Recent studies reveal that ethnic minorities are less likely to report job satisfaction, less likely to be promoted, and more likely to leave academic medicine. The purpose of this study is to explore the perceptions of majority and under-represented minority faculty regarding cultural diversity and facilitators and barriers to success and professional satisfaction in academic medicine within this context.
METHODS: Qualitative study using 3 focus groups (ethnically mixed, ethnic majority only, and under-represented minorities only) and 12 one-on-one in-depth interviews with junior and mid-level tenure track physicians from diverse clinical departments at an academic institution. Focus groups and interviews were audiotaped, transcribed verbatim and reviewed for thematic content in a 3-stage independent review/adjudication process.
RESULTS: Study participants included 29 faculty (8 associate professors, 18 assistant professors, 3 instructors) representing 9 clinical departments, various career tracks (7 basic/9 clinical researchers, 5 academic clinicians, 6 clinician educators, 2 other) and ethnic groups (13 African Americans, 11 Caucasians, 3 Hispanics, 2 Asians; 10 foreign born). In defining cultural diversity, faculty noted that some dimensions are visible (race, ethnicity, gender, foreign born status) while others may be invisible (religion, sexual orientation). They believe visible dimensions often provoke bias and cumulative advantages or disadvantages in the workplace. Minority and majority faculty agree that ethnic differences in prior educational opportunities lead to disparities in exposure to career options, qualifications for training programs and subsequent recruitment to training programs and faculty positions. Minority and foreign born faculty report ethnicity-based disparities in recruitment and subtle manifestations of bias in the promotion process. They feel they must work harder to justify their credentials and are expected to fulfill more stringent requirements. Minority faculty also describe structural barriers (poor retention efforts, lack of mentorship and cultural homogeneity) that hinder their success and professional satisfaction after recruitment. In contrast, some majority faculty view promotion as an objective process less likely to be affected by bias; others suggest that efforts to increase promotions among minorities may be reverse discrimination.
CONCLUSION: Subtle manifestations of bias and cumulative advantages or disadvantages in the workplace may hinder an institution's efforts to increase cultural diversity. Faculty beliefs about the institutional climate regarding recruitment, promotion and retention of diverse faculty are important intervention targets.

THE ROLE OF SYRINGE EXCHANGE PROGRAMS IN THE DELIVERY OF PREVENTIVE HEALTH SERVICES TO INJECTION DRUG USERS: RESULTS FROM THE CALIFORNIA SYRINGE EXCHANGE PROGRAM STUDY. K.G. Heinzerling[1]; N.M. Flynn[2]; A.H. Kral[3]; R. Anderson[2]; S.M. Asch[1]; R.N. Bluthenthal[4]. [1]University of California, Los Angeles, Los Angeles, CA; [2]University of California, Davis, Sacramento, CA; [3]University of California, San Francisco, San Francisco, CA; [4]RAND Corporation, Santa Monica, CA. *(Tracking ID #115886)*

BACKGROUND: Syringe exchange programs (SEP) may facilitate receipt of preventive health services by injection drug users (IDU) through on-site services and referrals. Although many SEPs offer preventive services, the role that SEPs play in the delivery of preventive services to IDUs is not known. We examined use of preventive health services in a sample of IDUs at 24 SEPs throughout California, and compared the proportion of services received from SEPs versus from other providers. We also compared the characteristics of IDUs who received preventive services from SEPs to those of IDUs who received preventive services from other providers.
METHODS: 560 IDUs were recruited from 24 SEPs in California between March and September of 2003 and interviewed about use of preventive services, demographics, medical history, and HIV risk behavior. Preventive services received from SEPs were those received either on-site at a SEP or via a referral from a SEP. Factors associated with receipt of preventive services from SEPs were identified through bivariate and multivariate logistic regression analyses.
RESULTS: Overall, 3% of IDUs reported being HIV positive, 41% hepatitis C positive, 27% having shared syringes, and 57% having sex without a condom. In the past six months, 34% of HIV negative IDUs received HIV testing, and 17% of hepatitis C negative IDUs received hepatitis C testing, while 17% of all IDUs received safer injection education, 12% drug abuse counseling, and 9% safer sex education. Of those who received services, a large proportion were received from SEPs, including 87% of safer injection education, 62% of safer sex education, 61% of drug abuse counseling, and 54% of IDUs tested for HIV. In a multiple logistic regression model, IDUs with no ambulatory care visits in the past six months were significantly more likely to have received preventive services from a SEP (OR 1.93, 95% CI 1.14–3.28), controlling for demographics, access to care, and HIV risk behavior.
CONCLUSION: Many IDUs recruited at California SEPs have not received indicated preventive health services. Among those who did receive preventive services, the majority reported receiving those services through SEPs. Incorporating preventive health services into SEP operations may be an effective way of reaching IDUs who are not being reached by traditional health services, such as IDUs without a recent ambulatory care visit.

THE ROLE OF THE INTERNIST IN PREVENTING UNINTENDED PREGNANCIES. M.S. Cunnane[1]; B. Hanusa[1]; R.L. Cook[1]. [1]University of Pittsburgh, Pittsburgh, PA. *(Tracking ID #117178)*

BACKGROUND: Physician-counseling regarding unintended pregnancy is recommended but rarely performed. The role of the internist versus the role of the obstetrician-gynecologist in providing this counseling is unclear. The objectives of this study were to assess women's receipt of physician-counseling about unintended pregnancy and emergency contraception (EC), and to determine women's preferences regarding physician specialty (internist vs. obstetrician-gynecologist) for delivery of such counseling.
METHODS: We conducted telephone interviews with 149 women who had seen an internist at an academic General Internal Medicine clinic in the previous 12 months.
RESULTS: 119 women (80%) were at risk for unintended pregnancy (average age 32.4 years, range 18–45 years, 76% Caucasian, 50% unmarried). Among these women, 54% received their routine reproductive health care from an obstetrician-gynecologist, 31% from their internist, and 15% reported no current provider of reproductive health care. Most expressed an interest in physician-counseling about unintended pregnancy (69%) and EC (57%). However, few of these at-risk women had been counseled by a physician about unintended pregnancy (33%) or EC (11%). Women with an obstetrician-gynecologist were no more likely to have received counseling (unintended pregnancy: 30% vs. 33%, $P = .75$; EC: 7% vs. 13%, $P = .39$). Women receiving reproductive care from an internist, compared to an obstetrician-gynecologist, were more likely to prefer an internist for counseling about unintended pregnancy (65% vs. 5%, $P = .000$) and EC (77% vs. 9%, $P = .000$).
CONCLUSION: Many women seen by a general internist are at risk for unintended pregnancy, yet only a fraction are receiving counseling about this topic, irrespective of receiving care from an obstetrician-gynecologist. As primary care physicians, internists should assess each patient's risk status and provide counseling, in order to ensure that all at-risk women are informed.

THE ECONOMIC IMPACT OF MORBID OBESITY IN ADULTS. D.E. Arterburn[1]; M. Maciejewski[2]; J. Tsevat[1]. [1]University of Cincinnati, Cincinnati, OH; [2]University of Washington, Seattle, WA. *(Tracking ID #116079)*

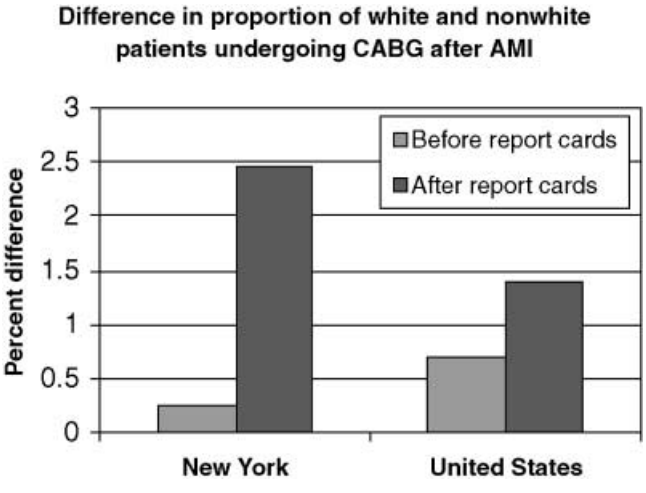
BACKGROUND: Over 9.8 million US adults were morbidly obese (Body Mass Index [BMI] ≥ 40) in 2000. Morbid obesity is associated with an increased risk of mortality, morbidity, and diminished quality of life; however, the specific impact of morbid obesity on health care expenditures and use of social programs in the US has not been described. Thus, we sought to examine these issues using a nationally representative sample of US adults.
METHODS: We performed a cross-sectional analysis of 16,262 US adults from the 2000 Medical Expenditure Panel Survey. Per capita health care expenditures for BMI categories were calculated using a two-part economic model adjusted for age, gender, race, income, education, martial status, and smoking status. We used logistic regression to predict the probability of incurring any health care expenditure. Next, we used linear regression on log-transformed expenditures and Duan nonparametric retransformation to predict adjusted costs among those who incurred any expense. The percentage of expenditures attributable to obesity in each BMI category was calculated by dividing expenditures attributable to obesity (expenditures for each BMI category minus expenditures for the normal weight reference group) by expenditures for all adults in the sample. Confidence intervals were generated via bootstrapping. Odds ratios comparing socioeconomic indicators and participation in social programs by BMI categories were calculated using multivariate logistic regression.
RESULTS: 2.8% of MEPS adults were morbidly obese in 2000 (n = 507). Per capita total health care expenditures for morbidly obese adults were $1,975 higher than normal weight adults ($4,399 vs. $2,424; $P < .05$). In addition, 73% of per capita expenditures for morbidly obese adults were attributable to excess body weight. Thus, overall expenditures attributable to excess body weight for morbidly obese adults in the US (2.8% of the population) exceeded $11.1 billion in 2000. By comparison, the expenditures attributable to excess body weight among overweight US adults (35% of the population; BMI 25.0 to 29.9) amounted to $17.2 billion. Finally, when compared with normal weight, morbidly obese adults were significantly ($P < .05$) more likely to take sick leave from work (OR 2.0), be unemployed (OR 1.4), and participate in a wide range of social programs, including: Medicaid (OR 2.3), welfare (OR 3.0), food stamps (OR 3.6) and Supplemental Security Income disability (OR 3.7).
CONCLUSION: The previously undefined socioeconomic impact of morbid obesity is enormous—the net cost of obesity among morbidly obese US adults exceeded that of all overweight US adults in 2000. Further research is needed to identify ways to improve health, quality of life, and socioeconomic outcomes for morbidly obese adults.

THE SUBSTITUTION OF CARVEDILOL FOR METOPROLOL IN THE TREATMENT OF SYSTOLIC HEART FAILURE: AN ECONOMIC ANALYSIS OF THE COMET TRIAL. S. Cykert[1]; S. Greene[2]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]University of North Carolina, Chapel Hill, NC, Chapel Hill, NC. *(Tracking ID #117203)*

BACKGROUND: The COMET Trial is a prospective randomized trial that demonstrated a 1.7% annual mortality reduction for carvedilol treated patients suffering from systolic heart failure compared to similar patients treated with metoprolol. Currently, there are no data that describe the cost-effectiveness (C/E) of this beta-blocker substitution related to the severity of heart failure symptoms in survivors. The object of this study was to establish the marginal C/E of carvedilol vs. metoprolol for patients with systolic heart failure using the New York Heart Association (NYHA) Classification System to adjust for quality of life (QOL).
METHODS: We performed decision analysis with a Markov state transition model using a hypothetical patient cohort whose characteristics were derived from Table 1 of the COMET trial. The cohort had a mean age of 62 yrs. and was 80% male. Four percent were in NYHA class IV while the remainder was evenly divided between class II and III. For cost purposes, all patients were assumed to be taking generic digoxin, furosemide, and lisinopril. Annual rates of death, hospitalization, and beta-blocker discontinuation were directly derived from COMET. Probabilities for heart failure outcomes for patients off beta-blockers and the effect of beta-blockers on NYHA class were derived from a systematic review of the relevant literature. Pharmaceutical prices were average "Red Book" wholesale prices while hospitalization costs were estimated from the Healthcare Cost and Utilization Project Nationwide Inpatient Sample. QOL scores assigned to NYHA class were based on a health utility survey administered to 183 participants. Sensitivity analyses were performed on variables including age, costs (meds and hospital), NYHA class, death rate, dropout rate, and utility scores.
RESULTS: For the base model, substituting carvedilol for metoprolol resulted in an average survival advantage of 191 days per patient at the cost of $14,577 per quality-adjusted life-year gained (QALY). When the annual mortality advantage of carvedilol was reduced to 0.4% per yr., a favorable C/E ratio was maintained ($30,000/QALY). Marginal improvement of NYHA class attributable to carvedilol resulted in marked improvement in C/E while other variables tested in sensitivity analyses showed no or minimal effect on C/E measures. The cost per QALY remained under $30,000 through the age of 80 yrs.
CONCLUSION: The marginal effectiveness of carvedilol over metoprolol demonstrated in the COMET Trial falls well within the realm of acceptable cost-effectiveness criteria. The findings remain robust through a wide range of sensitivity analyses.

THE UNINTENDED CONSEQUENCES OF CABG REPORT CARDS ON RACIAL DISPARITIES. R. Werner[1]. [1]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #115482)*

BACKGROUND: Publicly reported quality information is intended to improve healthcare. An unplanned response to report cards is that physicians avoid high-risk patients to improve their ratings. If physicians use race as a marker for risk, report cards could worsen existing racial disparities in healthcare. The objective of this study is to investigate the impact of coronary artery bypass graft (CABG) report cards on racial disparities in cardiac care.
METHODS: New York State began publicly releasing CABG report cards in 1992, based on surgeon-specific risk-adjusted mortality rates. Using in-patient discharge data from NY, compared to the Healthcare Cost and Utilization Project's National Inpatient Sample (excluding NY), I calculate the incidence of CABG surgery before (1990–1991) and after (1993) the release of CABG report cards among all patients admitted to the hospital with an acute myocardial infarction (AMI) (n = 262,736). Using difference-in-difference-in-difference methodology, I estimate if a patient's race is related to the likelihood of undergoing CABG surgery in NY after report cards were released, compared to before report cards were released, and compared to the rest of the country. Analyses are adjusted for patient severity of illness, demographics, insurance, socioeconomic status, and regional fixed-effects.
RESULTS: Before CABG report cards were released, a higher proportion of white patients than nonwhite patients underwent CABG surgery following AMI nationally (6.2% vs. 5.5%, $P = .02$) and in NY (4.1% vs. 3.9%, $P = .22$). These racial differences between NY and the rest of the country were not significantly different from one another ($P = .21$). After NY released its CABG report card, racial differences in receipt of CABG surgery increased ten-fold in NY (from 0.25% to 2.5%, $P < .0001$), compared to two-fold in the rest of the country (from 0.69% to 1.4%, $P < .0001$). After controlling for individual and regional characteristics, and for differences in CABG rates between NY and the rest of the country before and after report cards were released, nonwhite patients in NY were significantly less likely than white patients to undergo CABG following an AMI compared to before CABG report cards were



released in NY and compared to the rest of the country (5.9% vs. 8.0%, $P < .0001$). This resulted in white patients being 36% more likely than nonwhite patients to undergo CABG surgery following an AMI in NY.
CONCLUSION: The release of CABG report cards in New York was associated with a widening of the gap in CABG use between white and nonwhite patients. Although report cards have been proposed as a way to improve healthcare quality, they may create unintended incentives which have a negative impact on quality, including adversely impacting racial disparities.

THE URGENT CARE OUTCOMES CARD: A SYSTEMS-BASED PRACTICE TOOL. A. Tomolo[1]; A. Caron[1]; T. Fultz[1]; M. Perz[1]; D. Aron[1]. [1]Louis Stokes Cleveland Dept. Veterans Affairs Med. Ctr., Cleveland, OH. *(Tracking ID #115683)*

BACKGROUND: The ACGME has established Systems-Based Practice (SBP) as a competency for completing an accredited residency program. Competency is attained by developing knowledge and skills in the identification of medical errors/system failures in the context of clinical care. The objectives of the study were to design, implement, and evaluate an outcomes card, and to facilitate identification of medical error and systems failures in daily practice.
METHODS: A CQI project (multiple Plan-Do-Study-Act (PDSA) cycles) began in July 2002. Subjects include residents on two-week rotations in Urgent Care. The most recent PDSA cycle includes 1 hour per week of formal teaching about patient safety, medical error, and systems thinking, including a case analysis that requires application of this knowledge. Residents are required to complete 2 cards during their rotation. Information requested on the outcomes card includes patient identifiers, brief description, responses to questions about error, near miss, and adverse event in reference to the case, selection of error type based upon Leape's error classification guide (QRB, 1993), and the identification of up to 2 different systems and 1 system failures associated with each error. Two reviewers (supervisor and administrator) analyzed the data entered on each outcomes card independently. A trainee self-assessment tool was administered to residents upon rotation completion.
RESULTS: 60 two-week trainee rotations and 98 cards returned (81.7% return rate). The resident, supervisor, and administrator identified a mean of 2.3, 2.8, and 3.0 (range 1–6) errors/patient, respectively. Most frequently identified errors were error or delay in diagnosis, avoidable delay in treatment or in responding to an abnormal test, and failure in communication. Inter-rater reliability on error types between the resident and the supervisor was high (k = .88) as was inter-rater reliability of the reviewers (k = .95). Inter-rater reliability on system identification between the resident and supervisor was good (k = .66) as was the inter-rater reliability of the reviewers (k = 0.68). 56.6% of residents completed a trainee self-assessment tool. The mean score, based on 5-point Likert scales, for improved knowledge was 4.09 (1 = very poorly; 5 = very well), for comfort with skill in use of outcomes card was 3.97 (1 = very uncomfortable; 5 = very comfortable), and for agreement with importance of curriculum was 4.22 (1 = strongly disagree; 5 = strongly agree).
CONCLUSION: Residents identified errors associated with daily clinical practice. This observation and the high level of agreement between the residents and reviewers in identification of errors and systems suggest the reliability and utility of the outcomes card as an educational intervention to achieve competency in SBP.

THE USE OF A URINARY CATHETER REMINDER TO REDUCE URINARY CATHETERIZATION IN HOSPITALIZED PATIENTS. S.K. Saint[1]; S.R. Kaufman[2]; M. Thompson[2]; C.E. Chenoweth[2]; M. Rogers[2]. [1]Ann Arbor VAMC, Ann Arbor, MI; [2]University of Michigan, Ann Arbor, MI. *(Tracking ID #117280)*

BACKGROUND: Indwelling urinary catheters are placed in up to 25% of hospitalized patients and are a leading cause of hospital-acquired infection. Duration of catheterization is the dominant risk factor for hospital-acquired urinary tract infection (UTI). We have previously shown that physicians are often unaware that their patients have a urinary catheter in place, and that these "forgotten" catheters are frequently unnecessary. We sought to reduce the duration of urinary catheterization through the use of a written reminder placed on the patient's chart.
METHODS: This before-and-after study with concurrent control groups occurred on four hospital wards at an academic medical center. We designed a simple written reminder that aided the hospitalized patient's team in remembering that their patient had a urinary catheter. Two of the four wards were assigned at random to the intervention group (where the reminder would be used); the other two wards served as controls. A research nurse monitored the urethral catheter status of each patient daily. The primary outcome measures were the percentage of days catheterized and the number of urethral re-catheterizations per 1,000 catheterized patients. Bivariable analysis was followed by multivariable regression analyses.
RESULTS: A total of 5,678 subjects were evaluated. After adjusting for age, sex, and length-of-stay, the average proportion of time patients were catheterized increased by 14.1% in the control group but decreased by 7.7% in the intervention group. This difference in direction between the intervention and control groups was statistically significant ($P = .0091$ for the interaction). There was no significant difference in urethral re-catheterizations per 1,000 catheterized patients or in rates of UTI.
CONCLUSION: Catheter-related UTI is a common, costly, and morbid complication of hospitalization. The modest decrease in catheterization found in our prospective cohort study must be balanced with the cost of a nurse-based reminder system since we have recently shown that a computerized reminder was highly effective and efficient. Nevertheless, in the 95% of U.S. hospitals currently without computerized order-entry systems, this written reminder should be considered as one method for improving the safety of hospitalized patients.

