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ABSTRACTS

PATIENT-CENTERED RESEARCH

ANTIBIOTIC USE FOR ACUTE EXACERBATIONS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN HOSPITALIZED PATIENTS. S. Ades, S. Duggan, and D. Farquhar, Queen's University, Kingston, Ontario.

Acute exacerbations of chronic bronchitis (AECB) are a common reason for hospital admission. Although antibiotic therapy (ABT) has been shown to be useful in the management of outpatients with 'Type I' exacerbations (defined as a triad of worsening dyspnea, increased sputum volume, and change in sputum appearance), evidence supporting its use in the management of hospitalized patients is lacking. In order to characterize local patterns of ABT usage in patients requiring hospitalization for AECB, we conducted a retrospective audit of the care provided to this patient population at the two acute care hospitals affiliated with our institution.

The records of all patients who were hospitalized for AECB over an eight month period were reviewed. Using a standardized data extraction form, information concerning the following variables was collected for each patient: age, gender, comorbidities, smoking history, presenting symptoms and signs, x-ray findings, FEV1, arterial blood gases, leukocyte count, ABT usage, and length of hospital stay. Analyses were performed to determine whether any of these variables were associated with the decision to treat with intravenous ABT.

During the audit period, 57 patients required hospitalization for AECB. Of these, 40 (70.2%) were treated with intravenous (IV) ABT, 11 were treated with oral (PO) ABT, and only 6 (10.5%) were treated with no ABT. Characteristics of patients who received IV ABT were compared with those of patients who received PO or no ABT:

Variable	IV ABT (n=40)	PO or no ABT (n=17)	p-value
Age (yrs)	71.3 +/- 8.7	70.4 +/- 8.4	0.72
% Male	47.5%	58.8%	0.43
FEV1 (litres)	1.04 +/- 0.38	0.99 +/- 0.41	0.76
% Temp>38C	28.2%	5.9%	0.06
% Type I AECB	10.0%	11.76%	0.84
% With new X-ray infiltrate	29.7%	0.0%	0.01
PO2 (mmHg)	74.4 +/- 34.1	78.8 +/- 81.8	0.78
PCO2 (mmHg)	59.1 +/- 28.3	49.1 +/- 14.2	0.19
Length of stay (dys)	10.2 +/- 10.4	5.6 +/- 3.1	0.09

We found a surprisingly high prevalence of ABT,despite a relatively low prevalence of Type I exacerbations. Apart from a higher prevalence of fever and new radiographic infiltrate, patients treated with IV ABT appeared similar to patients treated with PO or no ABT. Our data suggest a need for more explicit guidelines in the use of ABT in hospitalized patients with AECB.

ANTIHYPERTENSIVE RESPONSE TO SUBLINGUAL CAPTOPRIL PREDICTS EFFECTIVENESS OF ORAL CAPTOPRIL. Atul Aggarwal Department of Medicine, State University of New York Health Science Center, Syracuse, NY.

Introduction: The choice of first line anti-hypertensive agent for each patient is made by physician predilection or by hit and trial method. The study was designed to see if there is any predictive value of blood pressure (BP) drop with sublingual captopril in guiding long term antihypertensive treatment with this drug.

Methods: Thirty patients with uncomplicated essential hypertension (Diastolic BP 100 to 114 mm Hg) were given 12.5 mg. of sublingual captopril on Day 1 of the study and the heart rate (HR) and BP were recorded for six hours. Patients were then given oral captopril 25 mg. twice daily and examined at weekly intervals for HR and BP recording for 3 weeks.

Results: Sublingual captopril caused a progressive fall in BP, starting at 15 minutes and peak effect at 1 hour. Three weeks after treatment with oral captopril 25 mg. twice daily, supine BP fell from 171±3.3/104.1±0.4 mm Hg to 155.1±3.3/93.0±1.4 mm Hg. An excellent correlation was obtained between Diastolic BP fall at 1 hour with sublingual captopril and Diastolic BP fall at weeks 2 and 3 with oral captopril (r=0.86,p 0.001). Satisfactory responders to oral captopril demonstrated much greater fall in BP with sublingual captopril, once again showing a positive correlation between the two. For each 2 mm Hg BP drop after sublingual captopril, accuracy for predicting satisfactory BP reduction at 3 weeks was calculated.

Conclusion: An 8 mm Hg fall in Diastolic BP one hour after sublingual captopril detects the maximum number of satisfactory responders to oral captopril with a sensitivity of 100% and specificity of 83%.

IS ANTIBIOTIC PROPHYLAXIS FOR BACTERIAL ENDOCARDITIS EFFECTIVE? Z Agha, RP Lofgren, J VanRuiswyk, J Mohsin. Division of General Internal Medicine, Medical College of Wisconsin and Clement J. Zablocki VAMC Milwaukee, Wisconsin.

Antibiotic prophylaxis for bacterial endocarditis is recommended by American Heart and American Dental Association prior to undergoing certain medical and dental procedures. Whether antibiotics are effective in preventing endocarditis is not clear.

We have conducted a meta-analysis of published literature on effectiveness of endocarditis prophylaxis. An electronic search of the MEDLINE (1966-98), HealthSTAR (1975-98) & Current contents (1998) databases using the MESH terms "endocarditis" and "antibiotic prophylaxis" was conducted. Only 4 human case control studies that addressed antibiotic effectiveness in preventing endocarditis as a primary (studies 1 & 2) or secondary goal (studies 3 & 4) were identified. Cases are defined as patients with underlying cardiac lesion who underwent a medical or dental procedure requiring antibiotic prophylaxis and developed endocarditis. Controls had similar cardiac lesions and procedure indication but did not develop endocarditis. Data on antibiotic use in cases and controls is compared, odds ratios (OR) and protective efficacy of antibiotic prophylaxis (1-OR) are calculated. After testing for heterogeneity we used the Mantel Henzel (MH) procedure for calculating pooled odds ratio.

Antibiotic use was infrequent in all four studies (Table 1). Only study # 2 showed a protective effect that was statistically significant. The MH pooled odds ratio showed that antibiotic prophylaxis has a small benefit - protective efficacy of 20% and at best the protective efficacy is 50%, but these results are not statistically significant.

Table 1. Antibiotic Prophylaxis Use and Odds of Developing Endocarditis.

Study #, Author & Year	Case (n)	Control (n)	% Antibiotic use Case	Control	OR (95 CI %)
1. Van Der Meer et al, 1992	28	96	29	26	1.2 (0.5-2.9)
2. Imperiale et al, 1990	8	24	12	62	0.09 (0.0-0.7)
3. Lacassin et al, 1995	26	22	23	27	0.8 (0.2-2.8)
4. Strom et al, 1998	104	17	23	18	1.4 (0.4-4.9)
* MH pooled OR	166	159			0.8 (0.5-1.5)

* Mantel Henzel Test for Heterogeneity p = 0.18

Based on the available literature we conclude that antibiotic prophylaxis may not be very effective strategy for preventing bacterial endocarditis. Current recommendations for prophylaxis lack evidence and need to be re-examined.

IS IT STILL ETHICAL TO USE PLACEBOS IN CLINICAL TRIALS OF HYPERTENSION? Sana M. Al-Khatib and Jeremy Sugarman. Duke University Medical Center, Durham, North Carolina.

OBJECTIVE. To determine whether the use of placebos in clinical trials of hypertension is safe.

METHODS. We retrieved reports of clinical trials of hypertension using the 1997 postings in MEDLINE and the Cochrane database. Only randomized clinical trials whose objective was to assess the efficacy of an antihypertensive agent(s) and which used placebo were included. The number of serious adverse events (stroke, myocardial infarction, congestive heart failure, and cardiovascular death) and the number of patients withdrawn from the study due to poorly controlled hypertension were recorded. Differences between groups were tested with odds ratios.

RESULTS. Sixty studies were included in the final analysis, twenty of which were conducted in the United States. Thirty-one reports included adequate safety data for our review. In these studies, serious adverse events were attributed to placebo use in 4 studies (12.9%). Patients in the placebo group were 1.7 times more likely to have a serious adverse event as compared to patients in the active treatment group (95% C.I. 1.36-2.12). Treatment failure, manifested by poorly controlled hypertension, was attributed to placebo use in 5 studies (16.13%). Patients administered placebo were 9.7 times more likely to withdraw from the study due to treatment failure than patients receiving active treatment (95% C.I. 3.22-29.08).

CONCLUSION. To ensure patients' safety and to comply with the ethical principles that should govern all medical research on human subjects, as put forth by national and international ethical standards, clinical trials should compare the experimental therapy to treatment of proven value, if this treatment exists, rather than to placebo. Accordingly, the use of placebos in clinical trials of hypertension should, in most cases, be abandoned since it is both unsafe and unethical.

QUIT FOR LIFE: A RANDOMIZED TRIAL OF CULTURALLY SENSITIVE MATERIALS FOR SMOKING CESSATION IN AFRICAN AMERICANS Jasjit S. Ahluwalia, Kimber P. Richter, Matthew S. Mayo, Ken Resnicow. Departments of Preventive Medicine and Internal Medicine and Kansas Cancer Institute, Univ. of Kansas School of Medicine, Kansas City, KS. Dept of Behavioral Sciences and Health Education, Emory Univ School of Public Health, Atlanta, GA

Quit rates in inner-city African American (AA) smokers are lower than the general population. Some data suggests that the use of culturally sensitive (CS) interventions may enhance quit rates.

We conducted a randomized, investigator-blinded trial, examining the effects of CS materials on rates of smoking cessation. All patients received 8 weeks of nicotine patches, booster phone calls at weeks 1 and 3, and booster postcards at months 3 and 5. Patients in the CS arm received a culturally tailored videotape (Kick-It) and guide (Pathways to Freedom) designed specifically for AAs. Patients in the control group received a commonly available videotape and guide (Freedom from Smoking) that was designed for the general population. Primary outcome measures included self-reported continuous abstinence at 4 weeks and 30-day abstinence at 6 months. A secondary measure included change in the number of cigarettes smoked per day.

We enrolled 500 patients from outpatient clinics; 250 were randomly assigned to each arm. Patients returned for brief assessment at 4 weeks and 6 months.

Table 1 Sociodemographics	CS	Standard
Mean age	42.8	43.1
% Female* ($p < 0.05$)	55%	65%
% Less than high school	26%	23%
% Uninsured	59%	57%
Mean # cigarettes smoked	17.9	18.0
Mean # years smoked	25.3	25.4
Mean # quit attempts past year	2.2	2.2

Table 2 Cessation Outcomes	CS	Standard
4 Week – % Continuous abstinence	20.4%	24.0%
6 Months – 30 day abstinence	17.2%	14.8%
Mean ↓ # cigarettes smoked 4 wks/6 months	9.4/6.3	9.4/6.8

Data revealed no significant outcome differences between CS and standard interventions. However, both interventions did lead to a significant reduction in the number of cigarettes smoked at 4 weeks and 6 months ($p<0.001$). In addition, a number of smokers were abstinent at 4 weeks and 6 months.

We conclude with considerations in evaluating the efficacy of culturally tailored materials and recommendations for future intervention and research.

CAN A SIMPLE INTERVENTION INCREASE PRIMARY CARE PROVIDER RECOGNITION OF PATIENT REFERRAL CONCERNS AND IMPROVE PATIENT SATISFACTION? Gail Albertson, C. T. Lin, Lisa Schilling, Elizabeth Cyran, Susan Anderson and Robert J. Anderson, University of Colorado Health Sciences Center, Denver, CO.

Background: We recently reported that 45% of ambulatory patients seen by general internist primary care providers (PCPs) in an academic setting have a specialist referral expectation and that this expectation is not recognized by PCPs in 27 to 56% of patients.

Objective: To determine if a simple intervention, (a brief pre-visit patient questionnaire asking about referral need), can increase PCP recognition of patient referral concerns and improve patent visit satisfaction.

Methods: Patients completed a brief pre-visit questionnaire asking about health status and referral need and a post-visit questionnaire asking whether a referral was discussed, estimated visit duration and visit satisfaction. PCPs completed a post-visit questionnaire asking whether a referral was discussed and made, estimated visit duration and visit satisfaction. For two months of the study, patient pre-visit questionnaires remained confidential (control phase), while for another two months, PCPs were shown the patients' questionnaires at the time of the encounter (experimental phase).

Results: The 781 patients seen in the control phase and the 714 patients seen in the experimental phase did not differ significantly with respect to % seeing their usual PCP, gender, self-rating of overall health and degree of worry about health. About 50% of patients in both phases of the study expressed a need for referral to a specialist. This self-perceived referral need was expressed as "possible" in 32% and "definite" in 18% of patients in both study phases. The experimental intervention significantly increased PCP referral recognition from 61 to 81% ($p<.001$). Increased PCP recognition of patient referral need was not associated with a difference in absolute referral rate (28% of control visits, 27% of experimental). The intervention also did not increase either patient- or PCP-estimated visit duration. The intervention was associated with a modest but significant increase in % of patient rating the visit at the highest level on a 1 (lowest) to 5 (highest) Likert scale (from 62 to 69%, $p<.05$) while not significantly increasing mean visit satisfaction score (4.51 ± 0.03 control to 4.57 ± 0.03 experimental, $p=0.19$). Provider satisfaction with the visit was rated comparably in both study phases of the study.

Conclusion: A brief pre-visit patient referral agenda form, which was used by more than 80% of PCPs, increases PCP recognition of patient referral need and perhaps visit satisfaction while not increasing either visit duration or number of referrals.

RACIAL DISPARITY IN THE CLINICAL MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION. J. Allison, C. Kiefe, N. Weissman, J. Canto, R. Centor, R. Farmer. Dept of Medicine. University of Alabama at Birmingham.

Background: Much has been written about racial disparities in the management of cardiovascular disease, especially regarding invasive procedures such as angioplasty and coronary artery bypass grafting. Less is known about racial disparities in the medical management of cardiovascular disease. Therefore, we sought to compare the medical treatment of African American and White Medicare patients with acute myocardial infarction (AMI) using an existing national data set.

Methods: Centrally-trained abstractors established the Cooperative Cardiovascular Project data set by retrospective medical record review of a proportional sample of Medicare admissions from 6,684 hospitals with a principal discharge diagnosis of AMI (March 4, 1994 -June 30, 1995). We had 195,832 patients for this analysis after excluding patients less than 65 years old and those of ethnicity other than African American or White. We ascertained use of acute reperfusion, β-blockers, aspirin, and angiotensin converting enzyme inhibitors (ACE-I) among patients who were clinically indicated for therapy. Using multivariable analysis, we adjusted for demographics, severity of illness, and comorbidity.

Results: Of the 13,234 African American (AA) patients, 55% were female and 45% were male, and of the 182,598 White patients, 46% were female and 54% were male. AA patients were younger (mean age 72 versus 75, p<0.05), more acutely ill (mean APACHE II 9.8 versus 9.2, p<0.05), and more likely to be diabetic (94% versus 68%, p<0.05), hypertensive (51% versus 38%, p<0.05), and have chronic renal insufficiency (23% versus 12%, p<0.05). The table below compares the utilization of each therapy. (N is number of patients clinically indicated for each therapy.)

		Unadjusted Utilization Rates (%)		Adjusted Odds Ratio (OR)*	
Therapy	N	AA	White	OR	95% CI
ACE-I	19,272	66.2	59.1	1.23	1.09-1.38
β-blockers	42,184	31.7	35.9	0.83	0.77-0.89
Aspirin	100,239	84.2	86.1	0.91	0.84-0.98
Reperfusion	26,575	46.7	58.1	0.66	0.59-0.74

*receipt of therapy for African American patients compared to White patients.

Conclusions: We found less use of all therapies for African American patients with AMI except for ACE inhibitors, where the reverse was true. Performance rates for both races show ample room for improvement. This was so even when considering only patients clinically indicated for therapy and after adjusting for clinically important covariates in this national data set.

BREAST CANCER RISK PERCEPTION AND USE OF POSTMENOPAUSAL HORMONE REPLACEMENT THERAPY

K Armstrong, S Popik, J Buzaglo, P Ubel, University of Pennsylvania School of Medicine, Philadelphia, PA

BACKGROUND: Postmenopausal hormone replacement therapy (HRT) has been shown to decrease the risk of coronary heart disease (CHD) and osteoporosis, but increase the risk of breast cancer (BCA). While only 24% of postmenopausal women in the US take HRT and fear of BCA is commonly cited as a reason for refusal, the relationship between HRT use and BCA risk perception is not known.

OBJECTIVES: To assess relationship between breast cancer risk perception and use of hormone replacement therapy.

DESIGN: Cross-sectional mailed survey.

PARTICIPANTS: 400 randomly selected postmenopausal women from a general internal medicine practice

MAIN RESULTS: From the 268 women (67%) who returned surveys, 189 were postmenopausal. 70 women (37%) were currently using HRT and 21 (11%) had previously used HRT. Mean perceived lifetime risk of BCA was 31% (+/- 21%) – substantially higher than mean predicted lifetime risk of 9% (+/- 4%). However, 80 women (44%) thought their BCA risk was lower than the average woman's, while only 24 (13%) thought it was higher. 59 women (33%) thought HRT increased the risk of BCA, 22 (12%) thought it did not and 100 (55%) were unsure. After multivariate adjustment, current use of HRT was inversely associated with age (OR 0.96 for each 1 year increase, 95% CI 0.94-0.98), and positively associated with Caucasian race (OR 2.73, 95% CI 1.40-5.32). Use of HRT was not associated with quantitative or qualitative measures of breast cancer risk perception, perceived severity of breast cancer, or belief that HRT increases the risk of BCA.

CONCLUSIONS: Breast cancer risk perception does not predict decisions about HRT. Use of HRT is associated with race and age. More work is needed to understand the causes of these associations and the reasons why many women do not take HRT.

BARRIERS TO INFLUENZA VACCINATION IN AN INNER CITY POPULATION: MISTRUST AND MISPERCEPTIONS

K Armstrong, M Berlin, J S Schwartz, K Propert, P Ubel, University of Pennsylvania School of Medicine, Philadelphia, PA

BACKGROUND: Influenza remains a serious threat to the health of the US elderly population. Although vaccination reduces influenza mortality by over 50%, over a third of elderly Americans are not vaccinated each year. Mistrust of the health care system is often cited as a barrier to medical care and research participation among African-Americans. The influence of mistrust on acceptance of influenza vaccination in an inner city population is unknown.

OBJECTIVES: To assess the role of mistrust of vaccine contents and other factors in the use of influenza vaccination among an inner city, predominantly African-American, low income population.

DESIGN: Cross-sectional telephone survey.

PARTICIPANTS: 850 randomly selected community-dwelling individuals 65 years of age or older

MAIN RESULTS: From the 486 individuals (70.7%) successfully interviewed, 304 (62.5%) reported influenza vaccination in the previous year. 97 individuals (20%) were concerned that the shot contained something other than influenza vaccination that they did not know about. After multivariate adjustment, mistrust of vaccine contents was inversely associated with vaccine receipt (OR 0.49, 95% CI 0.26-0.91). Receipt of influenza vaccination was inversely associated with belief that vaccination is inconvenient (OR 0.14, 95% CI 0.05-0.36), belief that vaccination is painful (OR 0.21, 95% CI 0.08-0.54) and previous side effects (OR 0.33, 95% CI 0.18-0.60) and positively associated with physician recommendation (OR 3.22, 95% CI 1.76-5.93).

CONCLUSIONS: Mistrust of vaccine contents impedes acceptance of influenza vaccination in an urban, predominantly African-American population. Programs to increase vaccination rates in the inner city should address mistrust of vaccination, as well as convenience, discomfort, side-effects and failure of health care providers to recommend vaccination.

ADHERENCE WITH ANTIRETROVIRAL THERAPY IN HIV-INFECTED DRUG USERS. JH Arnsten, RW Grant, PA Demas, MN Gourevitch, EE Schoenbaum, Department of Medicine, Department of Epidemiology and Social Medicine, Montefiore Medical Center, Bronx, NY.

Objective: To describe adherence with antiretroviral therapy (ART) in HIV-infected drug users and determine the impact of adherence on HIV viral load. Methods: Patients (pts) recruited from a prospective longitudinal study of current and former drug users are given medication event monitoring devices (MEMS) for each antiretroviral. MEMS devices are electronic bottle caps that record the time and date of each opening as a presumptive dose. Monthly interviews include adherence assessments by MEMS and self-report, collection of psychosocial and drug use data, and quantification of viral load. Results: To date, 53 pts have enrolled and used 122 MEMS devices for 3655 patient-days. Pts are taking a mean of 2.3 ART medicines. Their mean age is 45; pts are 62% male, 66% Hispanic, and 23% Black; 83% are on methadone and 100% are insured by Medicaid. By self-report, pts took 83% of all prescribed doses in the day preceding the interview and 84% in the preceding week. By MEMS device, pts took a mean of 54% of all prescribed doses during the monitored period (median 74.3 days); 23% of pts took >80% of all doses, and 27% took <20%. Pts took all doses on time (within 25% of prescribed interval) on 26% of monitored days. Overall MEMS-adherence (mean % doses taken/doses prescribed) was significantly lower for women (38%) v. men (63%); for active drug users (32%) v. former drug users (61%); and for pts with 2 or more HIV-related symptoms (36%) v. asymptomatic patients (68%) (all p<0.01). In a linear regression model adjusted for CD4 count and sociodemographics (age, race, marital status, SSI), only HIV symptoms remained significantly associated (p<0.01) with poorer MEMS-adherence. Viral load and CD4 count were more strongly correlated with MEMS-adherence than with self-report adherence (see table).

	MEMS	p-value	Self-report	p-value
Viral load < 10,000	62%	0.001	88%	0.06
Viral load > 10,000	26%		73%	
CD4 > 200	61%	NS	87%	NS
CD4 < 200	54%		84%	

Conclusions: Among HIV-infected drug users, adherence rates by MEMS and self-report are widely divergent and only MEMS-adherence is associated with viral load. Women, active drug users, and symptomatic pts are less adherent; symptoms are the strongest predictor of poor adherence. The divergence of MEMS and self-report is consistent with other populations. These results strongly support the need for interventions to improve adherence to ART.

POPULATION-BASED RATES OF LUMBAR SPINE SURGERY: ARE HIGHER RATES ASSOCIATED WITH WORSE OUTCOMES? SJ Atlas, RB Keller, RA Deyo, DN Soule, DE Singer, Massachusetts General Hospital, Harvard Medical School, Boston, MA, Maine Medical Assessment Foundation, Manchester, ME, University of Washington, Seattle, WA.

Population-based variations in rates of surgery for many procedures are well-described and may reflect differences in the threshold or likelihood at which different groups of physicians recommend surgery. We examined whether population-based rates of surgery for herniated lumbar disc or spinal stenosis are associated with patient (pt) outcomes.

Small area variation analysis was used to develop distinct "spine service areas" in Maine. Four year outcomes for 279 surgically treated pts participating in an ongoing prospective cohort study were compared across three defined spine service areas. Pts were enrolled by their physicians who provided baseline demographic and treatment data. Pts completed baseline and follow-up questionnaires that focused on symptoms, function, satisfaction and quality of life.

Population-based rates of surgery for the 3 spine service areas varied from 40% below to 72% above the state average (7.2 cases/10,000). Pts in high rate areas had less severe baseline symptoms and findings than those in low rate areas. Outcomes of pts treated by surgeons in the lowest rate area were superior to those in the two higher rate areas after 4 years of follow-up. Seventy-nine percent of the pts in the low rate area had marked or complete relief of leg pain compared to 60 percent of pts in the high rate area ($p=0.06$). Improvement in functional status (Roland disability questionnaire), quality of life, and satisfaction were significantly better among pts in the low rate area (all $p \leq 0.05$). Outcomes in the intermediate rate area were generally between the high and low rate areas. Previous comparisons to non-operated controls counter concerns regarding the impact of regression to the mean. Limitations include relatively few pts in the high rate area (35).

Higher population-based rates of elective spine surgery may be associated with poorer average outcomes. Higher severity thresholds for recommending surgery may result in better outcomes.

ADDED VALUE OF HOSPICE CARE IN THE NURSING HOME WM Baer, BA; LC Hanson, MD*; University of North Carolina, Chapel Hill, NC.

PURPOSE: To determine whether hospice provides added value for dying nursing home residents in the last 3 months of life.

METHODS: We used statewide hospice data to survey family of all nursing home hospice patients during a 6-month period. The mailed survey asked family to rate quality of care for physical and emotional symptoms before and after hospice services, to describe hospice and nursing home staff involvement in life-sustaining treatment decisions, and to define the added monetary value of nursing home hospice.

RESULTS: Of 398 eligible family members, 292 (73%) completed surveys. Decedents' average age was 79.5 years, 50% died of cancer, and 76% were functionally dependent. In the last 3 months of life, 69% of decedents had severe or moderate pain, 56% had severe or moderate dyspnea, and 61% had other uncomfortable physical symptoms. Quality of care for pain and other symptoms was rated good or excellent by 64% of family members before hospice and 93% after hospice ($P<0.01$). Dying residents had emotional needs, including moderate or severe depression (47%), anxiety (50%), and loneliness (35%). Quality of care for emotional needs was rated good or excellent by 64% of family members before hospice and by 90% after hospice ($P<0.01$). Hospice and nursing home staffs were equally likely to have discussed life-sustaining treatments. Fifty-three percent of family members believed hospice allowed the decedent to forego hospitalization. Family gave hospice a median added value of $75 per day, and 45% valued it at $100 or more.

CONCLUSION: Families of recently deceased nursing home residents believe hospice improves quality of care for physical and emotional symptoms, reduces hospitalizations, and adds value to terminal care services delivered in the nursing home.

DO PATIENTS' PREFERENCES EXPLAIN RACIAL DIFFERENCES IN ACCESS TO RENAL TRANSPLANTATION? JZ Ayanian, PD Cleary, JS Weissman, AM Epstein. Div of General Medicine, Brigham and Women's Hospital, Dept of Health Care Policy, Harvard Medical School, Dept of Health Policy & Management, Harvard School of Public Health, Boston, MA.

Black patients are less likely than white patients to receive renal transplants and other effective medical procedures, but few studies have explored racial differences in patients' preferences or communication with physicians.

To assess preferences for renal transplantation and experiences with care, we selected a random sample of adults age 18-54 with end-stage renal disease stratified by race and sex in four regions of the US (Alabama, S California, Maryland/DC/Virginia, Michigan). Approximately 10 months after eligible patients started dialysis, we conducted telephone interviews with 1395 of them (83%). Response rates did not differ by race, sex, age, region, body mass index, cause of renal failure, or type of dialysis (all $P>0.12$).

Black and white patients were similarly likely to report that they wanted a transplant (76 vs. 79% in women, 81 vs. 85% in men), and they had comparable expectations that transplantation would improve their quality of life and survival ($P>0.10$). However, blacks were less likely to report having been referred for a transplant evaluation (50 vs. 70%, 54 vs. 76%, respectively) or placed on a transplant waiting list (36 vs. 54%, 43 vs. 59%) ($P<0.001$). These differences remained significant in logistic regression models that adjusted for patients' preferences, expectations, socioeconomic characteristics, and self-reported health status. Few patients reported racial discrimination since starting dialysis (3 vs. 2%, 6 vs. 2%). Nonetheless, blacks were less likely than whites to trust their renal physicians' judgement mostly or completely (76 vs. 89%, 78 vs. 88%), report receiving some or a lot of information about transplants from physicians providing dialysis (56 vs. 64%, 61 vs. 69%) or transplantation (26 vs. 55%, 38 vs. 69%), or report that a physician recommended transplantation (60 vs. 75%, 63 vs. 78%) ($P<0.001$).

Substantial racial differences in rates of renal transplantation are not explained by patients' preferences, but they may arise from inadequate communication between physicians and patients. Thus, physicians should communicate more effectively with eligible black patients about renal transplantation and ensure that they are fully informed and evaluated.

LANGUAGE BARRIERS AND FOLLOW-UP APPOINTMENTS AFTER AN EMERGENCY DEPARTMENT VISIT. DW Baker, JH Sarver. Center for Health Care Research & Policy, Div of General Medicine, MetroHealth Medical Center, Case Western Reserve University, Cleveland, OH.

Purpose: To determine whether patients who communicated through an interpreter or who did not have an interpreter when one was needed were less likely to be referred for follow-up after an emergency department (ED) visit.

Methods: English (ENG) or Spanish (SPA)-speaking patients presenting to a public hospital ED with non-urgent problems were interviewed to determine demographics, socioeconomic status, and health status. After the visit, charts were abstracted to determine discharge diagnosis and follow-up appointments. Patients were interviewed again 1 week later by telephone or at their home. SPA-speaking patients were asked to rate their ability to speak ENG and the ED physician's ability to speak SPA; whether an interpreter was used; and whether an interpreter should have been used. Patient-physician communication was classified into 3 groups: 1) language concordant (CON); 2) used an interpreter (INT); and 3) no interpreter, but should have been used (NO INT). Chi-square tests and logistic regression were used to determine associations between patient characteristics and referral for any follow-up appointment.

Results: 714 patients met inclusion criteria and completed the ED and follow-up interviews (73% of those approached). Mean age was 39 (±14) yrs; 63% female, 18% black, 8% white, and 74% Latino. 65% were native SPA-speakers. Patient-physician communication was classified as: CON for 69%, INT for 17%; and NO INT for 14%. The proportions of patients in the 3 groups who were not given a follow-up appointment were 17%, 24%, and 25%, respectively ($p=0.05$). After adjusting for age, self-reported health, insurance, and discharge diagnosis category, the odds ratio for not receiving a follow-up appointment for INT was 1.92 (95% CI 1.11-3.33) and for NO INT was 1.79 (95% CI 1.00-3.18) compared to CON. The discharge diagnosis category (new, specific diagnosis; exacerbation of a known condition; descriptive diagnosis, and no diagnosis given) was the strongest predictor of receiving a follow-up appointment; for all categories, those who experienced language barriers (INT and NO INT combined) had lower referral rates.

Conclusions: Patients who communicated through an interpreter or who did not have an interpreter when one was needed were less likely to receive a follow-up appointment after their ED visit.

SCREENING FOR ASYMPTOMATIC LEFT VENTRICULAR SYSTOLIC DYSFUNCTION. DW Baker, Center for Health Care Research & Policy and Div of General Medicine; R Bahler, R Finkelhor, Div of Cardiology; MetroHealth Medical Center at Case Western Reserve Univ, Cleveland, OH; M Lauer, Dept Cardiology, Cleveland Clinic Foundation, Cleveland, OH.

Purpose: To determine the prevalence of asymptomatic left ventricular systolic dysfunction (ALVSD), a precursor to congestive heart failure (CHF), among general medicine clinic patients with risk factors for developing CHF.

Methods: General medicine patients at MetroHealth Medical Center age 60 yrs and older with hypertension (HTN), coronary artery disease (CAD), or diabetes (DM), and no diagnosis of CHF were identified using the hospital information system and asked to participate at the time of a clinic visit. Consenting patients completed a face-to-face interview to confirm inclusion and exclusion criteria and later underwent a screening echocardiogram with recording of the apical 2-chamber and 4-chamber views. Clinic charts were reviewed to confirm diagnoses and to exclude patients with a history of CHF or reduced left ventricular ejection fraction (LVEF) on previous diagnostic tests. All echocardiograms were interpreted by a primary reviewer (OBS1) with visual estimation of LVEF; 68 echocardiograms were interpreted by a second reviewer (OBS2) at another institution to determine inter-observer agreement of the LVEF. An LVEF $\leq$ 0.45 was classified as ALVSD and an LVEF = 0.50 was classified as borderline LVEF.

Results: 635 patients were asked to participate; 139 were ineligible, 320 refused, and 176 (35%) completed the study; 4 were found to have a history of CHF or ALVSD on chart review and were excluded. The average age was 69 yrs ($\pm$ 6), 71% were women, 69% white, 29% black; 92% had HTN, 32% had DM, and 24% had CAD. The mean time to complete the echocardiogram was 6.5 ($\pm$3.0) minutes. Of the 162 whose LVEF could be estimated, 16 (10%) had an LVEF $\leq$ 0.45 and 17 (10%) had borderline LVEF (0.50). The inter-observer reliability of the estimated LVEF was good (ρ = .87). Of patients classified by OBS1 as LVEF $\leq$ 0.45, OBS2 classified 6 of 8 as LVEF $\leq$ 0.45, 1 as borderline (LVEF = 0.50) and 1 as normal (LVEF $\geq$ 0.55). However, of the patients classified by OBS1 as LVEF = 0.50, OBS2 classified 4 of 7 as LVEF $\geq$ 0.55.

Conclusions: ALVSD is relatively common among patients with risk factors for CHF, and patients with ALVSD can reliably be identified by a screening echocardiogram that requires only a few minutes to complete.

INCREASED ANXIETY AND HEALTH CARE UTILIZATION AFTER FALSE-POSITIVE MAMMOGRAMS MB Barton*, S Moore*, S Polk*, E Shtatland*, N Twum-Danso*, JG Elmore†, SW Fletcher*, *Harvard Pilgrim Health Care and Harvard Medical School, Boston, and †U. Washington Medical School, Seattle

Background False-positive screening mammograms are common and women report anxiety about this experience in surveys. Whether clinicians are aware of patient anxiety and whether it affects health care utilization is not known. We studied how often anxiety was documented in medical records after false-positive mammograms and recorded health care utilization in the following year.

Methods Medical records for one year before and after the mammogram date were abstracted for 496 women in an HMO who had false-positive mammograms and 496 women with normal mammograms, matched for location and year of the mammogram. Mammogram outcomes were defined as abnormal if any non-routine follow-up was recommended or if the summary impression was indeterminate or suspicious for cancer. Abnormal mammograms in women who were not diagnosed with breast cancer within twelve months of the mammogram were defined as false positives. Clinicians' notes were reviewed for mention of patient anxiety or concern. Other abstracted data included specialty of the provider, whether the patient or clinician initiated the contact (including face-to-face contacts and telephone calls), and whether the contact was breast related or non-breast related.

Results 50 women (10 %) had documented anxiety during the 12 months after a false positive mammogram, versus 1 (0.2 %) woman with a normal mammogram. Compared to women with normal mammograms, women with false-positive mammograms had more contacts with internists and surgeons after their mammograms, and they initiated more breast-related contacts (see Table).

Mean # of Contacts to Internal Medicine and Surgery After a Mammogram			
	False-positive group	Normal group	p value
Overall	8.18	6.00	.0001
Breast-related	2.34	0.16	.0001
Initiated by clinician	1.93	0.07	.0001
Initiated by patient	0.16	0.05	.0006

After a false-positive mammogram, anxious women initiated 6 times as many breast-related contacts as women with no documentation of anxiety. There was no significant increase in non-breast related contacts in women with false-positive mammograms.