THE VA ENHANCED PHARMACY OUTPATIENT CLINIC (EPOC) STUDY: A RANDOMIZED-CONTROLLED PHARMICIST-PHYSICIAN INTERVENTION TRIAL. P Kaboli[1]; A. Hoth[1]; B.L. Carter[1]; E.A. Chrischilles[1]; R.I. Shorr[2]; A. Bhattacharyya[1]; J. Ness[1]; G.E. Rosenthal[1]. [1]University of Iowa, Iowa City, IA; [2]University of Tennessee, Memphis, TN. *(Tracking ID #117303)*

BACKGROUND: Older patients on multiple medications are at high risk for adverse drug events (ADEs) and other medication-related misadventures. Undertreatment of conditions may also results in poorer quality of life and increased morbidity and mortality. This study was designed to maximize the potency of a pharmacist-physician (PharmD-MD) collaborative team to improve medication prescribing and patient outcomes.
METHODS: The sample included 493 primary care patients 65 years and older receiving prescriptions for >5 medications in a VA primary care clinic. Patients were randomized to usual care or to the intervention, which included a structured medication history and medical records review. For intervention patients, therapeutic recommendations were developed and presented to primary care providers. Baseline and 3-month measures were obtained and change was assessed by analysis of covariance (ANCOVA).
RESULTS: Patients (mean age, 74 years; 98% male) were taking a mean of 13.7 ± 4.9 medications at baseline. At 3 months, the mean number of medications had decreased slightly in both intervention and control patients (1.0 vs. 0.1; $P = .08$); 22% of patients in both groups reported one or more ADEs ($P = .97$). No differences ($P > .1$) were observed between the groups in health-related quality of life (as measured by the SF-8), symptoms, self-reported health, patient satisfaction, medication knowledge, monthly drug costs, or VA and non-VA healthcare utilization. Surveys of providers indicated the intervention was well accepted by 80%, and 77% indicated that they would refer patients to such a service. Patients did not differ in their overall satisfaction with health care between the two groups, however the intervention group was more likely to want to schedule time with a pharmacist to review medications and felt the time spent discussing medications was appropriate.
CONCLUSION: Although well-accepted by patients and providers, a collaborative PharmD/MD intervention to improve prescribing resulted in no significant impact on the occurrence of ADEs, healthcare utilization, drug costs, and other endpoints at three months. The lack of measureable effect may reflect the one-time nature of the intervention or concurrent institutional patient safety initiatives. These negative findings suggest that more intensive interventions to improve medication prescribing in high risk elderly veterans may be necessary or specific high-risk populations may be more likely to obtain benefit.

THE VERMONT DIABETES INFORMATION SYSTEM: DESCRIPTION AND BASELINE CHARACTERISTICS OF A STATEWIDE DECISION SUPPORT SYSTEM. C.D. MacLean[1]; B. Littenberg[1]; M. Gagnon[2]; C. Jordan[3]; P. Turner[1]. [1]University of Vermont, Burlington, VT; [2]Fletcher Allen Health Care, Burlington, VT; [3]Vermont Program for Quality in Health Care, Montpelier, VT. *(Tracking ID #115970)*

BACKGROUND: Despite widely accepted guidelines, there are gaps between optimal and actual clinical care of patients with diabetes. The Vermont Diabetes Information System (VDIS) incorporates the Chronic Care Model into a decision support, reminder and patient activation system with a primary goal of improving glycemic control in community practices.
METHODS: Laboratory data are uploaded into the VDIS on a daily basis from participating labs. Guideline-based daily output includes: 1) Faxed Provider Flow Sheets with embedded decision support, 2) Mailed Alerts notifying patients of results that are out of range, and 3) Reminders to providers and patients when patients are overdue for testing. Summary performance reports are provided to each provider quarterly. Primary care practices were recruited from 8 of the 14 hospital catchement areas in Vermont, and 50% randomly assigned to the intervention. Analyses were completed with generalized linear modeling, clustering on practice. An 18–24 month intervention is ongoing.
RESULTS: We report on 12 control and 13 intervention practices with 62 providers. Table 1 shows the proportion of patients in control (A1C < 7%, LDL < 100 & Trig < 400). The proportion of patients who are ontime for recommended testing are 58% for A1C, 72% for lipids, 82% for creatinine, and 26% for microalbumin, with no important differences between control and intervention groups.
CONCLUSION: We have developed and implemented a population based information system for decision support of primary care practices and are evaluating its impact on lab outcomes. Control and intervention groups are similar at baseline. A large proportion of patients is over threshold or overdue for guideline-recommended testing.

Baseline characteristics of VDIS Population (N = 2963)

Characteristic	Control (n = 1184)	Intervention (n = 1779)	P value
Age (years, mean)	63.7	62.5	0.43
Sex (% female)	45.0	48.4	0.30
A1C in control (%)	57.2	54.5	0.34
Lipids in control (%)	47.2	42.1	0.18

THIRD-YEAR MEDICAL STUDENTS' PERCEPTIONS OF HIGH QUALITY LEARNING ACTIVITIES ACROSS INTERNAL MEDICINE AND FAMILY MEDICINE CLERKSHIPS. D. Torre[1]; D. Simpson[1]; J. Sebastian[1]; D. Bower[1]; B. Konicek[1]; R. Geck[1]; E. Johnson[1]. [1]Medical College of wisconsin, Milwaukee, WI. *(Tracking ID #115972)*

BACKGROUND: Although personal digital assistants (PDAs) have been used to collect data about patient encounters and trainee procedures, only one published

report has used real-time PDA-based data collection to evaluate the quality of clinical teaching and learning activities across more than one specialty. Using data collected from student PDA logs, we sought to identify the specific elements of our internal medicine (IM) and family medicine (FM) clerkships that third-year medical (M3) students perceived as contributing most strongly to high impact teaching/learning activities.
METHODS: From July to December 2001, data on patient encounters (n = 5,800), learning activities, and teaching quality was collected via personal hand-held computers from eighty two M3 students during their required IM (eight weeks duration) and FM (4 weeks) clerkships. Univariate (chi-squared) and multivariate (stepwise multiple logistic regression) analyses were performed to assess the association between various clerkship activities and student perceptions of high quality teaching/learning activities.
RESULTS: Univariate analysis revealed that both IM and FM clerkship students perceived that high quality teaching was associated with giving an oral case presentation, formulating an assessment, proposing a plan, and receiving high quality feedback ($P < .01$). IM students also reported that high quality teaching was associated with being on an inpatient rotation ($P < .01$) while FM students perceived that high quality teaching was associated with writing a progress note ($P < .01$). Multivariate analysis demonstrated that the strongest predictors of high quality teaching among IM students were receiving high quality feedback (Odds ratio [OR] 4.3, 95% CI 2.8–6.6) and proposing a plan (OR 3.2, 95% CI 2.0–5.2). Among FM clerkship students, high quality teaching was associated with receiving high quality feedback (OR 3.7, 95% CI 3.1–4.6), writing a progress note (OR 2.0, 95% CI 1.6–2.5) and giving an oral case presentation (OR 1.7, 95% CI 1.2–2.3).
CONCLUSION: Although student perceptions of high quality teaching activities appear to differ somewhat by clerkship/specialty, receiving high quality feedback is the activity most strongly associated with high quality teaching on both IM and FM clerkships. Further work is needed to identify those elements of feedback that are perceived by learners as being of especially high quality.

TO STUDY OUTCOMES ASSOCIATED WITH THE USE OF A NURSE-BASED TELEPHONE PROTOCOL FOR MANAGEMENT OF URI AND ACUTE SINUSITIS SYMPTOMATOLOGY. R. Chaudhry[1]; R.J. Stroebel[1]; T.G. McLeod[1]; S.M. Scheitel[1]. [1]Mayo Clinic, Rochester, MN. *(Tracking ID #116094)*

BACKGROUND: Acute upper respiratory infection is a common, self-limiting viral infectious illness. Antibiotic resistance due to inappropriate utilization of these agents for acute upper respiratory infections (URI) is an increasing problem. The present study was undertaken to determine if a nurse-based telephone protocol for management of URI will result in decreased antibiotic prescribing and increased use of first line antibiotics for presumed cases of sinusitis.
METHODS: January 2002 to July 2002 patients calling with symptoms of cough, runny nose, sinus pain or infection were triaged to a guideline-based registered nurse (RN) telephone treatment protocol (intervention) or usual care (control). Patients of 10 physicians were enrolled in the intervention group, whereas patients of the other 21 physicians received usual care (cluster randomization). Based on protocol questions, the RN determined if the patients' symptoms were suggestive of viral infection, bacterial sinusitis, or another diagnosis requiring physician evaluation. Symptomatic measures only were suggested for presumed viral infections. Cases of presumed bacterial sinusitis were treated with first line antibiotics (amoxicillin, erythromycin, or sulfamethoxazole/trimethoprim). Outcomes were assessed by chart review and included medications prescribed, follow-up visits, phone calls, urgent care center and emergency room visits, and hospitalization for similar or related complications.
RESULTS: There were a total of 77 patients in the nurse telephone treatment group versus 135 patients in the usual care group. For the patients with URI, 66% of patients in the usual care group and 72% of patients in nurse telephone treatment were not prescribed antibiotics. For the patients with acute sinusitis 81% of patients in the nurse telephone treatment received first line antibiotics compared to the 53% in the usual care group. None of the patients in either group had any ER visits or hospitalizations in the 30 days following treatment for related problems or complications.
CONCLUSION: Use of a guideline-based nurse telephone triage protocol for evaluation and management of URI symptomatology did not result in a statistically significant reduction in the use of antibiotics over usual care of URI symptoms ($P = .586$). However, protocol patients diagnosed with sinusitis were more likely to receive a first line antibiotic than control patients who were felt to have sinusitis ($P = .015$). More widespread implementation of such guideline-based protocols might reduce the use of second line antibiotics for patients with sinusitis, thereby decreasing the prevalence of antibiotic resistance and result in lower healthcare costs.

TOBACCO COUNSELING AMONG U.S.- AND FOREIGN-BORN ADULTS. M.S. Goel[1]; E.P. McCarthy[1]; R.S. Phillips[1]; C.C. Wee[1]. [1]Beth Israel Deaconess Medical Center, Boston, MA. *(Tracking ID #116522)*

BACKGROUND: Although immigrants are the fastest growing segment of the population and have substantial rates of tobacco use, it is unclear whether being foreign-born affects counseling about tobacco.
METHODS: We examined 25,365 respondents to the 2000 National Health Interview Survey who reported a provider visit in the past year. We compared rates of discussing tobacco use with a health provider among U.S.-born whites (n = 17,010), blacks (n = 3,369), Hispanics (n = 1,642), and Asians (n = 129), and foreign-born (FB) whites (n = 801), blacks (n = 326), Hispanics (n = 2,128), and Asians (n = 514). Multivariable models compared the likelihoods of being asked about tobacco use and being counseled to quit (among smokers), and adjusted for demographic factors, smoking status, self-reported health, comorbid illnesses, hospital stays in the past year, and access to care. All analyses used SUDAAN and results were weighted to reflect national population estimates.
RESULTS: Overall, the mean age was 46 years, 12% were FB, and 22% were current smokers. Compared with U.S.-born, FB were less likely to be current smokers (14% vs. 23%), asked about tobacco use (27% vs. 43%), and counseled to quit (39% vs. 54%). After adjusment, tobacco counseling varied by race/ethnicity and birthplace (Table).
CONCLUSION: Despite high rates of smoking, U.S.-born Hispanics and the foreign-born are generally less likely to discuss tobacco with their health providers. Interventions to improve physician counseling about tobacco among these populations are needed.

Smoking Status and Tobacco (TOB) Counseling by Race/Ethnicity and Birthplace

	Current Smokers (%)	Odds Ratio of Eliciting TOB Use (95% CI)	Odds Ratio of Cessation Counseling (95% CI)
US White	23	Reference	Reference
US Black	22	0.8 (0.7–0.9)	0.8 (0.7–1.0)
US Hispanic	21	0.8 (0.7–0.9)	0.5 (0.4–0.7)
US Asian	20	1.1 (0.6–2.1)	1.2 (0.5–2.5)
FB White	19	0.9 (0.7–1.1)	0.7 (0.5–1.0)
FB Black	9	0.4 (0.3–0.6)	0.4 (0.1–1.0)
FB Hispanic	14	0.5 (0.4–0.6)	0.5 (0.3–0.6)
FB Asian	10	0.6 (0.4–0.8)	1.4 (0.6–2.9)

TOWARDS THE IDEAL SIGNOUT: USING HOUSE OFFICER OPINION TO IMPROVE INPATIENT TRANSITIONS IN CARE. R.S. Mangrulkar[1]; C. Kim[1]; S. Lim[1]; F. Lee[1]; J. Del Valle[1]; J.M. Kramer[1]. [1]University of Michigan, Ann Arbor, MI. *(Tracking ID #117325)*

BACKGROUND: In most teaching hospitals, the transfer of care of inpatients between members of teams occurs regularly, and has increased recently with the enforcement of the ACGME duty hours regulations. However, studies have demonstrated a possible association between preventable adverse events and care by a cross-covering physician. We sought to characterize the information needs of internal medicine house officers in their signout forms, and use it to improve the type and quality of information that occurs during inpatient handover.
METHODS: We collected 56 signout forms from 56 internal medicine interns and residents on 8 inpatient and critical care services, representing 442 patients. Two independent raters characterized a subset of information on these forms to create a comprehensive list of informational elements. This was used to generate the topics of discussion for two separate focus groups of interns and residents, mediated by an independent facilitator. The topics of discussion centered on (a) the current state of signouts, (b) the forms used to transfer care, and (c) the handover process in general. Discussion was transcribed and analyzed for common themes.
RESULTS: The collected signouts varied widely in content and format. Data extraction resulted in a comprehensive list of 55 unique informational elements. Analysis of the focus group transcripts revealed several common themes. (a) Content: house officers felt that relevance, accuracy and recency of information were crucial in signout forms. In addition, many felt that conveying their judgement about their patient's clinical condition, and anticipating future events would greatly enhance signout forms. (b) Format: an organ system organization was favored on critical care units, while paragraph formats were generally preferred on the inpatient floors. Several residents felt that lengthy signouts were difficult to use. (c) Handover process: many house officers felt that important information should always be written, and then reinforced verbally, with complete read/write access to all members of the inpatient team. Unanimously, all felt that service-specific templates containing relevant subsets of the extracted informational elements would help standardize and improve the process of transfer of care.
CONCLUSION: As the primary caregivers of a majority of patients at teaching hospitals, housestaff should play a major role in the quality improvement of signout forms and the handover process. The data from this study has lead to the development of service-specific signout templates posted to common filespace for residents to generate signout forms. In addition, this data is being incorporated into a web-based signout-generation tool that interfaces with the electronic medical record.

TRAINING INTERNATIONAL MEDICAL GRADUATES WILL NOT INCREASE THE SUPPLY OF PRACTICING GENERAL INTERNISTS: THE RESIDENT CAREERS COHORT STUDY. V. Kumar[1]; A.K. Diehl[1]; A. Gateley[2]; J.L. Appleby[1]; M. O'Keefe[3]. [1]University of Texas Health Science Center at San Antonio, San Antonio, TX; [2]University of New Mexico, Albuquerque, NM; [3]Geisinger Medical Center, Danville, PA. *(Tracking ID #116334)*

BACKGROUND: Little is known regarding factors that predict an internal medicine resident's decision for a career in general internal medicine (GIM) rather than a medicine subspecialty (MSS). Research on medical student career choice suggests that older age, female sex, minority heritage, and certain aspects of personality predict a career in primary care. We re-examined these factors in a cohort of internal medicine residents.
METHODS: Study subjects were categorical internal medicine residents in 2 university-based programs. During training, subjects completed a baseline questionnaire covering demographic and personal data and responded to brief (5–10 item)

personality inventories measuring authoritarianism, Machiavellianism, reliance on high technology, negative orientation to psychological problems, and intolerance of ambiguity. Residents were surveyed in 1993-95 and reported their actual careers in a follow-up survey in 2002–03, 4–9 years after residency completion.
RESULTS: The cohort included 204 categorical residents. The follow-up survey response rate was 97%. Overall, 65.7% entered practice in GIM. Graduates of international medical schools (IMGs, 13.2% of the cohort) were more likely to enter a MSS (66.7% vs. 29.4% of US graduates, $P < .001$). Self-reported medical school class rank was inversely related to GIM career ($P = .04$). Residents with larger loan debt were more likely to choose GIM (>$100K 83.3%, $50–100K 69.6%, <$50K 72.6%, none 42.2%, $P < .001$). Of note, 69.0% of residents who perceived GIM to have lower potential income than MSS entered GIM, vs. 53.3% of those who did not ($P = .08$). GIMs were slightly older at medical school graduation than MSSs (28.6 vs. 27.6 years, $P = .08$). Sex and race/ethnicity were not related to career choice. Those who entered GIM scored lower on scales measuring authoritarianism ($P = .06$), Machiavellianism ($P = .09$), and negative orientation to psychological problems ($P = .07$). In a logistic regression, only graduation from a US medical school (OR = 3.0, $P = .049$) and perception of low future income (OR = 1.7, $P = .03$) predicted a career in GIM, although trends were apparent for higher loan debt ($P = .054$) and less negative perception of psychiatric patients ($P = .07$).
CONCLUSION: Recruitment of IMGs to medicine residencies is unlikely to increase the supply of practicing GIMs. Prospects of lower income, even in the face of large educational debt, do not discourage the choice of GIM. Residents comfortable managing patients with psychiatric conditions are more likely to enter GIM. If increasing GIM manpower is a goal, personality attributes of residency applicants should be weighed in their selection.

TRANSITION FROM PEDIATRIC TO ADULT HEALTHCARE: THE EXPERIENCES OF YOUNG ADULTS WITH SPINA BIFIDA. K.L. Garibaldi[1]; R.W. Gibson[2]; J. Reiss[2]; G.B. Villarreal[1]; P. Haidet[3]. [1]Baylor College of Medicine, Houston, TX; [2]University of Florida, Gainesville, FL; [3]Houston VA Medical Center, Houston, TX. *(Tracking ID #116766)*

BACKGROUND: Over the past thirty years, the survival of children with chronic medical conditions has increased dramatically. As these children become adults, they face the challenge of moving from the pediatric to the adult healthcare system. The purpose of this project was to understand the process of healthcare transition among a group of young adults with spina bifida, and to identify the factors that influence this process.
METHODS: We developed an interview guide to explore participants' experiences since leaving their pediatricians. Participants were drawn both from lists of patients who had "graduated" from the Spina Bifida Clinic at Texas Children's Hospital in Houston, Texas, and from contacts in local spina bifida organizations. We conducted eleven in-depth semi-structured interviews. Interviews were audiotaped and transcribed. Members of the study team reviewed the content of transcribed interviews to confirm coding schemes and to help elucidate recurrent themes.
RESULTS: In describing their relationships with pediatricians, participants reflected a tension between the comfort of "being taken care of," and their growing sense of independence ("I didn´t tell my mother—just so the doctors would talk to ME"). Participants perceived discharge from their pediatricians to be abrupt. Acute medical needs generally prompted the initiation of relationships with adult doctors ("I just take it as it comes; if I get sick, I´ll find a doctor"). In establishing relationships with doctors, participants focused on both the significance of their medical record to communicate their history, and the importance of finding a doctor knowledgeable in relevant medical issues. At the same time that they transitioned to new healthcare providers, participants experienced concurrent personal and social transitions, including: assuming adult roles, belonging to a community, and struggling to avoid isolation ("there's a feeling that when you become an adult, you cease to exist").
CONCLUSION: From these results, we constructed a conceptual framework to depict the process of healthcare transition. Transition takes place in the larger context of social development, and involves a series of prompts and facilitators that direct patients between two strikingly different systems of care. From this framework, we propose strategies to guide patients, families and doctors through the process, including: 1- facilitating communication and planning between patients and pediatricians regarding future healthcare; 2- increasing the awareness of adult doctors to pediatric conditions and needs of young adult patients; and, 3- developing protocols to promote improved collaboration between pediatric and adult doctors.