Conclusion Clinicians documented anxiety in a substantial proportion of women after false-positive mammograms. Women with false-positive mammograms, and especially women with documented anxiety, had an increased number of clinician-initiated and patient-initiated breast-related contacts. Women's anxiety after false-positive mammograms is associated with increased health care utilization.

USE OF ANTIDEPRESSANTS IN THE TREATMENT OF FIBROMYALGIA: A META-ANALYSIS EL Balden, PG O' Malley, JL Jackson, G Tomkins, J Santoro, K Kroenke, Dept. of Medicine, Walter Reed Army Medical Center, Wash. DC (ELB, PGO, GT, JS) Uniformed Services University, Bethesda, MD (JLJ) and the Regenstrief Institute for Health Care, Indianapolis, IN (KK).

PURPOSE: Fibromyalgia is a common, poorly understood musculoskeletal pain syndrome with limited therapeutic options. We examined the evidence for the use of anti depressants as effective therapy for fibromyalgia.

METHODS: Meta-analysis of English-language, randomized placebo-controlled trials Independent duplicate review was made of the methodological quality, study population, intervention, co-morbid psychiatric disease and outcomes of each trial. Studies were obtained from searching MEDLINE, EMBASE, and PSYCLIT (1966-1998), the Cochrane Library, unpublished literature and bibliographies.

RESULTS: Nineteen trials were identified. Fourteen were placebo-controlled trials evaluating three classes of antidepressants: tricyclics (8 trials), selective serotonin reuptake inhibitors (2 trials) and s-adenosylmethionine (2 trials). Eleven trials had extractable data, a single dichotomous outcome in 7 trials (symptom improvement) and various continuous outcomes in several trials (number of trigger points and pain severity in 7 trials, fatigue, sleep and well-being in 5 trials). Results are reported as summarized odds ratio (OR) for the dichotomous outcome and standardized mean difference (SMD) for continuous outcomes. Homogenous data were combined using a fixed-effects model (Mantel-Haentzel), heterogeneous data using a random-effects model (derSimonian and Laird). Publication bias was assessed using the Begg=s test. Overall, the quality of the studies was good (mean score 5.8, scale 0-8). Systematic assessment of depression was performed in only one of the 14 studies. Outcomes were not affected by class of agent or quality score using meta-regression.

Outcome	No. trials	Effect Size: (95% CI)	Heterogeneity (p value , χ^2)	Publication Bias (p value)
Improved	10	OR= 5.2 (3.1-8.5)	0.61	< 0.02
Trigger Pts.	7	SMD= 0.14 (-0.09-0.37)	0.31	0.88
Fatigue	5	SMD= 0.40 (0.13-0.68)	0.12	1.0
Sleep	5	SMD= 0.58 (0.30-0.85)	0.53	0.62
Well-being	5	SMD= 0.59 (0.07-1.1)	< 0.01	0.33
Pain	7	SMD= 1.1 (0.36-1.7)	< 0.01	<0.01

CONCLUSION: Antidepressants are efficacious in treating many of the symptoms of fibromyalgia. Patients were: 1) more than five times as likely to report overall improvement; and 2) reported substantial reductions in individual symptoms, particularly pain. Whether this effect is independent of depression needs further study.

CERVICAL CANCER SCREENING IN THE URGENT CARE SETTING. HA Batal, PS Mehler. General Internal Medicine, Denver Health, Denver, CO.

Patients seen in urgent care clinics often access health care in an unpredictable manner, and thus do not receive recommended health maintenance This study was undertaken to determine the feasibility of performing cervical cancer screening in an urgent care clinic at the time of initial patient contact.

Women presenting to a public hospital urgent care clinic with a chief complaint necessitating a pelvic examination were randomly assigned into one of two groups: the Pap group was offered a Pap smear during their urgent care clinic evaluation and the referral group was asked to make an appointment at the Gynecology clinic to have a Pap smear performed at a later date. Demographics, information regarding prior Pap smear screening, and cervical cancer risk factor profiles were collected for all patients. Identical information was obtained from a cohort of women who had independently scheduled appointments in the Gynecology clinic for routine Pap smears. These women served as the control group.

By intention to treat analysis, 70.2% (94/134) of eligible women in the Pap group received a Pap smear, as compared to 25.5% (82/98) of the women in the referral group ($p<0.001$). Follow-up rates for abnormal Pap smears in the Pap group versus the Gynecology clinic cohort were 23.8% and 60% ($p=0.049$). For both groups of women, follow-up was significantly affected by pregnancy status. The majority of women in the referral group who did schedule appointments were pregnant ($p<0.001$ for comparison by pregnancy), as well as those women in the Pap group who sought follow-up for abnormal Pap smears ($p=0.006$ for comparison by pregnancy). There was no difference in the Pap smear abnormality rates between women in the Pap group and those in the referral group 22.3% versus 20% ($p=0.745$). In addition, the adequacy of the Pap smears obtained in the urgent care clinic did not differ from those obtained in the Gynecology clinic. In the urgent care clinic, 32% of smears were noted to be inadequate or less than adequate, as compared to 28% of those done in the Gynecology clinic ($p=0.765$).

Pap smears should be offered to all women receiving a pelvic examination during an urgent care clinic visit. These visits present a unique opportunity for primary prevention because doing so increases the rate of receipt of Pap smears as compared to referral for a future appointment. Despite chief complaints from patients in the urgent care clinic of vaginal bleeding and infection, Pap smears obtained in this manner were adequate. However, follow-up is more problematic in this group of women. To reap the full benefits of screening women in this manner, an improved follow-up mechanism for abnormal Pap smears will likely need to be developed.

THYROID DISEASE AND MORTALITY IN OLDER WOMEN: A PROSPECTIVE STUDY. DC Bauer, B Ettinger, KL Stone, and MC Nevitt for the Study of Osteoporotic Fractures Research Group: University of California (San Francisco) and Kaiser Center for Health Research, Oakland.

Previous studies suggest that mortality may be increased after treatment for hyperthyroidism, but there are no prospective studies of the relationship between previous hyperthyroidism, thyroid hormone use, thyroid function and mortality. We examined these factors in the Study of Osteoporotic Fractures (SOF), a large cohort study of older women.

In 1986-88, 9704 women ≥65 were recruited from population-based listings in four US communities. Data about physician-diagnosed illnesses and medication use were collected at baseline, and serum was stored at -190°C. After a mean follow-up of 9.3 years, 2110 women (22%) had died and vital status was known for 99% of the cohort. Specific causes of death were ascertained from review of death certificates and hospital records, if available. The relationships between hyperthyroidism, thyroid hormone use and mortality were analyzed with multivariate hazard models. Sensitive TSH (Endocrine Sciences) was measured on baseline sera from 147 randomly selected women who had died, and 340 controls. The relationship between TSH and mortality was analyzed with hazard models modified for case-cohort sampling. Relative hazards (RH) are reported with 95% confidence intervals (CI).

At baseline 891 women (9.2%) reported a previous history of hyperthyroidism, and 1187 (12.2%) were current thyroid hormone users. After adjustment for age, weight, health status, physical activity, hypertension, diabetes, and use of estrogen, thyroid hormone, tobacco and alcohol, overall mortality was 27% higher among women with previous hyperthyroidism (RH = 1.27, CI: 1.09, 1.48). The association was strongest for death from ischemic heart disease (RH = 1.70, CI: 1.19, 2.45) and was not significant for cancer deaths (RH = 1.15, CI: 0.86, 1.55). Thyroid hormone use was not associated with mortality (RH = 1.08, CI: 0.93, 1.25). Compared to women with normal TSH (0.5-5.5 mU/L), mortality did not differ among those with low TSH (RH = 0.89, CI: 0.29, 02.78) or high TSH (RH = 0.91, CI: 0.26, 3.13).

We conclude that previous hyperthyroidism may be associated with increased mortality in older women, particularly from cardiac ischemia, but we found no association between thyroid hormone use or TSH level and mortality. The long-term consequences of hyperthyroidism and its treatment require further study.

APPARENT RESISTANCE TO TREATMENT : HOW OFTEN IS IT A PROBLEM OF NON-ADHERENCE TO THERAPY ? M. Burnier, C Fallab, B Favrat, N Bertholet, A Pécoud, Medical Oupatient Clinic, University of Lausanne, Switzerland.

Background: Lack of response to therapy is a major challenge for clinicians. The therapy itself could be ineffective or the patient may have failed to comply with the prescribed medication. Until recently, the examination of compliance relied on imprecise methods such as questioning the patient, counting pills or blood sampling for drug levels. Today, the use of electronic pill boxes with a microprocessor in the cap that records the date and hour each time the box is open is considered the only reliable way to monitor day-to-day drug adherence.

Objectives: In situations of lack of response to therapy, we investigated the impact on the treatment target of introducing an electronic pill box without modifying the therapy itself. Thereafter, a second evaluation was performed after modification of treatment or improving compliance according to the electronic pill box data.

Methods: In this pilot study, physicians were given the opportunity to use an electronic monitor of compliance when they had a situation of apparent resistance to treatment. We analyzed the data of 23 patients agreeing to participate in the study. These patients had a clearly measurable target and was classified in three clinical situations, i.e. hypertension (19), dyslipidemia (2) and diabetes (2). Achievement of treatment target was the major outcome and was classified in three categories: treatment target was achieved, partially achieved or not achieved. Compliance was calculated as the percentage of prescribed medication taken by patients during two months. Data were collected from medical records and reviewed by independent clinicians. Results: After introducing electronic pill box alone without changing the treatment, the clinical target was considered as achieved for 6/23 patients (26%) and partially achieved for 7/23 (30%). In these patients, median compliance was respectively 92 and 95%. The remaining patients (10/23 ; 43%) were not on target at all and were essentially poor compliers (median compliance: 68%). After the physician modified treatment or insisted on good compliance based on electronic pill box data, 6 additional patients achieved their treatment goals. Finally, out of the 23 patients, 6 (26%) did not reach the target at all essentially because of poor compliance (median compliance: 30%).

Conclusions: Electronic monitoring of drug adherence is a useful tool to resolve the physician's dilemma of resistance to therapy or poor compliance. Non-adherence to treatment is one of the most frequent causes of apparent resistance to treatment. An objective measurement of compliance is a prerequisite for rational management of patients. In addition, monitoring compliance per se is an effective tool to improve drug adherence.

NON-FINANCIAL BARRIERS TO VIRAL LOAD TESTING FOR PATIENTS WITH HUMAN IMMUNODEFICIECNY VIRUS INFECTION Ahmed M. Bayoumi[1 2 3], Dale McMurchy[2], Anita R Rachlis[2 3].
[1]St. Michael's Hospital and [2]HIV Health Evaluation Unit, Sunnybrook and Women's College Health Science Centre, [3]University of Toronto, Toronto, ON

Viral load testing (VLT) is available at no cost to all people living with HIV in Ontario. We examined non-financial barriers to accessing VLT.

Individuals enrolled in the HIV Ontario Observational Database were included. All VLT conducted before August, 1998 by the sole local provider of VLT were included. Predictors of receiving viral load testing were evaluated with the chi-squared test for univariate predictors and logistic regression analysis for multivariate predictors. Time to first VLT was assessed using Kaplan-Meier survival analysis. Multivariate predictors were assessed with Cox proportional hazards models.

Of 1430 individuals, 1319 (92%) had at least one VLT. Viral load testing was performed less often in patients with a Karnovsky score of 70 or less (81% vs 94%, p<0.001), in patients with a CD4 count of less than 200 (88% vs 95%, p<0.001), and in patients with a previous AIDS defining illness (85% vs 95%, p<0.001). In logistic regression analysis, all three variables remained significant. Similar results were observed when Karnovsky score and CD4 count were examined as continuos variables. The median time from when VLT was first offered to when it was first performed was 42 days. Individuals who received late VLT more frequently had a low Karnovsky score (difference in median time to first test of 39 days, p<0.001), had a low CD4 count (difference = 12 days, p<0.001), had a previous AIDS defining illness (difference = 8 days, p<0.001), were not gay men (difference = 43 days, p=0.002), lived in Eastern Ontario (difference compared to all other areas = 71 days, p=0.0001), were older than 40 (difference = 22 days, p<0.001), had a history of injection drug use (difference = 35 days, p=0.008), and did not have post-secondary school education (difference = 22 days, p=0.003). Sex and ethnicity were not features of early use of VLT. In multivariate analyses, late VLT was associated with a low Karnovsky score (relative hazard 0.75; 95% Confidence Interval 0.63-0.90) geographic location (RH 0.72; 0.61-0.85), history of injection drug use (RH 0.77, 0.63-0.95), lack of higher education (RH 0.86, 0.76-0.98), and older age (RH 0.62; 0.55-0.70).

Even when financial barriers are eliminated, differential access to viral load testing persists. Our analysis suggests that programs to increase access should focus on individuals who have more severe disease, are older, and live in remote areas

ASSESSING SYMPTOMS BEFORE HYSTERECTOMY: IS THE MEDICAL RECORD ACCURATE? SJ Bernstein , MS Broder, DE Kanouse, University of Michigan and Veterans Affairs Medical Center, Ann Arbor, MI; University of California, Los Angeles, CA, and RAND Corporation, Santa Monica, CA.

Objective: To evaluate the level of agreement between medical record documentation of symptoms leading to hysterectomy and patients' own assessments of those symptoms.

Methods: A retrospective study comparing symptoms described in medical records of 497 women who had undergone hysterectomy with symptoms reported by these patients during structured post-operative interviews in nine capitated medical groups in Southern California. We assessed: (1) the sensitivity and specificity of the medical record compared with patient reports for the presence of symptoms related to bleeding or pain and the presence of impairment due to bleeding or pain; and (2) the level of agreement between patient report and the medical record (kappa).

Results: The medical record was sensitive in identifying bleeding and pain as medium or big problems but not highly specific. Overall agreement between physician and patient was moderate for bleeding, fair for pain and poor for impairment due to bleeding or pain (see Table below).

	Sensitivity	Specificity	Kappa
Bleeding			
Medium/big problem	93%	61%	.58
Major impairment	29%	66%	.00
Pain			
Medium/big problem	79%	55%	.34
Major impairment	37%	78%	.14

Conclusion: A physician's understanding of patient symptoms is crucial for recommending the proper course of action; overestimation of symptoms could lead a physician to recommend hysterectomy unnecessarily, while underestimation could dissuade a physician from recommending surgery soon enough. Our results suggest that both these situations may occur for patients with abnormal vaginal bleeding and/or pelvic pain.

QUALITY OF LIFE AMONG WOMEN UNDERGOING HYSTERECTOMY. SJ Bernstein, MK Rowe, DE Kanouse, BS Mittma. University of Michigan and Veterans Affairs Medical Center (VAMC), Ann Arbor, MI; RAND Corporation, Santa Monica, CA, and VAMC, Los Angeles, CA.

Objective: To measure the association between gynecologic conditions and quality of life in women before hysterectomy.

Methods: We retrospectively identified 482 women who had hysterectomies for non-oncologic and non-emergency indications in one of nine captitated medical groups in Southern California between 1993 and 1995. Their symptoms and quality of life before hysterectomy were assessed by medical record review and telephone interviews. Women were grouped into four symptom-based categories (pain, bleeding, pelvic discomfort, or asymptomatic) and compared across six of quality of life scales.

Results: Patients with primary pain conditions reported the highest average role impairment compared with primary bleeding, pelvic discomfort, and asymptomatic conditions (8.6 days per month versus 5.0, 2.5, and 1.9 days respectively; $P < .05$). On the five 0—100 point quality of life scales, patients with primary pain conditions, compared with bleeding, pelvic discomfort, and asymptomatic conditions, had the highest mean level of sexual impairment (71.5 versus 54.1, 29.6, 17.9 respectively; $P < .05$), mood impairment (55.2 versus 45.2, 34.6, 38.1 respectively; $P < .05$), poor perception of general health (74.4 versus 60.7, 44.1, 49.4, respectively; $P < .05$) and increase in severity of symptoms before hysterectomy (77.2 versus 68.7, 61.5, 57.1, respectively; $P < .05$).

Conclusions: A woman's primary symptom before hysterectomy is differentially associated with varying levels of impairment. Standardized measurement of quality of life among women with gynecologic complaints that lead to hysterectomy might help in development of treatment guidelines and in assessing the appropriateness and outcomes of care for these women.

WHAT FACTORS ARE RELATED TO AUTONOMY PREFERENCES AND THEIR SERIAL CHANGES? S Bito, S Fukuhara, and K Kurokawa. General Internal Medicine, National Tokyo Medical Center. Graduate School of Medicine, The University of Tokyo. Tokai University, Tokyo, Japan.

Purpose: To explore what factors are associated with self-decision-making preference and information seeking preference in health care; and to clarify whether health status change or life events influence autonomy preferences among the Japanese population.

Methods: Initially, we surveyed 4,500 randomly sampled Japanese nationals over 16 years old in 1995 and again in 1996. The questionnaire included the following: the 6-item Japanese version of Ende's autonomy preference index, the respondents' demographic characteristics, the number of comorbidities, and the MOS short form 36 health survey (SF-36) as a health status index. In the 1996 survey, we asked about life events in the previous year. Using the respondent's characteristics and the health status indices, we analyzed the two subscales of the autonomy preference index: the self-decision-making preference (DMP) scale and the information seeking preference (ISP) scale. These scales had a 0-100 range, and a higher score correlates with greater autonomy. Finally, we analyzed the changes in serial preference that occurred with changes in health status and life events.

Results: In 1995, 4500 surveys were distributed, and 3,395 surveys were collected. In 1996, 2,002 surveys were collected. In 1995, the mean DMP score was 45.4 (SD=10.8) and the mean ISP score was 81.4 (SD=18.8). The mean DMP score was higher in the younger group, while the mean ISP score had no significant difference between the age groups. Multivariate analysis showed that females ($p<0.0001$) and those with higher education ($p<0.0001$) had higher DMP scores, whereas health status and the number of comorbidities were not associated with the DMP score. Those who live alone ($p<0.05$) and those with higher physical functioning measured by the SF-36 ($p<0.001$) had higher ISP scores. The mean serial changes in the DMP score was -1.1 (SD=13.1) and the mean serial changes of the ISP score was -6.0 (SD=18.3). Serial changes in the DMP and ISP scores were not associated with changes in physical functioning, mental health, outpatient-care utilization, hospitalization or a major operation in the previous year. Those respondents who had visited an intensive care unit had a significant reduction in the DMP score ($p<0.01$), and those who had a screening blood test had a significant reduction in the ISP score ($p<0.05$).

Conclusion: Relative to health conditions, autonomy preferences and their serial changes have a stronger association with personal characteristics and medical experiences. Therefore, physicians should not predict the patients' autonomy preference based only on their health conditions or health status among the Japanese population.

RELATIONSHIP OF HEALTH LITERACY TO PATIENTS' KNOWLEDGE OF MAMMOGRAPHY AND BREAST CANCER. SR Bialek, EH Burgess, MV Williams, J Doyle. Division of General Medicine, Emory University, Atlanta, GA.

Introduction: Previous research documents low rates of screening mammography, as well as inadequate health literacy, among indigent African American (AA) women. We hypothesized that women's health literacy would be related to their knowledge of breast cancer and screening mammography, and possibly related to their compliance with screening mammography.

Methods: We surveyed a convenience sample of 101 women between the ages of 50 and 75 in the Medical Clinic at a large urban public hospital serving a predominantly indigent AA population. A 58-item questionnaire (demographics, knowledge of and beliefs/attitudes about breast cancer and mammography), derived from previously published instruments, was orally administered to consenting participants. The Rapid Estimate of Adult Literacy in Medicine (REALM) was used to measure health literacy. A mammography and breast cancer knowledge index (Cronbach's alpha=0.67) was created using 18 items from the survey. We reviewed the computerized medical record to determine the proportion of women who had undergone mammography.

Results: Mean age (±SD) was 62 ± 7 years, 97% were AA, and 72% were insured. Only 26% of patients read at the high school level, although 47% reported being high school graduates; 28% read at the seventh- to eighth-grade level; 26% at the fourth- to sixth-grade level; and 13% at or below the third-grade level. Mean knowledge scores (±SD) on the 18 point scale were directly related to reading levels: 13.1 ± 1.9, 11.1 ± 2.8, 10.6 ± 3.0, and 10.1 ± 2.2, respectively ($p < 0.0005$). We verified that 72% of participants (73/101) had undergone mammography within the past two years. Patients reading at or below the third-grade level were more likely (93% vs. 69%) to have undergone mammography within the past two years than patients with greater health literacy, $p < 0.05$. Knowledge of mammography and breast cancer was not associated with having screening mammography.

Conclusions: Inadequate health literacy was common and strongly correlated with less knowledge of breast cancer and mammography. Remarkably, lower health literacy was correlated with greater compliance with screening mammography. Thus, existing programs to encourage screening mammography in this Medical Clinic are successful, especially among patients with inadequate health literacy.

TESTING OF A NEW SCALE FOR NURSING ASSISTANTS TO RECORD ACUTE CHANGES IN STATUS IN NURSING HOME RESIDENTS. KS Boockvar, D Brodie, MS Lachs, M Charlson, Department of Medicine, Weill Medical College of Cornell University, and Amsterdam Nursing Home, N.Y., N.Y.

Purpose: Acute illness causes considerable morbidity and mortality in nursing home residents. However, instruments used for monitoring residents of nursing homes are not designed to detect acute changes in status. In addition, such changes may be difficult to recognize in the presence of residents' chronic comorbidities. The goal of this study was to develop an instrument to be used by nursing assistants to document changes in nursing home resident status which precede acute illness.

Methods: The setting was a 302-bed urban teaching nursing home. The instrument was designed to contain generic and patient-specific items. Items were generated by interviewing nursing home staff until a saturation of ideas occurred. A 40-item closed-format questionnaire was tested by nursing assistants, from which 7 generic items were chosen for the final instrument. In order to adjust for the presence of chronic findings in subjects, the scale for each item allowed respondents to reject a finding or to endorse a finding as "the same as" or "worse than" "other days." Patient-specific items were generated by surveying nursing assistants about each resident's characteristic greetings, between-meal activities, and means of locomotion. A global status question was included on the final instrument, which was tested by 39 nursing assistants over 28 consecutive days. Nursing assistants were asked to fill out the instrument daily for all residents (n=74) assigned to them. The responses of morning- and afternoon-shift nursing assistants were compared to calculate interrater agreement.

Results: Each item on the final instrument assessed a nonspecific behavioral or functional change, such as being confused or needing help with dressing. Depending on the resident, the number of items on an instrument ranged from 8-12. The frequency of a positive response, indicating a status change, per resident per shift (n=1977) ranged from 0.7-8.6% depending on the item, and interrater agreement (median n=290 pairs) ranged from 65-96%. All but one item demonstrated statistically significant interrater correlation and a kappa >0.2 (range 0.2-0.4). Most of the nursing assistants spent 15 minutes or less each day filling out the instrument, and felt that if implemented the instrument would improve resident surveillance.

Conclusions: Tested in an actual practice setting, this newly developed instrument demonstrates good interrater agreement, and thus holds promise as a record of acute, nonspecific changes in nursing home residents. Subsequent study will estimate the validity of this assessment of change as a predictor of acute diagnosable illness. The high rate of acute illness in nursing home residents drives efforts to refine this instrument's performance and ease of use.

Assessment of HRQOL Among All Veterans in the Upper Midwest Veterans Integrated Service Network SJ Borowsky, SM Nugent, M Murdoch, DB Nelson, KL Nichol. Cntr. for Chronic Disease Outcomes Research, Mpls VAMC, Mpls, MN.

Objectives: To assess health related quality of life (HRQOL) among all veterans receiving care in the Upper Midwest Veterans Integrated Service Network (VISN 13). **Methods:** From 8/98 to 10/98 the SF-36V was mailed to all veterans (n=77,788) receiving any inpatient or outpatient care at any of the 5 VA medical centers in VISN 13. We determined the Physical Component Summary (PCS; derived from 4 SF-36V scales: physical function, role limitation-physical, general health perceptions, bodily pain) and the Mental Component Summary (MCS; derived from 4 SF-36V scales: role limitation-emotional, vitality, mental health, social functioning). The PCS and MCS are derived using weights from a national probability sample such that a score of 50 on each scale is the mean for the general US population. We used the Wilcoxon Rank Sum test to assess bivariate associations of PCS and MCS scores with age, gender, education, race, self-reported clinical conditions, number of conditions, and use of VA inpatient and outpatient care. We also determined scores for the 8 SF-36V scales for comparison to published SF-36 values from an elderly HMO population in the same region. **Results:** After the first of 2 mailings, 27,499 (35%) responded (an additional 24% responded to a 2nd mailing but are still being processed). The mean age was 60.9 (SD 15.5); 92.8% male and 90.8% white. Both the mean PCS score (35.6, 95% CI 35.5-35.8) and mean MCS score (46.7, 95% CI 46.6-46.9) were significantly lower than the US mean (50). All age, gender, education, and race subgroups had PCS and MCS scores lower than the general US population mean. PCS scores were lower in men than in women (35.4 vs. 40.0, $p < .001$), in less educated veterans ($\leq$ 8th grade=31.7 vs. $>$ 12th grade=38.3; $p < .001$), and in those with self-reported arthritis (31.8 vs. 39.8, $p < .001$), COPD (30.5 vs. 37.3, $p < .001$), diabetes (31.6 vs. 36.4, $p < .001$), HTN (33.3 vs. 36.8, $p < .001$), or heart disease (31.1 vs. 37.7, $p < .001$). Those with more conditions also had lower PCS scores (none=44.3 vs. $\geq$ 4=27.2, $p < .001$). MCS was lower among those with depression (35.3 vs. 50.6, $p < .001$), and those with more self-reported conditions (none=51.7 vs. $\geq$ 4=38.8, $p < .001$). Neither inpatient nor outpatient VA utilization was associated with large differences in PCS or MCS. Compared to mean SF-36 scale scores reported for an elderly HMO population in our region, mean scores on the individual SF-36V scales for all VISN respondents were significantly lower (range=11-22 points lower/scale). **Conclusions:** Our preliminary results suggest that veterans using the Upper Midwest VISN have physical health that is markedly lower than the general US population among all age, gender, race, and education veteran subgroups. HRQOL among VISN 13 veterans also appears to be substantially lower than values reported for an elderly HMO population. Large scale HRQOL assessment in VA is feasible and has the potential to identify patient groups and individuals with lower health status who may benefit from targeted interventions at the VISN level.

VETERANS' PREFERENCES FOR TRANSFER OF PRIMARY CARE TO COMMUNITY BASED OUTPATIENT CLINICS: ASSOCIATION WITH HEALTH STATUS, SATISFACTION WITH VA CARE, AND PRIOR USE OF VA CARE. SJ Borowsky, DB Nelson, SM Nugent, PR Hamann, CJ Stolee, JL Bradley, HB Rubins. Center for Chronic Disease Outcomes Research, Minneapolis VAMC, Minneapolis, MN

Objectives: Community Based Outpatient Clinics (CBOCs) are a national VHA initiative to enhance access to care. This study examines whether veterans' preferences to transfer primary care to a CBOC are associated with health status, satisfaction with VA care, and prior utilization of VA care. **Methods:** We surveyed 1469 veterans in 3/98. Included with the first of 2 survey mailings was an application to transfer primary care to a contract CBOC (contract with non-VA clinic). Veterans located in southern Minnesota (n=784) were offered a consortium of 23 clinics; veterans in northern Minnesota (n=685) were offered a CBOC consisting of 2 clinics. The sample included all veterans who lived within 50 miles of either CBOC area and had $\geq$ 1 primary care visit at any of 3 VA facilities during the preceding year. The dependent variable was whether or not veterans requested transfer to a CBOC. We used bivariate analyses and multivariate logistic regression to evaluate associations between preference for CBOC and health status (SF36-V), VA Customer Satisfaction Survey (CSS) scales, inpatient and outpatient VA utilization during the preceding 12 months, and demographics. Variable selection for the multivariate analysis used a model score criteria. **Results:** 1246 (85%) responded to the survey. Of these, 53% requested transfer of primary care to a CBOC. On bivariate analyses, compared to veterans not requesting CBOC, those who chose CBOC had fewer prior VA outpatient encounters (19.9 vs. 26.2, $p<.0001$), and had higher CSS scores (lower satisfaction with VA care) on 7 of 8 scales (p values ranging from $<.0001$ to $< .05$). CBOC preference was greater in the north than south (59.5% vs. 47.4%, $p< .001$. Seven of 8 SF36-V scales did not differ between veterans who did and did not request CBOC. Multivariate analysis confirmed that preference for CBOC varied by CBOC area (south vs. north OR=0.61 95%CI 0.47-0.79) and SC status (50-100% SC vs NSC OR=0.57 95%CI 0.38-0.85). Number of prior VA outpatient encounters was negatively associated with preference for CBOC (OR 0.98 95%CI 0.97-0.99). Three satisfaction scales were retained in the final model, each demonstrating an association between lower satisfaction and preference for CBOC (for 0.1 increase on 0-1 scale, higher=less satisfied: "access" OR 1.11 95%CI 1.01-1.23, "coordination" OR 1.11 95%CI 1.01-1.22, "preferences" OR 1.19, 95%CI 1.02-1.38). Three SF36V scales were retained in the model but did not indicate a strong association between health status and CBOC preference. **Conclusions:** Contract CBOCs may attract patients who use less VA care and who are less satisfied with VA care. CBOCs are an alternative that may improve access and satisfaction for this subpopulation. Comparisons of CBOC vs. VA-based care may not be confounded by large differences in patient health status.

DO POOR HEALTH HABITS AFFECT HEALTH RELATED QUALITY OF LIFE AND HEALTH CARE UTILIZATION IN VETERANS? AM Borzecki, AFS Lee, LE Kazis, Dalhousie University, Halifax, NS; Center for Health Quality, Outcomes and Economic Research, Bedford VAMC, Bedford, MA; Boston University School of Public Health and School of Medicine, Boston, MA.

Objective: To examine the relationship between health habits, health related quality of life (HRQoL) and health care utilization in a population of male veterans.

Methods: We analyzed data on health habits, HRQoL and health care utilization from the Veterans Health Study, an observational study of health outcomes in patients receiving VA ambulatory care. 2425 subjects were recruited from patients visiting 4 VA clinics in the greater Boston area. Health habit information obtained included smoking status, alcohol use, exercise, seat belt use, and cholesterol screening. Body mass index (BMI) was obtained by physical examination. HRQoL measures at baseline (t0) and 12 months (t12) were obtained using the SF-36, expressed as physical (PCS) and mental component summary scales (MCS). Prospective 12 month VA utilization data were obtained from an administrative data base.

Results: Using multiple regression, smoking status, alcohol use, exercise intensity and frequency and BMI were significant PCS predictors at t0 and t12, after adjustment for age, social supports, education, employment status and co-morbidities. For the MCS model, alcohol and seat belt use were significant at t0 and t12. For the outpatient medical utilization model only smoking status, alcohol use, and cholesterol screening were significant predictors of medical visits after adjustment for the previous variables plus additional socio-economic variables and baseline PCS and MCS scores. For adjusted mental health visits, none of the health habits were significant.

Conclusions: Smoking status, alcohol use, exercise and seat belt use were important predictors of HRQoL. Smoking and alcohol use were significant predictors of medical visits. If the goal of medical care is improved HRQoL and decreased health care use these results have important implications with regard to which health habits should be targeted by providers and payers.

PATIENT SOCIODEMOGRAPHIC CHARACTERISTICS INFLUENCE BREAST CANCER TREATMENT BY PHYSICIANS. RD Boss, M Mancuso, A Scaramucci, A Ash, MA Moskowitz, KM Freund, Section of General Internal Medicine, Boston Medical Center, Boston, MA .

Documented disparities in breast cancer outcomes by patient sociodemographic characteristics have been partially attributed to compromised access to care. It is yet uncharacterized how a patient's sociodemographic characteristics might influence physician decision making for patients within the healthcare system.

Oncologists and surgeons were asked to view two 5-minute videotapes, one of a patient presenting with a possible breast mass and one of a woman with stage IIA breast cancer. Sixteen versions of each videotape were professionally produced using actresses and holding all the clinical features of the case constant. Each physician viewed one of 16 versions of each scenario, as specified by a factorial design, where we systematically varied the patient's age (65 vs. 80 years), race (black vs. white), socioeconomic status (high vs. low), comorbidities (none vs. diabetes and hypertension), and mobility (agile vs. frail). Each of 192 physicians were randomly selected from 3 areas across the United States and asked their management recommendations for the cases viewed. Chi square analysis of 2X2 tables and Breslow-Day tests of homogeneity were performed.

Older women were less likely than younger women to be offered an axillary node dissection (47% verses 86%, $p<.01$), full primary therapy (74% versus 94%, $p<.01$), radiation (72% versus 93%, $p<.01$), chemotherapy (9% versus 51%, $p<.01$) and reconstruction (61% versus 91%, $p<.001$). Frail women were less likely than agile women to be offered a biopsy (64% versus 78%, $p=.03$) and reconstruction (68% versus 84%, $p=.02$). Women with comorbidities were less likely than healthy women to be offered reconstruction (71% versus 82%, $p=.08$). Black women were more likely than were white women to be offered an axillary node dissection (74% versus 58%, $p=.02$).

Despite identical clinical presentation physicians' management decisions varied significantly in association with patients' sociodemographic characteristics. Controlling for patient characteristics, factors which have confounded previous estimates of treatment variability, such as comorbidites and frailty, older women were less likely to be offered complete staging, primary therapy, chemotherapy and reconstruction.

PATIENTS' PERSPECTIVES ON THE PROBLEMATIC DOCTOR-PATIENT RELATIONSHIP. C Boutin-Foster and ME Charlson. Joan and Sanford I. Weill Medical College of Cornell University. New York, NY.

Medical residents often view the relationship with their patients as problematic or difficult. However, little is known about the patient's perception of such relationships. The purpose of our study was to identify determinants of problematic doctor-patient relationships from the perspectives of patients who were identified as either problematic or satisfactory by their primary care physicians.

We asked Internal Medicine residents from our ambulatory care clinic to identify 4 of their clinic patients each : 2 who they viewed as most problematic and 2 who they viewed as most satisfactory. All identified patients were also asked to rate the relationship with their physician from 1 to 10 (satisfactory to very problematic or difficult). Patients were also asked questions pertaining to various aspects of their doctor-patient relationships, the general health perception item from the SF-36, and items on perceived social support from the Duke Social Support Survey.

A total of 238 ambulatory care patients were identified by 75 medical residents. 129 of these patients (62 identified as problematic and 67 as satisfactory) have completed our questionnaire. 83% of these 129 patients, rated the relationship with their physician as satisfactory, with a median rating of 1. A major finding was that patients and their physicians often had discordant views of the relationship, as shown below.

	Physician's Rating of the Relationship		
Patient's Rating of the Relationship	Problematic	Satisfactory	Total
Problematic	15	7	22
Satisfactory	47	60	107
Total Number of patients	62	67	129

The 22 patients (17%) who rated the relationship with their physician as problematic, also rated their physicians as less accessible and less capable of handling complicated medical complaints. Differences in demographic characteristics and functional status did not account for the distinction between patients who rated the relationship with their physician as problematic and those who did not. However, 72% of the patients who rated the relationship as problematic, also reported poor social support (P<.001). Similarly, when both the patient and the physician rated the relationship as problematic, significantly more patients reported poor social support (P<.05).

We have found that in 54 (42%) of 129 relationships, the doctor and patient had different perceptions of the relationship. Our results also suggest that social support may be an important determinant of how patients view the relationship with their physicians. Future studies are needed to further investigate the potential impact that patient social support may have on the doctor-patient relationship.

THE FACULTY-LEARNER DYAD IN THE OUTPATIENT SETTING: WHAT IS THE PATIENT'S PERSPECTIVE? K Boyle, A Nattinger, G Lamb. Division of General Internal Medicine, Medical College of Wisconsin, Milwaukee, WI.

OBJECTIVE: To explore the patient's perception of primary care received from a student-faculty or a resident- faculty dyad versus faculty physicians alone, with emphasis on patient satisfaction, continuity, communication and confidence.
DESIGN: Cross sectional survey of patients attending Internal Medicine clinics.
SETTING: Two academic hospital based Internal Medicine clinics, one consisting of primarily faculty practices with occasional resident and student participation and the second consisting of predominantly resident practices with faculty supervision.
METHODS: Two focus groups, one from each clinic, were recruited to identify specific issues relating to the teaching encounter. A survey was constructed using 7 questions derived from the two focus groups; 5 questions from the Medical Outcomes Study - 9 item visit rating form (MOS-9); the MOS - 6 item general health survey; and 22 questions from the Components of Primary Care Index (CPCI) which includes scales for comprehensiveness of care, continuity, interpersonal communication, coordination of care, knowledge of the patient and advocacy. All patients attending the clinics during a twenty day study period were eligible for the study. Surveys were given to patients at the time of arrival in the waiting room and collected upon departure.
RESULTS: Surveys were completed by 361 patients, including 96 seen by faculty alone, 138 seen by a student and 127 seen by a resident. 55 patients had never been exposed to a student or resident. Overall satisfaction was high, 4.5 on a 5 point Likert scale. When asked if a teaching versus a non-teaching setting was preferred, 65% of patients preferred a teaching practice, 8% preferred a private practice setting and 27% did not care. Of those who saw only a faculty physician, 46% felt that the presence of a student would increase their confidence in their physician's care, while 20% felt that would not be true. There was no significant difference between groups with regard to perceptions of continuity, interpersonal communication, accumulated knowledge, coordination of care or advocacy. 35% of patients prefer that they be asked in advance if a student is to examine them while 65% did not care. Only 8% of patients would object to a student taking a history prior to the faculty physician but 27% would object to the student performing the physical examination.
CONCLUSION: In these primary care practices, the majority of patients prefer to be in a teaching setting as opposed to a traditional private practice. The presence of a learner increases confidence in the primary provider for a substantial number of these patients although there are some limits to the role of a student. The presence of a learner, student or resident, appears to have no significant impact on patient perceptions of continuity, communication, advocacy, accumulated knowledge, or coordination of care.

HEALTH CARE ACCESS AND UTILIZATION BY WOMEN INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV). T.L.Box, S.A.Keitz, E.Z. Oddone, Division of General Internal Medicine, Duke University Medical Center, Durham VA Medical Center, Durham, North Carolina.

Objective: Greater family and child-rearing responsibilities have been suggested as possible barriers to health care access and utilization for women with HIV infection. As part of a prospective, randomized, controlled trial in which participants were randomized to receive care in either general medicine clinic (GMC) or infectious disease clinic (IDC), we examined the provision of primary care with respect to gender.

Methods: 214 HIV-infected participants were followed for one year. Patients with private insurance were excluded from the study. The enrollment included a system of referrals from OB/GYN clinic and Pediatric Infectious Disease Clinic, leading to an enriched sample of women who accounted for 39% of the total study sample (N=83). Data was collected regarding ambulatory care visits, ER utilization, hospitalization rates and length of stay.

Results: Women and men enrolled in the study were similar with respect to age and race. A minority of women (14.5%) and men (16.8%) reported that they were employed either full or part-time. Men were more likely to report that they were unemployed due to disability (45.0% versus 27.7%; p=0.001). Women with HIV were more likely than men to have children (80.0% versus 25.2%; p=0.001), and spend their time as primary caregiver for their children (21.7% versus 0.8%; p=0.001). 51.8% of women and only 15.3% of men were on Medicaid (p=0.001). The average CD4 count for women at study enrollment was 377.7 ± 286.5 compared to 242.5 ± 252.0 for men (p=0.0002).

Women and men were similar with respect to the number of visits to the clinic to which they were randomized, ER visits, annual admission rates, and length of stay for hospitalizations (see table).

	Men (N=131)	Women (N=83)
Visits to assigned clinic (GMC or IDC)	4.5 ± 4.6	4.1 ± 3.7
ER visits	1.1 ± 2.2	1.1 ± 2.7
Hospitalization rate	0.5 ± 1.0	0.6 ± 1.6
Length of Stay (for hospitalized patients)	8.1 ± 5.3	7.2 ± 6.6

Conclusions: Women enrolled in this study had greater familial responsibilities than the men; however, this did not prove to be a barrier to utilization of health care services. In addition, access to health care for women may have been facilitated by Medicaid coverage, as the women enrolled in the study had considerably higher CD4 counts, indicating an earlier presentation for primary care.

A RETROSPECTIVE STUDY COMPARING THE OUTCOMES OF CRITICALLY ILL PATIENTS WITH ACUTE RENAL FAILURE (ARF) WHO RECEIVE RENAL REPLACEMENT THERAPY (RRT)WITH EITHER INTERMITTENT HEMODIALYSIS (IHD) OR CHRONIC RENAL REPLACEMENT THERAPY (CRRT)

M. Braunstein, K. Solangi. New York Medical College, Valhalla, New York.

The mortality of ARF in critical care patients has not decreased in the last forty years, it still remains at 70%. This figure remains high despite recent advances in RRT, most notably the advent of CRRT in the late 1970's to the early 1980's. Perhaps this is due to the fact that ARF almost never exists alone in critically ill patients but is usually an integral part of Multi-system Organ Failure (MOSF) which carries a mortality of 90-100%. However CRRT is proposed to have many advantages over IHD (decreased hypotension and smaller decline in GFR, steadier control of azotemia, electrolytes, and acid-base Imbalances, decreased interstitial and organ edema, better nutritional replacement possible) and many European studies show improved survival. However, our study implies that improved methods of RRT have little effect on mortality.
METHODS: This was an extensive chart review of all patients in all Intensive Care Units in the Westchester Medical Center during the months of July – October 1998 who received RRT . The only exclusion criteria were those patients who were already on maintenance RRT before becoming critically ill. A total of 37 patients were included.
RESULTS: The mortality of ARF was 73% (10 patients survived, 27 died). Of those who survived, 40% received CRRT, 20% received both modalities, and 40% received IHD. Of those who died, 60% received CRRT, 29% received both modalities, and 11% received IHD only. Of the patients who ultimately died but recovered their renal function (3 out of 27), 100% of them had received CRRT only. Alternatively, of the patients who survived but had to remain on maintenance RRT (3 out of 10) 100% of them had received IHD only.
CONCLUSIONS: Despite the implication that a critically ill patient with ARF has a higher chance to recover their renal function if CRRT is used alone , there is no improvement in mortality with this modality. This is due to the fact that ARF exists in most cases as part of MOSF, which carries a mortality of at least 90% despite all interventional therapies.

DELAY IN OBTAINING CONVENTIONAL HEALTH CARE BY WOMEN WHO USE HERBAL THERAPIES. RS Brienza, KP Fagan, MJ Fagan, MD Stein, Division of General Internal Medicine, Rhode Island Hospital and Brown University School of Medicine, Providence, RI

Background: Herbal therapy use is currently the largest growth area in retail pharmacy, exceeding conventional drug growth. While use of alternative medicine has been studied in the general population, there are few studies that have focused on herbal therapy use by primary care patients. In addition, studies have not addressed whether herbal therapy use influences patients to delay obtaining conventional care. **Purpose**: The primary objectives of this study were to: 1) describe the prevalence of use of the top selling herbal therapies in the US among women seeking primary care in three internal medicine practice settings; 2) describe the proportion of individuals who have delayed seeking conventional care in favor of use of herbal therapy for treatment of medical problems. **Methods**: Women were randomly selected from 3 general internal medicine practices and were sent a self-administered questionnaire (2 sites, N=300) or received an interviewer administered questionnaire (1 site, N=54) from 5/98-11/98 in Providence, RI. The questionnaire included information on sociodemographics, medical problems, use of conventional care, health habits, self-perceived health status and health utilization. A list of 15 of the most commonly sold herbal therapies in the US was included and participants were asked about use of these therapies. Delay of care was assessed by asking if participants had ever delayed seeing their doctor or delayed taking a prescription medication in favor of an herbal therapy. **Results**: Of 354 women contacted, 220 agreed to participate (62%, range 58-79% between study sites). The mean age of the sample was 51.4, the majority were Caucasian (77%), had 12 or more years of education (48%), and were married (48%). Of the total sample, 37% had ever used herbal therapies. Of these women, 21% had ever delayed seeing their doctor while waiting for an herbal product to work; 69% of those who had delayed care initially eventually saw their doctor for the same problem; 18% perceived their outcome to be worse as a result of the delay. Among users of herbal therapy, 22% had ever delayed taking a medication prescribed by their doctor in favor of taking an herbal product; of these women, 56% eventually took the prescribed medication; 12% believed the delay resulted in a worse outcome and 50% continued taking the herbal product after starting the prescription medicine. **Conclusions**: Many women who utilize both conventional care and herbal therapies for illness delay seeing their doctor and delay taking prescribed medication. Many continue taking the herbal therapy after starting the prescription medicine. Such delays could have significant impact on morbidity and mortality, especially for diseases with proven early effective conventional treatments (e.g. asthma).

USE OF HERBAL THERAPIES FOR TREATMENT OF MEDICAL PROBLEMS BY WOMEN IN THREE GENERAL INTERNAL MEDICINE PRACTICE SETTINGS. RS Brienza, KP Fagan, MJ Fagan, MD Stein, Division of General Internal Medicine, Rhode Island Hospital and Brown University School of Medicine, Providence, RI.

Background: Use of herbal therapies have increased in the US population, with sales increasing by 59% in 1997. Many known and potential herb-drug interactions exist. Few studies have focused on concurrent use of conventional and herbal therapy for medical problems by primary care patients. **Purpose**: The primary objectives of this study were to: 1) describe the prevalence of use of the top selling herbal therapies in the US among women seeking primary care in 3 internal medicine practice settings; 2) describe concurrent use of conventional and herbal therapy for medical problems in this population. **Methods**: Women were randomly selected from 3 general internal medicine practices and were sent a self-administered questionnaire (2 sites, N=300) or received an interviewer administered questionnaire (1 site, N=54) from 5/98-11/98 in Providence, RI. The questionnaire included information on sociodemographics, medical problems, use of conventional care, health habits, self-perceived health status and health utilization. A list of 15 of the most commonly sold herbals in the US was included. Participants were asked about use of herbals in general and for treatment of specific medical problems. **Results**: Of 354 women contacted, 220 agreed to participate (62%), (range 58-79% between study sites). The mean age of the sample was 51.4, the majority were Caucasian (77%), had 12 or more years of education (48%), and were married (48%). Users of herbal therapies were younger and more highly educated ($p<.05$) than non-users. Smoking, perceived health status, religion and marital status were not associated with use of herbals. Prevalence of herbal use for a specific condition over the past year ranged from 6% (incontinence) to 35% (irritable bowel syndrome (IBS)). Women were most likely to use herbal therapies for the following conditions: IBS, arthritis, premenstrual syndrome, migraines, insomnia, depression, anxiety, thyroid disease, asthma, and menopausal symptoms. For these problems, concurrent use of prescription medications and herbals was reported by the majority of women. Although 52% of women reported their doctor as their primary source for health information, the majority (55%) of herbal users seldom or never told their doctor about such use. **Conclusions**: This study reveals a high prevalence of herbal use for common medical problems. In addition, these results suggest that many women are using herbal therapies and prescription medications concurrently to treat specific medical problems. As in previous studies, women in this sample had a relatively low likelihood of informing their doctor about such use. Among this group of primary care patients, the high prevalence of herbal use, concurrent conventional drugs and failure to reveal use to their doctors highlights the need to consider unmonitored potential herb-drug and herb-disease interactions.

DEPRESSION AMONG NEEDLE EXCHANGE PROGRAM AND METHADONE MAINTENANCE CLIENTS. RS Brienza, MD Stein, MH Chen, A Gogineni, M Sobota, J Maksad, P Hu, J Clarke, Division of General Internal Medicine, Rhode Island Hospital and Brown University school of Medicine, Providence, RI

Background: Over the past two decades an association between depression and opiate abuse has been documented. Previous research has focused on prevalence of depression among opiate abusers entering treatment programs. There is limited data about depression among opiate abusers who are not in formal treatment such as those in Needle Exchange Programs (NEP). **Objective**: To compare the 6 month prevalence of major depression in 2 cohorts of injection drug users, those enrolled in a Methadone Maintenance Treatment Program (MMTP) and those enrolled in a NEP in the same community, and to determine if factors associated with depression were consistent across these groups. **Methods**: Over a 9-month period in 1997-98, we conducted face-to-face interviews in Providence, RI. Participants who were enrolled in NEP had not received formal substance abuse treatment in the last 6 months, and persons recruited from MMTP had been continuously enrolled for at least 6 months. The questionnaire included sections on demographics, drug use, social support and alcohol use during the last 6 months. Major depression in the last 6 months was measured using the Structured Clinical Interview for DSM-IIIR (SCID). **Results**: Among 528 persons interviewed, 54% of those in NEP and 42% of those in MMTP met criteria for major depression. Using multivariate logistic regression, women (OR 2.5; 95% CI 1.7-3.7), alcohol abusers (OR 1.7; 95% CI 1.1-2.7), and persons without a current partner (OR 1.8; 95% CI 1.2-2.6) were more likely to be depressed after controlling for age, race, education and HIV status. Persons enrolled in MMTP were less likely to be depressed (OR 0.6; 95% CI 0.4-0.8) than persons attending a needle exchange program. **Conclusion**: Very high rates of depression were found among NEP attendees, higher than rates among those enrolled in methadone maintenance. Despite the difficulties in distinguishing organic mood disorder from transient symptoms related to opiate use, these findings suggest the need for interventions directed at the growing number of needle exchange attendees in the United States.

PRESCRIPTION OF ACE INHIBITORS FOR THE TREATMENT OF DIABETIC NEPHROPATHY IN THE GENERAL MEDICINE CLINIC.

E. Krishtul, C. Brod Miller, Division of General Internal Medicine, Mount Sinai Hospital, Department of Medicine, New York, NY

Objective: ACE inhibitors (ACEI) are well known to be effective in the treatment of Diabetic Nephropathy (DN). The goal of our study was to identify the adequacy of treatment of diabetic nephropathy by internists in the General Medicine Clinic (GMC) of a tertiary care teaching hospital.

Methods: 1734 diabetics (mostly inner-city African-Americans and Hispanics) were identified from the GMC computerized database by their HBA1C values (HbA1C≥6.0%). We subdivided patients according to their serum creatinine (S.Cr) and urine microalbumin (M.Alb) tests into four categories: clinical nephropathy (Cl.N: M.Alb >300 mg/day,), subclinical nephropathy (Sub.N: U.pr= 30-300 mg/day,), normal (Nl.: S.Cr<1.4 mg/dl,), unknown (S.Cr<1.4 mg/dl, urine M.Alb not tested, and U.Dipstick=0,). In each group, we randomly selected 10% of patient charts for review. The following data was extracted: Indications for ACEI treatment: renoprotection for DN, HBP, and CHF; Proportion of patients on ACEI for either diagnosis; Mean Blood Pressure control - based on 3 physician visits - Normal BP <135/85 or <125/75 if proteinuria.

Results:

	Charted Diagnosis (Dx)			Mean BP values/ % of pts with HBP controlled	% of pts on ACEI when indicated
	HBP Dx, %	Renal Dx, %	CHF Dx, %		
Clin. Nephropathy	90	100	40	147/83, 10%	75
Subclin. Nephrop.	44	0	11	135/76, 56%	60
Nl. Renal Function	71	0	27	144/81, 29%	67
Unknown U.Protein (S.Cr<1.4 mg/dl)	73	0	23	145/89, 27%	54

Conclusion:

In this study, patients with clinical nephropathy were more likely to be treated with ACEI than those with subclinical nephropathy or normal renal function. This is probably due to the higher prevalence of HBP and CHF in the first group. The proportion of patients treated with ACEI increased with the frequency and severity of their cardiovascular disease. Diabetic nephropathy was rarely entered as a diagnosis and an indication for ACEI treatment. Intensive treatment of nephropathy with ACEI should be started before irreversible end-organ damage. An educational intervention of general internists will be initiated aiming to improve early detection and treatment of diabetic nephropathy.

DIAGNOSIS OF DIABETIC NEPHROPATHY IN THE GENERAL MEDICAL CLINIC OF A TEACHING HOSPITAL. C Brod Miller, E. Krishtul. Division of General Medicine. Mount Sinai Hospital and Medical Center NY, NY. 10029

Diabetic nephropathy due to type 2 diabetes is now the main cause of end stage renal disease in the US. Early detection and treatment may ameliorate the course of this disease. We studied the General Medical Clinic (GMC) physicians' adherence -120 Medical Residents and 22 General Medicine Attendings- to the recommendations of the American Diabetes Association (ADA) to screen for nephropathy by yearly measurements of urine microalbumin excretion by precise quantitative methods (PQT).

Methods: We analyzed the computerized laboratory records of all diabetics patients (Pts) seen in the GMC over a one year period (1997). 1734 Patients were identified as Diabetic (HBA1c ≥ 6 %). The majority of patients were Caribean-Hispanics and African-americans, urban and poor. Patients were subdivided according to their level of Serum Creatinine (SCr) and urine (micro)albumin excretion (UAE) into 4 groups: Normal –SCr < 1.4mg/dl, UAE <30mg/24h-, Subclinical -SCr < 1.4 mg/dl, UAE between 30 and 300mg/24h-, Clinical Nephropathy -UAE > 300mg/24h- and Unknown: UAE not tested.

Results: 1). Urine screening for (micro)Albuminuria was performed correctly in only 36% of all GMC diabetics (Patients screened = PQT group = 623 pts), in 56% of all pts a semi-quantitative protein dipstick was done, 30% of all pts had no urine test performed. 2). Of all 1734 GMC diabetics 83% (1447 Pts) had a normal SCr. Renal insufficiency (SCr ≥1.4 mg/dl) was present in 17% (287 pts). In addition, if one were to extrapolate the results from the "PQT group", to the entire group of "normal" SCr patients, it is estimated that 174 patients or 10 % would have proteinuria in the clinical range (> 300mg/24h). Thus a total of 461 pts or 27 % of all GMC diabetics have potentially significant renal damage. 3). In 52% of all GMC diabetics UAE levels were abnormally elevated > 30 mg/24h.

Conclusions: 1).This study demonstrates that a very high prevalence of renal function abnormalities is present in this inner city minority population.
2). In addition to the significant risk of progressive renal insufficiency, elevated levels of microalbuminuria are thought to indicate diffuse endothelial dysfunction and correlate with greatly increased morbidity and mortality from cardiovascular disease. Intensive cardiovascular risk reduction must be an integral part of the treatment.
3). The GMC physicians' adherence to ADA guidelines for microalbuminuria screening was poor.

An educational intervention directed at improving the detection and comprehensive treatment of diabetic nephropathy by the generalist has been instituted in the GMC.

USE OF STANDARDIZED QUESTIONS TO IDENTIFY DIABETIC PERSONS WITH PERIPHERAL NEUROPATHY AF Brown, PR Gutierrez, J Adams, MF Shapiro, CM Mangione. Department of Medicine, UCLA, Los Angeles, CA.

Background: The identification of persons at greatest risk for diabetic complications such as limb loss is an important problem faced by clinicians, researchers, and health plans. Our goal was to determine whether persons who self-reported neuropathy and/or reported neuropathy symptoms on a 3-item battery are more likely to have evidence of peripheral neuropathy on a standardized physical examination.

Methods: Telephone interviews and clinical examinations were performed on subjects identified through random sampling of Medicare managed care beneficiaries with diabetes cared for in 24 medical groups in Los Angeles. Using questions from the Total Illness Burden Index, a validated measure of diabetes-specific comorbidity, we asked subjects whether they had been told that they had peripheral neuropathy and whether they had experienced symptoms of numbness; tingling or burning; or a loss of temperature sensation in the feet in the past 4 weeks. The dependent variable, neuropathy on exam, was defined by examiners masked to the interview data who tested foot sensation using the Semmes-Weinstein 5.07 monofilament. To determine the strength of association between responses on questions and neuropathy on exam, we constructed stepwise logistic models that adjusted for other characteristics known to be associated with neuropathy. Candidate characteristics included age, gender, height, years with diabetes, insulin use, alcohol use, and lower extremity edema.

Results: Among the 170 subjects examined (response rate = 66%), mean age was 74 ± 5 years; 54% were male; 52% white, 24% Latino, 16% African American; and 9% had Medicaid. The mean number of years with diabetes was 12 ± 9 years; 30% were on insulin; 7% had ≥3 drinks per week; 34% reported peripheral neuropathy; and 18% reported experiencing neuropathy symptoms most or all of the time. The strongest predictor of peripheral neuropathy in each of the models was having neuropathy symptoms. Age and height were also significant ($p<.05$). The table below displays the adjusted odds ratios from the multivariable models for self-reported neuropathy and having symptoms most or all of the time and the area under the curve for each model.

	OR (95% CI)	ROC Curve
Model without responses to clinical questions	--	0.71
Model + self-reported neuropathy	2.1 (0.9-4.6)	0.74
Model + symptoms most or all of the time	4.6 (1.9-11.3)	0.78

Conclusions: In this elderly sample, self-reported neuropathy was weakly associated with the condition, while reported symptoms of numbness, tingling, or decreased temperature sensation were stronger predictors of peripheral neuropathy detected on physical examination. These findings support the usefulness of standardized questions for identifying those at greatest risk for neuropathy and limb-threatening complications.

CONSUMER SATISFACTION WITH CARE IN CAPITATED MANAGED CARE SETTINGS. AF Brown, RD Hays, S Whipple, E Keeler, CM Mangione. Department of Medicine, University of California, Los Angeles and RAND, Santa Monica, CA.

Background: The administrative complexity of Medicare managed care may create dissatisfaction that leads to barriers to needed services for older persons.

Methods: We studied the relationship of demographic and clinical characteristics to satisfaction with care for 633 randomly sampled Medicare beneficiaries from 24 medical groups who are enrolled in a large capitated Medicare plan in Los Angeles (69% response rate). Data collection included the Consumer Assessment of Health Plans Study (CAHPS™) 1.0 questionnaire, the SF-12, medical conditions, and sociodemographic characteristics. The CAHPS 1.0 measures the following domains of satisfaction: overall ratings of the health plan, specialists, and quality of care; the ease of getting needed care, finding a primary provider, seeing a specialist, completing paperwork, and managing claims; and the quality of the primary provider, the medical office staff, and the plan's customer service. We performed multivariable analysis for each of the above 11 CAHPS sub-scales and examined the independent effect of age, gender, race/ethnicity, Medicaid enrollment, and chronic conditions on satisfaction. All models were also adjusted for health status.

Results: The mean age was 75±6 years, 53% were female, 18% African American, 17% Latino, 7% Medicare-Medicaid, and 84% had one or more chronic medical conditions. After adjustment for other demographic characteristics, the global rating of the health plan was significantly higher for African Americans ($p=.007$) and Latinos ($p=.01$) compared to whites. Medicare-Medicaid enrollees reported more difficulty managing claims ($p<.05$) but were more satisfied with the quality of their providers ($p=.05$) than those without Medicaid. Compared to those with no chronic illnesses, persons with one or more medical conditions were more satisfied with customer service ($p=.03$) and the quality of their health care ($p=.04$).

Conclusions: We conclude that most components of satisfaction in capitated Medicare are the same or better for some traditionally disadvantaged groups. An exception is lower satisfaction among Medicare-Medicaid beneficiaries with claims, a domain that is likely to be influenced by literacy. A benefit of managed care may be the provision of similar care to demographically diverse groups.

DIFFERENCES IN WAITING TIME FOR LIVER TRANSPLANTS ACCORDING TO DISEASE, RACE AND GENDER. CL Bryce, JE Stahl, G Clermont, T Sefcik, DC Angus, MS Roberts. University of Pittsburgh Medical Center, Center for Research on Health Care, Divisions of General Medicine and Critical Care Medicine, Pittsburgh, PA.

Introduction: To examine how the waiting time for liver transplant varies with patient illness, race and gender.

Methods: The United Network for Organ Sharing (UNOS) maintains a complete registry of all transplant candidates nationwide. In conjunction with an ongoing study related to the timing of transplantation, we have UNOS data for all liver transplant candidates from 1990 through 1996. We extracted information for adults who received at least one liver transplant during this period (n=18,190) and stratified the sample by race, gender, primary diagnosis and medical condition at the time of transplant (at home, hospitalized, or in ICU). We examined the differences in waiting times using both univariate and multivariate models. We also examined waiting times separately for early (1990-1993) and late (1994-1996) time periods.

Results: Mean waiting time has increased in recent years from 90 days (1990-1993) to more than 160 days (1994-1996). Among the most common diagnoses, persons with alcoholic liver disease (ALD) have a shorter waiting time (mean = 106.7 days) than either hepatitis C (HCV, mean = 149.4 days) or primary biliary cirrhosis/primary sclerosing cholangitis (PBC, mean = 160.0 days). Men also experience shorter waiting times than women do (119.8 days vs. 137.3 days, p = 0.0001). The gender difference persists even after controlling for primary diagnosis and time period (see table), as well as medical condition at time of transplant (data not shown). Native Americans wait longer than other racial groups, but this may also be associated with illness.

Mean Waiting Time (in days), By Gender and Disease

		1990-1993	1994-1996	All Years
Men				
	ALD	74.3	139.6	104.1
	HCV	97.3	170.1	139.4
	PBC	99.7	195.2	143.3
	Other	74.5	148.0	115.3
	All Men	81.5	155.8	119.8
Women				
	ALD	81.7*	159.0*	116.0*
	HCV	123.7	194.6*	165.5*
	PBC	127.6	221.1	169.9
	Other	83.4*	148.4	114.1*
	All Women	100.6*	175.1*	137.3*

*: significant difference relative to male counterpart ($p < 0.05$).

Conclusion: Women with liver disease experience longer waiting times for donor organs. These differences persist even after accounting for medical differences such as etiology and medical condition at time of transplant. This suggests the need to examine center selection criteria and organ allocation policy more closely.

CONTINUITY OF CARE AS A DETERMINANT OF PATIENT SATISFACTION. RESULTS FROM THE ACQUIP STUDY. ML Burman, MB McDonell, SD Fihn VA Puget Sound Health Care System and University of Washington

Patient satisfaction has been positively associated with improved patient compliance and improved clinical outcomes and negatively associated with malpractice claims. Factors that have been found to be related to patient satisfaction include sociodemographic factors, payment source, both patient and physician rated health status and utilization measures. We examined relationship between continuity of care and patient satisfaction.

We surveyed 38,642 General Internal Medicine Clinic (GIMC) patients followed at 7 VAs. Data gathered included demogrpahics, active medical problems and satisfaction with care using the Seattle Outpatient Satisfaction Questionnaire (SOSQ) which measures satisfaction with humanistic and organization aspects of care. Patients who reported angina, COPD, diabetes or hypertension also received condition-specific questionnaires (e.g. the Seattle Angina Questionnaire and the Seattle Obstructive Lung Disease Questionnaire) which include measures of condition-specific satisfaction. All scales were scored from 0 (worst) to 100 (best). Patients were also asked to rate their continuity of care.

14,865 patients responded with 11,711 reporting one or more of the following disease conditions: angina (n=5544), COPD (n=3189), diabetes (n=3249) or hypertension (n=8059). The percent of patients reporting seeing the same provider "always", "most of the time", "sometimes", and "rarely or never" were 38, 39, 14 and 6 respectively. There was no difference in the distribution of continuity scores between the disease conditions. Mean scores on both the SOSQ humanistic scale and condition-specific scales were strongly related to perceived continuity of care with satisfaction scores ranging from 86.7 to 61.4 among veterans who reported "always" seeing the same provider. Satisfaction scores among veterans who reported "rarely or never" seeing the same provider ranged from 69.5 to 41.9 ($p<.001$). These findings persisted after adjusting for age, education, race, income, VA facility, and length of time receiving care at the VA and SF-36 scores.

Continuity with the same provider is highly related to patients' general and condition-specific satisfaction.Since higher patient satisfaction has been associated with improved outcomes in chronic disease and improved medical compliance efforts to improve patient satisfaction might be reasonable interventions for improving outcomes. Further studies are needed to evaluate the contribution of various components of continuity of care (for example convenience, access, ease of negotiating the system, etc) to patient satisfaction.

PATIENT SATISFACTION AMONG VETERANS VARIES BY DISEASE CONDITION BUT NOT BY SYMPTOM BURDEN. RESULTS FROM THE ACQUIP STUDY. ML Burman, MB McDonell, SD Fihn VA Puget Sound Health Care System and University of Washington

We examined the variation of patient satisfaction among veterans with angina, COPD, diabetes and hypertension. We also examined the relationship between satisfaction and measures of symptom severity and symptom burden.

We performed a cross-sectional survey of 38,642 General Internal Medicine Clinic patients followed at 7 VAs. Survey information included demographics and an inventory of active medical conditions including angina, COPD, diabetes and hypertension. Patients reporting any of these conditions were sent follow-up surveys including the Medical Outcomes Study SF-36 and the Seattle Outpatient Satisfaction Questionnaire (SOSQ) which measures satisfaction with humanistic and organization aspects of care. As appropriate, patients also received condition-specific questionnaires (e.g. the Seattle Angina Questionnaire and the Seattle Obstructive Lung Disease Questionnaire) which include measures of symptom severity and symptom burden. All scales were scored from 0 (worst) to 100 (best).

14, 865 patients responded to both the SOSQ and the SF-36 questionnaires. 11,711 veterans reported one or more of the following disease conditions: angina (n=5544), COPD (n=3189), diabetes (n=3211) or hypertension (n=8059). The overall SOSQ humanistic satisfaction score was 72.7. Mean condition-specific satisfaction scores ranged from 56.6 in patients with COPD to 83.3 in patients with angina ($p<.001$). Symptom severity and symptom burden were modestly correlated with satisfaction in patients with heart disease ($r=.28$ for angina frequency) but not in patients with the other three conditions (r range from .04 to .21). These findings persisted after adjustment for age, income, education, race and site.

Patient satisfaction varies significantly by medical condition. However, there is little or no correlation between several measures of symptom burden and either general satisfaction (as measured by the SOSQ Humanistic score) or condition-specific satisfaction. While patient satisfaction has been associated with improved outcomes in chronic disease and improved medical compliance, it appears that there is not a straightforward correlation with symptom burden. Further studies examining the differential impact of non-symptom related factors on patient satisfaction may lead to novel approaches to improving patient satisfaction and perhaps outcomes in different disease conditions.

DEPRESSION AND DEMENTIA SCREENING AT AN ACADEMIC HEALTH CENTER. D Burn, S Warshafsky, R Dornbush, CL Karmen, and SJ Peterson. Departments of Medicine and Psychiatry, New York Medical College, Valhalla, NY.

Purpose. To identify undiagnosed depression and dementia in hospitalized and ambulatory patients in a University Hospital.

Methods. Patients admitted to the medical service and those seen in an outpatient setting at a University Hospital were randomly selected for evaluation. The study design was a cross-sectional survey. Patients with a diagnosis of depression or dementia, very severe illness, intensive care patients, myocardial infarction in the last 48 hours, terminal illness or with auditory or visual defects were excluded from the study. The screening device for depression was the Zung self-rating depression scale, and for dementia the clock test and the Mini-Mental State Exam.

Results. One hundred sixty patients were screened, out of which 18 patients were excluded. The total number of patients evaluated was 142, with the age range 35-80 years. There were a total of 72 males and 70 females. Out of 72 males, 30 were older than 65, 24 between 51 and 64, and 18 were younger than 50. Out of 70 females, 28 were older than 65, 26 between 51 and 64, and 16 were younger than 50. Ninety-five percent Exact Confidence Intervals for a single proportion were computed using the Confidence Interval Analysis Version 1.1 British Medical Journal (London). Prevalence of depression among all males was 54.2% (95% CI=42-66), and in females was 58.6% (95% CI=46.2-70.2). Prevalence of dementia or cognitive disorder among all males was 11.1% (95% CI=4.93-20.7), and in females was 8.6% (95% CI=3.2-17.7). Subgroup analysis was also done.

Conclusions. Fifty to 60% of all patients seen in an academic health center have undiagnosed depression which increased with age. Thirty percent of female patients over the age of 65 have undiagnosed marked depression. Patients younger than 50 tend to have the severe form of depression, although the overall prevalence of depression is low. One out of 10 female patients and 3 out of 20 male patients over the age of 50 have undiagnosed dementia or other cognitive disorders. We did not find patients younger than 50 with dementia or a cognitive disorder. We recommend depression screening for all inpatients and ambulatory patients with chronic disease, regardless of their age. Dementia screening should be done for all inpatients over the age of 50, and ambulatory patients with chronic illness, compliance issues and psychosocial problems.

UNDERSTANDING FAMILY SATISFACTION WITH ICU CARE: ROLE OF FAMILY NEEDS AND EXPECTATIONS. HR Burstin, E Newton, J Soukup, M Hickey. Division of General Medicine, Brigham and Women's Hospital, Boston, MA.

Background. Previous studies have suggested that family needs may not be adequately met in critical care settings. To guide hospital improvement strategies, we assessed family satisfaction, expectations and needs in intensive care units (ICUs).