TRANSITIONING ADOLESCENTS WITH SPECIAL HEALTH CARE NEEDS TO ADULT CARE. S. McLaughlin[1]; R. Turchi[1]; M. Diener-West[1]; E. Levey[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #117097)*

BACKGROUND: Medical advances have transformed many once-fatal childhood illnesses into chronic conditions. Almost a half-million US adolescents with a special health care need transition into adulthood each year, presenting a unique and growing challenge to the adult health care system. Prior studies have found significant patient and provider disatisfaction with the transition experience as well as lapses in care. However, there have been no national quantitative studies of the transition experience. This study uses the National Survey of Children with Special Health Care Needs (CSHCN) to identify patient, provider and system characteristics that influence the transition process and explore the association between transition process and satisfaction with care.
METHODS: A cross-sectional random-digit-dial national telephone survey of households of CSHCN was conducted between 2000–02, weighting results for 2000 census demographics. Bivariate analyses explored the association between patient, provider and system characteristics and parental report of transition processes. A multiple logistic regression model was developed for the main outcome variable, transition, defined as any of three reported steps: discussing age-related changes in health needs, discussing the possible need for an adult care provider and developing a transition plan. A second multivariate model tested the association between transition and parental satisfaction with care.
RESULTS: Among respondents for 5,601 CSHCN between the ages of 13–17 years, less than half (48.9%) reported any of three transition processes. Only 1 in 5 reported all three elements. In a multivariate model, only frequency of visits (OR 1.54, 95% CI 1.12–2.12 for 4th vs 1st quartile), Hispanic ethnicity (OR 0.48, 0.31–0.76) and census region (OR 0.48, 0.30–0.77 for West South Central vs New England) were significantly associated with transition process. Surprisingly, age, severity of child's condition, and reports of having a personal provider, a regular site of care and continuous insurance coverage throughout the year were not significantly associated with transition. Those experiencing any transition process were more likely to report high levels of satisfaction with care (OR 2.04, 1.65–2.52).
CONCLUSION: Despite a Healthy People 2010 goal prioritizing health care transitions for adolescents, this national survey found fewer than half of age-eligible CSHCN had even discussed transition. We identified ethnic and geographic characteristics associated with an increased risk of missing transition processes. Transition discussion was associated with two-fold increases in the odds of being very satisfied with medical care. Simple clinical interventions, such as discussing age-related changes in care needs, may improve satisfaction with care and allow us to better meet care needs.

TREATING CHRONIC PAIN: A RANDOMIZED TRIAL OF MINDFULNESS BASED STRESS REDUCTION, MASSAGE AND USUAL CARE. M. Goodman[1]; J. Owens[1]; M.L. Plews-Ogan[1]; P. Wolfe[1]; M. Williams[1]. [1]University of Virginia, charlottesville, VA. *(Tracking ID #116860)*

BACKGROUND: Chronic pain presents a therapeutic challenge to general internists. Nontraditional therapies such as massage and mindfulness based stress reduction(MBSR) offer promising alternatives/adjuncts to medications in the management of chronic pain conditions. Vigorous clinical trials are currently lacking and the feasibility of using these therapies in an indigent chronic pain population is unknown.
METHODS: A randomized unblinded clinical trial of MBSR, massage or usual care in patients with chronic musculoskeletal pain was undertaken in a resident/faculty clinic serving primarily indigent patients. A total of 30 patients were randomized to massage(one session/wk for 8 weeks), MBSR(one class/wk for 8 weeks) or usual care. Assessments of pain intensity, pain unpleasantness, mood (positive and negative affect scale PANAS), global physical and mental health status (SF-12) and self-reported medication use were made at baseline, 4 weeks, 8 weeks and 12 weeks. At baseline, the Absorption scale (measure of a personality trait related to hypnotizability) was administered to assess individual differences.
RESULTS: 60% of the recruited participants were taking at least one narcotic medication. 23 of the 30 participants completed the study. There was a significant difference in pain unpleasantness reports between baseline and 8 weeks, comparing the massage and standard care groups. The massage group reported an average reduction of 2.9 on a 10 point numeric rating scale compared to the standard care mean change score of 0.13 ($t = 2.1$, $P < .05$). Mental health ratings from the SF12 at baseline were significantly different from average ratings at 12 weeks in the MBSR group with a mean increase of 10.2 compared to an average decrease of 1.7 in the standard care group ($t = 2.2$, $P < .05$). A similar trend was found in increases in positive affect on the PANAS at 12 weeks but this difference did not reach statistical significance. Reductions in pain report at week 8 were highly correlated to Absorption (a personality trait related to hypnotizability) in the treatment groups ($r = .77$, $P < .001$). Self reported pain medication use was not significantly different among the groups.
CONCLUSION: MBSR and massage appear to be feasible therapeutic options, even in this indigent chronic pain population, 60% of whom were on chronic narcotics. Massage appears to have a significantly positive effect on pain, while MBSR appeared to have more of an effect on mental health, an effect which persists well beyond the treatment period. Both MBSR and massage merit further research as promising therapeutic modalities in the treatment of chronic pain.

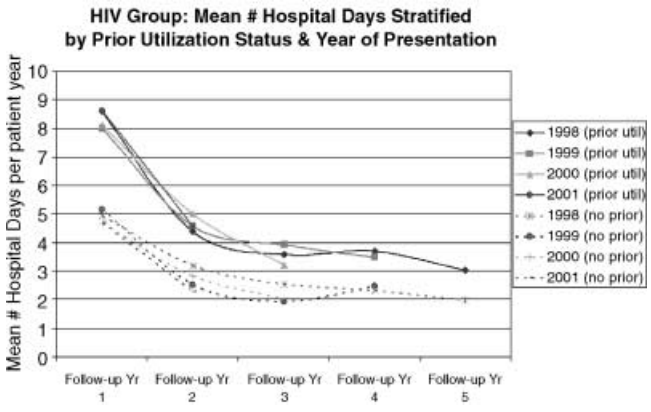
TRENDS IN HEALTH INSURANCE COVERAGE AMONG LATINOS, 1993–2002. N.S. Shah[1]; A. Guerra[1]; O. Carrasquillo[1]. [1]Columbia University, New York, NY. *(Tracking ID #115491)*

BACKGROUND: During the last decade the number of uninsured Latinos has increased by 60%. In contrast, the number of uninsured non-Hispanic whites and blacks has either decreased or remained stable, respectively. Given their diversity, we examine trends in the number of uninsured Hispanics by sub-group and immigration status.
METHODS: We analyzed data from the 1993 to 2002 Census Bureau Current Population Surveys (CPS). Prior to 1999 the CPS sample was approximately 160,000 persons. Subsequently the sample was expanded to 210,000 persons. Other changes in CPS methodology during this period have included revisions of insurance questions and updated population controls based on the 2000 Census. All estimates were derived using weights that account for the sample design and non-response (16.2% in 2002). Based on the four largest sub-groups, Latinos were categorized as Mexican, Puerto Rican, Cuban, Dominican, or other (primarily Central/South Americans). By immigration status, Hispanics were categorized as US-born (born in the USA or foreign-born with at least one American parent), immigrant citizens (foreign-born naturalized citizens) or non-citizen immigrants (foreign-born persons residing in the US who are not US citizens, including undocumented persons).

Consistent with conventions for demographic data, differences were significant if the 90 percent confidence interval (CI) for point estimates did not overlap.
RESULTS: From 1993–2002, the number of uninsured Dominicans and Cubans did not increase. However, there was a significant increase in the number of uninsured Mexicans 5.7 (CI, 5.5–5.9) to 9.5 million (CI, 9.2–9.8), Puerto Ricans 480,000 (CI, 390–580,000) to 720,000 (CI, 640–810,000), and other 1.6 (CI, 1.4–1.7) to 2.3 million (CI, 2.2–2.5). Similarly, the number of uninsured US-born Latinos and immigrant citizen Latinos also increased 3.7 (CI, 3.5–3.9) to 5.5 million (CI, 5.2–5.7) and 0.50 (CI, 0.40–0.59) to 1.1 million (CI, .096–1.2), respectively. However, these increases were primarily due to population growth as for most groups the percent uninsured did not change e.g. the percent of US-born Hispanics without insurance fluctuated between 22 to 23%. In contrast, the number and percent of uninsured non-citizen immigrants increased 4.2 (CI, 4.0–4.4) to 6.7 million (CI, 6.6–6.9) and 50.0% (CI, 47.6–52.3) to 56.5% (CI, 55.0–57.9), respectively. The percentage change was due to reductions in employer coverage.
CONCLUSION: The rise in the number of uninsured Hispanics from 1993 to 2002 was primarily due to population growth and occurred among various Latino subgroups as well as both US born and immigrant Latinos. However the most dramatic increase was among non-citizen immigrants. These findings support the need for additional targeted outreach and specific policy initiatives.

TRENDS IN HEALTHCARE UTILIZATION BY HIV-POSITIVE VETERANS FROM 1998 TO 2002. N.R. Gandhi[1]; M. Skanderson[2]; J. Concato[1]; A.C. Justice[1]. [1]Yale University & West Haven CT VA Medical Center, New Haven, CT; [2]Pittsburgh VA Healthcare System, Pittsburgh, PA. *(Tracking ID #115648)*

BACKGROUND: The 1990's were marked by a shift in healthcare utilization from the inpatient to the outpatient setting. In this context, a sharp decline in inpatient utilization was observed among HIV patients in 1997–98, attributable to the introduction of highly active antiretroviral therapy (HAART). Little is known, however, about the healthcare utilization patterns of HIV patients in the era of widespread HAART use since 1998.
METHODS: We conducted a retrospective observational study examining trends in healthcare utilization among HIV-positive patients and matched HIV-negative controls seen at all 176 VA Medical Centers in the US from 1998 to 2002. HIV-positive patients, identified by ICD-9 and DRG codes, were 1:1 matched to HIV-negative controls based on age, sex, race and site of care (VA network). Patients were grouped for analysis based on HIV status and their year of presentation. The primary outcome was the change in inpatient and outpatient utilization in each year of follow-up. The secondary outcome was the variation in utilization between groups of differing years of presentation.
RESULTS: 15,095 HIV-positive patients (mean age 49.2 years, 97% male, 36% white, 39% black, 7% Latino) presented with a new HIV diagnostic code between 1998 and 2001. Seventy-four percent (74%) of HIV-positive patients had utilized services in the VA at some point before HIV presentation and 55% had care in the year before presentation. Analysis of utilization patterns revealed that HIV patients had twice as many hospital admissions and hospital days in the year of presentation as compared with subsequent follow-up years (see figure). Levels of inpatient utilization among HIV-positive patients did not vary based on year of presentation. Stratified analysis of prior utilization revealed that the greater inpatient utilization observed in the first year was independent of prior utilization status. Additionally, inpatient utilization was nearly two-fold greater among patients with prior utilization, which persisted throughout follow-up. Among HIV-negative controls, inpatient utilization was stable during years 2 to 5 of follow-up, but did decline with later calendar year of presentation. Outpatient visits among HIV positive patients declined by 10% during follow-up, rather than rising to compensate for the diminished inpatient utilization.
CONCLUSION: Among HIV-positive veterans with and without prior VA utilization, inpatient utilization was greatest in the first year and did not vary based on year of presentation. The 26% of patients who entered the VA system only after having an HIV diagnosis used VA care half as much as those with VA utilization prior to their diagnosis. This disparity in utilization may represent differential access to care and deserves further evaluation.



Mean number of hospital days per patient-year in HIV Group: Stratified by Prior Utilization Status & Year of Presentation

TRENDS IN USE OF MAJOR PROCEDURES AMONG BLACK AND WHITE ELDERLY: IS THE GAP NARROWING? A.K. Jha[1]; E.S. Fisher[2]; A.M. Epstein[3]. [1]Brigham and Women's Hospital, Boston, MA; [2]Dartmouth College, White River Junction, VT; [3]Harvard University, Boston, MA. *(Tracking ID #116414)*

BACKGROUND: Racial disparities in high cost surgical procedures are well known, and both national and regional efforts have been launched to address these differences. However, whether the gap in the rates of these services between black and white patients has narrowed is unknown.
METHODS: We used the 100% data file from the Medicare Part A program from 1992 through 2001 to calculate age and sex adjusted rates of major high cost, high morbidity procedures for black and white enrollees sixty-five years of age or older. The procedures studied were coronary artery bypass surgery (CABG), carotid endarterectomy (CEA), total hip replacement (THR), total knee replacement (TKR), cardiac valve replacement (VR), and lumbar disc procedures (LDP).
RESULTS: Procedures rates increased for all Medicare enrollees from 1992 through 2001 for all six procedures studied. The white minus black (W – B) gap decreased for CABG (3.35 in 1992 versus 2.88 in 2001) but the gap widened for the other five procedures (Table 1).
CONCLUSION: The racial gap in absolute procedure rates widened during the 1990s for five of the six procedures studied. Whether these trends reflect worsening underuse among blacks or growing overuse among whites is unknown. These data provide no evidence that efforts to narrow the gap in use of major procedures between blacks and whites have been successful.

Table 1. Procedure rates and differences per 1,000 Medicare enrollees, whites versus blacks.

	Whites, 1992	Blacks, 1992	W – B, 1992	Whites, 2001	Blacks, 2001	W – B, 2001
CABG	5.49	2.14	3.35	6.19	3.31	2.88
CEA	2.20	0.70	1.50	3.23	1.26	1.98
THR	2.18	1.09	1.09	3.30	1.56	1.74
TKR	3.94	2.58	1.36	5.97	3.86	2.11
VR	1.10	0.43	0.68	1.47	0.68	0.79
LDP	2.78	1.52	1.26	4.48	2.42	2.06

TRIAL BANK PUBLISHING OF RANDOMIZED TRIALS FOR EVIDENCE-BASED PRACTICE: PRELIMINARY RESULTS. I. Sim[1]; B. Olasov[1]; S. Carini[1]; S. Jeng[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #103212)*

BACKGROUND: Randomized clinical trials (RCTs) are a valuable source of evidence for clinical practice, but computers cannot read RCT reports. Publishing RCTs into machine-understandable "trial banks" may allow clinical decision support systems to deliver RCT evidence more effectively and efficiently to clinicians. We have previously built RCT Bank, a trial bank that can capture over 160 trial design, execution, and summary result elements that are needed for the rigorous interpretation and application of trial results to clinical care.
OBJECTIVE: To collaborate with ***JAMA*** and the ***Annals of Internal Medicine (Annals)*** to co-publish RCTs directly into RCT Bank, just as genomic sequence results for genomic research articles are co-published into GenBank.
METHODS: Authors of RCTs accepted for publication by ***JAMA*** or ***Annals*** between January 2002 and July 2003 were invited to co-publish their trial in RCT Bank. Follow-up, crossover, and cluster-randomized trials were excluded due to modeling limitations in RCT Bank. Trial bank staff entered information from participating manuscripts into RCT Bank using a secure web-based tool (Bank-a-Trial), and obtained additional information from the authors as necessary. Completed entries were then made freely available via RCT Presenter (http://rctbank.ucsf.edu/Presenter/). ***JAMA*** and ***Annals*** subscribers can link to RCT Presenter from the trial's full-text article on the journal website. Reciprocal links are also available between RCT Presenter and ClinicalTrials.gov.
RESULTS: During the project period, 54/108 (50%) RCTs met our inclusion criteria. Initially, 38% of invited authors agreed to participate. The rate rose to 76% after the first example of a co-published trial was available. 9 diverse RCTs are now co-published, with 13 in progress. Co-published trials cover a variety of clinical domains (e.g., cardiology, geriatrics), intervention types (e.g., drugs, procedures), outcome types (e.g., categorical, survival), and result types (e.g., efficacy analysis). We also captured information needed for critical appraisal, such as details on intervention blinding and follow-up. We contacted all authors for additional information, in 3 cases to resolve data discrepancies in the manuscript. Trial entry usually required 10–15 hours (range 8–20 hours). Over 80% of this time was spent on extracting information from the manuscript rather than on data entry.
CONCLUSION: We have demonstrated proof of concept for "trial bank publishing." RCT Bank can capture detailed, essential information about diverse trials, leading journals and their authors are supportive, and the time required for trial-bank entry is reasonable compared to traditional manuscript preparation. In the next phase of trial bank publishing, ***JAMA***, ***Annals***, and ***BMJ*** authors will be submitting RCTs directly to RCT Bank for peer review.

TWO APPROACHES TO REFERRAL FOR SMOKING CESSATION TREATMENT. S.E. Sherman[1]; M. Estrada[1]. [1]VA Center for the Study of Healthcare Provider Behavior, Sepulveda, CA. *(Tracking ID #116284)*

BACKGROUND: Many clinical trials have documented the effectiveness of smoking cessation programs, but very little is known about how to get smokers to attend these programs. We evaluated whether an "on-call counselor" increased referrals

and attendance to smoking cessation programs among veterans enrolled in a primary care clinic.
METHODS: We randomly assigned one primary care team at the Sepulveda Veterans Administration (VA) Ambulatory Care Center to intervention and the other to usual care. The intervention team had access to an on-call counselor who provided 10–15 minutes of additional smoking cessation counseling, as well as care coordination (up to 4 follow-up telephone calls). The counselor referred all patients who agreed to either an on-site smoking cessation program or to a telephone counseling program. The intervention team also received weekly provider-specific audit and feedback reports on number of referrals and a monthly incentive for outstanding performance. We conducted computer-assisted baseline telephone interviews with a random population-based sample of 482 smokers. Six-month mailed follow-up interviews have been completed thus far by 252 patients.
RESULTS: During the one-year intervention period, the on-call counselor received 296 referrals, of whom 50% were referred to the on-site program, 31% to telephone counseling, and 19% chose not to be referred. 51% of those referred followed through with the referral. There were no significant differences on the baseline survey between the intervention team and control team in smoking history or prior cessation services received. This included reporting a quit attempt in the prior year; being counseled about cessation or being referred to a treatment program in the prior year; or attending a smoking cessation program in the prior year. On the 6 month follow-up survey, patients on both teams were equally likely to report a quit attempt in the prior 6 months, or to have used nicotine patches or bupropion in the prior 6 months. Patients on the intervention team were more likely to report being counseled about cessation (68% vs. 56%, $P = .05$) or to have been referred to a smoking cessation program (38% vs. 23%, $P = .01$). They were somewhat more likely to have attended a smoking cessation program (14% vs. 7%, $P = .057$).
CONCLUSION: Despite the high success rates at helping smokers quit, organized smoking cessation programs are vastly underused. Our data suggest that having access to an on-call counselor while receiving provider-specific audit and feedback leads to a higher rate of counseling about smoking cessation, referral to a smoking cessation program, and possibly attendance at a smoking cesation program. We are currently evaluating whether it leads to a higher rate of actually quitting smoking.

UNINSURED VETERANS NOT USING HEALTH SERVICES: TARGETS FOR REDUCING ACCESS DISPARITY. A. Rosland[1]; J.A. Long[2]. [1]City of Philadelphia Department of Health, Philadelphia, PA; [2]Philadelphia VA Center for Health Equity Research, Philadelphia, PA. *(Tracking ID #115572)*

BACKGROUND: 2.3 million US veterans had no health insurance coverage at some time during the year 2000, many of whom did not use any health care that year. Engaging uninsured veterans in VA health care could increase access among a large group that lacks other health care options. In this study we examined the numbers and demographics of uninsured veterans who receive no health care, their reasons for not accessing VA care, and targets to increase their access to information about veterans' benefits.
METHODS: We used data from the 2001 National Survey of Veterans, a telephone interview of over 20,000 veterans, with over-sampling of certain VA priority groups, women, Hispanics, and African Americans. Using weighted percentages to reflect the probability of sampling, we compared the demographics of uninsured veterans accessing no health care to all other veterans. We also describe this groups' response to questions about reasons for not accessing VA health care and preferred mode of accessing information about VA benefits.
RESULTS: Of those veterans interviewed, 372 were uninsured non-care using veterans, representing approximately 637,000 individuals. 47% of these veterans were over 45 years old. Compared to veterans who had insurance or who did access medical care in 2000, uninsured non-care using veterans were more likely to be African-American (16.2% vs 8.6%*), Hispanic (8.0% vs 2.6%*), and have an annual income less than $20,000 (32.5% vs 17%*). These veterans had less medical diagnoses (62% had no self-identified chronic conditions vs 17% of other veterans*) and less ADL disability (10% vs 26%*). When asked why they didn´t use VA health care, 60% of uninsured non-care using veterans responded that they did not need care, however, 33% also gave reasons consistent with needing more information about VA health services. These answers included, 'not aware of VA health care benefits' and 'did not know how to apply'. When asked where they would look for information about VA benefits, most would go directly to the VA: 58% would get information at the VA, 19.7% would use the VA or another internet site, 14.7% another government agency, and 12.6% the VA phone line. Virtually none would look for information from friends or from other media. (*$P < .0001$)
CONCLUSION: Veterans who have no health insurance and who do not use the VA or other health care services are disproportionately minority and low income, and almost half are of an age for which preventive care is recommended. Increasing enrollment of this group into VA health services could be targeted by increasing their awareness of recommended preventive services and by improving their access to information about VA benefits, specifically through information services at VA facilities and the internet.

UNMET NEED FOR DENTAL CARE IN A PUBLICLY FUNDED SYSTEM OF HEALTH CARE. A.L. Diamant[1]; R.D. Hays[1]; S. Asch[2]; I. Dyer[3]; L. Gelberg[1]. [1]University of California, Los Angeles, Los Angeles, CA; [2]West Los Angeles Veteran's Administration, Los Angeles, CA; [3]Los Angeles County Department of Health Services, Los Angeles, CA. *(Tracking ID #117159)*

BACKGROUND: Routine dental care is advocated to prevent tooth decay, tooth loss and other concomitant complications. Low-income and uninsured patients may receive inadequate dental care. We assessed receipt of routine and acute dental care among low-income primary care patients in a publicly funded system of health care.
METHODS: This was a probability-based survey of primary care patients receiving medical care through a large publicly funded health care system. Face-to-face interviews were conducted in English or Spanish at the time of a medical visit with 2,026 adult patients (78% response rate). Patients reported their need and use of dental services during the preceding year as well as sociodemographic characteristics, health status, and the nature of their health insurance. Variation in receipt of dental services and the unique associations of gender, race/ethnicity, insurance status and health status with dental services were estimated.
RESULTS: Rates of receipt of dental care were low (29% received routine care and 20% acute care in the past year). Receipt of regular dental care was greater among women than men (30% vs. 25%, $P < .05$); highest among African Americans and lowest among Latinos (42% vs. 26%, $P < .01$); greater among the insured than uninsured (32% vs. 28%, $P > .05$) and greater among those with better health status. Asian/Pacific Islanders were the most likely and Latinos were the least likely to receive acute dental care (30% vs. 18%, $P < .05$). Those with better health status were also more likely to receive acute dental care. Among those adults who did not receive any dental care, cost was the most common explanation given.
CONCLUSION: Among low-income and predominantly uninsured adults in a publicly funded system of health care there appears to be a significant unmet need for both routine and acute dental services, with cost the major barrier. Plans to incorporate dental and medical services for vulnerable population may be considered.

USE OF A DONATED CARE PROGRAM FOR LOW-INCOME UNINSURED ADULTS. J.T. Kullgren[1]; E.F. Taylor[2]; C.G. McLaughlin[3]. [1]Michigan State University, East Lansing, MI; [2]Mathematica Policy Research, Washington, DC; [3]University of Michigan, Ann Arbor, MI. *(Tracking ID #115811)*

BACKGROUND: In recent years interest has grown in donated medical care programs as options for providing low-income uninsured adults with access to care. We study the experiences of one such program in southern Maine to determine whether uninsured patients use the program as a short-term measure or rely upon the program for longer-term care.
METHODS: Data come from two waves of a telephone survey conducted by the University of Michigan's Institute for Social Research. Subjects were low-income uninsured adults who enrolled in a donated care program over an eight-month period. The survey collected data on enrollees' characteristics and experiences in the 12 months prior to joining the program and the six months after enrolling. Comparisons by coverage status six months after enrollment were analyzed using chi-square and ANOVA tests.
RESULTS: 266 enrollees participated in both survey waves. Response rates exceeded 85%. Six months after joining the program, 68% of participants were still enrolled, 5% had disenrolled and gained employer-sponsored insurance (ESI), 5% had disenrolled and were covered through Medicaid, and 20% had disenrolled and were uninsured. Compared with all others, persons still enrolled were least likely to be working for a large employer ($P < .001$), employed by a firm that offers coverage ($P < .001$), and eligible for ESI ($P < .001$). Persons who disenrolled and obtained ESI were most likely to be working full-time ($P < .001$) for a large firm ($P < .001$), and to have had ESI in the year before joining the program ($P = .004$). Of all groups, disenrollees with ESI were least likely to be in fair or poor health ($P = .04$) and had the highest incomes ($P < .001$). Disenrollees who obtained Medicaid coverage were least likely to be working ($P < .001$), had the lowest incomes ($P < .001$), and were most likely to have a chronic condition ($P = .04$). Among all disenrollees, those who were uninsured after leaving the program were most likely to have become ineligible because of an increase in income ($P = .03$), and were least likely to have had either Medicaid or ESI in the year before joining the program ($P = .007$).
CONCLUSION: This donated care program functioned differently for different groups of low-income uninsured adults. The bulk of enrollees used the program for longer-term access to care, while a minority of persons, who most often had health insurance in the past, used the program as a short-term measure. Another group of individuals with relatively less access to private or public coverage left the program within 6 months but continued to be uninsured.

USE OF A STRUCTURED IMPLICIT REVIEW TOOL TO ASSESS COUNSELING ABOUT PROSTATE-SPECIFIC ANTIGEN. M.H. Farrell[1]; J.M. Stein[1]; L.K. Ladouceur[1]; E.C. Chan[2]. [1]Yale University, Waterbury, CT; [2]University of Texas Health Science Center at Houston, Houston, TX. *(Tracking ID #116980)*

BACKGROUND: Cancer screening with prostate-specific antigen (PSA) is controversial. Professional guidelines advise doctors to counsel men before offering the test, but are unclear what should be said. According to the "professional practice standard" of consent, patients ought to be told what doctors believe is important. Chan et al. (***Am J Med*** 1998;105:266–274) used a Delphi group of nationally recognized experts in prostate cancer to rank the top 10 facts for PSA counseling. We adapted these into a 34-item structured implicit tool to assess counseling content. Structured implicit tools direct the attention and judgment of experienced clinician-reviewers to specific areas of quality.
METHODS: As part of a project to develop communication quality assessment tools, we taped visits between 39 internal medicine residents and five 50-yo male standardized patients trained to ask about PSA. Interviews were in the residents' clinic without any preceeding teaching. We reviewed transcripts of the tapes with the

structured implicit tool, using ***definite*** and ***maybe*** ratings to sort between clear and borderline mention of the facts. To assess reliability, 2 authors reviewed 55% of transcripts and 3 reviewed 24%.
RESULTS: Interviews ran a median of 9.15 min. Transcripts analyzed with the ***definite*** ratings revealed that residents included a mean of 2.5 top-10 items (SD 2.0). Figure 1 lists the frequency of appearance in counseling for each fact. When the ***maybe*** ratings were included in the analysis the mean number of top-10 facts used by each resident increased to 4.97 (SD 2.0); the frequency of each fact's appearance increased on average by 25%.
CONCLUSION: Counseling content varied widely across residents, but many residents included at least some of the key concepts recommended by experts in their counseling. The structured implicit approach for assessing communication quality will be a versatile tool for future quality improvement projects relating to physician counseling.

Figure 1. Resident inclusion of expert "top-10" facts in PSA counseling.*

1) PSA screening is controversial (50%).
2) Unknown if PSA reduces mortality(21%)
3) Each man should weigh risks and benefits and personally decide (39%).
4) False positive results (61%).
5) PCa detected by PSA more likely to be localized than PCa detected by DRE (& may respond better to therapy) (0%).
6) Uncertainty about benefit of treatment of localized PCa (3%).
7) PSA/DRE screening most appropriate for men with > 10 year life expectancy (18%).
8) Natural history of PCa and potential for slow growth (18%).
9) Treatment options for PCa (21%).
10) False negative PSA and biopsies (16%).

*Abbreviations: PSA, prostate-specific antigen; PCa, prostate cancer; DRE, digital rectal exam

USE OF E-HEALTH CARE SERVICES BETWEEN 1999 AND 2002: A GROWING DIGITAL DIVIDE. J. Hsu[1]; J. Huang[1]; C.J. Kinsman[1]; J. Fagan[2]; B.H. Fireman[1]; E. Ortiz[3]; R. Miller[4]; J.V. Selby[1]. [1]Kaiser Permanente Division of Research, Oakland, CA; [2]Kaiser Permanente Health Plan, Oakland, CA; [3]Agency for Healthcare Research and Quality, Rockville, MD; [4]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116529)*

BACKGROUND: Use of the internet for health-related services (e-Health) has the potential to improve the quality and efficiency of medical care. Despite this promise, there is little quantitative data on e-Health use or on the characteristics of users over time. We evaluated access to, and use of e-Health services over a four-year period and investigated whether there were any disparities in use by race/ethnicity.
METHODS: We conducted a longitudinal study of members of a large, prepaid integrated delivery system (IDS) between January 1999 and December 2002. Members could use the e-Health services to order prescription drug refills, schedule clinic appointments, and ask medical or drug-related questions. Members had free access after requesting a secure password protected account or could use services through a proxy member with an account. We determined the number and proportion of members with known access to e-Health services, and of members who used these services each quarter between 1999 and 2002. Using a generalized linear model approach, we also assessed trends in use over time by race/ethnicity.
RESULTS: The number of members increased from 3,213,571 (1999) to 3,482,511 (2002); 59.4% were white, 14.3% Hispanic, 13.5% Asian, 8.2% Black, and 4.7% Other Race/Ethnicity. The number who had access to e-Health services increased from 51,536 (1.6%) to 324,522 (9.3%), and the number who used e-Health at least once increased from 13,261 (0.4%) to 117,174 (3.4%). In addition, the percentage of households in which at least one person had access increased from 2.7% in 1999 to 14.1% in 2002. Among members with access, the percentage who used at least one e-Health service per quarter increased from 25.7% in 1999 to 36.2% in 2002 ($P < .0001$); the mean number of uses among users also increased from 1.5 to 3.9 uses/subject ($P < .0001$). After controlling for age, gender, socio-economic status, comorbidity, having a regular provider, and insurance type, subjects of non-white race/ethnicity were significantly less likely to have used e-Health services, compared to white subjects; moreover, the difference in the number of users increased from 5,422 to 42,151 users/year during the study ($P < .0001$). The divide persisted even after limiting the analysis to subjects with known access.
CONCLUSION: A growing number of people have access to and are using e-Health services. Despite this rapid increase, there appears to be a widening disparity in e-Health use between persons of white and non-white race/ethnicity; this disparity exists even among subjects with known access.

USE OF ENCOUNTER CARDS TO EVALUATE ORAL CASE PRESENTATION SKILLS OF MEDICAL STUDENTS. S. Kim[1]; J.R. Kogan[1]; L.M. Bellini[1]; J.A. Shea[1]. [1]University of Pennsylvania, Philadelphia, PA. *(Tracking ID #117058)*

BACKGROUND: Communication skills are an essential component of professional competence. The oral case presentation (OCP) facilitates transfer of clinically relevant information between health care providers. Despite its importance, little research has focused on OCP skills. The purpose of this study was to determine the feasibility and reliability of OCP encounter cards to evaluate medicine core clerkship students' OCP skills.
METHODS: We developed OCP encounter cards with 9 competencies (history of present illness, past medical history, social/family history, physical exam, data, assessment/differential diagnosis, plan, organization/coherence, and general speaking ability) rated on a nine-point scale (1–3 = unsatisfactory, 4–6 = satisfactory, and 7–9 = superior). In 2003, a sample of students (n = 79) enrolled in our medicine core clerkship during four 9-week blocks were instructed to complete 9 OCP encounter cards (3 each from inpatient attendings, residents, and outpatient attendings). Evaluators completed the encounter card during the presentation, provided the student with feedback, and documented the time spent in each activity. Evaluators and students rated their satisfaction with the OCP card on a nine-point scale. OCP cards were returned at the end of the clerkship; evaluations did not affect course grades.
RESULTS: 568 cards were completed (80% of target). The mean number of forms per student was 7.2 (sd = 2.4). Median OCP evaluation and feedback times were 15 (sd = 12.4) and 5 (sd = 5.1) minutes, respectively. Mean evaluator and student satisfaction ratings were 7.3 (sd = 1.7) and 6.8 (sd = 2.0), respectively. Mean ratings for the 9 competencies ranged from 7.6 (sd = 1.0) for plan to 8.0 (sd = .9) for general speaking ability. Cronbach's alpha among the nine competencies was 0.95. Residents gave significantly higher ratings on all competencies than did faculty ($P < .0009$). There was a consistent pattern showing students in block 4 received the highest ratings. Reproducibility of the OCP ratings using a (rater:student) x competency generalizability design showed that the standard error around the rating was 0.3. Reducing the number of raters to 6, 4, and 2 would change the standard error to 0.3, 0.4, and 0.6, respectively. Reducing the number of competencies would not change the standard error.
CONCLUSION: OCP encounter cards are a novel and feasible tool to evaluate students' OCP skills in the medicine clerkship. Future analyses will focus on the ability of the OCP cards to improve students' OCP skills.

USE OF ETHNICALLY TAILORED LETTERS TO RECRUIT MINORITY GENERAL MEDICINE PATIENTS. A.M. Nápoles-Springer[1]; J. Santoyo[1]; A.L. Stewart[1]. [1]University of California, San Francisco, San Francisco, CA. *(Tracking ID #103937)*

BACKGROUND: Ethnic minorities have been underrepresented and tend to require more resources to recruit and retain in clinical research. Limited evidence exists on the effectiveness of recruitment methods among diverse populations.
METHODS: Ethnically tailored initial contact letters and envelopes were pretested among African Americans and Latinos; letters requested participation in a telephone survey of the interpersonal processes occuring during medical visits. Ethnically tailored envelopes had the slogan "Your opinions matter. Help us improve communication between doctors and African American (or Latino) patients" and either a Frida Kahlo (Latinos) or Roy Wilkins (African Americans) postage stamp. General envelopes had the same slogan without the ethnic qualifier. Ethnically tailored letters referred to the shortage of African American (or Latino) physicians and the need to learn about the experiences of African American (or Latino) patients in communicating with their physicians. In the sampling frame of adult general medicine patients, minority patients were randomized within ethnic/language group (African Americans, English-speaking Latinos, and Spanish-speaking Latinos) to receive ethnically tailored or general letters/envelopes. White patients received general letters. Potential respondents were tracked for points of loss by stage of recruitment, ethnicity, and type of letter (for minority patients).
RESULTS: Of 2,482 contacted and eligible potential respondents, 69.9% completed the survey. Of the total sampling frame, 39% was unable to be contacted; this loss was higher among non-Latino Whites (46.5%) and African Americans (44.2%) than among English-speaking (32.3%) and Spanish-speaking Latinos (25.1%). Once contacted, of those who were eligible, response rates were highest among Spanish-speaking Latinos (75.2%), lowest for non-Latino Whites (66.4%), and intermediate for African Americans (69.7%) and English-speaking Latinos (68.1%). Minority patients who were contacted, eligible and received tailored letters had higher response rates (72.2%) than those receiving general letters (70.0%) (not significant); no differences were found within any group.
CONCLUSION: High losses due to an inability to contact potential respondents were evident among African Americans and non-Latino Whites, thus innovative approaches are needed to enable researchers to establish contact with a higher proportion of potential respondents in survey sampling frames. Once contacted and eligible, recruitment results varied by ethnicity; the highest participation rates occurred among Spanish-speaking Latinos. Use of ethnically tailored letters for minority patients did not enhance contact or response rates, thus higher intensity recruitment methods may be necessary.

USE OF STANDARDIZED PATIENTS TO TEACH FUNCTIONAL ASSESSMENT AND COMMUNICATION SKILLS TO SURGICAL AND MEDICAL SUBSPECIALTY HOUSE OFFICERS. B.C. Williams[1]; K.E. Hall[1]; J.T. Fitzgerald[1]; M.A. Supiano[1]. [1]University of Michigan, Ann Arbor, MI. *(Tracking ID #116452)*

BACKGROUND: Graduate Medical Education (GME) programs are increasingly employing standardized, skills-based instruction and assessment methods. Standardized patients are being developed for this purpose, but most are disease-specific, few target geriatrics issues, and none of the standardized geriatrics patients has been used outside primary care GME programs. We developed a Geriatrics Functional Assessment Standardized Patient Instructor (GFA SPI) as a teaching tool for residents and fellows in surgical specialties and medical subspecialties.
METHODS: A case scenario was developed in which the learner has 15 minutes to assess Basic and Instrumental Activities of Daily Living; and screen for cognitive impairment, depression, gait disturbance, and urinary incontinence using validated instruments. Instructional materials and pocket cards are provided and reviewed prior to the encounter. Learners receive feedback from the SPI on assessment and communication skills. Learners then discuss integrating the skills into their practice with faculty from their own discipline and a geriatrician. Learners complete a written evaluation of the exercise.

RESULTS: 26 house officers from gynecology, emergency medicine, and rheumatology have experienced the GFA SPI. All completed the exercise within 15 minutes. The percent of house officers: a) correctly assessing ADL status ranged from 64 (dressing) to 91 (toileting) and b) whose performance was "Skillful" was 45 (Timed Up and Go), 95 (Mini Cog), and 41 (2-Question Depression Screener) percent. Learners reported significant benefit from the SPI debriefing, with mean usefulness rating for encounter of 4.43 on a 5-point scale. Post-exercise estimates of confidence in performing functional assessment increased from 3.63 (0.8) prior, to 4.31 (0.8) following the exercise ($P < .01$) on a 5-point scale.
CONCLUSION: Standardized Patient Instructors that focus on general geriatrics rather than disease-specific skills are feasible and perceived as relevant and valuable by house officers in surgical and medical subspecialties. This type of SPI may help GME programs teach and measure skills relevant to the care of older patients as they implement skills-based assessment methods

USEFULNESS OF A DIAGNOSTIC PROTOCOL FOR PATIENTS WITH SYNCOPE REMAINING UNEXPLAINED AFTER EMERGENCY ASSESSMENT. F.P. Sarasin[1]; E. Pruvot[2]; M. Louis-Simonet[1]; J. Sztajzel[1]; M. Herrera[1]; J. Schlapfer[2]; O. Hugli[2]; B. Yersin[2]. [1]University Hospitals, Geneva, Switzerland; [2]Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland. *(Tracking ID #116323)*

BACKGROUND: The management of patients with syncope remaining unexplained after emergency assessment is a clinical challenge. We assessed the efficacy of a protocol designed to improve the diagnosis and management for these patients.
METHODS: Over a 18-month period, we have prospectively included in two primary and tertiary emergency care centers all patients with syncope that remained unexplained after standardized non invasive assessment that included: clinical history, physical examination, 12-lead ECG and testing for orthostatic hypotension. Using 3-month cycles we have alternatively applied a standardized set of sequential diagnostic tests (intervention period), or left management to patients' physicians in order to reflect usual practice (controled period). In accordance with current recommendations, standardized diagnostic tests were selected by the presence of underlying structural heart disease and/or an abnormal ECG and the frequency of syncopal episodes. We used strict, explicit and reproducible diagnostic criteria based on published recommendations.
RESULTS: Syncope was considered unexplained after non invasive emergency assessment in 523 (33%) of the 1,582 patients that presented with syncope during the study period. Among the 523 patients with unexplained syncope, 369 (71%) were included in the study, 175 during the intervention period and 194 during the controled period. During the intervention period, the application of standardized set of sequential diagnostic tests selected by the clinical setting allowed to establish a cause for syncope in 75 of the 175 patients (43%). During the controled period a cause for syncope could be established only in 18 (9%) of the 194 patients included ($P < .001$). During the experimental period, more tests were performed, however, these allowed to detect not only more reflex (n = 39) and psychogenic (n = 23) syncope, but also more arrhythmic syncope (n = 13).
CONCLUSION: After non invasive emergency assessment, use of a standardized set of diagnostic tests improved the diagnostic yield for patients with unexplained syncope.