Methods. As part of routine care, families of patients discharged (alive/dead) from medical/surgical ICUs were sent satisfaction surveys on day of discharge from the ICU. The survey included 4 scales: communication (α=0.92), RN care (α=0.90), MD care (α=0.92), and family support (α=0.89). Patient factors including age, gender, race, payer, and type of unit were considered. Correlations of scales and individual items to overall satisfaction were assessed. Differences in responses for comparable RN/MD items were examined using the McNemar test. Logistic regression was used to determine independent correlates of overall family satisfaction, with the dependent variable being excellent and very good responses.

Results. There were 911 completed surveys (50% medical, 50% surgical, 6% died). Overall, 97% of families reported high satisfaction with overall care. Families were least satisfied with explanation of what to expect (76%), explanation of tests/procedures (78%), MD availability (73%), identification of responsible MD (72%), involvement in decision-making (75%), and emotional support (71%). The RN care scale was most highly correlated with overall satisfaction (R=0.50). Individual items including consistency of information, RN concern/caring, RN explanation of care, and involvement in decision-making were most highly correlated to overall satisfaction. When satisfaction with RNs was compared to MDs for comparable questions in paired analyses, satisfaction was higher for RNs for concern/caring ($p=0.001$), explanation of status ($p=0.001$), identification of responsible RN/MD ($p=0.001$), and skill of RN/MD ($p=0.001$). Multivariate analyses found high ratings on the communication scale ($p=0.02$) and RN care scale ($p=0.0001$), and patient improvement at or above family expectations ($p=0.015$) were major correlates of family satisfaction in ICUs. Patient age, gender, race, and payer were not significantly associated with satisfaction.

Conclusion. These data suggest that communication and nursing care were major determinants of family satisfaction with ICU care. Families were generally more satisfied with care from RNs than MDs. Appropriate setting of outcome expectations was also an important determinant of family satisfaction. Interdisciplinary improvement initiatives may help better meet family needs and expectations.

PROSPECTIVE STUDY OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY OUTCOMES AMONG OLDER ADULTS.

CM Callahan, MD; R Nisi, MD; M Weinberger, PhD, WM Tierney, MD. Indiana University Center for Aging Research, Regenstrief Institute for Health Care, Roudebush VAMC, Indianapolis, IN.

Percutaneous endoscopic gastrostomy (PEG) tube feeding has become the preferred method of long-term enteral feeding among older adults with eating disorders. However, there are no prospective studies describing the long-term outcomes of PEG. The purpose of this study was to monitor changes in nutrition, functional status, and health-related quality of life among a prospective cohort of older adults receiving PEG in a community-based practice. The data presented here include 100 consecutive older adults receiving PEG over an 18 month period. The mean patient age was 77.9 years, 59% were women, and 13% were black. The most frequent indications for the procedure were stroke (39%), dementia (32%), and cancer (15%). The mean cumulative illness rating scale score was 23.8 (range 11-34) and the mean Glasgow Coma Scale score was 13.0 (range 3-15). Nearly 80% of patients had a serum albumin < 3.5g/dl and 50% had a BMI < 21 at the time of PEG; the 30-day mortality rate was 22%. The table below demonstrates mean baseline and up to 6 month follow-up data among survivors.

	Baseline	Follow-up
Activities of Daily Living (6 items)	5.6 (± 1.2)	5.2 (± 1.7)
Instrumental ADLs (7 items)	6.8 (± 1.1)	6.8 (± 0.6)
Lower body function (7 items)	6.4 (± 1.0)	6.1 (± 1.0)
Upper body function (3 items)	1.7 (± 1.3)	1.5 (± 1.3)
Body mass index	22.0 (± 5.3)	23.0 (± 5.4)
Serum albumin (mg/dl)	3.1 (± 0.5)	3.4 (± 0.5)
Serum BUN/creatinine ratio	23.1 (± 9.9)	28.8 (± 12)

About 25% of survivors had > 0.5mg/dl increase in albumin and 30% had a increase in BMI ≥ 2. Many patients died before they could achieve nutritional benefit. Among survivors, the majority did not achieve significant improvements in nutrition, hydration, or functioning.

PROSPECTIVE STUDY OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY TUBE COMPLICATIONS IN OLDER ADULTS.

CM Callahan, MD; R Nisi, MD; KM Haag, RN. Indiana University Center for Aging Research, Regenstrief Institute for Health Care, Central Indiana Gastroenterology Group, Indianapolis, IN.

Percutaneous endoscopic gastrostomy (PEG) tube feeding has become the preferred method of long-term enteral feeding among older adults with eating disorders. Prior studies of complication rates following PEG are limited to retrospective chart reviews and/or short-term experiences at academic medical centers. The purpose of this study was to prospectively assess complication rates among a cohort of older adults receiving PEG in a community-based practice. Data were collected directly from patient interviews and exams every two months and from review of patients' medical records. Over 18 months, 100 older adults received PEG from one of four gastroenterologists in the defined community. The mean patient age was 77.9 years, 59% were women, and 13% were African-American. The 30-day mortality rate was 22%. Ten percent of patients were treated at least once for pneumonia. The table below describes the frequency of early and late complications. The number in parentheses is the % of patients seeking medical care for the reported problem.

Complication	0-60 days	61-180 days
Vomiting, % (% seeking medical care)	9 (2)	14 (6)
Nausea, %	8 (4)	7 (3)
Diarrhea, %	5 (3)	16 (12)
Constipation, %	5 (2)	15 (10)
Aspiration by patient report, %	5 (3)	9 (8)
Infection at tube site, %	7 (7)	5 (5)
Tube site irritated or sore, %	3 (3)	8 (8)
Leakage around tube, %	2 (2)	1 (1)
Bleeding at tube site, %	2 (2)	5 (4)
Feeding tube clogged, %	1 (1)	8 (7)
Intra-abdominal infection, %	2 (2)	2 (2)

Serious complications were infrequent, but 64% of patients reported one or more problems, and most sought medical advice for these problems. PEG is generally a safe procedure with only rare intra-operative complications. However, the process of long-term enteral feeding by PEG is not innocuous and these potential problems should play a role in medical decision-making.

WHICH TESTING STRATEGY LEADS TO THE BEST MANAGEMENT OF URINARY TRACT INFECTION? GJ Canaris, TG Tape, RS Wigton. University of Nebraska Medical Center, Omaha, NE.

Surveys show that physicians vary in how they work-up uncomplicated urinary tract infection (UTI). Many physicians report using urine dipstick rather than microscopic urinalysis (micro UA) or urine culture, and others have suggested that suspected UTI be treated empirically. We therefore looked at the accuracy of various testing strategies to diagnose UTI.

We prospectively collected urine samples from adult women who presented to one of the private practice clinics in our community research network with symptoms of dysuria and/or frequency and/or urgency. Each urine sample was tested at a central lab with dipstick and micro UA and culture. Three diagnostic strategies were simulated on the first 138 samples collected: testing by dipstick alone, by micro UA alone, or by dipstick followed by micro UA if the dipstick was negative. The trade-offs of each strategy are detailed in the table below. Ninety-four (68%) of urine cultures were positive.

Strategy	Correctly Identified	Needlessly Treated	Spared Treatment	Untreated Infection
Dip only	112 (81%)	12	32	14
Micro only	102 (74%)	29	15	7
Dip+micro	102 (74%)	32	12	4
Treat all	---	44	0	0

No single strategy optimized all outcomes. The frequently-used urine dipstick was the most accurate test, but when used alone left many women with UTI untreated. The strategy which left the fewest women untreated is to first test with dipstick, treat all women with positive dipstick results, and test all negative dipstick urine samples with subsequent micro UA. However, this is done at the cost of a greater number of women being treated who don't have a UTI. If the only valued outcome is to identify and treat all infections, then treating all symptomatic women empirically would be the chosen strategy. Thus, the most accurate test is not necessarily the test that results in the best patient management.

THE TRANSITION FROM ACUTE TO CHRONIC LOW BACK PAIN: A 22 MONTH FOLLOW-UP. TS Carey, AM Jackman, JM Garrett, Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, NC.

Acute low back pain (LBP) has a generally favorable, and chronic low back pain a generally poor, prognosis. We wished to characterize the course of patients who develop chronic LBP after seeking care for acute LBP.

We followed 1246 patients with acute LBP in a prospective cohort study. Patients presented to 208 randomly selected North Carolina providers: primary care MD's, Doctors of Chiropractic (DC), Orthopedic surgeons, and primary care providers in a group model HMO. Entry criteria into the study were LBP of less than 10 weeks duration, no previous care for the episode of LBP, no previous spine surgery, not pregnant, no non-skin malignancy. Patients were contacted by telephone after enrollment and at 2, 4, 8, 12, 24 weeks, and at 22 months. We assessed patient functional status (Roland disability scale, 0-23 points), care seeking, and satisfaction.

96 (7.7%) patients had continuous symptoms for 3 months, forming an inception cohort of chronic LBP. Predictors of the development of chronicity were high initial Roland disability score (17.4 vs. 10.5, $p<0.05$) and sciatica (present at baseline in 47% of patients who develop chronic LBP vs. 22% of those who do not, $p<0.05$). Both a high baseline Roland score and sciatica, however, had positive predictive values for development of chronicity of <25%. Patients functionally impaired 4 weeks after seeking care had a 45% probability of being functionally impaired at 3 months. Two thirds of patients with chronic LBP had functionally disabling symptoms at 22 months (mean Roland score =16), but 59% were employed (78% employed at baseline). Only 58% of individuals with unremitting LBP sought care between 3-22 months follow-up. Satisfaction with care was low regardless of provider type. 41% of patients with chronic LBP saw a spine specialist. 46 patients (2.6% of the entire cohort) received surgery, with no statistically significant difference in surgical rate among the initial provider strata. Trends were for patients initially seeking care from orthopedic surgeons to be most likely to receive surgery (5.2%), 4.4% in the primary care stratum, 2.8% DC's, and 1.8% in the group model HMO ($p=0.38$).

Once established, chronic LBP is persistent. Continuous symptoms for 4 weeks indicates poor long-term prognosis. 42% of patients with chronic LBP seek relatively little care and a majority is employed. Given the limited ability of medical treatment to influence this illness course, future research should emphasize maintenance of employment and function.

"PRAYER WITH PATIENTS: CAN PHYSICIANS PREDICT WHO WANTS IT?"
D Castro, LK Loo, LE Skoretz, DD Trinh, DL Stottlemyer, J Ramirez, SJ John. Loma Linda University, Schools of Medicine and Religion, Loma Linda, CA

Introduction: Spirituality and prayer are important to many people. Two-thirds of the American public believe physicians should talk to their patients about spiritual issues and pray with those who request it, yet only 10% of patients recall their physicians doing so. Physicians might be more willing to incorporate spirituality as an aspect of health care if they can discreetly identify receptive patients. This study addresses whether primary care physicians can predict or identify which patients desire prayer.

Methods: Two hundred General Internal Medicine patients were surveyed at a Veterans Hospital (50% outpatients and 50% non-ICU inpatients). The survey instrument and medical record review included patient demographics, spirituality assessments, measures of physical and social health, and the patients' stated desire for prayer with their physicians now or in the future. The Internists' self-rated spirituality and their prediction of whether patients desired prayer were also assessed independently. Additional interviews for qualitative analysis were done.

Results: The patients' preferences and physicians' predictions for prayer from the 197 completed surveys are summarized in the table below:

Patients Desiring Prayer with Physicians		
	Patient Preferences	Physician Predictions
Now	64 (33%)	101 (51%)
Future	58 (29%)	81 (41%)
Never	75 (38%)	15 (8%)

There was no difference in desire for prayer between inpatients and outpatients ($p=0.20$). Patients' declared desire for prayer correlated highly with their self-rated spirituality ($p<0.0001$). Physicians were unable to predict patients' preferences for prayer ($p=0.15$). Physicians' predictions were related to their own self-rated spirituality ($p<0.0001$) but not their patients' spirituality ($p=0.92$).

Conclusions: Physicians were not able to predict which of their patients desired prayer. While 62% of the patients desired prayer, a result similar to recent polls of the general population, the physicians at our institution predicted a 92% positive response. This overestimation reflected the physicians' spirituality. Patients' desire for prayer with their physicians could be predicted with a simple 1-9 self-rated spirituality scale. Since spirituality is important to many but not to all patients, interested physicians may find this simple spirituality scale helpful in more accurately identifying patients receptive to prayer.

SICKLE CELL "CRISIS": CALIFORNIA ADMISSIONS 1995. SI Chaudhry, DM Carlisle. Division of General Internal Medicine, UCLA Medical Center, Department of Medicine, Los Angeles, CA.

Purpose: Sickle cell disease generates $475 million dollars in direct health care costs in the U.S. per year. There are 70,000 admissions among the 75,000 sickle cell patients nationwide each year. The frequency of sickle cell admissions (1.07 admissions per patient/year) is greater than for other common chronic diseases (i.e. congestive heart failure=0.20 admissions per patient/year and chronic obstructive pulmonary disease=0.03 admissions per patient/year). We sought to describe the pattern of hospital use by patients with sickle cell anemia in California.

Methods: A retrospective descriptive analysis was performed of all adult sickle cell hospitalizations in California in 1995 (ICD-9 primary diagnosis code 282.62) using hospital discharge data. The sample (2105 patients) was stratified into those with the highest (>11), high (≥6) and low (<6) number of admissions in 1995 using a unique patient identifier number.

Results: California's 7831 admissions accounted for 10% of nationwide sickle cell hospitalizations with $89 million dollars in charges and an estimated $55 million in costs (12% of nationwide sickle cell costs) in 1995. These 7831 admissions occurred among 2105 patients (average age 34.2 years; 67% female) with a range of 1-54 admissions/year. Over 90% were admitted through emergency rooms and 51% lived in Los Angeles County. Governmental insurance (i.e. Medicare and Medi-Cal) was the primary payer for 75% of all hospitalizations. High volume patients accounted for 31% of the sample but 71% of discharges and highest volume patients a corresponding 6% and 25%. Of the over 600 hospitals in California, 10 hospitals (including 3 public institutions) generated 33% of the discharges. Compared to low volume patients, high and highest volume patients were more likely to be male (57% vs. 43%: $p<0.03$), to have governmental insurance (80% vs. 60%: $p<0.0001$), to have unscheduled admissions (3312 vs. 1250: $p<0.02$), and to leave against medical advice (AMA) (111 AMA discharges vs. 26: $p<0.02$). High and highest volume patients were less likely to have comorbid discharge diagnoses (28% vs. 12%: $p<0.0001$) or to die during any one hospitalization (8 vs. 18 deaths: $p<0.0001$). Fifty-one "adverse events to opiates and narcotics" (ICD-9 code E9352) were documented and were more likely to occur among women (odds ratio 2.2; 95% CI 1.1-4.3).

Conclusions: We conclude that sickle cell patients contribute more to hospital care on a proportional basis than those with other more common diseases. California contributes to a large amount of nationwide health care costs for sickle cell disease. High volume patients are different from low volume patients in their demographics, severity of comorbid diseases and the outcomes of their hospitalizations.

RACIAL DIFFERENCES IN ADHERENCE TO CARDIAC MEDICATIONS. HM Charles, J Whittle, BH Hanusa. Center for Research on Health Care, University of Pittsburgh, Pittsburgh VAMC, Pittsburgh, PA.

African Americans (AA) have a higher rate of morbidity from cardiovascular diseases than White Americans (WA). Decreased adherence to cardiovascular medications (CV) may help explain this difference. Since cost and access to care may affect adherence, we examined adherence to 4 classes of CV medications in the VA Medical Center where cost and access are equal.

We reviewed computerized pharmacy records of 8582 black or white males age > 44 who received beta blockers (BB), angiotensin converting enzyme inhibitors (Ace), lipid lowering agents (LLA), or calcium channel blockers (CCB) from the Pittsburgh VA Medical Center from Oct 1996 to March 1998. We eliminated patients who had fewer than 3 fills for a drug. For each drug, we collected date of issue and the number of days supplied save the last one. Adherence ratio (AR) was calculated by dividing the total days supplied over the total number of days from the first to last fill. Patients were considered adherent if this exceeded 80%. Patients who with AR $\geq$ 1.2 were eliminated. Age and race were obtained from computerized VAMC medical records. Univariate comparisons were done with χ^2 statistics. Multivariate linear regression and logistic regression were used to examine the impact of race, age, drug class and the interactions of these simultaneously. Multiple records for the same patients were treated as clustered data.

A total of 5,118 patients, 17.7% of whom were AA, with 7,431 pharmacy records were eligible for the study,. The patients had a mean age of 65.2, AA were younger than WA (mean age 63.9 vs. 65.4 years, $p< 0.001$). AA were more likely than WA to be on Ace (65.9% vs. 56.9% $P< 0.001$), but less to likely to be on BB (29.9% vs. 36.8% $P < 0.001$) and LLA (14.5 % vs. 22.7% $p< 0.001$). The proportion of patients who were adherent (i.e., AR $\geq$ 0.80) varied by drug class (BB =35.6%, Ace= 30.8%, CCB =27.0%, LLA =20.4%, $P <0.001$) but not by age and race. Similar proportions of AA (31%) and WA (29%) were adherent ($p= 0.20$). In a multivariable linear regression model of AR, main effects for drug class but not age or race were significant. However there was an interaction between age and race. Specifically, young (age< 51) AA were less adherent within all drug classes than WA or older AA ($p= 0.012$). Logistic regression of the dichotomous adherence yielded similar results.

The results suggest that race does not influence adherence in males at a VA medical center where access to care and health care costs are the same for all patients. Younger AA had a significantly lower adherence rate than younger WA and older AA. It is not clear why this disparity exist. Interestingly, of all the drugs adherence was highest in patients taking Beta blockers.

CLINICAL PREDICTORS OF INFECTIVE ENDOCARDITIS AMONG FEBRILE INJECTION DRUG USERS. S Cheung, A Palepu, S Rae, C Thompson. Centre for Evaluation and Outcome Sciences, St. Paul's Hospital, University of British Columbia, Vancouver, BC, Canada.

"Febrile illnesses" are common reasons for hospitalization among injection drug users (IDUs). Infective endocarditis (IE) is a significant clinical concern which triggers the use of echocardiography (echo). Our objectives were to determine: 1) which clinical variables available within 48 hours of admission are predictive of IE and; 2) which variables identify patients in whom echo is unlikely to result in a change in management.

We enrolled consecutive febrile IDUs hospitalized at St. Paul's Hospital from February 1997 – April 1998 who had injected drugs within 3 months of presentation and there was a clinical suspicion of IE. Housestaff collected history and physical exam variables and an investigator ascertained the hospital course, blood culture and echo results. Duke criteria were used for the diagnosis of IE. Logistic regression was used to determine which variables are independent predictors of the presence or absence of IE. A classification tree was also used to model the data.

One hundred febrile IDUs were included. Patient characteristics: 51% female, mean age 35 years, 58% HIV-positive, 59% had respiratory symptoms, 30% had a past history of IE, 15% had immune complex or systemic emboli and 72% had an obvious source of infection (pneumonia, cellulitis, septic arthritis). Of the 61 patients with positive blood cultures at 48 hours, 20 had vegetations on echo whereas only 2 of the 39 patients with negative blood cultures had vegetations. The following clinical factors (adjusted odds ratio, 95% CI) were independently associated with the presence of IE: positive blood cultures (7.0, 1.3-38.1); multiple chest radiograph infiltrates (7.5, 1.8-31.8); immune complex disease or systemic emboli (8.3, 1.5-46.8); and no obvious source of infection (9.6, 2.2-41.0). The classification tree revealed that almost all the patients with endocarditis would be detected if echo was performed on IDUs with multiple chest radiograph infiltrates or with positive blood cultures. One patient would be missed who had a normal chest radiograph and negative blood cultures but had *S. Aureus* in his cerebral spinal fluid on admission.

We found 4 clinical factors at 48 hours (positive blood cultures, multiple chest radiograph infiltrate, immune complex or systemic emboli, and no obvious source of infection) that are independently associated with the presence of IE. In febrile IDUs with negative blood and CSF cultures AND those without multiple chest radiograph infiltrates, the yield of echo is low. Our results remain to be validated prospectively with a larger study population.

PREDICTING THE CUMULATIVE RISK OF FALSE-POSITIVE MAMMOGRAMS FOR INDIVIDUAL WOMEN

CL Christiansen[1], F Wang[2], MB Barton[1], W Kreuter[3], JG Elmore[3], AE Gelfand[2], SW Fletcher[1]
[1]Harvard Medical School and Harvard Pilgrim Health Care, [2]U. of Connecticut, Storrs, [3]U. Washington Medical School, Seattle

Background Women have a 50% risk of experiencing a false-positive mammogram over 10 screening mammograms. Whether certain women are more or less likely to experience a false-positive mammogram over time is not known. We developed a method for predicting the cumulative risk of a false-positive mammogram based on clinical and radiology variables.

Methods Medical records were abstracted for 2227 women enrolled continuously for 12 years at Harvard Pilgrim Health Care (an HMO) and selected from an age-stratified random sample. Using a product estimator similar to that used in the analysis of survival data, individual patient and radiologic variables were tested for their effect on the risk of a false-positive mammogram. A multiple-variable prediction model was developed and used to estimate cumulative risks for specific individuals.

Results 2227 women had 9747 screening mammograms from 1983 to 1993, with an overall false-positive rate of 6.5%. The risk of at least one false-positive mammogram was 43.1% after 9 mammograms. In the multiple-variable model, estimated rates independently varied inversely with patient age and directly with history of previous breast biopsy, family history of breast cancer, estrogen use, BMI, length of time between mammograms, no comparison to a previous mammogram, and the radiologist's propensity for a positive mammogram reading. Risk ratios were less than 2 except for breast biopsy (4.36 for 3 or more) and the radiologist effect (24.4 comparing highest to lowest). For a woman with the highest risk variables and using the average radiologist random effect, the cumulative risk for a false-positive reading after 1, 5, and 9 mammograms was estimated to be 25.0%, 62.6%, and 83.5% respectively. At the other extreme, a woman with the lowest risk variables was estimated to have risks of 2.1%, 7.1%, and 12.8%.

Conclusion Women's risks of experiencing a false-positive mammogram over time differ substantially according to their personal characteristics, timing of the mammogram, and certain radiologic practices.

OBESITY IN AN URBAN, AFRICAN-AMERICAN COMMUNITY

JM Clark, R Stallings, A Barker, L Bone, S Zeger, M Hill, D Levine. The Johns Hopkins Schools of Medicine and Hygiene. Baltimore, MD.

Introduction: With the prevalence of obesity rising among the African-American community, particularly among economically disadvantaged groups, we investigated what influences this condition.

Methods: Using indigenous community health workers, we surveyed adult residents in a predominantly African-American, urban community in Baltimore. Access was granted in 41% of the households, and 80% of the adults therein (N=2196) were interviewed. Blood pressure was measured, and self-reported demographics, perceived health status, health behaviors, height, weight, and illness history were recorded.

Results: The median age was 40.4 years, 63% were female, and 84% earned < $15,000 per year. The median BMI (kg/m^2) was 26.7 for women and 25.9 for men (p=.001). 62% of women were overweight (BMI ≥ 25), 35% were obese (BMI ≥ 30), and 7% were morbidly obese (BMI ≥ 40), compared with 56%, 24%, and 4% of men (p<.001) respectively. When adjusted for age, the odds of hypertension, and self-reported diabetes, arthritis, and poor health were significantly higher in the obese. In multivariate analysis, females (OR=1.7; 1.3-2.2), those with incomes of $15-30,000 (OR=1.9; 1.2-3.1), and those aged 45 to 60 (OR=1.8; 1.2-2.6) were more likely to be obese; less likely were smokers (OR=0.54; .45-.73), daily drinkers (OR=.49; .27-.90), and those with "good" or "excellent" health (OR=.80; .69-.93). Among the obese, 69% of women and 43% of men reported trying to lose weight. To do this 76% cut calories, 70% cut fat, 66% skipped meals, and 61% exercised more. Only 26% of the obese were receiving professional help.

Conclusions: Obesity was less common than expected from national data, but was associated with significant comorbidities. After adjustment, age, gender, income, smoking, drinking, and self-rated health were all associated with obesity. Despite trying to lose weight, only a minority of the obese was able to get professional help.

WHO'S USING POSTMENOPAUSAL HORMONE REPLACEMENT NOW?

JM Clark, EB Bass, KM Bass, TL Bush. The Johns Hopkins University School of Medicine; Baltimore, Md.; University of Maryland School of Medicine.

Introduction: Use of hormone replacement therapy (HRT) has fluctuated since its introduction. Recently, additional benefits and risks have been identified. Thus, we investigated factors currently associated with HRT use, including the use of herbal and other over-the-counter products.

Methods: We designed a 20 page, confidential, mailed questionnaire, and piloted it in a random sample of 100 women ages 50+ with available addresses in one county in Pennsylvania. Questions included demographics; past medical and family history; health care utilization; self-rated health and health habits; use of HRT; risks and benefits of HRT; reasons for starting, stopping, or declining HRT; sex and specialty of the prescriber; and use of other remedies. Stamped return envelopes were sent, as well as one postcard reminder at 4 weeks.

Results: Two surveys were not deliverable. Of the remaining 98, 54% were returned (N=53) and 63% of these were completed (N=33). The mean age of respondents was 60 years (95% Confidence Interval: 51-71), and the median age at menopause was 49 years. 94% were white, 41% had at least some college education, 46% had a household income over $40,000, and 75% were married. 17 (52%) of the respondents reported ever taking HRT, and 11 (65%) of these were currently using it. The only characteristic of respondents that was significantly associated with ever using HRT was learning about it from a doctor (p=.01). Current use of HRT was positively associated with rating health as "very good" or "excellent" (p=.05) and with BMI≥30 kg/m^2 (p=.04), and inversely related to a personal history of breast cancer (p=.03). Among the 11 current users, a gynecologist had prescribed HRT in 8 cases, an internist in only 2 and a family practitioner in 1. 5 (16%) women reported using menopausal herbal therapies; 2 (40%) of them were concurrently taking HRT. These women were younger (p=.02), and were less likely to have received information about HRT from a doctor (p=.04).

Conclusions: The majority of postmenopausal women (67%) are not currently using HRT and a substantial minority are using alternative herbal therapies. Since physicians seem to have an important role in influencing patient use of HRT and herbal therapies, internists and family practitioners need to give more attention to this issue. A larger study will yield more definitive information.

OUTPATIENT RESOURCE USE IN PATIENTS AWAITING LIVER TRANSPLANTATION

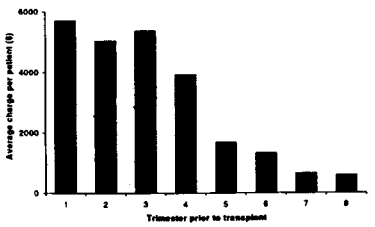
GC Clermont, CL Bryce, JE Stahl, T Sefcik, MS Roberts, DC Angus. University of Pittsburgh Medical Center, Center for Research on Health Care, Divisions of General Medicine and Critical Care Medicine, Pittsburgh, PA.

Introduction: Although waiting time for liver transplantation has been previously characterized, resource use in patients awaiting transplantation at home is unclear. This study describes outpatient resource use for Medical Assistance patients awaiting liver transplantation.

Methods: Fifty-eight patients with chronic end-stage liver disease were transplanted at the University of Pittsburgh Medical Center under PA Medicaid between 7/93 and 12/95. We abstracted the corresponding claims files from the PA Medicaid claims databases for at least two years prior to a first liver transplant. Initial transplant evaluation date and continuous eligibility (ensuring complete capture of resource use) were ascertained for 33 patients. Out-patient resource use profiles of these patients are presented by cost center.

Results. There were 22 (67%) males. Mean age for the cohort was 49.5±8.2 years. Patients awaited transplant for an average of 316±211d(median 267d). There were 10,475 outpatient-days on the waiting list. After listing for transplantation, mean outpatient monthly total charge was $1,766; $446 was reimbursed. Including resource use prior to listing, outpatient utilization was significantly more intense in the pre-transplant year than in the previous year (figure).

	Charges/month ($)	Encounters/month
Laboratory	409	4.9
Medical services	674	2.2
Pharmacy	278	3.6
Radiology	46	0.4
Medical supplies	50	0.4
Support services	309	0.9
Total	1,766	12.4



Conclusions. Our study suggests that out-patients awaiting liver transplant consume more resources as their disease progresses. This supports the notion of an optimal timing to transplant end-stage liver disease candidates.

UNDER-USE OF HORMONE REPLACEMENT IN A MULTI-ETHNIC URBAN POPULATION. E Cohen, JH Arnsten, P Mund, IN Rafique, M Jahn, Department of Medicine, Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY.

Objective: Most studies on use of hormone replacement (HRT) have been done primarily in white women, with recent data emerging on African-American women; but there remains a paucity of data on HRT use in other groups, such as Latina women. This ongoing study explores factors related to use of HRT in an ethnically diverse, largely Hispanic urban population.

Study design:Cross-sectional survey

Methods: Women attending ambulatory sites affiliated with Montefiore Medical Center who were over age 40 and postmenopausal were asked to participate in a structured interview assessing menopausal history, HRT use, comorbidities likely to effect HRT use, sociodemographic factors, and knowledge and attitudes regarding menopause (MNP) and HRT.

Results: To date, 46 women have completed the interview, with a median age of 55 yrs. (median 7 yrs. post-MNP); 56.5% were Latina, 28.3% were black, 8.7% were non-Hispanic white, 46.7% had not completed high school, and 55.6% had <$10,000/yr income. Of women interviewed 21.7% considered Spanish their first language, and 26.1% perceived a language barrier with their MD. 19.6% of participants were current HRT users (63.6% ≤ 1 year duration), and 6% were past users. Of those women never using HRT, 54.5% reported lack of MD discussion as a reason for non-use, and 70% reported never having had a discussion about HRT with their MD. In contrast, 21.6% reported concern about cancer risk, and 12.1% concern about side-effects as reasons for non-use. Despite low HRT use, this cohort reported high rates of other preventive care (82.6% had a PAP smear within 3 yrs., 71.7% had a mammogram within 3 yrs.). Uni-variate analysis revealed no statistically significant differences in HRT use according to race, education, income, medical comorbidities, prior hysterectomy, or perceived language barrier.

Conclusions: There was a low rate of HRT use in this largely Latina, indigent urban population, with a large proportion of nonusers of HRT reporting lack of physician discussion as a reason for non-use. Future efforts must be focused on effective methods for improving physician-patient discussion regarding HRT in multi-ethnic populations.

UPPER EXTREMITY REPETITIVE STRAIN SYMPTOMS IN COLLEGE STUDENTS. CM Coley, B Carroll, C Hollis, BC Amick III, JN Katz, Harvard University Health Services, Brigham and Women's Hospital, Harvard University, Cambridge, MA, Boston, MA

Upper extremity repetitive strain injuries (RSI) associated with computer use are one of the fastest growing sources of worker disability. RSI is also a burgeoning concern on U.S. campuses, but no published data exist defining its epidemiology in students. We analyzed annual surveys to investigate prevalence and determinants of RSI symptoms (SX) in a large sample of college students.

In June 1998, freshmen (FRESH) [N=1079, 67% of class] and seniors (N=1606, 100% of class) completed surveys that asked whether the student experienced one or more SX in the hands, wrists, or arms with computer use. 49% of FRESH and 55% of seniors reported some SX, while 10% of FRESH and 14% of seniors reported SX with < 1 hour of computer use. A gradient of risk was seen across the spectrum of self-reported weekly hours of computing for academic work [43% with SX if ≤ 2 hours vs 66% if ≥ 21 hours, p = .00005; odds ratio 2.6 (1.6 - 4.1)]. Overall, computer science majors (CSM) were more likely to report SX than other majors (p = .01). 25% of senior CSM report SX with < 1 hour of use; 15% of such seniors report SX after a few minutes, compared to 3% or less for other majors. There were no significant differences in likelihood of RSI SX according to gender, other major concentrations, average course grade, overall satisfaction with education, or touch-typing technique.

These preliminary findings confirm that reported upper extremity RSI SX associated with computing are common in a college student population. Our data suggest a relationship between SX development and duration of computer use. Further study is needed to define the clinical conditions underlying these SX, the ergonomic and psychosocial determinants, as well as the functional, social, and career impacts of RSI SX in students. Such data will help to inform the development of primary and secondary prevention programs.

USE OF A PREOPERATIVE CLINIC FOR AGGRESSIVE TREATMENT OF HYPERTENSION. SL Cohn and S Chhabra, Downstate Medical Center/ Kings County Hospital, Brooklyn, NY.

Results from NHANES III showed that 68% of hypertensive patients were aware of their diagnosis, 53% were on treatment, but only 27% were adequately controlled. We reviewed data on 538 consecutive patients referred to our Preoperative Medical Consultation Clinic from 8/95-8/96 to examine the prevalence of hypertension, the level of control, and the use of our clinic to aggressively treat hypertension prior to elective surgery. Of these patients, 314 (57%) either had an elevated blood pressure or history of hypertension as a reason for evaluation. Characteristics of this group included an average age of 61.1 (range 18-86), 62% females, 82 with DM, 28 with CAD, 47 current and 77 ex-smokers. For the overall group, the mean initial BP was 156.6/92.1. Our goal was to achieve a final BP of 160/100 or better prior to surgery, if possible, without having to postpone the procedure. The patients were treated aggressively primarily using two drugs – nifedipine XL and labetalol, although treatments were individualized. Drug doses were increased every 3-4 days if necessary. Sixty-one patients required 1 follow-up visit, 29 required 2-3 follow-up visits, and only 6 required 4 or more follow-up visits. For the 218 patients seen only once, the mean BP was 148.4/87. For the 96 patients seen two or more times preoperatively, the mean initial BP was 175.3/103.7 and the final BP was 149.2/88.5, a reduction of 14.7%.

Although not necessarily reaching the goal BP recommended by JNC V (and now VI), we did achieve significant improvements in a short time period. This was most likely due to aggressive management of medications, access to medication, and timely follow-up (within a week) combined with patient compliance related to their desire to have their surgery performed safely and without delay.

RACIAL VARIATION IN OBSERVED TO EXPECTED MORTALITY FOLLOWING ELECTIVE SURGERY FOR VASCULAR DISEASE. TC Collins, HS Gordon, M Johnson, J Daley, W Henderson, SF Khuri, Houston VAMC, Houston, TX, Brockton/West Roxbury VAMC, West Roxbury, MA, Hines VAMC, Hines, ILL, Brockton/West Roxbury VAMC, West Roxbury, MA.

This study assessed differences between whites and blacks in observed to expected 30-day postoperative mortality after elective surgery for vascular disease.