USEFULNESS OF VIDEOCONFERENCING FOR MEDICAL DECISIONS IN THE NURSING HOME. M.R. Laflamme[1]; M. Weiner[2]; D.C. Wilcox[3]; J. Sullivan[4]; G. Schadow[1]; D. Lindbergh[1]; J. Warvel[1]; G. Abernathy[1]; S. Perkins[1]; J. Daggy[1]; P. Dexter[1]; C.J. McDonald[1]. [1]Regenstrief Institute, Inc., Indianapolis, IN; [2]Regenstrief Institute, Inc., Center for Aging Research, Indianapolis, IN; [3]Department of Medicine, Indiana University, Indianapolis, IN; [4]Wishard Health Services, Indianapolis, IN. *(Tracking ID #116001)*

BACKGROUND: For approximately 2 million nursing home residents in the U.S., unexpected acute medical conditions can occur after regular business hours, when clinicians are not typically available for on-site evaluations. Telemedicine, such as videoconferencing, may provide valuable means to facilitate clinicians' decision-making. Telemedicine is increasingly reimbursable and can improve costs and efficiency of primary care without compromising quality. We assessed the role of videoconferencing on clinicians' medical decision-making in the nursing home. We hypothesized that videoconferencing without a bedside examination would be sufficient for making medical decisions in 25% of cases.
METHODS: Residents of a 240-bed, county-managed nursing home were enrolled between 2001 and 2003. We constructed a portable, wireless, secure, Internet-based videoconferencing workstation for use in the nursing home. Videoconferences were conducted between the residents and their off-site clinicians. For purposes of comparison, this was immediately followed by a bedside examination with the same provider. After both the virtual and bedside exams, clinicians were asked to rate the encounters and generate all orders deemed necessary for that resident. The orders were categorized and counted according to whether they were generated before or after the bedside visit.
RESULTS: Three clinicians conducted 69 videoconferences with 15 female and 21 male residents. Of the encounters, 71% were wound-related. Clinicians generated orders in 30% of encounters. Of these, 75% contained orders made after but not before the bedside exam, indicating clinicians' reliance on bedside examination over videoconferencing. Nevertheless, clinicians reported that—compared to no contact at all with residents—videoconferencing facilitated their clinical assessments in 73% of encounters. Problems with videoconferencing were primarily technical, including issues with sound quality (31%), visual representations of skin wounds (10%), participants' familiarity with using equipment to communicate with clinicians (8%), and lighting (8%).
CONCLUSION: Clinicians' satisfaction with video-based examination of nursing home residents was positive. The bedside examination was superior for most assessments, but videoconferencing was judged valuable when compared to no contact with residents. With improved video and audio quality, videoconferencing may prove valuable for making medical decisions in this setting when clinicians are not available for bedside encounters.

USING A WEB-BASED DISCHARGE NAVIGATOR TO IMPROVE THE TRANSFER OF CLINICAL INFORMATION FROM THE HOSPITAL TO THE OUTPATIENT CLINICIAN. J.M. Kramer[1]; W. Bria[1]; S. Lim[1]; F. Lee[1]; J. West[1]; R. Lund[1]; S.K. Saint[2]; A.M. Fendrick[1]. [1]University of Michigan, Ann Arbor, MI; [2]Ann Arbor VA Medical Center, Ann Arbor, MI. *(Tracking ID #117399)*

BACKGROUND: Ensuring the continuity of care between the inpatient and outpatient setting is an important challenge confronting the American healthcare system. Research on the transfer of information between inpatient and outpatient clinicians suggests that this process is slow, incomplete, and does not convey the most relevant information. In order to enhance the timeliness and quality of information transfer between clinical settings, the "Discharge Navigator," a web-based discharge information management tool was constructed.
METHODS: To assess the acceptability of the Discharge Navigator and its clinical and economic impact on the information transfer process, a prospective, randomized study was undertaken at a single Midwest academic center in the fall of 2003. Nurses, attending physicians, residents, and medical students on two of the four general internal medicine services were instructed to the use Discharge Navigator; two control medicine services used standard discharge practices. In lieu of traditional discharge summaries dictated by hospital physicians, discharge documents generated by the Navigator were faxed to referring physicians. Outcome measures included the time to deliver a discharge summary to a referring physician, discharge transcription costs, contributions of the discharge summary to a problem-based medical record, and quality of the discharge information as determined from a survey of referring physicians.
RESULTS: Hospital admissions to the two study groups were compared over the 4 month study period, (564 intervention and 559 control discharges). Users of the Discharge Navigator produced 528 discharge summaries. Referring physicians received discharge summaries significantly faster from physician users of the Navigator when compared to the traditional method (mean 4.10 days vs. 11.08 days control group, $P = .00$) Transcription costs incurred by the Navigator teams were approximately $7,000 less than those in the control group over the study period. Discharge Navigator physicians contributed 2,263 diagnosis and 3,804 medication entries to the problem-based medical record.
CONCLUSION: Multidisciplinary online collaboration to better manage discharge information transfer is feasible and leads to improved timeliness and efficiency in discharge information transfer process when compared to existing practices. Other benefits—such as greater contribution to the electronic medical record—will likely have additional positive consequences for subsequent care within our health system.

USING CENSUS 2000 INFORMATION TO DETERMINE A BREAST CANCER SCREENING PROGRAM´S EFFICACY. A. Goel[1]; R.C. Burack[1]. [1]Wayne State University, Detroit, MI. *(Tracking ID #115645)*

BACKGROUND: Geographic information systems (GIS) can help identify areas that may underutilize community screening programs. By using GIS, program administrators can direct additional recruitment efforts to specific regions. We developed a study to determine the efficacy of a breast cancer screening program by census tract.
METHODS: We examined enrollment records from the Wayne County Breast and Cervical Cancer Control and Prevention Project (BCCCP), a cancer screening program for low-income women ages 40–64. We clustered women by census tract using a GIS program to maintain patient confidentiality. We averaged annual census tract BCCCP enrollment over three years to increase data stability. We then collected median income per capita and population estimates by census tract from the United States Census 2000 (Census). Finally, we determined the rate of BCCCP enrollment for each census tract by dividing the census tract's average annual BCCCP enrollment by the number of women 40–64 within that census tract.
RESULTS: Wayne County, Michigan includes 620 census tracts. The census tracts include a median of 472 women ages 40–64 (range, 0–1,389 women) with a median 1999 per capita income of $18,476 ($0–$71,127). We were able to geographically locate 1,479 (70.1%), 4,973 (89.3%) and 3,769 (92.4%) of all BCCCP enrollees in 2001, 2002 and 2003, respectively. The median number of women enrolled into the BCCCP by census tract was four (0–49 women). The median BCCCP census tract enrollment rate was 0.9% (0–33.3%). The median BCCCP census tract enrollment rate by increasing census tract quartile of median 1999 per capita income was 2.1% (0–33.3%), 1.5% (0–5.5%), 0.4% (0–2.7%) and 0.2% (0–1.4%, $P < .01$ for nonparametric test of trend across ordered groups). Within the lowest quartile of median 1999 per capita income (median $10,740, range $0–$12,762), the middle 90% of census tracts had enrollment rates between 0.6% and 4.8%.
CONCLUSION: As expected from the BCCCP eligibility requirements, enrollment is higher in census tracts with lower income levels. We have demonstated that Census data can provide denominator information about populations eligible for community screening programs and can be linked to numerator data from the program in order to assess program effectiveness. We have also documented an eight-fold variation

in BCCCP enrollment among census tracts with similar per capita income. GIS-based analysis can lead to a better understanding of the sources of this variation and development of more effectively targeted recruitment strategies.

USING FOCUS GROUPS OF OLDER AFRICAN AMERICANS AND LATINOS WITH DIABETES TO MODIFY A SELF-CARE EMPOWERMENT INTERVENTION. C.A. Sarkisian[1]; R.J. Brusuelas[1]; W.N. Steers[1]; M.B. Davidson[2]; A.F. Brown[1]; K.C. Norris[2]; R.M. Anderson[3]; C.M. Mangione[1]. [1]University of California, Los Angeles, Los Angeles, CA; [2]Charles Drew School of Medicine, Los Angeles, CA; [3]University of Michigan, Ann Arbor, MI. *(Tracking ID #116992)*

BACKGROUND: Diabetes is an epidemic disproportionately affecting older African Americans and Latinos. In this report we describe the first phase of an ongoing project aimed at improving self-care of older African Americans and Latinos with diabetes. Our objectives were to: 1) assess the level of community interest in participating in a self-care empowerment intervention that has been effective in improving self-care and glycemic control among younger persons; 2) make cultural and age-specific modifications to the intervention to better address the issues valued by older African Americans and Latinos with diabetes in these communities.
METHODS: We conducted 11 focus groups in public health diabetes and geriatrics clinics and senior centers in and around South Central Los Angeles. In collaboration with community leaders, we recruited African Americans and Latinos aged ≥55 years with diabetes (n = 79), and 2 groups of health educators (n = 16). After describing the proposed intervention, trained focus group facilitators asked participants: 1) whether the community of interest would be interested in the proposed empowerment intervention; 2) why or why not; and 3) to suggest how to modify the intervention to better address the concerns of the study community of interest. All groups were audiotaped, transcribed, and (when appropriate) translated into English. Three independent investigators read all transcripts and completed standardized coding forms for each transcript. At the end of each focus group, all participants completed a self-administered written survey asking them to rate aspects of the proposed intervention.
RESULTS: Older African Americans and Latinos endorsed the intervention, but desired an expanded dietary educational component, and identified disability as an important missing content area. Participants rejected the use of an audio learning tool and did not believe that matching group-facilitator sociodemographic characteristics was important as long as facilitators demonstrated cultural competency.
CONCLUSION: These findings illustrate a model of participatory research in which researchers and community-members work together to develop an empowerment intervention that will meet community needs and have greater cultural appropriateness. Modifying the intervention in accordance with these findings should enhance the relevance and impact of the self-care intervention.

UTILIZATION OF PEDIATRIC CARE BY LATINO CHILDREN: THE EFFECTS OF LIMITED ENGLISH PROFICIENCY AMONG PARENTS. O. Duru[1]; L. Morales[2]. [1]University of California, Los Angeles, Los Angeles, CA; [2]University of California, Los Angeles, CA. *(Tracking ID #116425)*

BACKGROUND: Studies in adult populations have documented that limited English proficiency (LEP) is associated with decreased access to care, and may explain a significant component of racial/ethnic health disparities in utilization. Children depend on parents to access health care on their behalf, and minority children of LEP parents may be less likely to receive appropriate care. Latino children are less likely than white children to receive care, but few analyses have examined the possible unmeasured effect of primary language on children's utilization of care.
METHODS: We used 2000/2001 CAHPS survey data on 29,564 children enrolled in 27 health plans participating in the State of California Children's Health Insurance Program. Race/language pairings were used as the primary independent variable (white, Latino/English, Latino/Spanish), for three probit regressions predicting the likelihood of a clinic visit in different settings. In the first, we assessed whether the child had a clinic visit in the setting of an acute or chronic illness. In the second, we assessed whether the child had a clinic visit if an appointment had been made. In the third, we assessed whether children under two had any lifetime well child visit or immunization visit. To ease interpretation of our results, we estimated predicted probabilities and standard errors of a clinic visit for children from each race/language pairing. Errors were adjusted to control for clustering by health plans.
RESULTS: For each analysis, predicted clinic visit rates for white children were significantly higher than for Latino/Spanish children. With an illness, the probability of a visit for white children within six months was 92%, but only 79% for Latino/Spanish children. If an appointment was successfully made, the probability of a visit within six months was 94% for white children as compared to 82% for Latino/Spanish children. The predicted probability of a lifetime well child or immunization visit for children under two years of age was 93% for white children, whereas it was only 79% for Latino/Spanish children. In each case, there was no statistical difference between predicted probabilities for visits by white children and Latino/English children. All reported results were significant at the $P < .05$ level.
CONCLUSION: Within the insured population of children we studied, differences in utilization of care by language exist in different situations measuring a perceived or evaluated need for care. These findings suggest that racial/ethnic disparities in utilization of pediatric care between Latinos and whites may in fact reflect issues related to LEP. Further studies to investigate racial/ethnic disparities in utilization should measure primary language, as well as other factors related to acculturation that are likely to influence access to care.

UTILIZATION OF PERIOPERATIVE β-BLOCKADE. D.A. Quinn[1]; M. Cooper, MD[2]; H. Do[1]; J. Balantine[2]; L. Kadish[2]; S. Walerstein[2]; F. Weinbaum[2]; L. Chevalier[3]; E. Flink[3]; M.A. Callahan[1]; E. Lazar[2]. [1]Weill Cornell Medical College, Department of Public Health, New York, NY; [2]New York Presbyterian Healthcare System, New York, NY; [3]New York State Department of Health, Troy, NY. *(Tracking ID #116703)*

BACKGROUND: Perioperative cardiac ischemia and infarction are important causes of morbidity and mortality in patients undergoing noncardiac surgery. There is now significant evidence that the use of perioperative β-blockade among patients who have established coronary artery disease (CAD) or risk factors for CAD is associated with a reduction in myocardial ischemia and improved survival. This study was undertaken to examine the utilization of perioperative β-blockade and implications for clinical practice.
METHODS: A multi-center observational review was conducted in collaboration with New York State Department of Health across 5 network hospitals of the New York Presbyterian Health Network. 6,500 charts were reviewed which identified 914 postoperative cases at intermediate to high risk using the Revised Cardiac Risk Index and risk stratification tools by Mangano et al. 100 cases of perioperative MI were also identified with 52 cases included in this analysis. Patients with contraindications to β-blocker therapy, ambulatory, cardiac and obstetric cases were excluded. The primary outcome measure was the utilization of β-blockade therapy.
RESULTS: Among patients without contraindications, 384/914 (42%) of patients at intermediate to high risk and 31/52 (60%) of perioperative MI cases received β-blockade prophylaxis. β-blockade was initiated prior to hospitalization for 297/384 (77%) of patients who received β-blocker prophylaxis. Using a GEE multivariate model adjusting for clustering by hospital, β-blocker utilization was predicted by history of known CAD (χ^2 5.5 $P < .0001$), history of arrhythmia (4.7 $P < .0001$), dyslipidemia (4.5 $P < .0001$), hypertension (3.6 $P = .0004$), medicaid payor (3.4 $P = .0007$), peripheral vascular disease (2.91 $P = .004$) and self pay status (2.14 $P = .03$). Women were less likely to receive β-blocker (–2.1 $P = .04$).
CONCLUSION: Many perioperative patients with CAD risk factors did not receive β-blocker prophylaxis. Of the eligible patients who received therapy, most were already on β-blocker as an outpatient; few patients had β-blockers initiated after hospital presentation. Perioperative β-blocker therapy was underutilized in women at risk for cardiovascular complications. Payor status was correlated with β-blocker utilization among self pay and medicaid patients, patients who have access to health care and resources for medications. Strategies to increase the utilization of perioperative β-blocker should address the need for: perioperative evaluation after hospital presentation, awareness of cardiovascular risk, and the promotion of perioperative β-blockade among women with CAD risk factors.

VALIDATION OF A BRIEF SURVEY FOR DETECTING GENDER BASED VIOLENCE IN LATIN POPULATIONS. M. Majdalani[1]; R. Mejia[1]; A. Guedes[2]; R. Fayanas[1]. [1]Universidad de Buenos Aires, Buenos Aires, ; [2]International Planned Parenthood Federation/ Western Hemisphere Region, Brasilia, DF / Brasil, . *(Tracking ID #116854)*

BACKGROUND: Violence against women in intimate relationships is a major public health problem. Screening for gender-based violence (GBV) in health care settings is strongly recommended by several health organizations. We validated a short survey, used in five Spanish-speaking countries, for detecting GBV in primary care settings.
METHODS: The survey was originally developed in Spanish. The questionnaire had 4 questions corresponding to operational definitions of GBV and one question to assess risk. The validation process included two steps. The first, linguistic validation, was achieved through in depth interviews with a suitable sample of women, half of them with 6th grade of education or less. The second step, psychometric validation, included the assessment of the internal consistence by a correlation coefficient; the stability by the test-retest strategy; and the reproducibility by the inter-rater method.
RESULTS: After linguistic validation we developed the definitive version of the survey. 68 women participated in the second step. The median age was 44.5 years (range 22 to 82), 48.% had >7 years of formal education, 53% lived with a partner, and 55.2% had a job. The inter-observer (IO) and intra-subject (IS) agreement (Kappa) for each domain was Psychical Violence: kappa IO = 1.000; kappa IS = .938. Physical Violence: kappa IO = 1.000; kappa IS = .892. Sexual Abuse: kappa IO = 1.000; kappa IS = .915. Sexual Violence: kappa IO = 1.000; kappa IS = 1.000. Current Risk Perception: kappa IO = .631; kappa IS = .628. The internal consistence measured by the a correlation coefficient was: Psychical-Physical Violence a = .755, Psychical-Sexual Violence a = .498, Physical-Sexual a = 0.596, Psy- Phy- Sexual-Abuse during childhood a = .715.
CONCLUSION: This short screening tool is useful in detecting violence against Spanish-speaking women in primary care settings.

VALIDITY AND RELIABILITY OF INSTRUMENTS USED TO MEASURE CULTURAL COMPETENCE OF HEALTH PROFESSIONALS. A. Gozu[1]; M.C. Beach[2]; E.G. Price[1]; T. Gary[1]; K. Robinson[3]; A.M. Palacio[4]; C. Smarth[5]; M.W. Jenckes[1]; C. Feuerstein[5]; E.B. Bass[1]; N.R. Powe[1]; L.A. Cooper[1]. [1]Johns Hopkins University, Baltimore, MD; [2]Johns Hopkins Medical Institutions, Baltimore, MD; [3]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; [4]John Hopkins, Department of Medicine, Baltimore, MD; [5]Johns Hopkins University School of Medicine, Baltimore, MD. *(Tracking ID #116719)*

BACKGROUND: Medical educators need tools that accurately and reliably measure knowledge, attitudes, and skills reflecting cultural competence, but these instruments have not been comprehensively identified, systematically described or critiqued.

METHODS: We systematically identified and reviewed English language articles published from 1980 through June 2003 that evaluated the effectiveness of cultural competence interventions targeted at health professionals. Our review included studies that had both a pre and post intervention evaluation or control group for comparison. We abstracted information about evaluation methods, reliability, and validity of instruments.
RESULTS: The 34 studies included in our review evaluated curricula targeted at physicians (n = 17), nurses (n = 18) and other health professionals (n = 11) and assessed learner attitudes (n = 25), knowledge (n = 19), or skills/behaviors (n = 14). A total of 70 instruments were used in the 34 studies. Most studies used several evaluation methods; the most common methods were learner self-assessment surveys (n = 21) and written exams (n = 17); others included participant ratings of the curriculum (n = 10), learner essays (n = 3), group/individual interviews (n = 3), direct observation of learner skills (n = 2), and patient ratings (n = 3). The same instrument, Bernal and Froman's Cultural Self-Efficacy Scale (CSES), was used in only 4 studies. Surveys measured several attitudes toward cultural and social issues in learning and healthcare (i.e., cultural salience and self-efficacy, ethnocentrism vs. ethnorelativism, cognitive development, dogmatism); knowledge of culture-general concepts and organizational policies and procedures regarding diversity; and culture-specific knowledge (communities and resources, health beliefs and practices of populations). Only 21% of instruments (15/70) had been previously tested for validity and reliability and an additional 2 were validated in the current study. Thirty-eight percent (13/34) of the studies used at least one validated instrument; 12 used learner self-assessment surveys and one used patient reports.
CONCLUSION: Studies of cultural competence training use a variety of evaluation methods and instruments. Few studies include independent ratings of learner skills or patient reports, and most instruments have not been rigorously validated. The results of cultural competence training could be interpreted more accurately and reliably if objective evaluation methods and standardized, validated instruments were used.

VARIATION IN FINDING AND TREATING HIGH CHOLESTEROL DURING HOSPITALIZATIONS FOR ACUTE MYOCARDIAL INFARCTION. M.A. Callahan[1]; L.M. Korn[1]; K. Oneda[1]; E.J. Lazar[2]. [1]Cornell University, New York, NY; [2]New York Presbyterian Healthcare System, New York, NY. *(Tracking ID #116536)*

BACKGROUND: Hospitalization for acute myocardial infarction (MI) represents an opportunity to identify and treat previously undetected hypercholesterolemia. Physicians may not take advantage of this opportunity because of concerns that cholesterol levels may be falsely low in the acute setting. However, evidence suggests that initiating lipid-lowering medication during hospitalizations for acute MI may reduce the incidence of recurrent ischemic events. Our objective was to determine the extent to which physicians measure and treat high cholesterol during hospitalizations for acute MI.
METHODS: We conducted a retrospective cohort study of 453 patients admitted to 10 hospitals in the New York metropolitan area for acute MI during the 18-month period from November 1, 1999 to April 30, 2001. Each hospital provided a convenience sample of 30–60 cases. Using data from medical records, patients were followed for the duration of their hospitalizations for the process-outcomes of having cholesterol measured and having cholesterol-lowering medication prescribed. We used logistic regression to assess which patient characteristics and processes of care predicted cholesterol measurement and/or treatment.
RESULTS: The patients' average age was 70 years; 57% were male and 64% were white. Overall, 62% of patients had total cholesterol measured, 45% had high-density lipoprotein (HDL) measured and 39% had low-density lipoprotein (LDL) calculated. The proportion of patients with total cholesterol measured varied widely by hospital, from 32–98%. Of the patients with values measured, 47% had total cholesterol ≥200 mg/dl, 44% had HDL <40 mg/dl, and 66% had LDL ≥100 mg/dl. Forty-three percent of patients with total cholesterol ≥200 mg/dl and 43% of patients with LDL ≥100 mg/dl were discharged on cholesterol-lowering medication. Younger age and hospital were independent predictors of cholesterol measurement. Younger age, hospital, history of hypertension, treatment with aspirin at discharge, treatment with beta-blocker at discharge, measurement of cholesterol, and total cholesterol ≥200 mg/dl were independent predictors of cholesterol treatment. Hospitals that frequently measured cholesterol were just as likely to find high cholesterol as hospitals that measured cholesterol infrequently.
CONCLUSION: Among patients admitted for acute MI, the proportion that was tested and treated for high cholesterol varied widely by hospital. When total cholesterol was measured, it was abnormal nearly half the time. Most patients with abnormal cholesterol were not treated with medication upon discharge. Significant opportunity exists to improve detection and treatment of high cholesterol after acute MI.

VARIATION IN THE USE OF COMPUTERIZED CLINICAL REMINDERS IN AN INTEGRATED NATIONAL DELIVERY SYSTEM. C.H. Fung[1]; J.N. Woods[2]; S. Asch[1]; P.A. Glassman[1]; B.N. Doebbeling[3]. [1]VA Greater Los Angeles Healthcare System, Los Angeles, CA; [2]University of Iowa, Iowa City, IA; [3]Indiana University Purdue University Indianapolis, Indianapolis, IN. *(Tracking ID #117453)*

BACKGROUND: Many studies have shown that computerized clinical reminders may improve compliance with practice guidelines, leading to improved quality of care. Prior studies have also evaluated factors associated with diffusion of information technology into healthcare systems. The purpose of this study was to identify patterns of adoption and implementation of computerized clinical reminders across the Veterans Health Administration and describe facilitating factors and barriers.
METHODS: At a national meeting convened to discuss the Veterans Health Administration's Computerized Patient Record System (CPRS), we conducted a cross-sectional survey of 261 participants representing 104 Veterans Health Administration facilities. Main outcome measures: number and types of computerized clinical reminders available at each facility. Other measures included: ease of use and usefulness of computerized clinical reminders , training and personnel support for computer use, functionalities of electronic medical record, and availability of performance data feedback to providers.
RESULTS: The number of computerized clinical reminders in use ranged from one to fifteen; most facilities reported implementation of ten of the fifteen reminders surveyed. The most common computerized clinical reminders, used in over 85% of facilities, were for those with Veterans Health Administration national performance measures (e.g., tobacco use cessation and immunizations). The least common computerized clinical reminders were for post-deployment health evaluation/management and medically unexplained symptoms. Providers at facilities with a higher number of clinical reminders reported greater ease of use and usefulness of the reminders (Beta = .20, $P = .01$).
CONCLUSION: Veterans Health Administration facilities have varying degrees of adoption and implementation of computerized clinical reminders. This effect may be partly explained by incorporation of clinical reminders as performance measures and differences in perceived ease of use and usefulness of computerized clinical reminders at certain facilities.

VARYING OPINION BETWEEN RESIDENTS AND FACULTY ON THE IMPACT OF MODIFYING A GENERAL INTERNAL MEDICINE WARD SERVICE TO MEET ACGME GUIDELINES. B. Mathis[1]; T. Diers[1]; G.W. Rouan[1]. [1]University of Cincinnati, Cincinnati, OH. *(Tracking ID #116797)*

BACKGROUND: The recent ACGME duty hour guidelines required most programs to change their approach to education and patient care. We added a second team leader to each of our traditional ward teams. A survey was conducted to investigate the impact of this modification on effectively meeting ACGME standards while maintaining quality of patient care and education.
METHODS: As of July 2003, our four general medical ward teams were split into eight half teams (two half teams per attending physician) each containing one team leader and two intern "equivalents". Each half team took call on an every fourth night basis resulting in admissions every second night to their attending. The traditional number of admissions was thereby distributed over two post-call days and allowed for intra-team post-call coverage. A survey was distributed to all PGY 2–4 residents and faculty at the end of each rotation month. Responders were asked to anonymously answer questions using a 5-point Likert scale in which 5 = strongly agree and 1 = strongly disagree. Questions were grouped into three categories; ACGME requirements (3 questions), patient care (4 questions) and education (4 questions). The results of the residents and faculty surveys were separately summed, averaged and then compared using a two-sample t test.
RESULTS: One hundred percent (18/18) of faculty members and 78% (31/40) of residents responded. Questions were grouped by category and the mean responses for the residents and faculty were compared (Table). The average number of admissions presented post-call was 8.1 ± 2.5 (standard deviation) with a range from 1–13 every fourth night in the old system (July 02–Dec 02) and 5.5 ± 2.2 (0–12) every second night in the new system (July 03–Dec 03) $P < .001$. A question exclusive to the residents demonstrated that they felt the new system did not reduce fatigue 2.5 ± 1.1 out of 5.
CONCLUSION: We changed our general medicine team structure to address the new July 2003 duty hour restrictions while attempting to optimize patient care and resident education. While the faculty viewed the change very positively, the residents were less certain in their responses but did not feel the changes negatively impacted ACGME compliance, education or patient care. PGY 2 responses tended to be more negative than PGY 3 responses but the study was not powered to compare these two. The positive response of the faculty may be related to their prior experience with and insights regarding the prior unfettered system that often led to high admission volume and long post-call hours. The new system was more prescriptive and decreased post-call volume and overall time commitment. The finding that residents did not feel less fatigued in the new system that specifically limits their in-house hours questions the effectiveness of the ACGME guidelines.

Question Type	Resident Response	Faculty Response	p-value
Meeting ACGME Standards (1–15)	9.8	13.5	<.0001
Patient Care (1–20)	10.7	14.3	.002
Education (1–20)	12.0	14.1	.005

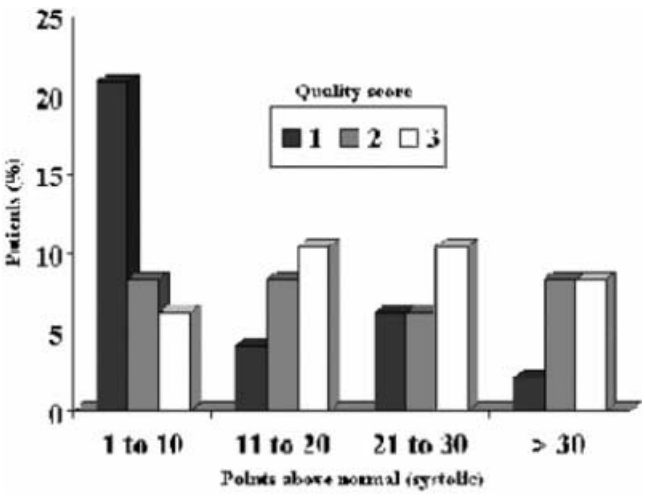
VENOUS THROMBOEMBOLISM AMONG HOSPITALIZED PATIENTS. D.A. Quinn[1]; J. Novotny[2]; S. Rajan[2]; M.A. Callahan[1]. [1]Weill Medical College of Cornell University, Department of Public Health, New York, NY; [2]New York Presbyterian Hospital, New York, NY. *(Tracking ID #116398)*

BACKGROUND: Venous thromboembolism (VTE) is a common disease associated with significant morbidity and mortality among hospitalized patients. Despite the development of effective VTE prophylaxis strategies and trends toward shorter hospitalizations, the incidence of hospital related thromboembolism has remained constant. The reason for this finding remains unclear. This study was undertaken to examine the current state of utilization of these measures and further characterize patients who develop hospital related VTE in a large, ethnically diverse academic medical center.

METHODS: A retrospective case series of patients with a DVT or PE diagnosed through ultrasound imaging, ventilation/perfusion scan, CT angiogram or pulmonary angiography was examined. Patients were identified through lists of studies performed at New York Presbyterian Hospital, Department of Radiology from January 1 through December 31, 2002. 152 cases of VTE were included in this analysis from all cases identified. Cases were included if admitted for an unrelated condition or hospitalization occurred within 30 days prior to VTE diagnosis.
RESULTS: 52% of cases were on the medical service. 50% of cases were admitted to an ICU during the hospital course. Median LOS was 22 days. 40% of VTE cases were associated with central catheters. 38% of cases of pulmonary embolus were confirmed by imaging however 53% of VTE cases had symptoms of shortness of breath, tachycardia or arrhythmia with only radiologically confirmed DVT. 73% of VTE cases had contraindications to anticoagulation therapy prior to VTE diagnosis with 37% having multiple contraindications. 81% of patients received prophylaxis with the other 8% having multiple contraindications to anticoagulation therapy, including ongoing bleeding and tumor compression of the pulmonary artery. The average delay in prophylaxis initiation was 2 days. 22% of cases received only mechanical prophylaxis. 24% of cases were not identified by ICD9 coding.
CONCLUSION: Most of the cases of hospital related VTE occurred among patients with prolonged hospitalizations in the setting of prophylaxis failure rather than omission. Multiple contraindications to anticoagulation resulted in an increased use of mechanical prophylaxis, which may have been inadequate in this population with significant risk factors for VTE. A short delay in prophylaxis initiation was observed among a subset of patients and may be amenable to intervention. While guideline implementation of VTE prophylaxis remains an important patient safety strategy, the ability to reduce the incidence of VTE may be limited. Studies limited to administrative databases may underestimate the incidence of hospital related VTE.

VISIT-SPECIFIC HYPERTENSION QUALITY OF CARE SCALE. W. Henderson[1]; H.B. Bosworth[1]; C. Voils[1]; T.K. Dudley[2]; F. McCant[1]; P. Gentry[1]; E.Z. Oddone[1]. [1]Duke University Medical Center, Durham, NC; [2]Durham VA Medical Center, Durham, NC. *(Tracking ID #116069)*

BACKGROUND: Normotensive 55 year olds have a 90% lifetime risk of developing hypertension. Blood pressure (BP) treatment guidelines specify evidence-based targets for long-term management, yet the majority of patients remain uncontrolled. One reason for poor control may be provider inattention to elevated BP, or 'clinical inertia.' This study was designed to develop a reproducible scale, the Hypertension Quality of Care Scale; to quantify the provider's recognition of and reaction to uncontrolled BP during an office visit; to establish the inter-rater reliability of the scale; and to examine if higher quality scores correlated with the degree that systolic BP was out of control.
METHODS: Retrospective chart review of 70 primary care patients with hypertension treated with medication at the Durham VAMC. The index visit used to judge quality was the first primary care visit after enrollment. BP control was defined by JNC VI guidelines. An attending, a resident, and a registered nurse who were blinded to each other's ratings reviewed the computerized note. Ratings were made using the following scores: 0: BP not recorded at visit; 1: BP out of control, not recognized, and nothing further done; 2: BP out of control, recognized, but nothing further done; 3: BP out of control and the provider acted (e.g., increased medication or added new medication); N/A: BP in control. Unweighted kappas were calculated to assess interrater reliability. Spearman correlations were calculated to examine the relationship between the score and the extent to which BP was elevated.
RESULTS: The patients were 91% male, 64% White, and 36% Black, with a mean age of 65. The average frequency of each score across the raters was 2.9% (0), 30.5% (1), 14.3% (2), 25.3% (3) and 27.1% (BP in control). The unweighted kappas assessing agreement for quality score were 0.62, 0.70 and 0.75 (one for each pairing of two raters). There was moderate correlation between quality score and the degree to which systolic BP was uncontrolled. The graph depicts the percent of patients with each quality score by degree of systolic BP elevation above target (Spearman 0.33, $P = .02$).



CONCLUSION: A quantitative assessment of quality that incorporates the degree of attention providers record for elevated systolic BP demonstrated excellent inter-rater agreement and moderate correlation with systolic BP. Interventions designed to activate providers may want to include visit-specific measures of quality.

VULNERABLE OLDER PATIENTS RECEIVING HIGHER QUALITY MEDICAL CARE HAVE LOWER MORTALITY. T. Higashi[1]; P.G. Shekelle[2]; J.L. Adams[2]; C. Kamberg[3]; C.P. Roth[2]; D.H. Solomon[2]; D.B. Reuben[1]; C. Lillian[1]; M. Catherine[1]; J.T. Chang[1]; R.T. Young[1]; N. Wenger[1]. [1]University of California, Los Angeles, Los Angeles, CA; [2]RAND, Santa Monica, CA; [3]RAND, Washington, DC. *(Tracking ID #115865)*

BACKGROUND: Most performance measures used to assess the quality of medical care rely on process measures, such as the proportion of eligible patients being treated with aspirin after a myocardial infarction or the proportion of older patients given an annual flu shot. A critique of the use of such performance measures has been that quality measured with processes of care may not be related to patient outcomes.
METHODS: The Assessing Care of Vulnerable Elders (ACOVE) project developed a set of quality indicators in 22 conditions important for the care of older patients using a formal process that combines systematic reviews of the literature with multiple levels of multidisciplinary expert clinical judgment. These measures were applied to the care received by a random sample of community-dwelling vulnerable enrollees in two senior managed care plans (N = 372), over a 13 months period. Quality of care was calculated at the patient level as the proportion of eligible quality indicators for which a patient received indicated care based on information obtained from medical records. Mortality over 3-year following the measurement period was obtained from the Social Security Death Index. The link between quality scores and mortality was examined by survival analysis. Logistic regression was used to evaluate the relationship of quality of care to mortality controlling for patient demographics and health status.
RESULTS: The mean age of the sample was 81 years (range: 65–98) and 64% were female. Patients were eligible for a mean of 21 quality indicators (range: 8–54) and received on average 53% of the care processes prescribed in quality indicators (range 27%–88%). Of 372 sampled persons, 84 persons (23%) died during 3-year follow-up. In the half of the sample who received higher quality care (mean quality score: 63%), 17% of persons died, while in the half of the sample who received lower quality care (mean quality score: 44%), 28% of persons died (log-rank test for the survival curves: $P < .001$). Graphical assessment of the relationship between quality scores and 3-year mortality showed a linear relationship of high quality and low mortality. After adjusting for demographics and health status, a higher quality score was associated with lower mortality (OR: 0.69 for a 10% difference in quality scores, 95% CI: 0.52–0.92).
CONCLUSION: There is a strong graded relationship between better performance on ACOVE process measures and 3-year mortality in community-dwelling vulnerable older patients.

WARNING: PUBLIC HOSPITAL PATIENTS DON´T UNDERSTAND PRESCRIPTION WARNING LABELS! P.F. Bass[1]; S. Stephanie[2]; D. Terry[1]; R.M. Parker[3]; C. Arnold[2]; J. McClarty[1]; C. Manning[1]; A. Bocchini[1]. [1]Louisiana State University Health Science Center Shreveport, Shreveport, LA; [2]Louisiana State University Medical Center at Shreveport, Shreveport, LA; [3]Emory University, Atlanta, GA. *(Tracking ID #116068)*

BACKGROUND: Prescription bottles often carry warning labels intended to improve drug safety. Health literacy may be a hidden barrier to understanding the warning labels. The impact of low literacy on comprehension of prescription warning labels (PWL) is poorly studied. We hypothesized that lower literacy would be associated with lower comprehension of PWL.
METHODS: 253 patients from LSUHSC primary care clinics were interviewed and tested to assess literacy [Rapid Estimate of Adult Literacy in Medicine (REALM)] and comprehension of PWL. PWL were shown to patients and a panel of four physicians graded responses as correct or incorrect.
RESULTS: Patients were 71% female, 66% African American, and ranged in age from 14 to 86. 30% read < 6th grade level, 70% read > 7th grade. Patient comprehension of PWL by literacy level is presented in Table 1. In multivariate analysis, literacy (B = 695, $P < .001$) and age (B = −0.195, $P < .001$) werepredictive of comprehension.
CONCLUSION: Single step PWL tended to be better comprehended at all literacy levels than multiple steps PWL. Overall, comprehension improved with literacy level, but decreased with age. This study indicates the need for standardized warning labels featuring short, concise instructions, and pilot testing to ensure comprehension of them in all literacy and age levels.

Label-Multiple Step Instructions	**? 6th grade**	**7-8th grade**	**?9th grade**
Do not take dairy products, antacids … within 1 hour	0%	6%	15%*
Refrigerate… shake well …. discard after	8%	18%	23%*
You should avoid…exposure to direct sunlight	5%	36%	38%*
Label- Single Step Instruction	**<6**	**7-8**	**>9**
For external use ONLY	8%	64%	82%*
DO NOT DRINK alcoholic beverages	43%	65%	64%*
Take with WATER	38%	73%	70%*
Take with FOOD	79%	86%	88%±

*$P < .01$ and ±$P < .05$

WHAT ARE THE BENEFITS AND RISKS OF RETAINER PRACTICE? M. Wynia[1]; G. Alexander[1]; J. Matiasek[2]; S. Arekapudi[3]; S. Taub[2]; J. Kurlander[2]. [1]University of Chicago, Chicago, IL; [2]American Medical Association Institute for Ethics, Chicago, IL; [3]Northwestern University School of Medicine, Chicago, IL. *(Tracking ID #116846)*

BACKGROUND: Retainer practices in medicine, wherein patients pay an up-front fee for special amenities, are becoming increasingly common despite raising some concerns. We conducted the first-ever national survey of physicians, oversampling those in retainer practice, to explore factors associated with physicians choosing retainer practice.
METHODS: Mail survey conducted in late 2003 of a national random sample of 1,096 physicians (44% response rate) and an additional 172 physicians in retainer practice (42% response rate). Retainer physicians were obtained using snowball sampling in all major US cities.
RESULTS: Even among physicians choosing retainer practice, only 50% believe this practice model should be encouraged or strongly encouraged (v 13% of physicians not in retainer practice, $P < .001$); 26% of those not in such practices believe they should be discouraged or illegal (v 3% of retainer physicians, $P < .001$). A majority of both groups agree that physicians in retainer practice risk "peer or community disapproval" (59% v 66%, $P = .296$). Compared to other physicians however, those in retainer practices are much more likely to believe that retainer practices reduce administrative hassles (87% v 56%), provide more time with each patient (99% v 77%), deliver "better quality of care" (90% v 48%), and increase physician revenue (69% v 38%, all p values <0.001). Retainer physicians are also more likely to believe retainer practices offer patients "more diagnostic and therapeutic services" (52% v 35%, $P = .005$), and allow for a "decrease in average number of hours worked" (36% v 18%, $P = .008$). Regarding possible risks of retainer practice, fewer of those in such practices agree that the practices might produce a "tiered system of access to healthcare" (39% v 79%), loss of diversity in one's practice (25% v 61%), or "harm patients unable to afford the retainer fee" (6% v 29%, all p values <0.001). However, they are somewhat more likely to agree that these practices risk losing insurance contracts (55% v 34%, $P = .001$) and could face legal challenges (53% v 30%, $P < .001$).
CONCLUSION: Most physicians believe retainer practices pose some risks, including peer or community disapproval, but those choosing such practices see several countervailing benefits, such as more time with patients, fewer administrative hassles, improved income, and the ability to offer more and better diagnostic and therapeutic services.

WHAT CAN INPATIENTS TELL US ABOUT ADVERSE EVENTS? S.N. Weingart[1]; O. Pagovich[1]; D.Z. Sands[1]; J.M. Li[1]; M.D. Aronson[1]; R.B. Davis[1]; D.W. Bates[2]; R.S. Phillips[1]. [1]Beth Israel Deaconess Medical Center, Boston, MA; [2]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #116360)*

BACKGROUND: Despite recommendations that call for patient involvement in patient safety, little is known about whether hospitalized patients can identify errors and injuries in their care. We sought to elicit incident reports from hospital inpatients in order to identify and characterize adverse events and potential adverse events.
METHODS: We interviewed a prospective cohort of adult inpatients on a medicine unit of a Boston teaching hospital 2–3 times per week during their hospitalization about problems, mistakes, and injuries. We also performed telephone interviews 10 days after discharge. Physician-investigators assessed and classified patients' reports and confirmed events in the medical record. Events were categorized as adverse events (AEs) if patients experienced an injury due to medical care, and as potential AEs if there was a close-call error with the potential for harm. We compared patient-reported events with incidents generated by the hospital incident reporting system. We calculated event rates and used mulitvariable Poisson regression models to examine factors associated with patient-reported AEs or potential AEs.
RESULTS: Of 264 eligible patients, 229 (87%) agreed to participate and subsequently completed 528 interviews. The mean patient age was 63 years (range 19–102), 19% were non-white, 37% were male, 5% required an interpreter, 12% were covered by Medicaid or free care, and the mean length of stay was 4.4 days (range 0–36). Seventeen patients (7%) experienced 20 patient-identified AEs; 1 was serious. Eight patients (4%) experienced 13 potential AEs; 5 were potentially serious or life threatening. Eleven (55%) of 20 AEs and 4 (31%) of 13 potential AEs were documented in the medical record; none were found in the hospital incident reporting system. Patients were more likely to report preventable AEs or potential AEs when a nurse was involved in the event (IRR 2.5, 95% CI 1.1–5.8, compared with a physician reference group), and when patients had four or more drug allergies (IRR 2.8, 95% CI 1.2–6.9, compared with patients who had one or fewer allergies).
CONCLUSION: Inpatients can identify adverse events affecting their care. Many patient-identified events are not captured by the hospital incident reporting system or recorded in the medical record. Engaging patients as partners in identifying medical errors and injuries is a potentially promising approach for improving patient safety.