Data were from the National VA Surgical Quality Improvement Program, a prospective, multicenter observational study of risk adjusted surgical outcomes after major surgery (123 VAMC's). Race was defined as black, not of Hispanic origin or white, not of Hispanic origin as identified by the physician, physician assistant or clinical nurse specialist. Cases involving other races were excluded. The following elective operations were evaluated: abdominal aortic aneurysm repair (AAA; n=1401; 94.2% white and 5.8% black), lower extremity revascularization surgery (LEVS; n=2773; 81.7% white and 18.3% black), and lower extremity amputations (AMP; n=2336; 70.7% white and 29.3% black). The outcome of interest was all cause mortality within 30 days of the index operation. For each operation, multivariable logistic regression models were developed to predict 30-day mortality on Phase I of the data, 10/1/91-12/31/93, using candidate clinical variables that were significant at p< .10 in univariate analyses. Models were validated using Phase II, 1/1/94-8/31/95, by comparing the area under the receiver operating characteristic curve for each model between the two phases. Each logistic regression model was then used to estimate the probability of death for each patient. These probabilities were summed by race to obtain the expected number of deaths within thirty days. The ratio of observed to expected 30-day mortality was calculated for each operation for whites and blacks. We used an alpha level of 0.10 to increase our power to detect a difference and avoid a Type II error.

The overall 30-day mortality was 4.0% for AAA, 2.1% for LEVS, and 7.0% for AMP. For AAA, significant predictors of mortality included age, hypertension, diabetes, history of a cerebrovascular accident, and creatinine ≥ 1.2. 42 whites and 7 blacks were observed to die within 30-days of operation, whereas 45.9 and 3.1 deaths were expected for whites and blacks respectively. The observed to expected mortality ratio was .91(90% CI .70,1.2) for whites, and 2.3 (90% CI 1.1, 4.3) for blacks. For LEVS and AMP, there was no statistically significant difference by race in observed to expected 30-day mortality (p>. 10).

There is over twice the rate of observed to expected 30-day mortality after elective AAA, for blacks compared to whites. Further research is needed to address issues of access to care, unmeasured risk factors specific to blacks, and/or process of care, which could account for the increased 30-day mortality following elective AAA.

RANDOMIZED TRIAL OF INTERVENTIONS TO SUPPORT DECISION-MAKING ABOUT POSTMENOPAUSAL HORMONE REPLACEMENT THERAPY. MT Connelly, D Rusinak, L Raeke, W Livingston, TS Inui, Department of Ambulatory Care and Prevention, Harvard Medical School and Harvard Pilgrim Health Care, Boston, MA.

Objective: To learn more about the differential effectiveness of decision support technologies on women's satisfaction, knowledge, decisional conflict and likelihood to use postmenopausal hormone replacement therapy (HRT).

Methods: Harvard Pilgrim enrollees who identified themselves as peri- or postmenopausal and who had never used HRT were randomized to: 1) usual care which consisted of a single recommended visit to a health care provider to discuss menopause; 2) usual care plus an audiotape, workbook and literature mailed to the woman's home prior to the provider visit; or 3) usual care plus literature mailed to the home and an interactive video viewed at the participant's health center. Pre- and post-intervention measures of satisfaction, knowledge about HRT, intention to use HRT, and decisional conflict were obtained by telephone interview. Analyses were based on intention to treat.

Results: One hundred fifty-seven women were randomized and completed the post-intervention assessment. The mean interval between baseline and final survey was 5.7 months. The majority was white (79%), perimenopausal (85%), employed (90%), had more than a college education (61%) and had a per capita income of $60,000 or more (68%). Of those randomized to audiotape, 57% reported listening to the tape compared with 82% who viewed the interactive video program ($p<.01$). Eighty-six percent of the usual care arm, 75% of the audiotape arm, and 88% of the interactive video arm actually met with a health care provider during the course of the study to discuss menopause.

For all three study arms, overall decisional conflict decreased, self assessment of knowledge about HRT and menopause increased, likelihood to use HRT increased, and satisfaction with menopause care increased and *did not differ* by intervention. The change between baseline and post-intervention objective knowledge about HRT, however, differed by treatment arm: those randomized to the interactive video had the largest gain on a 16 point scale (7.3 to 9.9), followed by the audiotape arm (7.7 to 9.6) and usual care (8.2-9.2) (F statistic 3.8, $p<.02$).

Conclusions: For this managed care population, exposure to literature about HRT and either an audiotape or interactive video program was no more effective than merely offering a provider visit to discuss menopause for most outcomes measured except explicit knowledge about HRT. These data suggest that if the goal of decision support is to lower patient conflict or improve satisfaction, neither intervention offered an advantage over a provider visit alone. If, however, in this era of evolving scientific evidence, the primary objective is to maximize women's knowledge about HRT, health care providers and their patients may need to invest in decision support systems such as interactive video programs.

SMOKING CESSATION COUNSELING FOR SMOKERS IN PRECONTEMPLATION STAGE: A RANDOMIZED CONTROLLED TRIAL AMONG RESIDENTS. J Cornuz, JP Humair, L Seemater, H Stalder, A Pécoud. Outpatient clinic, Institute of Social and Preventive Medicine, Medical School, Lausanne University and Department of Community Medicine, Geneva University, Switzerland

Objectives: The majority of Swiss smokers are in the precontemplation stage (no intention to quit smoking within the next six months) and residents in general internal medicine often fail, despite opportunity, to provide smoking cessation counseling. We developed a teaching intervention for general internal medicine residents on behavioral theories of smoking cessation, and measured the effect of this teaching intervention on the quality of smoking cessation counseling provided by residents.

Methods: The 35 residents trained in outpatient general medicine clinics of Lausanne and Geneva (Switzerland) were randomized to either a two half-day training program based on behavioral theories of smoking cessation, role playing and standardized patients or a control intervention aimed to counsel and treat patients with hyperlipidemia. Residents' counseling practices were assessed through interviews with 211 consecutive precontemplative smokers (mean age 38 years, 68% male, mean number of cigarettes/day 19). We assessed the quality of residents' smoking cessation counseling by determining whether they used ten specific counseling practices. A summary score was assigned to each smoker based on the number of effective counseling practices used (one point for each practice, potential range 0 to 10).

Results: Smokers attended by residents trained in smoking cessation had a slightly higher mean score than did smokers attended by residents who received the control intervention: 3.4 vs 2.4, $p=.005$. Specifically, residents in the intervention group more often proposed to help smokers (21% vs 5%), gave self-help materials (13% vs 1%), provided counseling for coping with cessation (14% vs 5%), asked the time of the first cigarette (18% vs 12%), discussed the benefits of quitting (18% vs 10%), and proposed another appointment to discuss smoking (13% vs 7%). For practices not targeted in the training intervention because of inappropriateness in such smokers (e.g., proposing a quit date or prescribing nicotine replacement therapy), there were no differences between groups.

Conclusion: Short-term counseling by residents was generally poor. However, counseling practices were improved among residents trained in counseling smokers in the precontemplation stage.

QUALITY OF PRIMARY CARE AND ITS EFFECT ON EMERGENCY DEPARTMET USE IN AN URBAN HOSPITAL'S OUTPATIENT TEACHING CLINIC. T Conway, TC Hu, M Saleem. Department of Medicine, Cook County Hospital; Ambulatory and Community Health Network, Cook County Bureau of Health Services, Chicago, IL.

High quality primary care should, theoretically, help retain patients in the primary care system for most of their healthcare needs. To assess the effect of patient perceived quality of primary care on emergency department (ED) utilization, we conducted a retrospective cohort study in an urban public hospital's General Medicine Clinic (GMC). The Component of Primary Care Instrument (CPCI), a previously validated tool, was used in a 6-point Likert scale format to measure the perceived quality of primary care. 989 patients with regular follow-up appointments in the study setting for more than one year who completed the baseline data were enrolled in the cohort. ED utilization was retrospectively confirmed through the hospital information system. Scores for the major components of the CPCI were calculated, with the higher score representing better-perceived quality of care. Student's t-test was performed for group comparison. A 2-tailed p-value < 0.05 was defined as having a statistically significant difference.

Of the 989 patients, 325 (32.9%) used ED in the past 12 months even though they already had a regular appointment scheduled within GMC. The following table displays the score comparisons between the group of patients who used ED after entering GMC with those who did not (n=662).

Major Component	Not used ED mean ± SD	Used ED mean ± SD	t-test	p-value
Comprehensiveness of care	5.07 ± 1.07	4.83 ± 1.16	3.16	0.002*
Accumulated knowledge	4.78 ± 1.20	2.55 ± 1.26	2.73	0.006*
Interpersonal communication	4.96 ± 1.02	4.81 ± 1.10	2.33	0.020*
Preference for regular physician	5.33 ± 0.98	5.16 ± 1.06	2.41	0.016*
Coordination of care	4.07 ± 1.51	4.06 ± 1.49	0.12	0.904
Advocacy	4.67 ± 1.05	4.56 ± 1.11	1.49	0.138
Family context	2.43 ± 1.54	2.34 ± 1.53	0.92	0.360
Community context	2.43 ± 1.73	2.28 ± 1.62	1.35	0.178

Our study demonstrates the effect of patient-perceived quality of primary care on their ED utilization. Patients who did not use ED in the past 12 months perceived the services they received as better on all the components of CPCI, with four components statistically significantly different, than those who used ED despite appointments. Our data also reveal the importance of monitoring and addressing the quality of primary care in teaching clinics to avoid unnecessary ED utilization, which is more costly and less beneficial to patients than primary care.

GENDER DIFFERENCES IN HEALTH PROMOTION ACTIVITIES IN PRIMARY CARE SETTING. J Cornuz, JP Humair, L Seemater, H Stalder, A Pécoud. Outpatient clinic and Institute of Social and Preventive Medicine, Medical School, Lausanne University and Department of Community Medicine, Geneva University Hospital, Switzerland.

Objectives : Few studies have assessed whether there are gender differences in the use of health promotion activities outpatient clinical practice.

Methods: We surveyed all consecutive patients aged 18 to 75 who attended two outpatient general medicine clinics in Switzerland to determine whether patients had been exposed to health promotion activities such as counseling regarding regular physical activity and healthy diet, and whether they had their blood pressure and plasma cholesterol levels measured during the last three clinic visits. Data were collected by a face-to-face interview using a pre-tested questionnaire. The results are expressed by age-adjusted odds ratio (OR) with 95% confidence interval (95% CI)

Results: Of the 1955 contacted subjects, 1344 (68 % participation rate) outpatients (mean age 39, 45% women) agreed to report health promotion and screening activities by the physicians. For physical activity counseling, women were less likely than men to be asked about their usual level of physical activity (OR 0.46, 95% CI 0.34-0.58), to be informed about the role of physical activity in disease prevention (OR 0.63, 95% CI 0.50-0.89), to be counseled to either initiate or consolidate regular exercise (OR 0.63, 95% CI 0.50-0.82) and to be assisted in selecting appropriate type of physical activity (OR 0.73, 95% CI 0.58-1.04). For counseling regarding a healthy diet, women also were less likely to be asked about dietary habits (OR 0.67, 95% CI 0.50-0.89). Among patients over the age of 50 (n=412), women also were less likely to have measurement of plasma cholesterol level (OR 0.57, 95% CI 0.38-0.85). However, no difference between genders was noted in the frequency of blood pressure measurement (OR 0.98, 95% CI 0.76-1.28).

Conclusion: Even though data are self-reported, our results suggest that women do not receive health promotion activities (such as physical activity and healthy diet counseling) as often as men. Further studies are needed to examine the reasons for and the implications of this gender disparity.

READABILITY OF SPANISH LANGUAGE PATIENT EDUCATIONAL MATERIAL. Anna Cosyleon, Ralph Gonzales and Robert J. Anderson, University of Colorado Health Sciences Center, Denver, CO.

Background: Decreasing duration of ambulatory visits with primary care providers and the need for reinforcement emphasizes the importance of written patient educational materials (PEM) as aids for physician-patient communication. Although there is no recommended reading level for Spanish language PEM, published experience suggests that English language PEMs should be written at a 6th grade level to reach the majority of patients.

Objective: To ascertain the readability of Spanish language PEM.

Methods: To assess readability of Spanish language PEM, we applied two validated methods of measuring Spanish literature reading levels that are based on the FRY English language readability scale. The FRY scale is based on the number of sentences and syllables per selected 100 word passages. We analyzed samples of PEMs for three health issues that are over-represented or have relevance to the Hispanic community including diabetes mellitus (n=27), women's health issues (n=18) and HIV infection (n=13). The PEMs were obtained from a variety of sources including nonprofit organizations (e.g., American Diabetes Association, American College of Obstetrics and Gynecology, American Cancer Society), federal government (e.g., Centers for Disease Control, Health and Human Services, National Cancer Institute), the pharmaceutical industry and local institutions for each condition.

Results: Analysis of the 58 examples of Spanish PEM revealed substantial variability in the grade level at which they were written, ranging from the first through eleventh grade levels. This variability was observed not only within each of the three medical conditions selected for the study, but also was found within organizations that had developed several sets of material related to different aspects of a single medical condition. The level at which the Spanish language PEM was written was moderately high with the average grade levels (mean ± SEM) of 6.7 ± 0.3, 7.2 ± 0.1 and 7.6 ± 0.7 for diabetes, women's health and HIV respectively. Overall 59-78% of the PEM we analyzed were written at levels above the sixth grade. When 10 sets of PEM that provided simultaneous English and Spanish versions were compared, reasonable grade correlations were present.

Conclusion: Spanish language PEMs have a wide range of readability with the majority written at a 6th to 8th grade level. The original source material rather than translation is the reason for the high readability level of the Spanish PEM. In view of the observation that a 6th grade or lower level is needed to reach the majority of English speaking patients in community settings, it is likely that a high percentage of Spanish PEM is not readable for the population for which it is intended.

EVALUATION OF AN AMBULATORY CARE ASTHMA CENTER

D Curran, A Rose, Y Montalvo, S Balbontin, M Sola, K Shahan, S Burko, C Shim. Department of Medicine Jacobi Medical Center & TheAlbert Einstein College of Medicine, Bronx, N.Y.

Objective: To evaluate the effectiveness of an ambulatory care asthma program on improving quality of life and reducing emergency room and hospital admissions.

Setting and participants: The asthma center is staffed by general internists, nurse practitioners and respiratory therapists. It is based at a municipal hospital which serves inner-city communities with high rates of asthma. Most patients were enrolled following an emergency room visit (70%) or hospitalization, (6%) a smaller number were referred by their primary care physicians (24%).

Intervention: Patients received asthma care based on National Institute of Health (NIH) guidelines for the treatment of asthma and intensive individualized education concerning trigger avoidance, peak flow monitoring, spacer use and metered dose inhaler technique.

Methods: Quality of life was assessed by the Asthma Quality of Life Questionnaire; a validated asthma specific quality of life questionnaire. The response options to each question are on a 7 point scale where 1 indicates maximal impairment and 7 indicates no impairment. Patients were assessed on their initial visit, after three months and after six months. Asthma related emergency room and hospital admissions which occurred between the initial visit and the completion of the third questionnaire were determined by review of the hospital's records. The number of emergency room and hospital admissions during an equal number of days before the initial visit were also determined and served as the patient's control.

Results: Over a 13 month period 599 patients were enrolled in the asthma center. 189 patients completed all three evaluations. Mean quality of life increased from 2.78/7 to 3.59/7 after 3 months and 4.16 /7 after 6 months ($p< .0001$ paired t test). Total emergency room visits of the patients completing the three questionnaires were reduced from 533 to 153. ($p<.0001$ paired t test). Total hospitalizations in this group also were reduced from 62 to 14 ($p<.0001$ paired t test). This represented a 71% reduction in emergency room visits and 88% reduction in hospitalizations.

Conclusion: Ambulatory asthma care programs which adhere to NIH guidelines for asthma treatment and provide intensive patient education can improve quality of life and reduce emergency room admissions and hospitalizations.

RETROSPECTIVE ASSESSMENTS OF BASELINE ADL FUNCTION IN HOSPITALIZED ELDERS: EVIDENCE OF PREDICTIVE VALIDITITY KE Covinsky*; RM Palmer*; ZM Pine*; LC Walter*; MM Chren; Div of Geriatrics, UCSF

The validity of patients' assessments of their past ability to perform activities of daily living (ADL) is not known. We assessed the predictive validity of retrospective ADL assessments of patients on admission (ADM) to the hospital by testing the hypothesis that they are a measure of functional reserve. We hypothesized that patients dependent in an ADL at ADM, but independent two weeks prior to ADM, would be more likely to recover independence in that ADL, and more likely to survive, than patients who were dependent both before and at ADM to the hospital. We interviewed 899 hospitalized medical patients (mean age 81) on ADM and asked them to report whether they could independently perform 5 ADL on ADM and two weeks before ADM.

Among patients dependent in each ADL on ADM (n=329, 292, 161, 287, 165 for bathing, dressing, eating, transferring, and toileting, respectively) we compared the number of patients who recovered independence in the ADL at three months and the number who survived at one year. As shown in the table; for each ADL, patients who were independent two weeks prior to ADM were more likely to be independent at three months and to survive to 12 months, than patients dependent two weeks prior to ADM.

ADL	% Independent at 3 mos		% Survival at 12 mos	
	Dependent 2 wks prior	Independent 2 wks prior	Dependent 2wks prior	Independent 2wks prior
Bathing	20	63**	62	72*
Dressing	33	67**	59	72*
Eating	47	70*	59	69
Transfer	40	68**	58	72*
Toileting	44	70**	59	72*

*p<.05 **p<.01

We conclude that patients' assessments of their past ability to perform ADL have evidence of predictive validity. Moreover, these measures may have clinical usefulness as predictors of important health outcomes such as functioning and survival.

ALCOHOL DEPENDENT INDIVIDUALS WITHOUT PRIOR ALCOHOL TREATMENT: WHAT DO THEY LOOK LIKE? JB Daeppen, EB Raimo, GP Danko, TL Smith, MA Schuckit, Alcohol Research Center, VA Medical Center, UC San Diego, San Diego, CA.

Objective: Most clinical research related to alcohol use disorders is carried out with subjects recruited from treatment programs. In order to test the hypothesis that our understanding of alcohol dependence might be biased if research is limited to the study of clinical cases, the characteristics of alcohol dependent individuals without a history of alcohol treatment were described. Methods: As part of the Collaborative Study on the Genetics of Alcoholism, a semi-structured interview was administered to 3,619 alcohol dependent subjects. There were 1,608 (44.4%) individuals who had never received treatment for an alcohol-related problem, and 2,011 (55.6%) members with at least one past or present alcohol treatment (e.g., inpatient, outpatient, AA). Characteristics related to demography, alcohol use history, and associated diagnoses were compared between never treated (NT) and treated (T) subjects. Results: The NT and T groups were similar in age (38 years old) and in duration of alcohol dependence (15 years). NT members were more likely to be female (43.5% vs. 28.3%)*, employed (70.2% vs. 48.4%)*, and married (53.1% vs. 35.0%)*. These subjects also reported fewer of nine possible health problems (1.0 ± 1.14 vs. 1.4 ± 1.31)*, were less likely to be diagnosed with conditions associated with alcohol dependence, such as cigarette smoking (74.6% vs. 87.6%)*, antisocial personality disorder (ASPD) (9.2% vs. 21.2%)*, and dependence on at least one additional drug (marijuana, cocaine, amphetamines, opiates, or sedatives) (35.7 vs. 63.4)*. The data were consistent with a less intense course of alcoholism for NT individuals, as they reported fewer maximum number of drinks in a 24-hour period (19.9 ± 12.48 vs. 34.2 ± 23.90)*, fewer DSM-III-R criteria of alcohol dependence (4.6 ± 1.53 vs. 7.3 ± 1.70)*, and fewer of 39 alcohol-related life events (12.9 ± 5.91 vs. 24.6 ± 6.57)*. The analysis of the prevalence of each of the 39 alcohol-related problems indicated that most difficulties were less prevalent in the NT group (e.g., 14.6% [NT] vs. 89.5 % [T] experienced psychological impairment due to drinking). A logistic regression analysis demonstrated that variables described above as differing between NT and T groups at the univariate level remained robust as predictors even when considered in the context of other predictors. Exceptions to this general rule included ASPD, the history of additional drug dependencies, and the number of medical problems. The overall chi-square for the logistic regression was 2043.34* (df 11). Conclusions: Differences in demography, alcohol use history, and associated diagnoses were identified between alcohol dependent subjects with and without a history of alcohol treatment. The data suggest that nontreated alcoholics may not fit the stereotype generated from the study of clinical cases. (* p<.001).

Large Multistate Outbreak of Oyster-Associated *Vibrio parahaemolyticus* Infections: Emergence of Virulent Serotype Highlights Prevention Quandary

Nicholas A. Daniels, B. Ray, A. Easton, N. Marano, E. Kahn, A. McShan, L. Del Rosario, T. Baldwin, M. Kingsley, N. Puhr, J. Wells, D. Cameron, P. Griffin, R.Tauxe, F. Angulo
Centers for Disease Control and Prevention, Atlanta GA; Texas Dept. of Health, Austin TX.

Background: In June 1998, the Texas Department of Health detected an outbreak of *Vibrio parahaemolyticus* infections among persons who had eaten oysters harvested from Galveston Bay.
Methods: To determine factors that may have contributed to this outbreak, we assessed stool culturing practices by clinical laboratories and analyzed water temperature and salinity data from seven monitoring sites in Galveston Bay. We characterized *V. parahaemolyticus* by serotype and pulsed-field gel electrophoresis (PFGE).
Results: Between May 27 and June 24, 416 persons in 13 states reported having gastroenteritis after eating oysters harvested from Galveston Bay. *V. parahaemolyticus* isolates from ill persons (n=28) were serotype O3:K6, the first isolation of this serotype in the United States. All patient isolates had the same PFGE pattern. Bacteriologic monitoring at harvest sites did not prevent this outbreak; oyster beds met current bacteriologic standards during harvest. None of 46 randomly selected laboratories that processed stool specimens reported changing stool culturing or reporting practices in 1998. Mean water temperature and salinity during May-June 1998 were 84°F and 20 parts per thousand [ppt] compared with 79°F and 9 ppt for the previous 5 years ($p < 0.01$), suggesting that environmental changes contributed to this outbreak.
Conclusions: The emergence of a new virulent serotype, and elevated water temperature and salinity levels at the harvest site apparently contributed to a large multistate outbreak of *V. parahaemolyticus*. Current policy and regulations regarding the safety of raw oysters need re-evaluation. Consumers should avoid eating raw or undercooked oysters, especially during the warmer months.

REORGANIZATION OF A PRESCRIPTION RENEWAL SERVICE IN AN UNDERSERVED URBAN PRIMARY CARE PRACTICE: RA David. Mount Sinai School of Medicine, Department of Ambulatory Care, Elmhurst, New York.

OBJECTIVE: Varied practice patterns are notable regarding renewing of prescriptions in clinic settings. Our primary care practice is located in a medically underserved, urban setting, and is multi-cultural. As part of quality improvement, we were interested in evaluating whether our practice of renewing prescriptions for "walk-in" patients was consistent with high quality of care. The practice called for scheduling an appointment with the primary physician and at the same time prescribing a limited quantity of medication to last until that appointment. The benchmark of quality care was that patients would only receive medication that was intended by the primary ordering physician to last until the next suggested evaluation by that physician.
METHODS: A patient survey was created, pilot tested, and then utilized with patients presenting solely for medication renewal. It was verbally administered in Spanish and English by a medical provider prior to offering the medication renewals to "walk-in" patients who belonged to the practice. Patients were asked why they were presenting for a medication renewal in a "walk-in" service.
RESULTS: Over a seven-week study period 210 of 678 patients presenting for medication refills were sampled. Data was collected from all 210. 34% ± 6% ($p<.05$) of patients indicated that they needed a prescription because they missed their appointment with their physician; 61% ± 6% ($p<.05$) of those patients had not seen their physician for greater than 6 months and 84% ± 5% ($p<.05$) had not seen their physician in more than 3 months. 11% ± 5% ($p<.01$) of patients cited issues including; received the medicine in another country, took the wrong dose of medicine so they ran our early, and generic medicine didn't seem to be working. 43% ± 7% ($P<.05$) of patients indicated that their physicians had not given them enough medication to last until their next appointment, but they in fact were found to have valid prescriptions on file with the pharmacy.
CONSLUSIONS: A large proportion of patients presenting for renewal of medication either: 1. Really needed a medical evaluation, or 2. Needed only to be directed to the pharmacy for a medication refill. We were concerned about a relatively high "no show" rate (up to 35% in our experience) for follow-up appointments after medication refill visits. Subsequent to analysis of our results we instituted significant changes in our medication renewal policy. Patients are now identified as to whether they have valid prescriptions in the pharmacy. A medical provider now formally evaluates all other patients before they are given a prescription renewal. These focused evaluations are targeted to the particular organ system being treated by the ordered medication. Patients then are given a choice of follow-up with the provider giving them their prescription renewal or their former primary provider.

SCREENING MAMMOGRAPHY RATES IN BOSTON HAITIAN NEIGHBORHOODS. MM David, R Jean-Baptiste, G Jeanty, B Laws, N Prudent. Boston Medical Center (BMC), Boston U. School of Medicine, Latino Health Institute, Haitian Health Institute at BMC, Boston, MA

Culture and language are known to impact health care delivery.
Purpose: We undertook this study to determine the rate of screening mammography among Haitian immigrant women in a US city (Boston), and to compare it to the rate of other women living in the same neighborhood. We also sought to determine factors that may facilitate or hinder access to and utilization of screening mammography.
Methods: We performed a cross-sectional survey of 332 women, 40 years old and over, from randomly selected households in enclaves with high concentrations of Haitian women. Trained bilingual interviewers conducted in-person interviews to assess mammography rates, socioeconomic status, health beliefs and practices, and degree of acculturation. Chi-square analyses were used for categorical data.
Results: Number of respondents by ethnicity and their rates of screening mammography, in brackets, were as follows: Haitian (H), 140 [79.3%]; African American (AA), 53 [75.5%]; English-speaking Caribbean (EC), 21 [76.2%]; Latina (L), 21 [85.7%]; white (W), 63 [95.2%]; and other groups (O), 34 [85.3%]; p=0.08. Bivariate analysis revealed that women with incomes <$20k had fewer mammographies (73.8% vs 86.8%; p=0.02). Among immigrants, greater length of time in the US was associated with greater likelihood of ever having had a mammogram. Women who thought cancer was a death sentence had fewer mammograms (79.4% vs 85.1%, p=0.01). White women were less likely to subscribe to this belief than all other groups (W=23.3%; H= 51%; AA=45%; EC=48%; L=50%). Educational level did not influence rate of mammography.
Conclusion: Women living in Haitian neighborhood reported high rates of mammography, possibly owing to outreach and free screenings available to Massachusetts's women. Percentages of screening mammography were similar for all women living in those neighborhoods. However, women who thought cancer was a death sentence had less mammograms and were more likely to be of Haitian, African-American, English-speaking Caribbean and Latina descent. Campaign to promote mammography should address health beliefs if they are to attract more women of color.

PROBLEM-SOLVING STYLE, SUBSTANCE USE, AND HELP-SEEKING BEHAVIOR IN ADOLESCENTS. MM Davis, JD Lantos, Robert Wood Johnson Clinical Scholars Program, University of Chicago, Chicago, IL.

In order to prevent adolescent substance use, we must understand why some adolescents begin using substances while others do not. The success of substance use prevention programs that teach peer resistance skills suggests that teens' social problem-solving styles may influence their decisions about substance use, and may also impact teens' help-seeking behavior when they face troubling problems. We examined the associations between adolescents' social problem-solving characteristics and two behaviors of interest: (1) patterns of substance use; and (2) help-seeking tendencies.

A self-administered, anonymous survey was completed by 302 5th-8th-grade students in two inner-city schools. The survey instrument included the Social Problem-Solving Inventory-Revised (Short Form), which measures problem-solving orientation (positive or negative) and problem-solving skills (rational, impulsive/careless, or avoidant). If a student demonstrated both positive orientation and rational skills, her/his overall problem-solving profile was constructive. Questions regarding current substance use were adapted from previously validated surveys. Items regarding help-seeking behaviors inquired if students felt comfortable asking family members, teachers, or school counselors for assistance with troubling problems, in general. Chi-square analyses were performed to test the significance of associations.

Students were 99% African-American and 55% female, with a mean age of 11.9 years (range 9-14). 27% had ever used tobacco; 30% had ever drunk alcohol; 14% had ever used marijuana. Problem-solving analysis indicated that only 66% of ever-tobacco smokers showed positive problem orientation (PPO), compared with 82% of never-tobacco smokers ($p<0.01$). Only 48% of ever-tobacco smokers demonstrated an overall constructive problem-solving profile, compared with 63% of never-tobacco smokers ($p<0.05$). Similar trends, though not statistically significant, were evident for ever-users of marijuana and alcohol. Among students who sought help from family members, 81% demonstrated PPO, compared with only 63% of students who did not ask family members for help ($p=0.005$). Family-help seekers were also significantly more likely to show rational problem-solving skills and a constructive problem-solving profile. Of note, family-help seeking was more common among never-users of substances than among ever-users, although these differences were not statistically significant. Seeking help from teachers or school counselors was not associated with problem-solving.

This analysis suggests a significant link between specific social problem-solving characteristics and patterns of adolescents' current substance use, and between problem-solving style and willingness to seek help from family members. Further exploration of the mechanisms through which social problem-solving attributes impact substance use, and how problem-solving styles affect help-seeking behavior, may lead to the development of more effective substance use prevention programs for adolescents.

SELF-RATED DIET QUALITY: WHICH FOODS COUNT? HK Delichatsios, K Glanz, S Tennstedt, RH Friedman, MW Gillman. Harvard Medical School and Harvard Pilgrim Health Care, Boston, MA, University of Hawaii, Honolulu, HI, New England Research Institutes, Watertown, MA, Boston University, Boston, MA.

Background: Diet quality is a determinant of common chronic adult diseases. Improving patients' diets depends on their stage of readiness to change, a major component of which is their self-rated diet quality. Although previous studies have shown self-rated diet quality and actual diet quality to be related, it is not known how patients rank the importance of various foods in evaluating the quality of their diets.

Methods: Among 363 HMO members recruited for a randomized controlled trial of diet and physical activity interventions, we analyzed baseline data on diet, clinical, demographic, and psychosocial characteristics. We assessed actual diet by a validated 18-question food frequency questionnaire. We defined "worse," as opposed to "better," diet quality as failing to achieve appropriate intake of at least two of the five food groups: fruits, vegetables, whole grains, red and processed meat, and whole dairy foods. We also asked subjects to self-rate the overall quality of their diet on a 5-point Likert scale, very unhealthful to very healthful. We examined the contributions of each food group both to actual and self-rated diet quality as follows. We took the difference in mean number of daily servings between (1) "better" and "worse" actual diet, and (2) for self-rated diet, between somewhat and very healthful and somewhat or very unhealthful. We report the ratio of these two differences, which represents the relative contributions of the food groups to actual versus self-rated diet.

Results: Mean (SD) age was 47 (12.8) years, and 73% were women. Mean body mass index was 28.4 kg/m^2. Thirty-five percent of the patients had "better" diet quality. In multivariate logistic regression, subjects who self-rated their diets as somewhat or very healthful were three times as likely to consume a "better" diet, compared with those with ratings of somewhat or very unhealthful (odds ratio = 3.1, 95% CI 1.8 - 5.2). Self-rating of overall diet quality was substantially correlated with intake of fruit (Spearman r = 0.25, p <0.0001), vegetables (r = 0.24, p <0.0001), red and processed meat (r = -0.23, p <0.0001), and whole dairy foods (r = -0.17, p=0.001), but not with whole grain foods (r = -0.02, p = 0.66). The contribution of whole grains to actual diet quality was 4.7 times its self-rated contribution whereas for the other food groups, the ratios were 0.6 - 2.0.

Conclusion: As expected, self-rated and actual overall diet quality were strongly associated. Fruits, vegetables, meats, and whole dairy foods played a stronger role in self-rated diet quality than did whole grain goods. Subjects substantially underestimated the contribution of whole grains to diet quality. Changing patients' perception of the importance of whole grains may increase the chance of success of interventions to improve the quality of diets among adults.

COMPLETENESS OF REPORTING IN RANDOMIZED CONTROLLED TRIALS. **PJ Devereaux, BJ Manns, WA Ghali, H Quan, GH Guyatt. Department of Medicine, Dalhousie University, Halifax, Nova Scotia, Departments of Medicine and Community Health, University of Calgary, Calgary, Alberta and the Department of Medicine, McMaster University, Hamilton, Ontario, Canada.**

Journal editors and clinical investigators have offered strong support for the "Consolidation of Standards for Reporting Trials" (CONSORT) statement (JAMA, 1996;276:637-9) for improving the quality of reporting of randomized controlled trials (RCTs). We reviewed a sample of RCTs published subsequent to the CONSORT statement to determine adherence with its guidelines.

We identified 81 RCTs dealing with internal medicine issues summarized in three review journals (ACP Journal Club, Journal Watch, and Internal Medicine Alert) from March to August 1997. These three review journals summarize the most important studies from a wide spectrum of journals. We reviewed the full text original descriptions of the RCTs and recorded the reporting of: (1) the method used to generate the allocation schedule; (2) the concealment of randomization; (3) the use of intention to treat analysis; and (4) the blinding status of patients, patient caregivers, those recording outcomes, judicial assessors of the outcomes, and data analysts.

The 81 RCTs were reported in 24 scientific journals. RCT reports described the method used to generate the allocation schedule and concealment of randomization 67% and 53% of the time, respectively. The RCT reports explicitly stated whether they had used an intention to treat analysis in 70%. The reports mentioned blinding status for patients in 70%, for patient caregivers in 35%, individuals collecting the data for the outcomes in 29%, judicial assessors of the outcomes in 48%, and data analysts in 3%.

We conclude that authors and journal editors are failing to ensure RCT reporting is consistent with CONSORT guidelines.

REVIEWING THE REVIEWERS: THE QUALITY OF REPORTING IN THREE REVIEW JOURNALS. **PJ Devereaux, BJ Manns, WA Ghali, H Quan, GH Guyatt. Department of Medicine, Dalhousie University, Halifax, Nova Scotia, Departments of Medicine and Community Health, University of Calgary, Calgary, Alberta and the Department of Medicine, McMaster University, Hamilton, Ontario.**

Review journals such as ACP Journal Club (ACP), Journal Watch (JW), and Internal Medicine Alert (IMA) provide an important resource for clinicians striving to efficiently keep track of important studies directly relevant to their practice. However, to allow clinicians to critically evaluate the validity of new findings, review journal summaries must include crucial features of study design and methodology.

Beginning with the March 1, 1997 issues, we evaluated the completeness of reporting of study design and methodology in 30 consecutive summaries from each of three review journals: ACP, JW, and IMA. We included all summaries of studies addressing issues of therapy or prevention relevant to internal medicine, and excluded summaries of meta-analyses and review articles.

Of the therapy and prevention articles in ACP, 100% were summaries of randomized controlled trials (RCTs). In JW and IMA, only 53% and 47% of the review articles, respectively, were summaries of RCTs (p=0.001 for difference across review journals). In summaries of non-RCTs, JW and IMA failed to mention study design 69% and 44% of the time, respectively. For RCTs, none of the three review journals ever mentioned whether randomization was concealed. In summaries of RCTs, ACP, JW, and IMA provided details on completeness of patient follow-up in 53%, 13%, and 0% of the summaries, respectively (p=0.001). ACP reported whether investigators conducted intention to treat analysis in 37% of their RCT summaries; JW and IMA never reported this information (p=0.001). In the reporting of the summaries of RCTs, a comment about blinding was present 60%, 81%, and 71% of the time in ACP, JW, and IMA respectively (p=0.3).

While ACP included only RCTs and provided more methodological information than JW and IMA, its completeness of reporting remains limited. All three review journals are lacking in their reporting of crucial features of the study design and methodology and are thus limiting the value of the provided study summaries.

ASSESSING USE OF HEALTH CARE BY VERY LOW INCOME ADULTS IN A MANAGED SYSTEM OF CARE. AL Diamant, RH Brook, K McGuigan, L. Gelberg. Division of General Internal Medicine and Health Services Research, Department of Medicine, UCLA, Los Angeles, CA.

Improving access to health care for the underserved is important. We measured the use of primary care services by adults when they obtained General Relief (GR) and were also enrolled in a system designed specifically for very low income adults, the General Relief Health Care Program (GRHCP).

The GRHCP is a managed care system for very low income adults which consists of 11 community health care organizations. It was implemented in LA County in October 1995. As adults registered for GR they were asked to complete a baseline health history survey, were enrolled in the GRHCP, and were given a health care provider (i.e. name and address). 8,520 surveys were completed between September and November 1996 (98% response rate). Individuals were eligible for inclusion in this study (N=2,164) if they reported a history of hypertension, diabetes mellitus, a non-resolving cough or substance dependence, and did not designate the one Independent Practice Association site as their primary source for health care. To assess use of primary care services we performed a medical record review to determine whether eligible adults had made a visit to their designated GRHCP provider within 4 months of enrollment. We performed multivariate logistic regression to assess the characteristics of adults in this sample that are associated with their use of primary health care services.

17% of individuals with one or more of the 4 marker conditions made a visit to their assigned GRHCP clinic within 4 months of enrollment; however, rates varied by medical condition with 25% of individuals with diabetes, 23% with a persistent cough, 18% with hypertension and 12% with substance dependence making a visit within 4 months. Adults older than fifty were 40% more likely than younger adults (OR 1.50, 95% CI 1.06, 2.14, RR 1.40) and women were 31% more likely than men (OR 1.37, 95% CI 1.02, 1.84, RR 1.31) to have made a visit to a designated GRHCP provider within 4 months.

Although the LA County Department of Health Services made a considerable effort to make primary care services available to very low income adults, the rates for use as defined by a first visit to a primary care provider within four months were low. Even though we found age and gender to be predictive of use of services, they did not increase use sufficiently to allow health programs to be targeted by them. These findings indicate that it is not sufficient to provide the name and address of a health care provider to this population, but more aggressive efforts (e.g. making an appointment with the provider, and providing transportation) are needed to reduce the under use of needed care.

TRUST IN HEALTH PLANS Susan Dorr Goold, Pranab Bhattacharjee, Glenn Kipp, Department of Internal Medicine, University of Michigan, Ann Arbor, MI.

Informed choice of health insurance could morally justify later, potentially harmful rationing decisions the way informed consent justifies potentially harmful medical interventions. In complex and technical areas, however, individuals may base decisions more on trust than informed choice.

We interviewed enrollees in managed care plans to explore in detail their expectations and experiences in choosing and using their health plan. Diverse subjects were selected from multiple plans to participate in semi-structured interviews about health insurance choices, experiences, and expectations. Open coding on the first 11 interviews by two investigators generated thematic categories which were applied to all interviews. Assessment of trustworthiness of data collection and analysis included intercoder agreement, triangulation of data sources, and coherence with existing theories and data. Results are presented for the theme of trust (and distrust), which emerged spontaneously in interviews.

Forty subjects took part in 31 interviews: 65% were women, 50% Caucasian, 35% in fair or poor health, and ranged in age from 25 - 71 (median 40). Income ranged from <$15,000 to >$60,000 (median $45-60,000).

Interviewees mentioned many aspects of interpersonal trust in ***physicians***, often in the context of discussions about care experiences, doctor payment, and conflict of interest. Elements of trust included physical and emotional vulnerability ['We're at their mercy,' 'You're very vulnerable obviously at that point, and to put your faith in to a doctor…'], expectations of goodwill, advocacy and competence ['I have enough confidence in him,' 'I trust him, and I know he will do whatever is necessary'] and belief in professional ethics ['The oath …to give the best health care to whomever…I'd like to think that really has some meaning']. Trust in the ***medical profession*** had more hesitancy, uncertainty, and disagreement between spouses.

Elements of trust in ***hospitals***, including vulnerability to financial loss, expectations of competence (quality) ['we saw the care that she got at the hospital …just incompetent things'] and beneficence ['you kind of trust that a hospital will have and provide for you without looking into it'] arose in talk about choosing insurance, differential treatment due to health insurance and profit. Elements of trust in ***health insurance plans*** emerged in discussions about catastrophic illness ['I'm thinking, my god, you know, you rely on your insurance company to be there…for something that serious'] coverage denials, and profit, and were often accompanied by expressions of uncertainty. Vulnerability, worry, fear and security were prominent. Fiscal rather than clinical competence was emphasized, while expectations of goodwill remained.

Enrollees in managed care plans spontaneously discussed trust and distrust in individuals and institutions during conversations about their insurance expectations and experiences. Similarities and differences in the elements and the context of these discussions illuminate important distinctions between these individual and institutional relationships of trust.

PHYSICIAN-PATIENT DISCUSSIONS OF CONTROVERSIAL CANCER SCREENING TESTS: A SURVEY OF ATTENDINGS AND HOUSE STAFF. AS Dunn, K Shridharani, W Lou, J Bernstein, and C Horowitz, Division of General Internal Medicine, Mount Sinai School of Medicine, New York, NY.

Introduction: Patient participation in clinical decision-making is widely accepted, and is particularly important for tests with known risks and uncertain benefits. We aimed to determine how often primary care physicians discuss the benefits and risks of controversial cancer screening tests with their patients, and the factors influencing the frequency and quality of these discussions.

Methods: Questions were based on three case scenarios: a 55-year-old man being considered for prostate cancer screening, and 45- and 55-year-old women being considered for screening mammography. For each scenario, physicians were asked whether they would discuss the test, whether they would order the test, and whether they thought the test was advantageous. The questionnaire was distributed to attending physicians and house staff in the Departments of Medicine of an academic medical center and two affiliated hospitals.

Results: Questionnaires were completed by 86 attendings and 83 house staff, for a response rate of 57%. A substantial number of physicians do not involve patients in the decision to use cancer screening tests: 16% to 34% of physicians reported that they do not discuss the benefits and risks of screening mammography and prostate-specific antigen (PSA) measurement, and few stated that the decision to order the test "depends on the patient's preference" (12% to 24%). Several factors were found to affect the rate of discussion. The belief in whether the test is advantageous influenced whether the test was discussed: PSA testing was felt to be the least advantageous of the three scenarios and was the least likely to be discussed. Screening mammography was more likely to be discussed for the scenario where its use is considered controversial (45-year-old woman) than where its use is considered uncontroversial (55-year-old woman) (p=.05 for attendings and house staff). House staff encouraged to have discussions by their attending preceptors were more likely to have these discussions than house staff not encouraged by their preceptors. Time constraint was the most common of several barriers to these discussions identified for both PSA testing and mammography.

Conclusions: Although informed consent is an essential component of medical decision-making, physicians often do not discuss cancer screening tests with their patients. Physicians need to be educated on the importance of patient participation in the decision to screen for cancer, especially when considering tests for which there is no clear consensus on whether the benefits outweigh the risks.

HIGHLY ACTIVE ANTIRETROVIRAL THERAPY IN EARLY HUMAN IMMUNODEFICIENCY VIRUS INFECTION. DR Dowell and MD Schwartz, Primary Care Internal Medicine Residency Program, New York University School of Medicine, New York, NY.

Purpose: Highly active antiretroviral therapy (HAART) has been shown to decrease mortality in people with human immunodeficiency virus (HIV) infection and CD4 counts less than 200. Whether treatment in earlier HIV infection would lead to lower mortality has not been studied. Decision analysis was used to compare a strategy of starting HAART early with deferring therapy until viral load increases.

Methods: In a Markov decision analysis model asymptomatic adults with HIV infection, CD4 counts greater than 500, and low viral loads (less than 20,000 by reverse transcriptase polymerase chain reaction) received HAART either at study entry or only after viral load increased. Subjects were followed every three months for changes in viral load, development of the acquired immunodeficiency syndrome (AIDS), and death. Those on therapy were considered to have failed a regimen if viral load did not become and remain undetectable or if they progressed to AIDS. Those initially deferring therapy started HAART if viral load increased by 0.5 log. Once the first HAART regimen failed a new HAART regimen was started and if the second regimen failed drugs were discontinued. Probabilities for changes in viral load and progression to AIDS and to death were obtained from published studies and abstracts using searches of MEDLINE, AIDSLINE, and the XII World AIDS Conference website. Weighted averages of results were used when several applicable studies were found. Outcomes were expressed as life expectancy from entry into the model. Sensitivity analyses were performed by varying probabilities across a range of published values when available.

Results: In this theoretical cohort the strategy of early treatment was slightly preferred with a small increase in life expectancy. In sensitivity analyses initial deferral of therapy was preferred if the probability of maintaining a low viral load without treatment was higher, if the probability of an undetectable viral load on initial HAART regimen was lower, or if the probability of undetectable viral load on HAART after initial deferral of therapy was higher. The model was insensitive to varying the probabilities of remaining alive with AIDS on or off successful therapy.

Conclusions: The decision to start HAART early in HIV disease or to defer therapy until viral load increases is complicated and depends on numerous factors. This theoretical model suggests that the strategy offering better chances for long term survival may differ for each patient, and that the factors most likely to sway the decision are the likelihood of successful viral load suppression with treatment and the probability of maintaining low viral load without treatment.

EMERGENCY DEPARTMENT ADMISSIONS TO CARDIAC TELEMETRY BEDS: Risk Stratification and Outcome Measurements in a Public Hospital. L. Durairaj, K. Das, C. Acob, S. Husain, C. Smith, M. Saquib, P. Ganschow, B. Reilly (Cook County Hospital and Rush Medical College, Chicago, IL)

PURPOSE: To study Emergency Department (ED) admissions to telemetry units.

METHODS: During an eight week period (6/98-8/98), 345 consecutive patients admitted from the Cook County Hospital ED to the non-CCU telemetry unit underwent standardized assessments by hospitalist attendings staffing the unit. All patients' admitting diagnoses, hospital and unit lengths of stay (LOS), and significant in-hospital outcome events (MI, major and intermediate cardiac complications, deaths, and transfers to intensive care [ICU]) were analyzed. 235 patients with chest pain (CP) and suspected acute cardiac ischemia (ACI) were risk stratified using a previously validated prediction rule. During the study period, we also measured denials of ED requests for telemetry admission caused by lack of beds on the unit.

RESULTS: Patients with chest pain and suspected ACI comprised 68% of all admissions to the telemetry unit (235/345). Overall, 30 patients (8.7%) suffered a total of 38 significant outcome events. Non-CP patients required more ICU transfers than CP patients (6.4% vs. 2.1%). Risk stratification of CP patients accurately predicted cardiac complications. No very low risk CP patients suffered a major cardiac complication despite their 77% prevalence of either known CAD (39%), high risk for CAD (32%) or cocaine use (6%). Hospital LOS was significantly shorter for CP patients than non-CP patients (1.9 vs. 4.1 days). Denials of ED admissions to the unit (n=168: CP=100, non-CP=68) could not be attributed to excessive LOS on the unit (mean unit LOS=1.2 days).

Telemetry Unit Admit Diagnosis	N	Cardiac Major (fatal)	Complications Intermediate	MI	Transfer to ICU	Mean LOS
CP, suspect ACI	235	3	13	4	5	1.9
High Risk	4	0	0	0	0	4.0
Mod/Low Risk	105	3(1)	11	2	3	1.8
Very Low Risk	126	0	2	2	2	1.8
Non-CP*	110	1(1)	4	1	7	4.1
TOTAL	345	4(2)	17	5	12	2.7

*Known or suspected arrhythmia 27%, heart failure 26%, ischemic ECG 20%

CONCLUSIONS: Patients with chest pain dominate current ED demand for cardiac telemetry beds in our public hospital. Use of prediction rules to inform triage decisions in the ED could relieve 'bed pressure' in our telemetry unit without compromising quality of care. Prediction rules are needed for non-CP patients from the ED who are being considered for telemetry admission from the ED.

PATTERNS OF ADHERENCE WITH OXYGEN THERAPY IN COPD, MA Earnest, JF Steiner, Univ. of Colorado Health Sciences Center, Denver, Colorado

Background - Continuous oxygen therapy is commonly prescribed for hypoxemic patients with COPD. Adherence to oxygen therapy presents a number of challenges to patients with COPD including managing cumbersome equipment and coping with an altered appearance. We sought to explore beliefs about oxygen therapy and patterns of adherence to supplemental oxygen therapy in hypoxemic subjects with COPD.

Methods - 20 subjects with hypoxemic COPD underwent a semistructured interview. Interviews were qualitatively analyzed according to grounded theory.

Results - Nine subjects reported a pattern of use in which they avoided ever being without oxygen, except for short, self-limited activities like bathing. Four of these subjects described this pattern of use from the time of their initial prescription and were adherent to the regimen primarily because of their physician's recommendation. Five subjects described coming to this pattern of use only after a period of intermittent use; all five cited perceived progression of self-monitored symptoms as the reason for becoming strictly adherent. Eleven subjects described intermittent use of oxygen which fell into three distinct patterns. Two subjects used oxygen regularly but would deliberately discontinue for prescribed periods to test their degree of symptoms. Five subjects described avoidance of oxygen use in public or social settings. Four subjects described using oxygen only when they felt they needed it - either to alleviate symptoms or in asymptomatic situations in which they believed they needed oxygen. Of the twenty subjects, all but three described some self-adjustment in their liter flow that was independent of their physician's recommendations.

Conclusions - Most patients prescribed oxygen for hypoxemic COPD display some self-adjustment of the dose of their oxygen. Many subjects who report strict adherence to their oxygen regimen, become adherent only when they believe their symptoms warrant it. Few subjects display the behavior described by the word "compliance" in which they engage in adherent behavior only because their physician recommended it. Subjects considered their decisions regarding adherence to be rational and in response to internal and external cues. Among the subjects, a lower level of adherence was generally not a simple default on therapy, but represented their efforts to manage their illness.

HORMONE REPLACEMENT THERAPY: KNOWLEDGE AND ATTITUDES OF UNDERSERVED HISPANIC WOMEN IN THE BRONX. EM Eskridge, R Mangani, T Milligan and M Mulvihill, Residency Program in Social Internal Medicine and the Department of Family Medicine, Albert Einstein College of Medicine and Montefiore Medical Center, Bronx, NY

There is a substantial body of literature regarding the use of hormone replacement therapy (HRT) in both Caucasian and African American women, however little is known about the value of HRT in Hispanic women. Even less is understood about their knowledge regarding the process of menopause, and the benefits and risks of HRT. This is partly due to language and cultural barriers that can exist between physicians and patients.

As an initial effort to bridge this gap, we developed a survey instrument, administered in either English or Spanish to Hispanic women living in the Bronx. In the first of three sections, data on demographics were obtained including age, nationality, ethnic identity, and zip code as well as health status including chronic diseases, menstrual status, prior use of estrogen and risk factors for coronary artery disease. The second section contained a series of "knowledge" statements about HRT with which the responder agreed, disagreed or answered "don't know". The third section was an assessment of the respondent's level of concern regarding specific health problems of aging. The survey was administered to women at several locations including health centers and senior citizen centers. Initially 140 surveys were collected of which 78% were completed by Hispanic women; the rest of the women were either African American (20%) or white (2%). The data were used to examine for relationships between the demographic data and either knowledge of HRT or level of concern for specific health issues.

RESULTS: The average age was 56 years. Eighty-four percent had a regular doctor, 74% were overweight, 34% had diabetes, and 41% had ever smoked (half were currently smoking). Approximately 50% had heard of HRT, while 22% had ever used HRT. Only 16% recalled a discussion of HRT with their doctors. A knowledge score was assigned from 0 – 100, with 100 being all 5 knowledge statements marked correctly. Postmenopausal women scored worse than premenopausal women (24.9 vs. 36.5) and there was a strong correlation between hormone use and knowledge score (61 vs. 17 for women who had never used HRT, $p = .0005$). There was no difference between the health concerns of women using HRT and those not using it.

CONCLUSIONS: 1. Hispanic women in the Bronx exhibit many risk factors for coronary artery disease including obesity, diabetes and hypertension. 2. Hispanic women have a high level of concern for many age related health problems, often higher than in other groups studied. 3. The current overall knowledge base concerning HRT was low but a high level of knowledge was positively correlated with HRT use, thus strengthening the possibility that it is the dissemination of information that may be most useful in counseling these patients. Future directions of this work will be discussed.

THE IMPACT OF POPULATION- BASED BLOOD PRESSURE (BP) REDUCTION ON CORONARY HEART DISEASE (CHD) EVENTS

Thomas P. Erlinger†, Lawrence J. Appel†, Mikel Aickenψ, William M. Vollmerψ, Laura P. Svetky‡, David Levine†
† The Johns Hopkins University, Baltimore, MD
‡ Duke University, Durham, NC
ψKaiser Permanente Center for Health Research, Portland, OR

Non-pharmacologic BP reduction therapies should prevent CHD events by shifting the entire BP distribution of a population. We compared the estimated impact on CHD events of a traditional, fixed BP reduction model and an alternative model of progressive BP reduction. The latter model is derived from the Dietary Approaches to Stop Hypertension (DASH) clinical trial. In DASH, a healthy dietary pattern led to progressively greater BP reduction (net of control) with higher baseline BP; these results were not explained by regression to the mean. BP reductions from the two models were applied to the SBP distribution of men and women, ages 20-75, in NHANES III. The number of CHD events over 10 years was estimated as the sum of individual probabilities derived from the gender-specific Framingham risk equations. Without any BP shift 734 CHD events per 10k would occur in men and 316 per 10k would occur in women. Under the fixed model, the DASH diet would reduce SBP by an average of 2.2 mm Hg in men and prevent 18 CHD events per 10k persons. A fixed shift of ~3 mm Hg would be required to produce the same benefit as the alternative model (26 prevented events per 10k persons). Under the fixed model, most of the prevented events (83%) were in non-hypertensive individuals (SBP<140), whereas under the alternative model, 46% of the prevented events were in non-hypertensives. In women, the respective values were 80% and 38%. This analysis demonstrates that a fixed BP reduction model would underestimate the impact of a population-based intervention in hypertensive individuals and overestimate the impact in non-hypertensive individuals.

LOW LITERACY AND NUMERACY ARE PREVALENT AMONG PATIENTS TAKING WARFARIN. CA Estrada, V Barnes, M Martin-Hryniewicz, C Collins, JC Byrd. East Carolina University School of Medicine, Greenville, NC.

Background: Warfarin has multiple indications. Due to its narrow therapeutic window, warfarin demands an ability to follow instructions very closely. Lack of understanding of warfarin dosing increases the risk of an elevated International Normalized Ratio (INR) by 8 fold. Patients with poor literacy or numeracy skills may have difficulties taking warfarin.

Objectives: To determine the prevalence of low literacy and numeracy in patients taking warfarin; and, to determine the readability of patient information material offered to such patients.

Methods: Cross-sectional study in consecutive patients attending an anticoagulation management unit. Literacy is the ability to use printed material to function in society, while numeracy is the ability to use basic probability and mathematical concepts. Literacy was measured with the Rapid Estimate of Adult Literacy in Medicine (REALM). Numeracy was measured with a modified Schwartz scale (maximun score=6). Readability of patient information material was measured with the Flesch-Kincaid grade level.

Results: The mean patient age was 63 years (SD 9.6), 45% were female, and 33% were non-white. Self-reported grade completed overestimates the ability to read health-related words. While 83% of the sample had completed high school, only 47% had a REALM score at that reading level, and 30% had scores at ≤ 6th grade level.

Self Reported Grade Completed	REALM ≤ 6th Grade	REALM 7-8th Grade	REALM ≥High School	Total n (%)
≤ 6th grade	67%	33%	-	3 (100%)
7-8th grade	50%	50%	-	4 (100%)
≥High School	24%	19%	57%	33 (100%)
Total	12 (30%)	9 (23%)	19 (47%)	40(100%)

Numeracy scores where less than 50% for all subjects with reported education through completion of high school. Numeracy score improved with higher reported grade completed, ≤ 6th grade (1.7, SD 0.57), 7-8th grade (2.3, SD 1.7), high school (2.4, SD 1.4), and college degree or more (3.8, SD 1.7) ($p=0.03$). Four commonly used patient information brochures were written at a 5.7, 7.9, 8.1, and 10th grade level, respectively.

Conclusions: Low literacy and numeracy are prevalent among patients attending an anticoagulation management unit. Commonly used patient information brochures are written at levels beyond the understanding of most patients. Literacy and numeracy may have implications on the patients' ability to follow dosing schedules.

HYPERTENSION MANAGEMENT: COMPARISION OF A NURSE PRACTIONER ALGORITHM TO TREATMENT WITH A PHYSICIAN. DG Fairchild, J Dudley, K Kaufman, L Baier, M Portnow. Division of General Medicine, Brigham and Women's Hospital, Boston, MA.

To assess the effectiveness of a clinical pathway for the management of hypertension employing nurse practitioners and a treatment algorithm, we compared the rate of blood pressure control of patients enrolled in the clinical pathway to patients managed by their primary care physicians (PCPs).

Patients with hypertension as their primary active medical problem referred by their PCP to the pathway (path patients) were managed by nurse practitioners following a treatment algorithm for lifestyle and pharmacologic therapy. Using our computerized medical record we identified a control group of patients with a diagnosis of hypertension newly entered into their problem list being managed by their PCP (standard care patients). For each path patient, 3-5 standard care patients were identified, matching on age, gender, and comorbidities. We compared the rate of blood pressure control (defined as < 140/90) among path and standard care patients after 6 months of management. The outcome was based on the most recent BP measurement recorded in the medical record at a routine clinic visit. Patients for whom no follow-up readings were recorded were assumed to still be hypertensive.

The two patient study groups were similar in age, comorbidities, and gender mix. Mean BP at baseline was higher for standard care patients (157/93) than for path patients (148/91). After 6 months of management, significantly more patients in the clinical pathway (23 of 42 [55%]) had BP controlled than did patients under standard care (38 of 162 [23%]), (P=.035). Hypertensive medications were prescribed more frequently for path patients (mean: 1.2 meds/patient) than for standard care patients (mean: 0.9 meds/patient).

Although baseline BP was higher among path patients than for standard care patients at the outset of treatment, these data suggest that a clinical pathway employing nurse practitioners to deliver routine hypertension management following a treatment algorithm may be an effective alternative to standard care with a physician. Randomized prospective studies will be necessary to determine if this clinical strategy can actually improve outcomes for a broad range of patients with hypertension.

CORRELATES OF DEPRESSION AMONG PATIENTS WITH HIV INFECTION IN A GENERAL MEDICINE PRACTICE. KM Fairfield, H Libman, RB Davis, DM Eisenberg, A Beckett, RS Phillips; Division of General Medicine and Primary Care, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA

Depression decreases quality of life and may undermine adherence to antiretroviral therapy. Prevalence estimates for depression in patients with HIV infection vary, and few data are available on correlates of depression in this population.

We examined correlates of depression in a cohort of patients in an academic primary care practice. Charts were reviewed for all eligible patients known to be HIV positive. We defined patients as depressed if this diagnosis was noted in the electronic medical record in problem lists or text of office notes anytime during the two-year study period (7/1/95-6/30/97) and the patient was also being prescribed antidepressant medication at the end of the study period. Additional data were gathered from the medical record on demographics, HIV risk behavior, medications, history of substance use, CD4 cell count and HIV viral load titer. We used logistic regression with the forward selection technique to identify correlates of depression.

There were 275 patients with HIV infection: median age 40; 85% male; 74% with male homosexual risk behavior; 46% with history of substance use; 63% with CDC defined AIDS; and 24% with at least one medical hospitalization during the study period. Depression was documented in charts of 147/275 patients (53%), half of whom (73/275, 27%) also had at least one prescription for antidepressant medication. Significant bivariable correlates ($p < 0.05$) of depression were history of hospitalization during the study period, (40% of hospitalized patients with HIV were depressed versus 22% of those without hospitalization) and history of substance use (36% versus 18%). History of homosexual male contact was not a significant risk factor for depression in bivariable analyses. In multivariable models, factors significantly associated with depression were history of substance use (2.76, 1.56-4.89), history of hospitalization (2.54, 1.36-4.72), and history of homosexual risk behavior (1.98, 1.00-3.89). Duration of HIV infection, sex, AIDS diagnosis, CD4 cell count, and viral load were not significantly associated with depression. Models using a definition of depression of chart notation only (n=147) revealed similar results.

Depression is common in patients with HIV infection, particularly among those who have a history of male homosexuality, substance abuse, or hospitalization. Routine screening for depression in this population, especially those at high risk, may offer the opportunity for earlier diagnosis and treatment.

LESSONS FROM PROSTATE-SPECIFIC ANTIGEN ABOUT PATIENT DECISION-MAKING UNDER UNCERTAINTY. MH Farrell, MA Murphy. Robert Wood Johnson Clinical Scholars Program, University of Michigan, Ann Arbor.

Since cancer screening with prostate-specific antigen (PSA) is controversial, consensus groups have defaulted to a recommendation that men be counseled about risk and benefits, encouraging them to make an individual decision. Although this active decision principle has broad appeal, it conflicts with some basic literature about cognitive errors in decisions. A mixed qualitative-quantitative study was needed to scrutinize this conflict, and to help bring the voice of patients into the debate. Forty men were recruited using PSA-neutral materials and interviewed with semi-structured techniques. Participants received neutral counseling about PSA (similar to that used by Wolf and colleagues, 1996), which has been previously suggested to reduce interest in PSA. Three raters analyzed the transcripts, each using a grounded theory approach.

As demonstrated by quotes, several consistent themes emerged from the interviews. First, many men are already aware of the PSA controversy via media reports, and these men demonstrated an anchoring effect of resistance to new information. Most respondents typically held conflicting data in their minds at once, sifting through several points to find a salient (but not necessarily representative) point to aid in their decision. Few respondents were willing to accept that the PSA decision was in any way linked to the long-term complications of treatment. Most men held "unlimited compensatory utilities," a phrase coined to reflect a strongly held belief that can balance out any new negative information. One example of this was that men displayed an unrealistic over-valuation of "prevention," contemptuously dismissing men who decline a PSA as "not being preventive." Many men displayed an inaccurately grave fear of cancer, and several respondents claimed to personally know a man who had suffered from prostate cancer after not having been tested. These and other similar beliefs were used as defenses against changing an earlier PSA decision. When discussing the best policy for PSA, most respondents disagreed strongly with basic tenets of public health, such as a requirement that a PSA decision be evidence-based and cost-effective. Many men displayed an intense distrust of statistics. Some men acknowledged public health statistics as applying for most men, but then said that separate rules should apply for them personally. Most felt that they would be able to make a rational, informed treatment choice when faced with a positive PSA. Interestingly, almost all of these men said that they would choose watchful waiting, creating this strategy by themselves in the context of the interview. Many respondents repeatedly insisted that they had a separate wish to know about prostate cancer, even if the test result could be wrong or misleading.

These interviews describe strategies that real patients use to deal with new information during a PSA counseling session. These strategies, some of which might be described as "irrational," raise caution about active decision making policies, and highlight a need for appropriate counseling.

PARTICIPANT RECRUITMENT BIAS FOR DECISION-MAKING STUDIES: THE EFFECT OF ADVERTISING ON PROSTATE-SPECIFIC ANTIGEN HISTORY. MH Farrell, MA Murphy. Robert Wood Johnson Clinical Scholars Program, University of Michigan, Ann Arbor.

Decision-making studies may be particularly vulnerable to recruitment bias, especially for an opinion study about a controversial area. For example, even the bare mention of prostate-specific antigen (PSA) might bias the content of the respondent group, potentially gathering a disproportionate number of respondents who favor (or oppose) testing. Despite this, many previous studies of prostate testing or treatment decisions apparently utilized some form of advertising to obtain subjects. As part of a more extensive project about PSA decisions, this study examined the effects of an advertisement or solicitation letter on a group's history of having a PSA.

Three separate groups were queried for history of PSA testing, as well as recall and future intention. The first group consisted of sixteen respondents to a newspaper advertisement saying "men ages 40-65 needed for interview study about preferences and decisions in health care." The second group consisted of a random sample of 150 charts of men in the same age group presenting for physical exams during a two month period. A neutral solicitation letter was sent to this group for the interview study, and the respondents comprised the third group (N=25). There was substantial intra-group variation by income, self-perceived level of health, and several other characteristics. Each group varied similarly, however. Chi-squared comparison of these intended subpopulations within the interview study revealed several differences. Compared to the patients who responded to our solicitation letter, the advertising population had significantly more men who recalled having had a PSA ($p=0.005$), and who currently favored PSA ($p=0.05$). The responding patient population also had correspondingly more PSA takers than the nonrespondents ($p < 0.001$).

	Recall having a PSA	Intended future PSA
Advertising respondents	15/16 (94%)	14/16 (87.5%)
Refusal patients	20/125 (16%)*	
Solicited patients	8/25 (32%)	16/25 (64%)

* refusal patients "recall" information is from chart review

These differences between the three groups suggest that even a topic-neutral advertisement or solicitation letter may bias the respondent pool, and perhaps make generalization from the study inappropriate. This problem may be particularly evident for decision or opinion studies, where typical volunteers may have vastly different decisional preferences. Although this bias does not affect the conclusions of our primary study, we are concerned that other studies may not be as helpful as originally thought. When producing solicitation materials or advertisements, we recommend that investigators consider a balance between ethical muster for institutional review, and the risk of producing invalid results.

PREDICTING BLOOD PRESSURE RESPONSE IN PATIENTS UNDERGOING RENAL ARTERY ANGIOPLASTY AD Federman, JP Wisnivesky, D Trost, MJ Bloch, CI Henschke, F Rottgardt, G Paccione, TG McGinn, Montefiore Medical Center, Bronx, NY and Cornell-Presbyterian Medical Center, New York, NY

Purpose: Much of the current literature on secondary hypertension has sought to identify predictors of renal artery stenosis, but few have attempted to identify predictors of response to therapy. The objective of this study was to identify predictors of blood pressure response in patients undergoing percutaneous transluminal renal artery angioplasty (PTRA) for correction of suspected renovascular hypertension. **Methods**: We analyzed the charts of consecutive hypertensive patients referred to a major hypertension clinic. Included patients were 18y and older and had PTRA with stent placement. Patients with inadequate follow-up data were excluded. A single investigator blinded to the outcome event reviewed charts for potential predictors identified through literature review. Follow-up data included average blood pressure and number of medications at three to twelve months post-procedure and was obtained by chart review. Outcome was defined as cure, improvement or failure as defined by the National Heart Lung and Blood Institute criteria. Univariate and multivariate analysis was applied to all predictors. **Results**: Preliminary data collection identified sixty-four patients, fifty-three of whom met inclusion criteria. Eleven patients with no follow-up data were excluded. Fifty-eight percent were women; average age, duration of hypertension and serum creatinine were 66±9y, 12.7±9y, and 2.05±1.30mg/dl, respectively. All had hemodynamically significant stenoses. No patient was cured, 32% improved and 68% failed to improve. Eight complications occurred, including hematomas, pseudoaneurysms and renal failure. Univariate analysis identified seven significant predictors having a positive association with blood pressure response. Multivariate analysis eliminated three (stage III-IV retinopathy and family histories of hypertension or diabetes) and identified four independently significant predictors: diastolic blood pressure (odds ratio, OR 1.12, p=0.0076), number of medications (OR 1.95, p=0.049), potassium (OR 3.12, p=0.041), and hemoglobin (OR 1.53, p=0.048). For patients who improved, the lowest probability of improvement predicted by the multivariate equation (analysis) was 20%. Below this value, there were twenty-four patients who failed to improve. This indicates that by choosing a 20% probability cutoff, 61% of the patients in our study would have avoided unnecessary intervention. **Conclusion**: Patients undergoing PTRA are subject to high rates of treatment failure and complication, thereby necessitating selection of appropriate candidates for this procedure. This study identified four variables positively associated with blood pressure reduction in patients undergoing PTRA. Our model may help physicians optimize patient selection for revascularization. Validation is therefore indicated.

ALCOHOL-RELATED DIAGNOSES ARE NOT A BARRIER TO QUALITY CARE IN ELDERLY PATIENTS WITH ACUTE MYOCARDIAL INFARCTION. D Fiellin, P O'Connor, Y Wang, H Krumholz. Yale University, New Haven, CT.

Elderly adults with alcohol problems represent a vulnerable population who may receive lower quality treatment during hospitalization for acute medical illnesses. We sought to determine whether patients with alcohol-related diagnoses (ARD) were less likely to receive indicators of quality care in a group of elderly patients with acute myocardial infarction (AMI).

We analyzed data from Medicare beneficiaries with a principal discharge diagnosis of AMI from all acute care hospitals in the United States, between 2/94 and 11/95, using the Health Care Financing Administration's Cooperative Cardiovascular Project. We used customary ICD-9 codes to identify patients with ARD. After excluding patients younger than 65 years old and those transferred from other medical facilities, we evaluated bivariate associations between ARD and demographic and clinical variables. We then formed cohorts of eligible patients who met minimum requirements for each of seven quality of care indicators. Next we excluded from these eligible cohorts patients with possible contraindications to each indicator to form ideal cohorts. Finally, we evaluated the provision of the seven indicators in the total, eligible, and ideal cohorts.