WHAT DETERMINES TIME TO HAART INITIATION IN INJECTION DRUG USERS VS. NON INJECTION DRUG USERS? G. Chander[1]; R.D. Moore[1]; K. Gebo[1]. [1]Johns Hopkins University, Baltimore, MD. *(Tracking ID #116081)*

BACKGROUND: Previous literature suggests that injection drug users (IDU) experience delays in HAART initiation. We sought to determine whether factors associated with HAART initiation in HIV+ individuals are different in IDUs versus non IDUs.
METHODS: Prospective cohort study at a university-based urban HIV clinic in Baltimore, MD. We included all ART-naïve HIV+ individuals with an enrollment CD4 count ≤350 who enrolled in the clinic between January 1997 and November 2002. HAART was defined as two nucleoside reverse transcriptase inhibitors (NRTI) and a protease inhibitor (PI) or a non-nucleoside reverse transcriptase inhibitor (NNRTI), three NRTIs or a combination of NNRTIs and PIs. The outcome assessed was time to HAART. Variables of interest included, age, race, gender, IDU, CD4 count, HIV-1 RNA, antidepressant use, high-school education, and insurance. Cox proportional hazards regression was used to assess factors associated with time to HAART. Analyses were stratified by IDU.
RESULTS: Between 1997–2002 619 HAART-naïve individuals enrolled in the cohort (mean age 38.9 (SD:9.2), 68% male, 82% African American (AA), 16% Caucasian, 20% MSM, 41% IDU, 52% had heterosexual exposure, 44% had health insurance at baseline, 35% used antidepressants. IDUs were significantly less likely to receive HAART (63% vs. 76% $P < .05$) compared to non-IDUs. On multivariate analysis stratifying by IDU we found differences in several factors associated with HAART utilization comparing IDUs and non IDUs (see table below). Other variables of interest including age, gender, high school education, and the presence of insurance were not significantly associated with HAART initiation in either group.
CONCLUSION: In this HIV cohort, IDU is a major barrier to HAART initiation. Among IDUs advanced immunosuppression and antidepressant use are associated with earlier HAART initiation. African American race is not associated with HAART in IDUs. Among non-IDUs African Americans have delayed HAART initiation. Non-IDUs are more likely to to initiate HAART at higher CD4 counts. Awareness of differences in factors associated with HAART in IDUs and non-IDUs will assist healthcare providers in addressing barriers to HAART.

Factors Associated With Time To HAART in IDUs vs. Non-IDUs

Independent Variable	IDU (Adjusted Hazard (95% CI)	Non IDU (Adjusted Hazard (95% CI)
African American (y/n)	0.72 (0.41–1.26)	0.62 (0.44–0.86)
CD4 >250	0.23 (0.13–0.42)	0.52 (0.36–0.78)
201–250	0.28 (0.13–0.65)	0.63 (0.37–1.04)
151–200	0.46 (0.24–0.87)	0.80 (0.50–1.27)
101–150	0.54 (0.30–0.97)	0.69 (0.41–1.19)
51–100	1.08 (0.65–1.80)	1.10 (0.70–1.74)
<50	1.0 (Reference)	1.0 (Reference)
Antidepressant (y/n)	1.46 (1.02–2.09)	1.22 (0.93–1.66)

WHAT DO AFRICAN-AMERICAN PATIENTS WITH CHRONIC HIP AND KNEE PAIN WANT TO KNOW ABOUT JOINT REPLACEMENT? J.P. Lopez[1]; K. Kwoh[1]; S. Ibrahim[2]. [1]University of Pittsburgh, Pittsburgh, PA; [2]Veterans Administration, Pittsburgh, PA. *(Tracking ID #117029)*

BACKGROUND: Total Joint Replacement is an effective treatment option for end-stage knee/hip osteoarthritis. There is marked racial disparity in the utilization of this effective treatment option. Racial variations in expectations and perceptions regarding joint replacement may contribute to this disparity. We conducted 8 focus group interviews to examine what African-American (AA) patients wanted to know when making decisions regarding joint replacement as a treatment option.
METHODS: Elderly AA men and women with chronic hip/knee pain attending community-based primary care clinic in inner city Cleveland were asked about their thoughts regarding care for their hip/knee arthritis pain and joint replacement as a treatment option. Each 90-minute focus group session was attended by 8–12 invited participants, and was led by a trained moderator and AA facilitator. The sessions were audiotaped and transcribed. Two independent analysts coded the transcripts for thematic structure using NUD*IST® software. The main themes were tabulated, and actual text was analyzed to record specific nodes that emerged from each theme.
RESULTS: Sixty-one patients participated in the focus group sessions; mean age was 63.5 years (range 49–77). The mean years of education was 13 (range 10–22); 75% were Protestant, 12 % were from other Christian denominations and 13% were non-Christian; 49% were married; 58% reported annual household income of less than or equal to $20,000; 72% of the sample were women. Regarding the factors that impact the decision to have surgery, two major themes emerged: 1) The sources of the information obtained, and 2) Types of information needed to make the decision. Regarding the sources of information, patients express a need for information on the experience of the surgeon, input from other doctors, input from books and library sources of information, the Internet, and the experiences of other patients who have had the surgery before. Regarding types of information needed to make a decision, patients want to know what other patient's experiences were after surgery, other treatment options that are available, what to expect from surgery, potential side effects of surgery (such as pain, hospital stay, duration of rehabilitation), and durability of the replacement.
CONCLUSION: In this sample of elderly AA men and women with chronic knee/hip arthritis pain, patients identified specific sources and types of information that would be helpful in deciding about joint replacement surgery.

WHAT EFFECT DOES PHYSICIAN "PROFILING" HAVE ON INPATIENT PHYSICIAN SATISFACTION AND LENGTH OF STAY? J. Zemencuk[1]; S. Saint[1]; R. Hayward[1]; T. Hofer[1]. [1]VA Center for Practice Management and Outcomes Research, Ann Arbor, MI. *(Tracking ID #117132)*

BACKGROUND: Hospitals have substantial financial incentives for implementing cost-effective measures to reduce length of stay (LOS). Physician profiling, where

a physician's practice pattern is explicitly compared with his or her peers, is a proposed method for reducing LOS. Many physicians, however, have a negative view of profiling. We sought to determine if profiling affects physician satisfaction and if it is associated with a change in LOS.
METHODS: LOS data was collected at an intervention hospital and at six control hospitals in the same hospital network over a 4-year period (2 years before and 1 year after a profiling year). During the profiling year, physicians at the intervention hospital were told that their patient LOS for that month would be compared to their peers. During the pre-profiling and profiling years, physicians at the intervention hospital were sent a questionnaire assessing their ward month experience. We tested for differences in physician satisfaction and for a change in LOS associated with profiling occurring beyond ecologic trends, adjusting for patient demographics, diagnoses, and comorbidities.
RESULTS: 74 physicians completed questionnaires (response rate 90%). Nearly 90% of all physicians greatly enjoyed their ward month. 34% of non-profiled physicians agreed that being profiled would cause most physicians to discharge some patients early, while just 8% of profiled physicians felt the same ($P < .05$) and 86% disagreed that being profiled caused them to discharge some patients earlier than they would have normally. More profiled physicians felt indifferent toward profiling than did non-profiled physicians (56% vs. 26%, $P < .05$); however, 46% of profiled physicians reported being more involved than usual in the care of their patients. During the profiling year, the profiled site experienced a significant decrease in LOS (–0.32 days; CI = −0.49 to −0.16; $P < .001$) relative to the non-profiled sites.
CONCLUSION: While a substantial number of profiled physicians reported being more involved than usual in the care of their patients, they were less likely than those not profiled to believe profiling would cause physicians to modify their practice of patient care and more likely to report feeling indifferent toward profiling. Although survey responses suggested profiling would not cause physicians to discharge patients early, after taking into account the background trend and relative to the non-profiled sites, LOS at the profiled site decreased by 1/3 of a day in the profiling year. It appears that physician profiling may be an effective method of reducing LOS without adversely affecting physician satisfaction.

WHAT TAKES SO LONG FOR MY PATIENT TO GET TREATED? N.A. Bickell[1]; M. Rojas[1]; R.M. Anderson[1]; S. Chatterjee[1]; H. Leventhal[2]. [1]Mount Sinai School of Medicine, New York, NY; [2]Rutgers, The State University of New Jersey, New Brunswick, NJ. *(Tracking ID #115830)*

BACKGROUND: Despite the need to quickly diagnose and treat patients with conditions that worsen with passing time such as appendicitis or intestinal obstruction, little is known about the factors that affect the timeliness of treatment once patients access care.
METHODS: We surveyed 353 physicians who first examined 196 appendicitis and 157 intestinal obstruction patients who were treated at 2 urban inner-city hospitals between June 2001 and December 2002. We asked physicians about perceived patient and system attributes and abstracted in- and outpatient records for detailed clinical and time data to understand what affects time to treatment once patients have accessed medical care (system-time). We assessed physician perceived availability of the operating room, imaging studies, consults (Cronbach's alpha = .83), certainty of illness seriousness (Cronbach's alpha = .84), severity of patient pain and how well they knew the patient and used Best Fit Linear Models to determine which clinical, physician perception & system variables affected system-time to treatment.
RESULTS: The median time between first examination and definitive treatment was 9h (9h–151h) for appendicitis patients and 11h (0h–304h) for obstruction patients. 353 "1st examining physicians" completed the survey (67% response): 267 were Emergency Department (ED) and 86 were out-of-hospital physicians. For obstruction patients, after adjusting for patient demographics, illness severity (rebound, fever, pulse >100,WBC count) and treatment type, those who went to the ED first had shorter times (b = –.98; $P < .0001$) and to CT scan, longer times to treatment (b = .36; $P = .06$); physician perceived availability of the operating room, certainty of seriousness and how well they knew the patient did not affect time to treatment [model R2 = .64; $P < .0001$]. Using similar adjustment for appendicitis patients, the presence of rebound (b = –.43; $P < .01$), and going to the ED first (b = –.47; $P < .001$) were associated with shorter system-times, and physician perceived operating room availability (b = .16; $P < .01$), and undergoing a CT scan (b = .65; $P < .0001$) with longer system times [model R2 = 38; $P < .0001$].
CONCLUSION: For patients who have accessed care for conditions in which time can affect health outcomes, location of first examination was associated with shortened and use of CT scan with prolonged time to treatment. Physician perceptions about patients' illness were not associated with time to treatment. Clinical measures of severity had little effect on time.

WHAT WILL TOMORROW BRING? WOMEN´S PERCEIVED RISK OF CANCER. S.T. Wong[1]; T. Denberg[2]; A. Beattie[3]; E.J. Perez-Stable[3]. [1]University of British Columbia, Vancouver, British Columbia; [2]University of Colorado Health Sciences Center, Denver, CO; [3]University of California, San Francisco, San Francisco, CA. *(Tracking ID #116974)*

BACKGROUND: Risk is considered to be the product of the probability of an outcome and the severity of that outcome. Questionnaires are commonly used to measure risk perception, however, these constrain peoples' responses and so make assumptions about how people understand risks. There is less work addressing peoples' understanding of the qualitative nature of risk. The purpose of this study was to qualitatively examine: 1) women's perceived risk of breast, cervical, and colorectal cancer and 2) different methods of conveying risk.
METHODS: Semistructured interviews were transcribed, translated if necessary, and thematically coded using a convenience sample of 24 white, African American, Latino and Chinese women recruited from community settings. Women described their risk of getting cancer and we assessed their ability to understand numerical risk presentations using a variety of formats (relative versus absolute risks).
RESULTS: Women did not voluntarily use numbers to describe risk, but gauged their personal susceptibility on the basis of engaging in "unhealthy" or "stressful" lifestyles and having a family history or personal acquaintances with cancer. Women repeatedly reported their risk of getting cancer as "50/50." When asked to assign percentages to the risk of getting cancer, women reported low risk as 10%–30% and high risk as anything above 50%. Presentation of different numerical or graphical formats rarely helped women understand their risk of getting any of these cancers.
CONCLUSION: Patients may understand the concept of risk differently compared to clinicians and biomedical researchers. While both parties use the same language (e.g. percents) to talk about risk, it is likely that each understands the other differently. The terms "50/50" and 50% were often used as numerical symbols that meant "I don´t know [if I´m going to get cancer]" or "There's always a chance." Patients' interpretation of risk was guided by using heuristics or short cuts in order to simplify the decision making process. Current risk communication methods using numerical and graphical formats may not be effective in helping patients understand cancer risk.

WHAT'S IN A NAME? HEPATITIS AS A GENERIC TERM AND THE SURROUNDING CONFUSION. J.J. Terchek[1]; A.T. Perzynski[1]; E.P. Stoller[1]; C.E. Blixen[2]; S.W. Kanuch[3]; N.V. Dawson[1]; R.C. McCormick[1]. [1]Case Western Reserve University, Cleveland, OH; [2]Cleveland Clinic Foundation, Cleveland, OH; [3]MetroHealth Medical Center, Cleveland, OH. *(Tracking ID #117037)*

BACKGROUND: The word "hepatitis" refers to inflammation of the liver. Medical professionals use "hepatitis" to categorize many diseases of the liver with various causes, symptoms, and treatments. Hepatitis C (HCV) was discovered in the 1970s and initially labeled as non A non B hepatitis. The expansion of knowledge and shift in emphasis from other types of hepatitis has created confusion for HCV patients and the lay public. The objective of this research was to show how generic use of the term "hepatitis" affects the understandings and daily lives of those who confront it.
METHODS: Semi-structured interviews were conducted with 30 HCV positive patients at an urban medical center. Interviews were tape recorded and transcribed verbatim. A team of researchers coded the interviews on paper and electronically with qualitative data analysis software.
RESULTS: Confusion directly related to the term "hepatitis" was mentioned in 13(43%) of the 30 interviews. Areas of individual confusion were related to etiology: "Most people that drink, alcoholics, most of them, get hepatitis C. Someone might call it, I think, alcoholic hepatitis C or something like that. But a lot of them, I know my brother, he has hepatitis C too. You know he was an alcoholic. He never was a drug addict." Further confusion exists between types of viral hepatitis: "It was like A, OK like first it was A, then they checked me again, it was A, B. So, here it is, this has been allowed to progress to the whole produce to that level (Hepatitis C)." Hepatitis C misconceptions among the general public were also a source of social stigma: "I had one woman she said 'it's highly contagious and you can catch it off of anything.' So when I go take a leak at [her] house or get a drink of water, she´d take her bottle of bleach and wipe the toilet off."
CONCLUSION: Rapid advances in scientific medicine and shifting definitions of "hepatitis" have produced a cultural lag for HCV patients and the general public. While the use of the term "hepatitis" may be convenient for health care providers, our research suggests that HCV patients and the general public blur the lines between different types of hepatitis. At least part of the confusion lies in the generic usage of the term hepatitis to categorize diseases of the liver. Misunderstandings at the individual patient level can affect compliance/treatment decisions as well as satisfaction with care. On a larger scale, misunderstandings of the term hepatitis among the general public magnify stigma associated with all types of hepatitis. Effective interventions need to be developed and tested to address these misconceptions.

WHEN TO STOP CPR? VALIDATION OF A CLINICAL DECISION RULE FOR SURVIVAL DURING CARDIO-PULMONARY RESUSCITATION AFTER CARDIAC ARREST. G. Parameswaran[1]; G. Kashlan[1]; M. Doyle[1]; B. Thompson[1]. [1]Unity Health System, Rochester, NY. *(Tracking ID #116356)*

BACKGROUND: Background: Cardio-pulmonary resuscitation (CPR) after cardiac arrest is frequently unsuccessful with low rates of survival to discharge from hospital. A clinical decision rule predicting futility of continuing CPR, for in-hospital cardiac arrests, has been described to have 100% sensitivity. Walraven and colleagues [1] described that if a patient had all three predictor variables (CPR >10 minutes without return of pulse, initial rhythm not VT/VF and un-witnessed cardiac arrest) the chance of survival to hospital discharge is 0%. This decision rule was based on data of in-hospital cardiac arrests Objective: To validate the decision rule described by Walraven and colleagues for in-hospital and out-of-hospital cardiac arrests.
METHODS: Design: Retrospective analysis of CPRs over two years. Setting: A community hospital in Rochester, NY. Patients: All who underwent CPR for cardiac arrest, both in-hospital and out-of-hospital, age >18. Measurements: Patient

demographics, duration of CPR without pulse, initial rhythm and whether cardiac arrest was witnessed. Predictions, based on the three variables described by Walraven and colleagues, for "no chance" of survival and "some chance" of survival were made by one investigator who was blinded to the results of CPR.
RESULTS: Results: Total 117 CPRs analyzed. For patients who had all three variables (duration of CPR without pulse >10 minutes, initial rhythm not VT/VF and non-witnessed arrest) survival to discharge was 0%. Of the 9 patients who survived to discharge, none had all three variables. The predictions based on the decision rule correctly identified all survivors as having "some chance" and all non-survivors as having "no chance".
CONCLUSION: Conclusion: The decision rule based on time of CPR without pulse, initial rhythm and whether cardiac arrest was witnessed, has 100% sensitivity in predicting "no chance" of survival. This applied to out-of-hospital as well as in-hospital cardiac arrests. This decision rule can help physicians in discussions regarding discontinuation of CPR with families of patients. 1. Walraven C v, F.A.J., Stiell I G, Derivation of a Clinical Decision Rule for the Discontinuation of In-Hospital Cardiac Arrest Resuscitations. Archives of Internal Medicine, 1999. 159: p. 129–134.

WHERE´S MY DOCTOR? WHAT DOCTORS DO IN THE MONTHS BEFORE DEATH. J. Hauser[1]; R. Durazo-Arvizu[1]; L. Emanuel[1]. [1]Northwestern University, Chicago, IL. *(Tracking ID #117152)*

BACKGROUND: While there are ample standards and guidelines for physician behavior, there is less known about the specific actions of physicians around the time of death. We sought to describe family caregiver views of physician behavior in the four months preceding death in a nationally representative sample.
METHODS: We analyzed data from patients (PTs) with life-threatening illnesses and their family caregivers (FCGs). Patients were recruited through their physicians from six sites in the United States. Of 1117 eligible PTs, 988 were interviewed along with 893 of their FCGs. A subsequent interview was conducted 4 months later with either the PT or FCG when the PT had died. Of 293 FCGs of PTs who died, 256 (response rate 90.5%) were interviewed and included in this analysis. The face-to-face interview included 150 questions with sections on the PTs health status and symptoms, communication, personal meaning, caregiving responsibilities and economic burdens of care. We performed descriptive analyses to describe physicians' actions with PTs and FCGs
RESULTS: The diagnoses included 51.8% cancer, 18.0% heart disease and 10.9% chronic obstructive pulmonary disease. 87.9% of FCGs identified a physician (MD) as their primary professional caregiver and 11.3% identified a nurse. 54.3% of patients were with MDs less than two years before death. MDs were more likely to discuss advance care planning with PTs than were FCGs: 49.3% of MDs (vs. 38.0% of FCGs) discussed living wills; 49.5% (vs. 39.6% of FCGs) discussed health care proxies and 65.0% (vs. 49.0% of FCGs) discussed resuscitation generally. In terms of overall communication, almost three quarters of PTs (71.1%) were told by their MD that they would eventually die from their illness; however, in only 17.2% of the cases did that change how FCGs made decisions. 83.0% agreed strongly or somewhat that they had "complete trust" in MD and 70.0% agreed strongly or somewhat that their MD provided clear information. However, 12.1% agreed strongly or somewhat that their MD "abandoned" them. FCGs reported that PTs had high degrees of contact with their MDs just prior to and after death: 77.7% of patients had an MD see them in four weeks prior to death. However, of those who received hospice or home care, only 20.7% of MDs subsequently visited PTs. 58.6% of physicians contacted FCGs after death.
CONCLUSION: These data show MDs are more likely to discuss advance care planning with PTs than with FCGs; had excellent communication with FCGs and significant contact with PTs around the time of death. However, a small subset felt "abandoned" by their MD and a significant majority of patients were not visited by their MD after hospice referral. Further work will identify which specific subsets of patients may be at risk for these sub-optimal outcomes.