Overall, 1587 (1%) of the 186,007 patients met criteria for ARD, 1323 of whom were diagnosed with alcohol dependence or abuse. In bivariate analysis, patients with ARD were more likely to be between the ages of 65 and 84 (97% vs. 84%), male (82% vs. 50%), use tobacco (48% vs. 14%), and less likely to have a history of myocardial infarction (25% vs. 31%) (p <.001 for all comparisons). Among the total cohort there were no differences between patients with and without ARD in the provision of aspirin (ASA) (77% vs. 76%) or reperfusion (thrombolysis or angioplasty) (21% vs. 20%) on admission, and the use of ACE inhibitors (25% vs. 27%) or beta-blockers (28% vs. 29%) at discharge (p >.05 for all comparisons). Patients with ARD were more likely to have calcium channel blockers appropriately withheld at discharge (78% vs. 73%), receive ASA at discharge (52% vs. 49%) and receive smoking cessation advice (SCA) if they smoked (19% vs. 5%)(p<.01 for all comparisons). Evaluation of these indicators in the eligible and ideal cohorts revealed that patients with ARD continued to be more likely to receive SCA (44% vs. 38%, p=.02). However, no other differences were found in the performance of the seven quality indicators for eligible and ideal patients with and without ARD.

We conclude that alcohol-related diagnoses are not a barrier to receiving quality care in elderly patients hospitalized for acute myocardial infarction.

VARIATIONS IN GENERAL AND CONDITION-SPECIFIC HEALTH STATUS AMONG VA GENERAL INTERNAL MEDICINE CLINICS. SD Fihn, MB McDonell. University of Washington and VA Puget Sound Health Care System, Seattle WA.

Objective: Recent efforts to improve quality of care and productivity have involved measurements of patients' general health status to adjust for case-mix and assess outcomes. As part of the Ambulatory Care Quality Improvement Project (AQUIP), we compared geographic variability in general and condition-specific measures of health status among VA primary care patients.

Setting/Participants: All 23,889 active eligible patients in 7 VA GIM clinics

Study Design: Cross-sectional mailed survey

Measures: Data collected on all respondents included an inventory of active medical conditions and the SF-36 a measure of general health status that includes a depression screen (the MHI-5). Patients who reported one of six target conditions were then mailed the relevant condition-specific health status measure(s) that included the Seattle Angina Questionnaire (SAQ) and the Seattle Obstructive Lung Questionnaire (SOLQ). Patients with a positive MHI-5 were mailed the SCL-20, a measure of depression.

Results: 66% of patients responded to the baseline inventory. The mean age was 64; 96% were male. Of the 24,287 patients who were mailed follow-up SF-36 and condition specific surveys, 15,007 (62%) responded. Statistically (p<.01) and clinically significant differences among sites were observed on all SF-36 scales including Physical Function (range 39.1 to 58.6), General Health (36.2 to 54.8), Vitality (34.0 to 50.5); Bodily Pain (44.9 to 61.0). Significant but smaller variation was observed on social and mental health scales. Relative differences among sites were consistent across scales and approximated a full standard deviation comparing the highest and lowest sites.

Of 9004 patients who reported angina on the initial questionnaire, 5697 (63%) returned the SAQ. Highly significant differences among sites were also observed for scores on all SAQ scales including Anginal Frequency (69.7 to 81.1), Anginal Stability (50.9 to 63.9) and Physical Function (43.6 to 56.5). Of 5553 patients who reported COPD, 3302 (59%) returned the SOLQ. Again, highly significant differences among sites were present for all scales including Coping (59.8 to 70.8), Emotional function (51.5 to 65.4) and Physical Function (33.6 to 50.4).

Using a score of 17 as a cutoff on the MHI-5, the percentage of patients screening positive for depression averaged 32.6% with a range from 20.8 to 33.2%.

After adjusting for age, education, income and race, geographic location remained highly significant (p<.01) for all comparisons.

Conclusions: Although potentially limited by response bias, these results suggest there are clinically important differences among primary care patients in different geographic locations with regard to both general and condition-specific health status.

EFFICACY AND SAFETY OF PHARMACOLOGIC TREATMENTS FOR MALE ERECTILE DYSFUNCTION: A SYSTEMATIC REVIEW. HA Fink, R MacDonald, IR Rutks, TJ Wilt. VISN 13 Center for Chronic Diseases Outcomes Research, VA Medical Center, Minneapolis, MN.

Erectile dysfunction (ED) is a common condition that reduces quality of life. Increased public awareness of ED and the availability of new therapies have increased demands on physicians to be knowledgeable about treatment options for ED.

We performed a systematic review of the literature to evaluate efficacy and safety of pharmacologic treatments for ED in men with acquired ED. Treatments included oral sildenafil, yohimbine, phentolamine and trazodone; as well as intraurethral (IU) alprostadil. Eligible studies were randomized controlled trials of ≥ 7 days duration which evaluated clinically relevant outcomes (e.g. "intercourse success"). Information on study design, patient characteristics and treatment outcomes was extracted in a standardized fashion. Data were pooled using a fixed effects model unless there was evidence of heterogeneity. An intention to treat analysis was utilized.

In 15 studies, involving 4081 patients with mean baseline erectile function "adequate for intercourse much less than half the time," sildenafil produced "erections sufficient for intercourse" in 48% of intercourse attempts vs. 21% for placebo (RR 2.7; 95%CI 2.1,3.5) and at least one successful intercourse attempt during treatment in 84% of patients vs. 55% for placebo (RR 1.6; 95%CI 1.4,1.8). Adverse events included headaches (20%) and visual changes (5%). Yohimbine, in 9 studies involving 469 patients, produced "response to treatment," variously defined, in 48% of patients vs. 25% for placebo (RR 1.9; 95%CI 1.3,2.8). Adverse events, including hypertension and anxiety, occurred in 17%. Neither trazodone nor phentolamine was superior to placebo, though clinically important effects could not be ruled out. The 2 studies of IU alprostadil were limited to 1760 patients who had no erections sufficient for intercourse at baseline but responded to treatment during screening (66% of those screened). In these patients, IU alprostadil produced "erections sufficient for intercourse" in 51% of intercourse attempts vs. 10% for placebo (RR 5.0; 95%CI 4.6,5.5) and at least one successful intercourse attempt during treatment in 61% of patients vs. 17% for placebo (RR 3.6; 95%CI 3.0,4.3). Adverse events included penile pain (33%) and urethral pain (12%). No studies involving intracavernous injection (IC) therapy met eligibility criteria for this review though, in unblinded at-home use, IC alprostadil monotherapy produced erections sufficient for intercourse in 61% of subjects. Adverse events included penile pain (20%) and priapism (3%). Comparative studies suggested that IC combination therapies may be equally or more effective than IC alprostadil with fewer adverse events.

Effective pharmacologic treatments for ED include sildenafil, yohimbine and IU alprostadil. IC therapy also may be effective though data are limited. Variation in study design and patient characteristics, including severity of baseline ED, make head-to-head comparisons of relative treatment efficacy and safety difficult. Also, treatments have marked differences in contraindications and patient acceptability profiles.

DISABILITY AFTER FRACTURE IN POSTMENOPAUSAL OSTEOPOROTIC WOMEN: THE FRACTURE INTERVENTION TRIAL. HA Fink, K Ensrud, RM Pieper, PJ Schreiner, DC Bauer, M Nevitt, S Cummings for the FIT Research Group, University of MN & Minneapolis VAMC, University of CA, San Francisco.

While the disability associated with hip and vertebral fractures (fx) is well characterized, less is known about the disability following osteoporotic fx at other sites.

We addressed this question with data from the Fracture Intervention Trial, a placebo-controlled trial of 6459 women with low femoral neck bone density (< 0.68 g/cm^2), ages 55-81, randomized to alendronate or placebo. During follow-up (mean 3.8 years), subjects reported all incident clinical fx. Fx were radiographically confirmed; those secondary to excessive trauma or malignancy were excluded. To assess disability, subjects with clinical fx were asked: (1) if they had limited usual activities due to the fx, (2) the number of days of hospitalization or confinement to bed due to the fx (summed 'bed days') and (3) the number of days of reduced usual activities due to the fx, including 'bed days' (total disability days). No comparable data was available for subjects without clinical fx. For each fx, disability follow-up continued until the subject reported resolution. Only a subject's first fracture during follow-up, for which disability was not overlapped by a simultaneous or later fx, was eligible for analysis. 'Bed days' and total disability days were estimated using linear models, adjusting for baseline age, history of postmenopausal fx and treatment assignment. Fx-related disability at different sites were quantified and compared to hip fx, using Bonferroni correction for multiple comparisons.

During follow-up, 909 women reported 1100 confirmed fractures; 823 fractures met eligibility criteria for analysis. Data for the 7 most frequent fx sites and hip fx are shown.

Fx site	Eligible fx (n)	% of fx with any disability	Adjusted 'bed days' mean (95%CI)	Adjusted total disability days mean (95%CI)
Hip	49	100.0	18.0 (14.3,21.7)	99.1 (68.9,117.1)
Vertebra	73	84.9	14.2 (11.2,17.2)	95.6 (77.8,113.4)
Humerus	69	94.2	2.9 (0,6.0)	74.4 (56.2,92.6)
Ankle	59	88.1	8.0 (4.7,11.4)	70.6 (50.9,90.4)
Radius+ulna	66	90.9	0.6 (0,3.9)	62.3 (43.9,80.8)
Radius only	103	82.5	1.4 (0,4.0)	46.6 (31.7,61.6)
Foot	92	79.3	1.7 (0,4.4)	36.2 (20.4,52.1)
Toes	66	62.1	1.6 (0,4.7)	22.9 (4.4,41.4)

Compared with hip fx, fx at all other sites, except clinically recognized vertebral fx, resulted in significantly fewer days hospitalized or confined to bed. Total disability days after hip fx exceeded that after fx of the radius, foot or toes (p-values < 0.0001), but were not significantly different than that after fx of the vertebra, humerus, ankle or radius+ulna.

In conclusion, in this population of women with low bone density, while fx at sites other than the hip and spine infrequently limited women to bed, they commonly caused long-lasting disability.

ETHNICITY NOT A PREDICTOR OF BREAST CANCER SCREENING IN ONE-CLASS CARE SYSTEM. J. Flynn, S. Flynn, M. Callahan, The New York Hospital, Department of Medicine, New York, NY

Purpose: Previous community-based studies have shown that Hispanic women disproportionately underutilize breast cancer screening with significant health consequences. However, most studies examined poor Hispanic women who received their care through public health settings, and compared them to insured non-Hispanic counterparts. We compared the rates of breast cancer screening at an urban academic general internal medicine practice that provides care to both underserved and commercially insured populations in the same clinical setting.

Methods: We conducted a telephone survey and chart review on 155 randomly selected patients to assess self-reported and documented rates of clinical breast examination (CBE), breast self examination (BSE) and mammography. Group differences were analyzed using chi-squared tests, and multiple linear regression analysis was used to calculate odds ratios.

Results: Of 180 eligible subjects, 155 (86%) consented to participate and were included in the analysis. Only 84% of African-American women report having had a mammogram within two years compared with 97% of Caucasian and 92% of Hispanic women. In contrast, chart-documented rates of mammography (76%) do not vary by group. Neither self-reported (57%) nor documented rates of CBE (68%) vary by racial/ethnic group. Although rates of performing BSE vary significantly between the groups (60% of Caucasians, 89% of African-Americans, 71% of Hispanics), the proportion of women who perform BSE on a monthly interval (20%) is substantially lower and not significantly different between the groups. No difference in reported rates of having been taught BSE was found (57%). After adjusting for insurance type, age, perceived risk of breast cancer, perceived overall health, training level of primary provider, number of billed appointments and percent of appointments billed with non-primary provider, Hispanic ethnicity was not found to be a predictor for any modality of breast cancer screening (self-reported or documented). African-American race was negative predictor of self-reported mammography (OR 0.04; 95%CI 0-0.57) and a positive predictor of performing BSE (OR 4.13; 95%CI 1.44-11.82).

Conclusions: Unlike previous studies where subjects were selected from community based populations, these data suggest that within a one-class care system, Hispanic ethnicity is not a risk factor for under-utilization of breast cancer screening. Although African-American race is a risk factor for self-reported underutilization of mammography, there is no difference in documented rates of mammography, rates of CBE or rates of performing monthly BSE between racial groups. These results support the importance of a one-class care system in ameliorating ethnic and racial disparities in the utilization of breast cancer screening.

ACCURACY OF PHYSICAL EXAMINATION TO DETECT ABDOMINAL AORTIC ANEURYSM. HA Fink, FA Lederle, CS Roth, CA Bowles, DB Nelson, MA Haas. Division of General Internal Medicine & VISN 13 Center for Chronic Diseases Outcomes Research, VA Medical Center, Minneapolis, MN.

Abdominal palpation to detect abdominal aortic aneurysm (AAA) has been recommended by some authors for the periodic health examination of older men, yet its accuracy is uncertain. The purpose of the present study was to provide more detailed information on the accuracy of abdominal palpation for AAA.

Subjects with and without AAA, as documented by recent ultrasound, were invited to participate. Each subject was examined by two internists, who were blinded to each other's findings and to the ultrasound findings. Examiners were given brief instruction on AAA palpation prior to the study. Based on a definition of AAA as a 'pulsatile mass ≥ 3.0 cm in diameter,' examiners rated each examination as 'definite' or 'suggestive' for AAA (considered together as 'positive' in the analysis), or as 'no AAA.' Abdominal girth was measured once for each subject and each examiner made a subjective judgement as to whether the abdomen was obese. Examination was used as the unit of analysis, with repeated measures logistic regression used to control for the dependence of exams within each subject.

200 subjects (196 men), aged 51-88, were examined. 59% of subjects had abdominal girth ≥ 100 cm and 45% were rated 'obese' (Kappa for 'obese' and 'girth ≥ 100 cm' = 0.71). 99 subjects had AAA; 41 were 3.0-3.9 cm in diameter, 44 were 4.0-4.9 cm, and 14 were ≥ 5.0 cm. Inter-examiner agreement for presence of AAA was 77% (Kappa = 0.53). Overall sensitivity of palpation for AAA was 68% (specificity 75%, LR+ 2.7, LR- 0.43). Sensitivity increased with AAA diameter, from 61% for AAA 3.0-3.9 cm, to 69% for AAA 4.0-4.9 cm and 82% for AAA ≥ 5.0 cm, approaching statistical significance (p < 0.07). When girth was < 100 cm, sensitivity was 91% (specificity 64%, LR+ 2.5, LR- 0.14), significantly greater than the 53% sensitivity for girth ≥ 100 cm (specificity 83%, LR+ 3.2, LR- 0.56) (p < 0.0001). Similarly, sensitivity of palpation in subjects with 'nonobese' abdomens was significantly greater than in those with 'obese' abdomens (89% vs. 46%, p < 0.0001). When abdominal girth was < 100 cm and AAA diameter was ≥ 5.0 cm, sensitivity was 100% (12 examinations).

In this study, abdominal palpation demonstrated moderate sensitivity for detection of AAA and fair-to-good interobserver agreement. For larger AAA, especially in non-obese subjects, sensitivity was high. Sensitivity was higher and specificity lower in this study than in previous studies, presumably reflecting the examiners' increased vigilance due to the high prevalence of AAA. These results, considered along with previous screening and cost-effectiveness studies, suggest that case-finding with abdominal palpation in non-obese older men may be worthwhile.

MARIJUANA USE AND TOBACCO SMOKING PERSISTENCE IN YOUNG ADULTS. D Ford, H Vu, J Anthony, Division of General Internal Medicine and Department of Mental Hygiene, Johns Hopkins Medical Institutions, Baltimore, MD

Marijuana is the most common illicit drug used in the U.S. Some consider marijuana to have no adverse health consequences. One might hypothesize that young adults who use marijuana might be more likely to stop using tobacco because they use another psychoactive substance to manage anxiety and stress. To address this issue we used data from the Baltimore Epidemiologic Catchment Area Study, a prospective observational community-based study.

This analysis is based on 390 adults aged 18 to 44 years who reported smoking 10 or more cigarettes per day in the week prior to the baseline interview in 1981 and completed the follow-up interview. Of the original sample, 72% of survivors were reinterviewed. This sample was 38% male, 43% non-white, and 35% had less than a high school education. Of the smokers, 39% reported ever smoking marijuana, 14% ever smoked marijuana daily for ≥ 2 weeks, and 28% reported smoking marijuana in the month prior to the baseline interview. Thirteen years later the participants were reinterviewed and asked about tobacco use. Respondents were considered to persist in smoking tobacco if they last smoked within three months before the follow-up interview. Among those who reported ever smoking marijuana at baseline, marijuana use in the prior month was strongly associated with continued tobacco smoking 13 years later (OR=2.0, 95% CI 1.1-3.8). The association remained after adjustment for race and education (OR=2.0, 95% CI 1.1-3.7). The relationship was even stronger among those who ever smoked marijuana daily for two or more weeks. Those who smoked marijuana in the previous month were more likely to continue smoking tobacco 13 years later (OR=4.7, 95% CI 1.1-20.0). Results were consistent after adjusting for race and education (OR=4.6, 95% CI 1.1-19.8). Among young adults, marijuana use is related to continued use of tobacco. Our data do not support the hypothesis that marijuana can substitute for tobacco.

ALTERNATIVE MEDICINE USE IN THE ELDERLY. DF Foster, RS Phillips, ME Hamel, and DM Eisenberg, Center for Alternative Medicine Research and Education, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA.

Alternative medicine (AM) is widely used especially by young, educated, affluent populations. Few data are available describing AM use in older populations.

To describe AM use in a random national sample of elderly people, we utilized data collected in a nationally representative telephone survey of adults conducted between November 1997 and February 1998. The data were weighted to adjust demographic features for aggregate discrepancies between sample distributions and population distributions provided by the US Census Bureau. Respondents were presented with a list of common medical conditions and asked if they had experienced each of these conditions in the previous twelve months, asked about their use of conventional medical services, and asked about their use of 20 AM therapies in the last 12 months. Extrapolation of survey estimates to the total US population were based on the assumption that there were 34 million people 65 years of age or older.

Of those eligible, sixty percent completed the interview. Of 2055 respondents, 311 were age 65 or older. Overall, 30% of people age 65 and older used at least one AM modality in the last year, compared with 46% of those under age 65 ($p<.0001$). Of older people, 19% saw a provider of AM within the past year compared with 26% of those under age 65. However, older patients made more visits to an AM provider (10 versus 3 visits per person). Chiropractic was used equally by both groups (11% by each). Older persons used less relaxation techniques (18% vs. 5%), massage (13% vs. 3%), herbal remedies (13% vs. 8%), religious healing by others (8% vs. 4%), aromatherapy (6% vs. 1%), self-help groups (5% vs. 2%), imagery (5% vs. 1%), and folk medicine (5% vs. 2%)($p<.05$ for each). No AM modality was used more frequently by those age 65 and older. The most commonly used AM modalities among those age 65 and older were chiropractic (11%), herbal remedies (8%), relaxation techniques (5%), high dose or mega vitamins (4%), and religious or spiritual healing by others (4%). The most common conditions for which older people reported using AM were arthritis (21%), back pain (13%), heart disease (9%), allergy (5%), and diabetes (5%). Older persons with a primary care provider used alternative medicine more frequently (34% vs. 7%, $p <.05$). Patients who saw their physician more frequently were more likely to use AM (0 visits 7%, 1-2 visits 22%, 3-6 visits 35%, 7 or more visits 44% $p<.05$ for the group, Wald Chi Square). Among older patients 6% were taking both herbs and prescription drugs. Of older patients, 57% made no mention of their use of any AM to their doctor.

Among those age 65 and older, 30% used alternative medicine (amounting to 10 million Americans) and 19% visited an AM provider (making 63 million visits) within the past year. The two most commonly used modalities were chiropractic and herbs, both of which may be problematic in older patients.

ANTIDEPRESSANT USE IN PRIMARY CARE. KM Freund, JB McKinlay, J Irish, T Lin, MA Moskowitz, Boston University Medical Center and New England Research Institutes, Boston and Watertown MA.

Given the magnitude of undiagnosed depression, Agency for Health Care Policy Research (AHCPR) has published treatment guidelines, which recommend early diagnosis and treatment using clinical criteria without extensive evaluation to rule out other causes. We sought to evaluate the use of these guidelines in initial management of depression by physician and patient characteristics.

64 internists and 64 family physicians were asked to view a 5-minute videotape of a patient presenting with constipation, who had five symptoms meeting criteria for major depression. Eight versions of the videotape were professionally produced using actors and holding constant all the clinical features of the case. Each physician viewed one of the 8 versions of the scenario, where we systematically varied the patient's age (67 vs 79 years), race (African-American vs. Caucasian), gender, and socioeconomic status (middle vs. low income). Physicians were randomly selected to view the videotape and were asked their management recommendations.

Based on the clinical presentation on videotape, 98% of physicians considered depression a possible diagnosis and 54% considered depression the most likely diagnosis. 13% recommended an antidepressant after the first visit. Antidepressant recommendation was not associated with patient age, gender, race or socioeconomic status, or with physician gender, race, or experience. 19% of family physicians versus 6% of internists recommended antidepressant use ($p<.05$). Physicians recommending antidepressants were less likely than other physicians to order thyroid function tests (4% vs 32%, $p<.001$), complete blood counts (7% vs. 21%, $p<.05$), hemoccults (6% vs. 16%, $p<.10$) or invasive gastrointestinal evaluations (7 vs. 17%, $p<.10$) at the first visit.

Primary care providers considered depression a likely diagnosis, and some physicians, especially in family medicine, are adopting the practice of early antidepressant use and postponing extensive medical evaluation.

PATIENT-CENTERED CARE PROCESSES AND LONG-TERM MYOCARDIAL INFARCTION OUTCOMES. AM Fremont, PD Cleary, JZ Ayanian, Div of General Medicine, Brigham & Women's Hospital, Dept of Health Care Policy, Harvard Medical School, Boston, MA.

Most research on acute myocardial infarction (AMI) quality of care focuses on technical aspects of care. Little is known about the extent to which nontechnical aspects of care that are salient to patients and their families affect recovery from AMI and long-term health outcomes.

To assess the impact of AMI patients' reported quality of their hospital care on long-term health outcomes, we collected prospective data from a cohort of AMI patients discharged from 20 New Hampshire hospitals during 1996. Picker Institute surveys that ask patients about their care and health were mailed to patients 1 and 12 months after discharge with 758(58.4%), and 548(42.5%) of study participants responding, respectively. Response rates did not differ by age, sex, race, number or types of comorbidities (all $p>0.05$). Discharge abstracts were used to compute a validated comorbidity index and determine treatment type(medical, PTCA, or CABG). Patients' responses to questions about 7 dimensions of hospital care (e.g., coordination of care, emotional support, continuity and transition) were used to compute a problem score (0-100). Medical Outcomes Study questions were used to assess physical health status, mental health status, and self-rated health; angina and dyspnea severity were measured using 2 scales based on London School of Hygiene measures (all 0-100).

Problem scores ranged from 0 to 85(mean=15). Compared to other patients, those reporting the most problems with care (top quartile, >21) had worse 1 and 12 month unadjusted health status for all 5 measures: physical health (1 month: 61 vs 46, 12 month: 70 vs 52), mental health (72 vs 59, 72 vs 65), self-rated health (56 vs 42, 54 vs 44), angina (82 vs 65, 90 vs 71), and dyspnea (77 vs 54, 80 vs 63)(all $P < .001$). Adjusting for sociodemographic factors, comorbidities, treatment type, and 1 month health status with linear regression analysis revealed that having more problems with care was associated with significant decreases in physical health (problem score regression coefficient b= -.32, P=.001), self-rated health (b= -.18, P=.01), and worsening angina (b= -.27, P=.004). For example, each 10 point increase in problems was associated with a 3.2 decrease in physical health between 1 and 12 months post-MI.

Patients' experiences with their hospital care and discharge to home have short and long-term impact on their post-MI course. Precisely how negative experiences translate into worse health outcomes has yet to be determined. Potential explanations include decreased compliance with medications, life-style changes, cardiac rehabilitation, symptom reporting, and increased psychological distress.

OLDER PERSONS' PREFERENCES FOR SITE OF TERMINAL CARE. TR Fried, C van Doorn, ME Tinetti, VA Connecticut Healthcare System and Yale University School of Medicine, New Haven, CT.

Purpose: To describe preferences for site of terminal care, compare these preferences with preferences for site of non-terminal acute illness care, and describe reasons for these preferences.

Methods: Quantitative telephone interviews with 246 persons age ≥65 years hospitalized with an episode of congestive heart failure, chronic obstructive lung disease, or pneumonia. Interviews were performed two months after discharge and asked participants to choose home or hospital as preferred treatment site for terminal and non-terminal illness. Qualitative, semi-structured, face-to-face interviews with an additional 29 persons, in which participants were asked to name their preferred treatment site and discuss the reason for their choice.

Results: In the quantitative interviews, in the case of terminal illness, 106 of the 246 participants (43%) preferred the hospital, 118 (48%) preferred home, and 22 (9%) did not know. In the case of non-terminal illness, 113 (46%) preferred home, 132 (54%) preferred the hospital, and 1 did not know. Approximately one-third of those who preferred home or hospital for non-terminal illness changed their preference according to whether the illness was terminal. In the qualitative interviews, when site was not constrained to home or hospital, 7 participants preferred home, 7 the hospital, 1 hospice, 5 the nursing home, and 9 would not talk about their preference. Of the 14 preferring home or hospital, 6 had a different preference in the case of non-terminal illness. Those who preferred home in terminal illness but otherwise preferred hospital spoke about the importance of having family around them. Those who preferred hospital in terminal illness but otherwise preferred home were concerned about whether their families could take care of them when they were dying. Those who preferred the nursing home were also concerned about families' ability to cope with their care needs, specifically those resulting from chronic illness preceding death. No one mentioned concerns about the quality of terminal care available in the hospital or nursing home. The 9 who would not name a preferred site showed a marked reluctance to consider site of death.

Conclusions: Preference for home as a site of terminal care exceeds existing practice. However, this is not based on concerns about quality of care, a factor often cited in the literature. Instead, preference appears to depend heavily on concerns about meeting chronic care needs prior to death, an issue not addressed in the current debate about how best to provide end-of-life care. Specific concerns about terminal care frequently result in differences between preferred site for terminal and non-terminal illness. In contrast to the general acceptance of advance directives, there was great discomfort with discussing preferences for site of terminal care.

DOES AN OPEN-ENDED INTRODUCTION OR QUESTION-ORDER INFLUENCE THE TEST CHARACTERISTICS OF ALCOHOL SCREENING TOOLS? PD Friedmann, JX Zhang, C Pittinger, AR Brooks, R Saitz. Sections of General Internal Medicine, University of Chicago Pritzker and Boston University Schools of Medicine.

Purpose: Steinweg et al. (1993) found that an open-ended introduction can increase, and an initial inquiry about drinking amounts can decrease, the sensitivity of the CAGE. The purpose of this study was to assess whether an open-ended introduction or question-order influences the sensitivity (SENS) and specificity (SPEC) of the CAGE or the combination of the CAGE plus quantity, frequency and maximum (QFM) questions recommended by the National Institute on Alcohol Abuse and Alcoholism's (NIAAA) "Physician's Guide to Helping Patients with Alcohol Problems."

Methods: We randomized 395 patients who presented to one urban emergency department to receive one of 4 versions (V) of an alcohol screening questionnaire. V1 and V2 began with the open-ended introduction (OEI) "Tell me about your drinking." V1 then asked the four CAGE questions, followed by QFM questions while V2 asked QFM questions before CAGE. V3 was similar to V1, and V4 to V2, but without the introduction. Screen-positive subjects, drug users and cigarette smokers, and a random sample of the remainder, received the Composite International Diagnostic Interview-alcohol module (CIDI-AM), a gold standard for the lifetime diagnosis of alcohol abuse or dependence. We used the method of Begg and Greenes to adjust for verification bias.

Results: Of the 395 patients screened, 86% were African-American, 52% female, and mean age was 40±17. Of the 250 subjects who completed the CIDI-AM, 67 had alcohol abuse or dependence. Demographic characteristics were balanced across the 4 versions.

Sensitivity/specificity of alcohol screening tools, by introduction		
	OEI n=215	no OEI n=180
CAGE ≥1	.68 / .90	.71 / .74
CAGE ≥2	.52 / .92	.47 / .81
Combination: CAGE ≥ 1 or QFM positive*	.73 / .88	.86 / .72
*Males: >14 drks/wk or >4/occasion; females: >7/wk or >3/occas.		

The OEI had no effect on the SENS of CAGE, but it increased SPEC (table, P<.0001). For the combination of CAGE and QFM, the OEI produced a non-significant decrease in SENS (P=.12), while increasing SPEC (P<.0001). We could detect no significant effect of asking QFM before CAGE or vice versa on the test characteristics of the alcohol screening tools. Ongoing analyses are using ROC methods to make comparisons across multiple cut-points.

Conclusions: Although the open-ended introduction improved the specificity of both the CAGE alone and the NIAAA-recommended combination of the CAGE and quantity/frequency/maximum questions, the unexpected trend toward the open-ended introduction lowering the combination's sensitivity needs further study. Asking first about drinking amounts did not appear to alter the test characteristics of alcohol screening questions.

OUTCOME OF ANTITHROMBOTIC THERAPY IN MISSOURI MEDICARE BENEFICIARIES WHO HAVE NONVALVULAR ATRIAL FIBRILLATION **BF Gage, M Boechler, AL Doggette, G Fortune, JM Radford, GC Flaker. Division of General Medical Sciences Washington University School of Medicine; Louisiana Health Care Review; Missouri Patient Care Review foundation; Center for Outcomes Research and Evaluation, Yale-New Haven Hospital; University of Missouri-Columbia Hospital and Clinics**

Purpose: Although clinical trials demonstrated that antithrombotic therapy can reduce the risk of death and stroke in carefully selected patients with nonvalvular atrial fibrillation (NVAF), whether such therapy is effective in older, sicker populations remains unresolved. Our objective was to compare the effectiveness of antithrombotic therapy in Missouri Medicare beneficiaries with NVAF to the effectiveness of that therapy reported from the NVAF trials.

Methods: Retrospective cohort study linking reviews of 1147 Missouri hospitalizations from 1993 to 1994 to subsequent Medicare claims.

Results: We documented the presence of NVAF and obtained 2- to 3-year follow-up on 597 Medicare beneficiaries (mean age, 80 years). Only 328 (55%) beneficiaries were prescribed antithrombotic therapy at hospital discharge -- 34% received warfarin and 21% received aspirin. Advanced age and female gender predicted underuse of antithrombotic therapy. Controlling for these factors, stroke risk factors, and contraindications to anticoagulation, we found that prescription of warfarin decreased the rate of death or hospitalization for nonfatal stroke by 23% (hazard rate = 0.77; 95% confidence interval [CI] 0.51-1.18) and prescription of aspirin decreased the rate of these events by 10% (hazard rate = 0.90 ; 95% CI 0.61-1.28). These relative risk reductions (RRRs) were not significantly lower than the corresponding RRRs for similar endpoints observed in clinical trials -- 48% and 19% for warfarin and aspirin, respectively. Furthermore, because of the high rate of death and nonfatal stroke observed in the Medicare beneficiaries, the absolute risk reductions afforded by antithrombotic therapy were equivalent in the two populations.

Conclusions: Increasing the appropriate use of antithrombotic therapy in Medicare beneficiaries with NVAF may prevent as many deaths and strokes in them as antithrombotic therapy did in younger, healthier trial participants.

A CONTROLLED TRIAL OF THE CANALITH REPOSITIONING PROCEDURE FOR THE TREATMENT OF BENIGN PAROXYSMAL POSITIONAL VERTIGO IN A GENERAL INTERNAL MEDICINE OUTPATIENT PRACTICE. DA Froehling, JM Bowen, MD Silverstein, DN Mohr, RH Brey, CW Beatty, and PC Wollan. Departments of Internal Medicine, Otorhinolaryngology, and Health Sciences Research, Mayo Clinic and Mayo Foundation, Rochester, MN; and Center for Health Care Research, Medical University of South Carolina, Charleston, SC.

Benign paroxysmal positional vertigo (BPPV) is the most common cause of dizziness. BPPV is thought to be caused by free-floating debris in the posterior semicircular canal of the vestibular labyrinth of the inner ear. Physical therapy maneuvers such as the canalith repositioning procedure (CRP) described by Epley have been reported to be effective therapy for BPPV in patients seen by otolaryngologists.

Methods: We initiated a randomized, placebo-controlled trial of the CRP for patients with clinically diagnosed BPPV in a general internal medicine outpatient practice. No vestibular or other laboratory studies were performed. Patients with a history of positional vertigo and unilateral positional nystagmus on physical examination (Dix-Hallpike maneuver) were enrolled in the study. Measured outcomes included resolution of vertigo and positional nystagmus at follow-up examination.

Results: 50 subjects (mean age 64, 18 males and 32 females) were recruited; the median duration of symptoms was 39 days. 24 were randomized to the CRP and 26 were randomized to a placebo maneuver. Median follow-up was 10 days; all subjects returned for follow-up. 12/24 subjects (50%) in the CRP group reported resolution of vertigo compared to 5/26 subjects (19%) in the placebo group (p=0.036 by a 2-tail Fisher's exact test). At follow-up, 16/24 subjects (67%) in the CRP group and 10/26 subjects (38%) in the placebo group had a negative test for positional nystagmus on physical examination (Dix-Hallpike maneuver) (p=0.046 by the chi-square test).

Conclusions: The CRP is effective treatment for BPPV and this procedure can be performed by general internists on outpatients with a clinical diagnosis of BPPV and unilateral positional nystagmus on physical examination. Further testing or referral may be appropriate for patients who do not respond to this intervention.

PATIENTS' ATTITUDES TOWARDS FINANCIAL INCENTIVES FOR MANAGED CARE PHYSICIANS. TH Gallagher, R St. Peter, M. Chesney, W Shannon, B Lo. Division of General Medical Sciences, Washington University School of Medicine, St. Louis; Kansas Health Institute; Department of Medicine, UCSF.

Managed care plans commonly use financial incentives to encourage physicians to practice cost-conscious medicine. These incentives may create a conflict of interests between patients and physicians. Disclosure of financial incentives is proposed to restore trust in physicians. However, little is known about patients' attitudes towards these incentives or towards the disclosure of incentives.

We conducted a random digit dial telephone interview with 1050 adult users of the health care system in 88 metropolitan areas with >25% managed care penetration. The survey concerned an incentive in which physicians "could receive up to 10% extra income if they kept health care costs under control." The response rate was 55%.