WHO GETS HIGH QUALITY, EFFICIENT CARE? RESULTS OF A MULTICENTER PNEUMONIA STUDY. E.A. Halm[1]; C. Horowitz[1]; A. Silver[2]; Y. Dlugacz[3]; A. Fein[2]; B. Hirsch[2]; M. Chassin[1]. [1]Mount Sinai School of Medicine, New York, NY; [2]Long Island Jewish Hospital, New Hyde Park, NY; [3]North Shore Univ. Hospital, Manhasset, NY. *(Tracking ID #115899)*

BACKGROUND: Significant variations in the quality and efficiency of hospital care for community-acquired pneumonia (CAP) have been well-documented. We evaluated whether the sickest patients (Pts) were more likely to receive high quality care according to national quality indicators and less sick Pts were more likely to be treated efficiently.
METHODS: We collected detailed clinical data on a consecutive cohort of eligible adult inpatients with CAP during 2 pneumonia seasons (12/99 to 3/00 and 11/00 to 3/01) at 4 hospitals. All cases had signs, symptoms, and CXR evidence of CAP. Data included: sociodemographics, Pneumonia Severity Index (PSI), comorbidities, antibiotic (Abx) selection and timing, blood culture performance, oxygenation (02) assessment, time to clinical stability, and delays in switching to oral Abx, delays in discharge (DC), and stability on DC. We stratified performance on national (CMS/JCAHO) CAP quality indicators and efficiency measures by PSI risk class (Low risk-Class I-III, Moderate risk-Class IV, and High risk-Class V) using Mantel-Haenszel trend tests and Wilcoxon rank sum tests.
RESULTS: We abstracted the charts of 2094 of 2109 (99%) cases. The mean age was 72 yrs, 54% were female, 64% were White. According to the PSI, 44% of Pts were low risk, 37% moderate risk, and 19% high risk. On the quality measures, Pts who were sicker were more likely to have blood cultures (Cx) done (low risk 84%, moderate risk 86%, and high risk 92%, $P < .0001$), have Cx done before Abx (77%, 80%, 84%, $P < .0001$), and have 02 assessment (96%, 97%, 99%, $P < .01$). In contrast, sicker Pts were less likely to receive national guideline appropriate Abx regimens (86%, 81%, 67%, $P < .0001$) and more likely to be DCed prior to reaching clinical stability (85%, 76%, 50%; $P < .0001$). There was no association between PSI scores and receiving 1st dose of Abx within 8 hrs (72%, 76%, 74%) or within 4 hrs (57%, 60%, 59%). With regard to the efficiency measures, while pneumonia severity did influence length of stay ($P < .0001$), it did not influence mean time from ER to ward arrival (18, 16, 16 hrs), switch to oral Abx within 24 hrs of stability (40%, 42%, 40%), or DC within 24 hrs of stability (29%, 28%, 25%).
CONCLUSION: Pts at higher risk received higher quality of care on some measures and poorer quality on others, though rates were suboptimal across all strata of severity. Pts who were less sick did not receive more efficient care. Failure to deliver high quality, efficient care likely represents system failures rather than clinical characteristics. Better systems are needed to assure high quality care for all, but particularly for those at highest risk.

WHO'S THERE? FAMILY CAREGIVERS IN THE MONTHS BEFORE DEATH. J. Hauser[1]; R. Durazo-Arvizu[1]; L. Emanuel[1]. [1]Northwestern University, Chicago, IL. *(Tracking ID #117136)*

BACKGROUND: While there is literature on the needs of patients' families and the impact of patients' death on families, less is known about specific circumstances of families around the time of death. We sought to describe the circumstances of family caregivers in the four months preceding death in a nationally representative sample.
METHODS: We analyzed data from patients (PTs) with life-threatening illnesses and their primary family caregivers (FCGs). Patients were recruited from six sites in the United States. Of 1117 eligible PTs, 988 were interviewed along with 893 of their FCGs. A subsequent interview was conducted 4 months later with FCG of PTs who died. Of 293 FCGs, 256 (response rate 90.5%) were interviewed and included in this analysis. The interview included 150 questions on PTs' health status and symptoms, communication, personal meaning, caregiving responsibilities and economic burdens of care. We performed descriptive analyses to describe the experience of caregiving.
RESULTS: The diagnoses included 51.8% cancer, 18.0% heart disease and 10.9% chronic obstructive pulmonary disease. 59% of the sample received hospice care. In terms of communication between PT and FCG, 70.3% became closer during the the illness. 33.6% of the time, another family member became more involved during the illness. 50% of FCGs talked freely about end of life (EOL) care with PT; 46.9% discussed finances; 58.2% discussed religion. 93.3% of the time FCGs found it helpful to discuss these topics with PTs. In terms of the caregiving experience itself, 91.8% of FCGs found it "meaningful or fulfilling" while 47.3% felt "lonely" some or all of the time. 78% of FCGs helped with nursing care; 76% with transportation; 90.8% with homemaking; 70.7% with personal care and 80.1% with legal or financial issues. For 21.7% of FCGs the experience changed their own ideas about end of life care. In the last four months of life, 75.8% of PTs were admitted to hospital at least once. 31.3% died in hospital and 46.5% died at home. For 64.5% of these PTs, these locations were where they wanted to die. FCGs were in same room at death as the PT 52.3% of the time. 49.2% of the time other family members were there. In 12.5% of cases a nurse was there and 4.3% of cases an MD. PTs in hospice had significantly higher levels of communication and advance care planning than PTs not in hospice.
CONCLUSION: These data show that a majority of FCGs became closer to PTs during serious illness, found caregiving meaningful, had generally good communication with PTs and contribute significantly to PTs physical care. However, while a vast majority found it helpful to discuss EOL care with their PTs, half did not have these discussions. A majority of PTs die where they want to and at the time of death, a slight majority of FCGs are with PTs.

WHY DOES IT SEEM TO TAKE SO LONG FOR PATIENTS TO GET TO NEEDED CARE? N.A. Bickell[1]; M. Rojas[1]; R.M. Anderson[1]; H. Leventhal[2]. [1]Mount Sinai School of Medicine, New York, NY; [2]Rutgers, The State University of New Jersey, New Brunswick, NJ. *(Tracking ID #115836)*

BACKGROUND: For serious common conditions in which passing time worsens health outcomes, little is known about factors that affect the time between a patient's onset of symptoms and first encounter with medical care (patient-time).
METHODS: We identified and shortly after their treatment surveyed 224 appendicitis and 152 intestinal obstruction patients treated at 2 urban inner-city hospitals between June 2001 & December 2002 and abstracted in- & outpatient records for detailed clinical and time information. We assessed patients' perceived severity of pain, having a regular doctor, knowing a doctor to call, past symptom experience (Cronbach's alpha = .76), seriousness of condition (Cronbach's alpha = .74), stoicism (Cronbach's alpha = .75), comfort seeking care (Cronbach's alpha = .69), discrimination (Cronbach's alpha = .67) and prior health status, and used Best Fit Linear Models to determine which clinical factors affected patient-time to first examination.
RESULTS: The median time between symptom onset and 1st examination was 24h (0h–720h) for appendicitis and 24h (2h–600h) for obstruction patients. On average, appendicitis patients were 35y (5y–87y) & 35% had Medicaid or no insurance; obstruction patients were 53y (2y–95y) & 26% had Medicaid or no insurance. Appendicitis patients who perceived the condition's seriousness (b = .46; $P = .0001$),

were in severe pain (b = –.06; $P = .07$) and whose health status had been good (b = .24; $P < .01$) came to care more quickly (model $R^2 = .20$; $P < .0001$). Obstruction patients who were older (b–.01; $P < .05$), male (b = .47; $P < .05$) and Black or Hispanic (b = .65; $P < .05$) had longer times to access care (model $R^2 = .18$; $P < .001$); clinical severity & measured perceptions were not associated with time to care.
CONCLUSION: Factors affecting time between symptom onset and first examination differ by condition. For appendicitis patients, perception about the condition's seriousness and prior good health were associated with quicker access of needed care. Neither patient beliefs about the health system, having a regular doctor and knowing whom to call, insurance, education nor clinical severity appear to affect the amount of time between symptom onset and first examination for these time-sensitive serious conditions.

WHY RESIDENTS FAIL TO ANSWER THEIR CLINICAL QUESTIONS: A QUALITATIVE STUDY. T.R. Ruff[1]; M.L. Green[1]. [1]Yale University, Waterbury, CT. *(Tracking ID #116194)*

BACKGROUND: Physicians fail to pursue answers to most of their clinical questions, despite exhortations to practice evidence-based medicine (EBM). While studies have revealed several EBM barriers among practicing physicians, residents may face obstacles unique to their status as trainees. We conducted a qualitative study to explore residents' experience in trying to answer their questions.
METHODS: We studied residents in a university-based internal medicine program. They rotate through 1 university hospital, 2 community hospitals, 2 hospital based clinics, and several community private practices. A professional facilitator convened and audiotaped 3 focus groups, following a discussion guide. The key question elicited the barriers residents encountered in attempting to answer their clinical questions. We performed a thematic analysis of the transcripts, using common coding techniques and the constant comparison method of analysis. In an iterative process, 2 investigators met after independently analyzing each of the transcripts to compare coding structures, review theme exemplars, and reach consensus for differences. We presented our classification scheme to a post hoc focus group of residents to confirm that it represented their experience.
RESULTS: Thirty-four residents (PG1-10, PG2–11, PG3–13), representing 54% of the residents in the categorical program, participated in the focus groups. Thematic saturation was reached by the third group. Eight main themes emerged among the many EBM barriers identified by the residents. Based on the reported experience of practicing physicians and our own observations, we anticipated the 4 technical or pragmatic themes, which included access to medical information, skills in searching information resources, clinical question tracking, and time. The remaining 4 attitudinal or cultural themes, however, did not reflect prior studies. These included clinical question priority, personal initiative, team dynamics, and institutional culture. Our analysis suggested a conceptual model in which residents may encounter different barriers in every step of the EBM process. In particular, attitudinal or cultural barriers may lead a resident to abort the pursuit of a question before some of the technical barriers would be encountered.
CONCLUSION: Residents face EBM barriers unique to their status as trainees. While increased informatics training and reliable, rapid, and point-of-care access to electronic information resources remain necessary, they are not sufficient to help residents answer more of their clinical questions. Educators must also attend to their attitudes toward learning and larger programmatic and institutional cultures.

"WILL I PASS THE BOARDS?" CORRELATION OF THE IN-TRAINING EXAM WITH OUTCOME ON THE ABIM CERTIFYING EXAMINATION. S.F. Babbott[1]; K.T. Hinchey[1]; B. Beasley[2]; J.W. Blotzer[3]; Y. Xu[4]; E.S. Holmboe[5]. [1]Baystate Medical Center, Springfield, MA; [2]University of Missouri-Kansas City, Kansas City, MO; [3]York Hospital, York, PA; [4]University of Massachusetts, Amherst, MA; [5]Yale University, New Haven, CT. *(Tracking ID #117084)*

BACKGROUND: The In-Training Examination (ITE), originally designed to assess residents' knowledge in internal medicine in the PGY2 year, is currently taken by residents in all three years and used as part of preparation for the American Board of Internal Medicine Certifying Exam (ABIM-CE). Prior studies have correlated the second year ITE with the ABIM-CE outcome. We studied residents completing all three ITEs to correlate ITE scores and ABIM-CE outcome, and to enhance our ability to advise residents, particularly identifying those residents at risk for failing the boards.
METHODS: All ITE scores (percentile and percent items correct) and ABIM-CE results (date of first test and pass/fail outcome) for graduates from 2000, 2001 and 2002 were obtained from three Internal Medicine residency programs. All IRBs approved the study. ROC analysis provided the most accurate cut-offs to predict ABIM passing at each PGY for residents who took all three ITEs. Sensitivity, specificity, PPV, NPV and overall correct classification are reported.
RESULTS: All 109 graduates had taken at least one ITE; 10 did not take the ABIM-CE, leaving 99 subjects. Of those, 77 had taken the ITE for all three years (55% male, equal numbers of graduates in each year, 84% USMG). Results shown in Table.
CONCLUSION: This study demonstrates the predictive ability of the ITE during each of the three years of residency. Limitations of this study include no knowledge of the test taking skills of the resident, nor the preparation methods or effort employed. Further studies should focus on the residents 'at risk', and the outcomes of interventions to help those residents such as study skills and test taking skills for high stakes examination.

ITE Results and ABIM-CE Outcome

% items correct	Cut-off	Sens	Spec	PPV	NPV	Correct Class
PGY 1	46%	81.0%	89.5%	95.9%	61.7%	83.1%
PGY 2	53%	86.2%	84.2%	94.3%	66.7%	85.7%
PGY 3	57%	82.8%	84.2%	94.1%	61.5%	83.1%
%ile rank	Cut-off					
PGY 1	21%	81.0%	78.9%	92.2%	58.7%	80.5%
PGY 2	23%	82.8%	84.2%	94.1%	61.5%	83.1%
PGY 3	21%	86.2%	94.7%	98.0%	69.2%	83.3%

WILL PHYSICIANS ACCEPT A DECISION SUPPORT SYSTEM FOR HYPERTENTION MANAGEMENT (ATHENA DSS)? A.S. Chan[1]; M. Steinman[2]; M.A. Fischer[3]; M. Shlipak[2]; H.B. Bosworth[4]; E.Z. Oddone[4]; B.B. Hoffman[5]; M.K. Goldstein[6]. [1]Stanford University, Stanford, CA; [2]University of California, San Francisco, San Francisco, CA; [3]University of Massachusetts Medical School (Worcester), Worcester, MA; [4]Duke University, Durham, NC; [5]Harvard University, West Roxbury, MA; [6]Stanford University, Palo Alto, CA. *(Tracking ID #117161)*

BACKGROUND: Decision support systems (DSS) are designed with the intention of operationalizing clinical practice guidelines. Within the VA electronic medical record system (CPRS), we designed the ATHENA DSS (Assessment and Treatment of Hypertension: Evidence-Based Automation Decision Support System), an evidence-based tool to deliver patient-specific, guideline-based treatment advisories to clinicians. In this study, we assessed the attending physicians' acceptance and evaluation of ATHENA DSS.
METHODS: At the completion of a randomized trial to evaluate the evaluate the efficacy of ATHENA DSS for improving blood pressure control, participants assigned to the intervention were surveyed regarding their impressions of the utility of ATHENA DSS. Responses were recorded using a 4-item Likert scale, which we dichotomized for our analysis.
RESULTS: The response rate of attending physicians in the intervention group of the study was 64% (28/44). A majority of clinicians (57%) found ATHENA DSS sometimes or often useful, rating among its most beneficial effects as assisting providers to consider management of hypertension (50%), intensify the patient's hypertensive treatment (39%), and change the choice of antihypertensive therapy to guideline-based medication choices (36%). Over 70% found that the visual presentation and the ease of navigation in ATHENA DSS to be good or excellent. Eighty-nine percent found ATHENA DSS easy to exit to return to CPRS, suggesting that its presence did not interfere with clinical workflow. Nearly two-thirds reported interest in the option of continued use of ATHENA DSS after completion of the study.
CONCLUSION: Clinicians in the ATHENA DSS trial indicated acceptance of a decision support system that delivers patient-specific, guideline-based treatment recommendations at the point-of-care.

WOMEN, ALCOHOL, AND ADHERENCE TO ANTIRETROVIRAL THERAPY. K.M. Berg[1]; P.A. Demas[1]; A.A. Howard[1]; E.E. Schoenbaum[1]; M.N. Gourevitch[1]; J.H. Arnsten[1]. [1]Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, NY. *(Tracking ID #116634)*

BACKGROUND: Adherence to complex medication regimens is necessary to achieve clinical and survival benefits of antiretroviral therapy. Though some studies have found adherence to be poorer among women, a consistent relationship between gender and adherence has not been demonstrated. Social and behavioral factors, including social network factors and drug and alcohol use, have been associated with adherence but it is unknown if these factors affect adherence differently in men and women. Since the observed relationship between gender and adherence to HAART may be confounded by unexamined factors, our objective was to examine gender differences in social and behavioral factors associated with adherence.
METHODS: We conducted a six month prospective cohort study of 113 HIV-seropositive current or former opioid users in a methadone maintenance treatment program. Participants were surveyed at baseline about social and behavioral characteristics, including housing status, social networks, and depression. Additional surveys conducted at monthly research visits assessed medication side effects and active drug and alcohol use. Electronic monitors (MEMS) were used to measure adherence with all antiretrovirals, calculated as the percent of doses taken as prescribed. "Problem alcohol use" was defined as: (1) drinking at least 5 drinks on one occasion, or (2) drinking frequently ("several days per week" or "every day") at any time during the study period. Gender stratified multivariate linear regression models were constructed to identify possible interaction terms, which were then tested in a final model including both men and women.
RESULTS: Median adherence among women was 27% lower than among men (46% v. 73%, $P < .05$). In the final multivariate model, adjusted for depression, worse adherence was associated with lack of long term housing ($P < .005$), not belonging to any HIV support groups ($P < .0005$), presence of 2 or more medication side effects ($P < .0005$), active crack or cocaine use ($P < .01$), and the interaction between female gender and problem alcohol use ($P \leq .05$).
CONCLUSION: In this cohort of current and former drug users, factors associated with worse adherence included medication side effects, lack of long term housing, not belonging to any HIV support groups, and active crack or cocaine use. In addition, for women, adherence to antiretrovirals was associated with problem alcohol use. Because problem drinking among women has a particularly harmful impact on adherence, strategies to improve antiretroviral adherence among women should focus on identifying and treating alcohol use disorders.

WOMEN'S DISCUSSIONS AND USE OF BREAST CANCER PREVENTION THERAPIES IN A MULTIETHNIC COHORT. C.P Kaplan[1]; E.J. Perez-Stable[1]; K.M. Kerlikowske[1]; G. Des Jarlais[1]; J.S. Haas[2]. [1]University of California, San Francisco, San Francisco, CA; [2]Brigham and Women's Hospital, Boston, MA. *(Tracking ID #117357)*

BACKGROUND: Little is known about patients' knowledge and usage of breast cancer preventive therapies (BCPTs). We assessed women's discussions and use of chemoprevention, genetic testing, and preventive surgery in four racial/ethnic groups.
METHODS: In 2002–03, we recruited women ages 40–75 with no personal history of breast cancer or breast lumps through the San Francisco Mammography Registry. The sample was stratified by race/ethnicity (Asian American/Pacific Islander (API), Black, Latina, and White) and breast cancer risk level (high vs. low). High risk was defined by a Gail risk score of at least 1.67%. Telephone surveys were completed in English, Spanish or Cantonese. The outcome measures were whether participants had ever discussed with a clinician or used tamoxifen, raloxifene, genetic testing, or preventive surgery.
RESULTS: Of the 1700 participants, approximately 21% were API, 19% Black, 19% Latina, and 40% White. 54% were high risk. The mean age was 54 (SD 8). 65% were born in the US, 78% had at least some college, and over 90% had health insurance. Findings are presented below by racial/ethnic group for the total sample. For all BCPTs except surgery, there were significant differences among racial/ethnic groups. Among high risk women (n = 921), 6% had discussed tamoxifen with a clinician, 5% raloxifene, 6% genetic testing, and 7% preventive surgery. 17% had discussed any therapy and 5% had used any therapy. For all therapies, high risk White women reported a higher prevalence of discussion than minority women.
CONCLUSION: White women discuss BCPTs with clinicians in higher proportions. The prevalence of discussions are very low, even among high risk women.

Discussion and Use of Breast Cancer Prevention Therapies, by Racial/Ethnic Group

	API (%)	Black (%)	Latina (%)	White (%)	TOTAL (%)
Tamoxifen	3	4	2	6	4
Raloxifene	4	1	1	6	4
Genetic testing	2	2	2	7	4
Preventive surgery	3	5	5	7	5
Any therapy	10	10	9	16	13