We found that patients had serious concerns about this incentive. 44% of respondents thought that giving doctors such a bonus was a "very bad idea," and 28% said this bonus was a "somewhat bad idea." Respondents were more likely to think this cost-control bonus was a bad idea if they were older (p=.001), had heard about bonuses (p=.01), were in good overall health (p=.01), or had lower global ratings of their doctor (p=.008) or health plan (p=.001). Respondents in the highest SES quartile were twice as likely to think this incentive was a bad idea compared with those in the lowest SES quartile (p=.0004). 65% said such a bonus would lower their trust in their doctor. Respondents were more likely to say that this bonus would lower their trust in their doctor if they had low baseline trust in their doctor (p=.007). 79% of respondents would choose a plan that had no bonuses. Respondents wanted information about such incentives. 89% said that they would want to know whether their doctor receives a bonus. Although 57% were very likely to ask their health plan whether their doctor receives a bonus, only 32% were very likely to ask their doctor about bonuses. 62% agreed that "talking with my doctor about bonuses would be awkward," and 82% agreed that they should be told about their doctor's bonuses without having to ask.

Patients believe that financial incentives to physicians to reduce expenditures are bad for patients, would lower trust, and might lead them to choose a different plan. Patients want incentives disclosed to them without having to request this information. Health plans and physicians need to consider whether patients can be educated about financial incentives in ways that regain their trust.

THE IMPACT OF MEDICARE SUPPLEMENTARY INSURANCE ON ACCESS TO THE KIDNEY TRANSPLANT WAITING LIST. PP Garg and NR Powe, Robert Wood Johnson Clinical Scholars Program and Division of General Internal Medicine, Johns Hopkins University, Baltimore, MD.

Renal transplantation is preferred over dialysis for the treatment of end-stage renal disease (ESRD) because the former improves quality-of-life and survival while reducing overall costs of care. As a result, use of this modality is encouraged by Medicare, which provides coverage for over 90% of ESRD patients. We investigated whether the presence of private supplementary insurance (PSI) improves quality-of-care for Medicare patients with ESRD by increasing access to the renal transplant waiting list.

In a national prospective cohort study, we linked baseline medical record data for two incident groups (1990 and 1993) of adult ESRD patients to wait list data from the United Network of Organ Sharing. Using Cox proportional hazard models, we examined the independent effect of insurance status on access to the renal transplant waiting list while adjusting for sociodemographic factors (e.g. age, gender, education, income, employment status), baseline comorbid illnesses (e.g. cardiovascular disease, lung disease, cancer, diabetes) and dialysis facility ownership (e.g. profit status).

Of 3441 incident patients, 502 (15%) were wait-listed by May 1996. 3205 (93%) were covered by Medicare, of whom 1817 (57%) had PSI, 908 (28%) had dual Medicaid/Medicare insurance and 480 (15%) had Medicare alone. At baseline, those with PSI were older, more likely to be white, more educated, had higher incomes and were more likely to have comorbid medical conditions than those with Medicare alone. Crude listing rates per 100 person-years of ESRD were similar for patients with PSI and Medicare alone (5.65 and 5.50, respectively). However, in multivariate analysis, patients with PSI were one-third more likely to be placed on the waiting list than those with Medicare alone (adjusted RH, 1.34 [95% CI, 1.01-1.78]). While access improved overall for patients with ESRD incident in 1993 compared to those with onset in 1990 (adjusted RH, 1.34 [95% CI, 1.09-1.64]), gains were substantial for those with PSI (adjusted RH, 1.51 [95% CI, 1.16-1.98]) while those with Medicare alone may have experienced a reduction in access during this time (adjusted RH, 0.68 [95% CI, 0.40-1.17]). As a result, for the 1993 incident group, those with Medicare and PSI were two-times more likely than those with Medicare alone to be placed on the waiting-list (adjusted RH, 2.21 [95% CI, 1.34-3.67]).

Access to the renal transplant waiting list is greater for those Medicare patients with PSI, and this advantage appears to be growing. Increasing Medicare transplantation-related benefits (for pre-transplant tests and services, transplant surgery and post-transplant medications) to the level offered by private insurers may improve quality-of-care and simultaneously reduce the overall costs of treating patients with ESRD.

VALIDATION OF COMORBIDITY INFORMATION IN ICD-9-CM ADMINISTRATIVE DATA. WA Ghali, H Quan, G Parsons, Department of Medicine, University of Calgary, AB, Canada.

Administrative data are widely used in case-mix adjusted outcome analyses despite concerns regarding their validity. For such data to be relied upon as a resource for measuring outcomes of care, an accurate characterization of patient case-mix is essential. To assess the validity of regional administrative data, we performed a study comparing the clinical information extracted from administrative data with that generated by detailed chart review.

Randomly-selected medical records from in-patient hospitalizations in the Calgary Regional Health Authority were reviewed by a clinically-trained chart reviewer who carefully examined the entire medical record for evidence of any of the 17 comorbidity variables which constitute the Charlson index. We then examined the corresponding administrative data discharge records generated after hospitalization. These discharge records contain up to 16 ICD-9-CM diagnosis codes and 10 procedure codes. The ICD-9-CM coding algorithm developed by Deyo et al. was used to define the 17 comorbidity variables comprising the Charlson index. We then calculated kappa statistics to quantify the extent of agreement between the administrative and clinical data sources for each of the comorbidity variables, and for individual patients' Charlson comorbidity index scores.

A total of 600 medical records were reviewed — 200 from each of the region's three acute-care hospitals. Each of the 17 comorbidity variables of interest were detected among these medical records, with prevalences ranging from 18.0% for chronic lung disease to 0.5% for human immunodeficiency virus disease. Agreement between the administrative data and the chart review data was not uniform across variables: Kappa was near perfect (0.8-1.0) for 4 variables, substantial (0.6-0.8) for 4 variables, moderate (0.4-0.6) for 8 variables, and fair (0.2-0.4) for 1 variable. Despite these varying, and occasionally low, kappa values for individual variables, the Charlson comorbidity index scores derived from administrative data were in substantial agreement with the index scores derived from chart review data (weighted kappa=0.71).

We conclude that information on comorbidity in ICD-9-CM administrative data does not perfectly agree with more-detailed clinical data extracted by medical chart review. This may cause problems in clinical studies that focus primarily on those clinical risk variables for which validity is questionable. However, for summary measures of comorbidity such as the Charlson index, administrative data may sufficiently approximate measures derived from more detailed, and costly, clinical data sources.

INCIDENCE AND PROPHYLAXIS OF VENOUS THROMBOEMBOLISM IN PATIENTS WITH MULTIPLE TRAUMA. GW Garriss, DM Becker, JT Philbrick, SR Hurwitz, and JS Young. University of Virginia, Charlottesville, VA

Although deep venous thromboses (DVT) and pulmonary emboli (PE) are potentially life threatening complications in patients with multiple trauma, reported incidence rates vary. Studies that assess only clinically evident events likely underestimate the problem To systematically assess DVT/PE in multiple trauma patients, we conducted a Medline search to identify all English language articles published since 1966 that evaluated DVT/PE in this population. The search matched thromboembolism with wounds, injuries, fractures, and/or multiple trauma. Articles concerned only with isolated hip fractures or CNS injuries were excluded.

Seventeen relevant articles (3,647 patients) were found of which 10 (2,913 patients) met our minimum criteria for incidence studies: adequate description of the patient selection process, a description of the study population (age, gender, measure of injury severity/trauma type), inception into the study cohort within 72 hours of admission, description of the surveillance method used to detect DVT/PE, prospective surveillance to assess DVT/PE, and application of DVT surveillance to all study patients. Prophylactic treatment trials had 2 additional criteria: adequate description of the treatment, and random allocation of the treatment. Only 5 (1,475 patients) of the 10 studies also met these criteria.

Incidences in untreated patients varied widely: all DVT, 5.8-56%; proximal DVT, 5.8-28.4%; PE, 0.03-6.2%; PE case fatality rate, 0-75%. In the 10 incidence studies, there was great variation in patient groups studied and in the DVT/PE surveillance protocols. On average, the 2 studies using venograms detected higher rates of DVT (all DVT, 42%; proximal DVT 18%) than did ultrasound (all DVT, 7.9%). This difference occurred despite the use of more frequent surveillance in all ultrasound studies.

Of the 2 trials that included untreated controls, only one demonstrated statistically significant benefit from prophylaxis with either low dose heparin (LDH) or a mechanical device (SCD). Overall, 4 different prophylaxis regimens were studied: LDH, low molecular weight heparin (LMWH), SCD, and combinations (heparins/SCD); no one was clearly superior. Bleeding complications of heparins (range from 0 to 5%) were mentioned in only 3 of the 5 studies. There was potential for Type II error.

Ten of 17 studies evaluating multiple trauma patients for DVT/PE met minimal methodologic standards for incidence research. Only 5 trials met minimal additional standards for treatment research. Despite these limitations, DVT and PE were proven to occur at clinically significant rates in untreated multiple trauma patients. Wide variation in rates are likely due to methodologic differences among studies. There are few well-designed randomized controlled trials evaluating DVT prophylaxis in these patients. These are insufficient to firmly establish the efficacy and risk of commonly used prophylaxis regimens. More well-designed research in this area is needed.

THE INFLUENCE OF SOCIAL, PSYCHOLOGICAL, AND CLINICAL FACTORS ON ANTIRETROVIRAL MEDICATION ADHERENCE AND PLASMA HIV LEVELS. AL Gifford, JE Bormann, MJ Shively, BC Wright, DD Richman, SA Bozzette, VA San Diego Healthcare System, University of California San Diego School of Medicine, San Diego State University, University of Phoenix, San Diego, CA.

Background: Non-adherence to HIV combination antiretroviral (ARV) therapies can lead to treatment failure, and to the emergence and possible transmission of drug-resistant HIV strains. However, the clinical and psychosocial factors associated with adherence and with HIV suppression are unknown.

Methods: We recruited 133 HIV-infected adults receiving 3 or 4-drug highly-active ARV therapy (116 patients) or dual nucleoside therapy (17 patients) from academic and community clinical practices, and community-based AIDS service organizations. Research personnel collected sociodemographic, psychological, and clinical data from subjects, and knowledge, attitudes, beliefs, and behaviors relating to health and medications. Subjects completed customized adherence self-report instruments and provided blood samples to measure plasma HIV-1 RNA concentrations and CD4+ lymphocyte counts. Ordinal logistic regression and linear regression models were used to determine independent predictors of (ARV) adherence and plasma HIV concentration, respectively.

Results: Adherence was poor (average <80% ARVs per day) in 37 subjects (28%), fair (80-99% ARVs) in 30 subjects (23%), and excellent (100% ARVs) in 66 subjects (50%). Mean decreases in plasma HIV concentration from highest-ever level were 1.3, 1.6, and 2.0 log10 copies/ml in patients with poor, fair, and excellent adherence, respectively ($\chi 2$; $p<0.02$). In full multivariate models adjusting for disease state, sociodemographic factors, and differences in environment, knowledge, attitudes, psychological state and ARV regimen, convenience of the medication regimen ("fit" with routine and daily activities) was associated with greater medication adherence (Adjusted Odds Ratio [AOR] 9.0; 95% confidence interval [CI], 1.8-45.3), and lower HIV concentration (1.04 log10 copies/ml; $p<0.02$). Confidence in medication-taking ability (perceived self-efficacy) was also associated with greater medication adherence (AOR 5.3; 95% CI, 2.4-11.8). African-Americans were less likely to adhere to their ARVs (AOR 0.4, 95% CI, 0.2-1.0), and had higher plasma HIV concentrations by 0.51 log10 copies/ml ($p<0.04$). The most common reasons for missing medications were: too busy with other things or simply forgot (52%), away from home (46%), and change in daily routine (45%).

Conclusion: Non-adherence to combination ARV medications is common, and is clearly associated with higher levels of plasma HIV. Programs and clinical efforts to improve medication-taking should strive to better integrate medications into patients' daily routines and should improve patient confidence in taking medications.

A CLINICAL PREDICTION RULE FOR CARPAL TUNNEL SYNDROME. JK Lo, HM Finestone, and K Gilbert, Division of Physical Medicine and Rehabilitation & Division of General Internal Medicine, Department of Medicine, University of Western Ontario, London, ON, Canada.

Carpal tunnel syndrome (CTS) is a common medical problem with well-described symptoms and signs. Electrodiagnostic testing (nerve conduction studies (NCS) and electromyography (EMG)) is frequently ordered to help make this diagnosis. Patients with clinical findings suggestive of other neurological or musculoskeletal conditions may currently be referred too often for electrodiagnostic testing to rule out CTS. Similarly, such testing may be less necessary when the clinical findings are entirely consistent with CTS.

PURPOSE: To develop a clinical prediction rule for CTS which will aid in ruling the diagnosis in or out prior to performing the NCS & EMG.

METHODS: Retrospective chart review of all patients referred to an electrodiagnostic center with a suspicion of CTS in 1997. Patients were excluded if they had prior NCS & EMG, or surgery for CTS, on the affected limb. Electrodiagnostic studies were performed according to accepted guidelines, and served as the primary outcome measure. Clinical variables were analyzed to determine their relationship with CTS, and those with univariate p-values <.1 were eligible for entry into a forward stepwise multiple logistic regression model. Variables remaining in the final regression model were used to develop a point-score system which was validated by examining the area under the receiver operating characteristic (ROC) curve.

RESULTS: 348 patients were enrolled, with 169 (49%) meeting electrodiagnostic criteria for CTS. The remaining patients were diagnosed with a variety of neurological and musculoskeletal problems. Of the 43 variables assessed for their association with CTS, 25 were eligible for entry into the logistic regression model after univariate analyses, and 9 remained in the final model, including: male gender, duration of symptoms, nocturnal symptoms, sensory symptoms, wrist pain (negative predictor), neck pain (negative predictor), abnormal pinprick sensation, abductor pollicis brevis weakness, and thenar wasting. The area under the ROC curve for the final model was 0.93 (95% CI: 0.90-0.96), indicating that the model performed exceptionally well.

CONCLUSIONS: The use of this clinical prediction rule can be a significant aid in diagnosing CTS, and may alter the need to perform electrodiagnostic studies on all patients suspected of having this problem. Further validation of this model will help to confirm its clinical utility.

SHOULD ALL DIABETICS BE TREATED WITH ANGIOTENSIN-CONVERTING ENZYME INHIBITORS TO PRESERVE RENAL FUNCTION? A COST-EFFECTIVENESS ANALYSIS. L Golan, HG Welch, JD Birkmeyer, VA Outcomes Group, White River Junction, VT

Purpose. Although guidelines recommend angiotensin-converting enzyme (ACE) inhibitors for diabetic patients with microalbuminuria, this strategy requires that providers adhere to screening recommendations. Inspired by recent information about benefit of ACE inhibitors in normoalbuminuric patients, we evaluated the cost-effectiveness of simply treating all diabetics without screening.

Methods. We used a Markov model to simulate the progression of diabetic nephropathy (from normoalbuminuria to microalbuminuria, gross proteinuria and end-stage renal disease) in a cohort of 50 year old patients with newly diagnosed type II diabetes. We considered three strategies: treating all diabetics with ACE inhibitors ("treat all"), annual screening for microalbuminuria ("screen for micro") and gross proteinuria ("screen for gross"). We assumed that all screen positive patients were started on ACE inhibitors. The model accounted for imperfect adherence to screening recommendations and discontinuation of treatment (either due to noncompliance or side effects). We used data from randomized controlled trials to estimate the progression of diabetic nephropathy and other published sources for competing risks of death, prevalence of microalbuminuria and remaining variables. Major categories of costs included screening, ACE inhibitors and treatment for end-stage renal disease. We calculated expected costs and quality adjusted life years (QALYs) using a 3% discount rate.

Results. "Screen for gross" had the highest cost and the lowest benefit (i.e. was dominated). Compared to "screen for micro", "treat all" was more expensive ($10,134 vs. $9,169 per patient) but had a higher benefit (10.82 QALYs vs. 10.63 QALYs). The marginal cost-effectiveness ratio (cost per additional QALY) was $5,108. In sensitivity analyses, the marginal cost-effectiveness ratio remained below $50,000 under a wide range of conditions. The exceptions included newly diagnosed elderly patients (age>84 years), high cost of ACE inhibitor (>$1,750 per year) or ineffective therapy (average progression of nephropathy with ACE inhibitors relative to no treatment > 0.9). The model was relatively insensitive to adherence with screening and the cost of end-stage renal disease.

Conclusion. Treating all diabetics with ACE inhibitors without screening is a simple strategy that provides additional benefit at a modest incremental cost.

LOOKING AT RISK IN HYPERTENSION CARE: UNIDIMENSIONAL VERSUS MULTIDIMENSIONAL PERSPECTIVE. N Gimpel, V Schoj, M Boccardo, R Di Paolo, K Kopitowski, A Rubinstein. Division of Family and Preventive Medicine. Hospital Italiano. University of Buenos Aires. Argentina.

The risk of cardiovascular disease in patients with hypertension (HT) is determined not only by the level of blood pressure but also by the presence of target organ damage (TOD) and other risk factors (RF).The JNC VI provides, as compared to JNC V and previous versions, which only considered level of blood pressure (BP) to guide medical interventions, a prognostic classification based on BP (stages 1-3) and the presence of TOD or RF(risk groups A: no RF or cardiovascular disease (CVD),B: ≥ 1 RF and C: diabetes or CVD).This report makes emphasis on absolute risk and benefit and uses risk stratification as part of the treatment strategy. We aimed to answer whether the intensity of treatment (increase the dose or add a new drug), was associated with BP alone (stages), or also included patient's absolute risks (stages and groups), as reported by JNC VI.

We randomized 800 records of patients (pt) with HT from an academic HMO who received regular care by a primary care physician. We made univariate and multiple regression analysis to examine potential predictors of poorly controlled BP (≥160-95) as well as predictors of change in the systolic and diastolic blood pressure (SBP and DBP).

Pt mean (±SD) age was 57.4 ±14.3 years, 54% women, and average follow-up was 34 ±17.5 months, with 3.4 visits per year. The percentage of pt with well-controlled BP (<140-90 mmHg) was 34.1% and with poorly-controlled BP, was 30%.The mean SBP and DBP at the inicial visit was 155 ± 20.5 mmHg and 97.7 ±12 mmHg, respectively. SBP and DBP decreased 14.06 ± 20.77 mmHg (p<.001) and 10.25 ± 12.15 mmHg (p<.001), over the follow-up period. Despite that the percentage of pt with poorly-controlled BP was 18.2%, 34.6% and 40.4% in stage1, 2 and 3, respectively (p< .001), the higher the stage, the greater the reduction of BP achieved; SBP: 4.4 mmHg, 12.2 mmHg and 31.9 mmHg (p<.001), DBP: 4.0 mmHg, 9.9 mmHg and 24.6 mmHg (p<.001),in stage 1, 2 and 3, respectively. A decrease in the SBP and DBP was not observed across risk groups;SBP:10.5, 14.0, 16.9 mmHg (p=.19), DBP:11.0, 10.6, 10.8 mmHg (p=.9), in group A, B and C, respectively. Initial level of BP (per increase of 10 mmHg) was the only predictor of change of BP in the model (ΔSBP: 7.8 mmHg and ΔDBP: 7.5 mmHg (p<.0001) as well as the only predictor of intensity of treatment (OR:1.5, 95% CI:1.3, 1.9).

Although BP was reduced as a consequence of more intensive treatment in those pt with higher level of initial BP, doctors seem to consider HT only unidimensionally. Pt's absolute risks did not change physician behavior in spite of recent JNC VI recommendations. Doctors need to incorporate pt's risk profile in the HT process of care, to improve the effectiveness of their interventions.

OSTEOPOROSIS AWARENESS IN A GENERAL MEDICAL PRACTICE. E Goldberger, S Cohn, AM Valinoti, M Callahan, Division of General Internal Medicine, Cornell Medical College, New York, NY

Background Osteoporosis affects over 25 million women in the United States with direct medical costs estimated to exceed 10 billion dollars per year. Despite significant advances regarding the pathophysiology, screening and treatment of osteoporosis, little is known about osteoporosis awareness and knowledge among patients.

Methods To assess osteoporosis awareness and understanding, we conducted a telephone survey of 331 female patients, ages 30 to 75, in our academic general medicine practice.

Results Eighty-six percent of patients contacted (n=285) participated in the study. Of these, 34% were African-American, 31% were Caucasian, 31% were Hispanic and 4% were Asian. Among participants, 66% were postmenopausal. Osteoporosis was correctly defined by 64%; 60% believed they were at risk for developing it. Only 40% of patients had heard about osteoporosis from a physician; internists were the most commonly cited physician source (65%). Over 90% of patients identified hip fracture and loss of height as potential complications of osteoporosis. Misconceptions about osteoporosis complications included arthritis (75%), heart attack (19%) and breast cancer (14%). Participants believed the following were risk factors for osteoporosis: postmenopausal status (82%), alcohol consumption (68%), smoking (62%), obesity (48%), high cholesterol (43%) and African-American race (27%). Eighty-two percent of patients said that osteoporosis is a preventable disease. Responders were highly knowledgeable about the role of adequate calcium intake in preventing osteoporosis (97%), but fewer knew that smoking cessation (76%), estrogen (72%) and weight-bearing exercises (65%) were also preventative measures. A common misconception was that lowering cholesterol could prevent osteoporosis (62%). Patients with HMO insurance were more knowledgeable about osteoporosis than were those with Medicaid, who in turn were more informed than Medicare patients. Formal education correlated highly with osteoporosis awareness. Caucasian women answered more questions correctly than did African-American and Hispanic women. Premenopausal women knew more about osteoporosis then did their postmenopausal counterparts. Only 54% of women had discussed calcium with their doctor. Only 54% of postmenopausal women had discussed the use of estrogen with their doctor. Lastly, physician gender did not impact on osteoporosis awareness and knowledge. (P value < .01 for all comparisons.)

Conclusion Our survey revealed that many women in an urban academic-affiliated internal medicine practice have misconceptions and knowledge deficits about osteoporosis. This vulnerable population included Medicare and Medicaid recipients, those with less education, minority patients and postmenopausal women. While most physicians reportedly had not discussed osteoporosis with their patients, internists made up the majority of physicians who had. This underscores the need for internists to take the lead in educating patients about the prevention, treatment and consequences of osteoporosis.

PATIENT FACTORS ASSOCIATED WITH AND SELF-REPORTED REASONS FOR NONADHERENCE TO ANTIRETROVIRAL THERAPY C Golin, A Kaplan, HH Liu, L Miller, K Beck, J Ickovics, NS Wenger. University of North Carolina, Chapel Hill, NC; University of California, Los Angeles, CA; Harbor/UCLA Medical Center, Torrance, CA.; and Yale University, New Haven, CT.

Background: Adherence to complex antiretroviral regimens is critical to the effective treatment of HIV, but is difficult to achieve. Interventions to improve adherence require detailed information regarding barriers to adherence.

Methods: We assessed adherence to protease inhibitor medication and information regarding patients' demographic and clinical characteristics, habits, attitudes and reasons for non-adherence. Among subjects enrolled in a prospective observational HIV trial, we measured adherence using a composite adherence score that combined data from medication bottle tops that record each instance of bottle opening, pill counts and follow-up interviews. Adherence was expressed as percent of prescribed doses taken during the study period.

Results: Eighty-one patients (mean age 37, 80% male) completed at least eight weeks of follow-up. Mean adherence was 80% (range 0-100). In bivariate analyses, patients were more likely to be adherent if they had greater trust in their provider ($p<.003$), if they were White or Hispanic than African American (mean 86%, 83%, 57%, respectively, $p<.001$), if their regimen would not fit with their daily activities in the next 30 days ($p<.05$), and if they were not heavy alcohol users ($p<0.001$). Patient age, gender, education level, highest viral load and coping style were not significantly associated with adherence.

Forty-eight patients (59%) reported reasons for missing antiretroviral doses. Most cited reasons related to their daily routine: 54% were away from home, 55% were too busy or forgot, 55% had a change in their daily routine, 30% were asleep when a dose was due, and 26% reported that alcohol or drug use interfered. Fewer patients cited regimen factors as reasons for missing doses: 11% were confused about dosage directions, 10% because of drug toxicity and 21% because they had too many pills to take. One third reported missing at least one dose because they ran out of medication.

Conclusions: Less trust in the provider, excessive alcohol use, and a poor regimen fit with patients' daily activities were strongly related to worse adherence to antiretroviral therapy. Interventions to improve adherence should be directed at enhancing the patient-provider relationship and helping patients to fit their regimen into their daily routine.

RELATIONSHIPS OF PATIENT CHARACTERISTICS AND SUCCESSFUL COMPLETION OF SUBSTANCE ABUSE DETOXIFICATION. AJ Gordon, CM Wentz, JL Gibbon, AD Mason, PJ Freyder, TP O'Toole. Center for Research on Health Care, Division of General Internal Medicine, University of Pittsburgh, Pittsburgh, PA.

Purpose: We evaluated what features of substance abuse history, physical exam, and laboratory data of patients admitted to a short-term, in-patient, medically monitored detoxification unit were associated with successful completion of detoxification.

Methods: We reviewed charts of consecutive patients admitted from April, 1997 to September. 1997 who voluntarily entered a Pittsburgh in-patient detoxification unit (designated "medically monitored", Level 3-A by Pennsylvania's Client Placement Guidelines for Adults (modified from American Society of Addiction Medicine criteria)). To be admitted, patients must have had a risk for severe withdrawal syndromes defined objectively, a need for daily professional monitoring due to concurrent medical or substance use factors, or a risk of harming self or others during withdrawal. Patients who did not qualify for this level of care possessed stupor, abuse of unknown substance(s), unstable vital signs (i.e.: blood pressure higher than 160/110), recent head trauma, need for opiate or benzodiazipine medication, or exhibited delirium tremens, seizures, or extreme agitation. We collected demographic, substance use history, physical exam, laboratory, and outcome data (completion of detoxification without emergent medical referral or leaving against medical advice) from the records.

Results: The cohort (n=186) was predominantly male (92%), African American (73%), homeless (72%), single (54%), and unemployed (94%) with a median age of 38. Overall, 45% patients reported a psychiatric history, 29% had a chronic medical condition, and 33% took prescribed medication. Active abused substances were alcohol (87%), cocaine (64%), and heroin (15%); drugs of choice were alcohol (46%) and cocaine (43%); 67% of patients reported at least two active substances of abuse. The detoxification period was not completed in 31 patients (17%): 10 left due to urgent medical referral and 21 left against medical advice. Statistic analysis revealed no significant demographic or substance abuse characteristic associated with successful completion of detoxification. Although laboratory abnormalities were common in all patients (i.e.: 27% gamma glutamyl transpeptidase, 21% aspartate aminotransferase, and 27% albumin) we detected no significant difference ($p>0.05$) between the different outcome groups. Elevated heart rate and blood pressure were found in 4% and 8% of patients and were not associated with outcome. Significantly more patients with a history of nausea or vomiting did not complete detoxification than did (23% (n=7) vs. 9% (n=13), $p=0.024$).

Conclusions: For patients admitted to a medically monitored detoxification facility, we found no association between demographic, substance abuse history, physical exam, and laboratory data associated with successful completion of the detoxification. For this population, use of routine admission screening laboratory data for medically monitored detoxification may be unwarranted.

SAFETY AND EFFICACY OF IBUTILIDE IN CONVERTING ATRIAL FIBRILLATION AND ATRIAL FLUTTER, R Gondi, P Gordon and E Racine, Department of medicine, DMC - Wayne State University, Detroit, MI

INTRODUCTION: Atrial fibrillation (Afib) and Atrial Flutter (Afl) are common atrial arrhythmias. Currently available anti-arrhythmic drugs have limited efficacy for acute conversion of Afib and Afl. Electrical cardioversion (EC) is most common and highly successful non pharmacological intervention used to treat these arrhythmias; however it is more invasive and traumatic. Ibutilide Fumarate is a rapid acting Class III anti-arrhythmic drug approved by FDA for this purpose. OBJECTIVE: To determine the safety and efficacy of Ibutilide relative to electrical cardioversion in terminating Afib and Afl. METHODS: We reviewed the medical records of all the events of IV Ibutilide injection and electrical shock for cardioversion of Afib and Afl between Feb '97 and Dec '97 in Detroit Medical Center and the data was recorded according to a predetermined data sheet. Relevant information was also collected from the cardiology database of the institute. Financial data was obtained from the accounts department. RESULTS: 28 patients received Ibutilide and 23 patients received electrical cardioversion. There were 55% males and 45% females. The median age for Ibutilide group was 72 yrs , the same for EC was 66yrs. 23 of the 28 patients got converted to sinus rhythm in Ibutilide group, with a conversion rate of 82% and median duration of conversion of 35mts. Efficacy was higher in Afl (89%) than in Afib (83%). One patient with combined Afib and Afl did not convert. In EC group, the conversion rate was 83%. Efficacy was higher in Afl (92%) than in Afib (75%). One of the 2 patients with combined Afib and Afl did convert (50%). There were a total of 8 episodes of complications with Ibutilide in 7 patients. The most frequent major adverse events were nonsustained ventricular tachycardia (10%), nonsustained polymorphic ventricular tachycardia (3.5%). In the EC group there were 6 episodes of complicatons in 5 patients which included sinus bradycardia in 3 patients (17%), asystole in one patient requiring pacemaker (4%). The cost of acquisition of each dose of Ibutilide is $119.00 and the average dose of ibutilide required per patient is 1.8 mg. EC cost $375.00. CONCLUSIONS: 1) This data demonstrates that IV Ibutilide is effective in rapidly terminating the Afib and AFL. 2) From a cost analysis point of view, Ibutilide is less expensive compared to electrical cardiversion. 3) With careful patient selection and under appropriate clinical and EKG monitoring Ibutilide is safe, effective and convenient drug and can be administrated as an alternative to electrical cardioversion.

COMPARISONS OF ABBREVIATED INSTRUMENTS TO DETECT HAZARDOUS DRINKING IN A LARGE PRIMARY CARE SETTING. AJ Gordon, SA Maisto, M McNeil, K Kraemer, ME Kelley, J Conigliaro. Center For Research on Health Care, Division of General Internal Medicine, University of Pittsburgh and VA Pittsburgh Healthcare System, Pittsburgh, PA and Department of Psychology, Syracuse University, Syracuse, NY.

Purpose: The Alcohol Use Disorders Identification Test (AUDIT) is a sensitive and specific instrument to detect hazardous drinkers. Hazardous drinkers drink enough alcohol to be at risk for adverse consequences, but do not meet DSM-IV criteria for alcohol abuse or dependence. Recent reports indicate that the three AUDIT consumption questions (AUDIT-C) and the third question ("How often do you have six or more drinks on one occasion?") defined as AUDIT-3, may also be used to detect hazardous drinkers. We compared the performance of the AUDIT, AUDIT-C, and AUDIT-3 in detecting hazardous drinkers identified using a quantity/frequency (QF) criterion in a large primary care sample. We also compared the abbreviated instruments to the full AUDIT.

Methods: We screened patients from 12 primary care sites in the Pittsburgh area as part of a large clinical trial investigating brief interventions for hazardous drinkers. The screening form included questions on demographics, stress management, smoking and the AUDIT and QF to assess alcohol use. To assess performance of the various forms of the AUDIT, we compared receiver operator characteristic (ROC) curves based on a standard QF criterion for hazardous drinking defined as ≥ 16 drinks per week for males and ≥ 12 drinks for females. Area under the curve (AUC) was used as the basis for comparing the various AUDIT forms. We also assessed the sensitivities and specificities in identifying hazardous drinkers of the abbreviated forms to the full AUDIT.

Results: A total of 13,439 patients were screened. This cohort was predominantly male (53%), Caucasian (80%), middle aged (median age 41-50), educated (92% graduated from high school), married (60%), and employed (10% unemployed or disabled). Overall, 8192 (61%) and 7484 (56%) patients completed the QF and AUDIT instruments respectively. We identified 367 (3%) as hazardous drinkers by QF. The AUDIT, AUDIT-C, and AUDIT-3 were found to have AUC of 0.803, 0.832, and 0.718 respectively, indicating that the AUDIT-C performed best, followed by the full AUDIT and then the AUDIT-3 in predicting hazardous drinking.

Using scores on the AUDIT of ≥ 8 AUDIT-C ≥ 3, AUDIT-3 ≥ 1 we identified 1492 hazardous drinkers using the full AUDIT. At these scores, the AUDIT-C and AUDIT-3 were 99% and 98% sensitive and 58% and 64% specific in detecting individuals as hazardous drinkers by the full AUDIT.

Conclusions: We find that in a large primary care sample the consumption questions of the AUDIT (AUDIT-C) as well as the full AUDIT perform better than the AUDIT-3 in identifying hazardous drinkers as defined by the QF criterion. Based on the AUDIT alone, the abbreviated forms are equally sensitive but less specific to the full AUDIT.

PREDICTING HEALTH CARE UTILIZATION IN PATIENTS WITH CHEST PAIN: RELATIVE ROLES OF PSYCHIATRIC AND CORONARY DISEASE. GH Gordon, LH Baker, K Avalos, L DeBar, K James, GC Larsen, Portland VAMC and Oregon Health Sciences University, and Center for Health Research, Portland, OR.

About a third of patients with chest pain (CP) and no angiographic coronary artery disease (CAD) have high health care utilization (HCU) associated with psychiatric disorders (PD); many are women with panic disorder. We hypothesized that PD might increase HCU across a spectrum of CAD severity. We studied 231 chest pain patients enrolled in a prospective comparison of angiography with computer-analyzed exercise testing. We measured: 1) PD (DSM-IV structured interview); 2) psychological distress (SCL-90R); 3) HCU in the subsequent year (clinic and ER visits, hospitalizations); and 4) medical co-morbidity (MCM) by problem list review. We retrieved HCU data using Veterans Affairs (VA) computerized databases. We tried to predict high HCU (>10 clinic visits or >2 emergency room [ER] visits or ≥1hospitalization) by logistic regression analysis, entering as predictor variables (age) plus (MCM + ejection fraction + CAD severity) plus (alcohol abuse + other PD) plus (psychological distress).

The patients were all male with a mean age of 60 ± 10 years. Current/lifetime prevalence of PD was: 2.6%/4.3% (panic), 16.9%/27.4% (major depression), 6.5% (somatization disorder) and 4.3%/46.9% (alcoholism), all higher than expected except current alcoholism. Psychological distress scores were: general (62.2±10.7), anxiety (59.8±12.4), depression (61.8±10.9). At angiography, 30% of patients had no or minimal CAD, 40% had 1-2 vessel disease, and 30% had 3-vessel or left main disease. Seventy-nine patients (27%) had prior myocardial infarction, 48 had prior exercise tests, and 5 had prior angiography. Most (64%) had ejection fractions over 50%.

Our model predicted 5%-15% of the variance in HCU. Clinic HCU was significantly predicted only by psychological distress, but the odds ratio (OR) was very low (1.03; 95% confidence interval or CI=1.00-1.06). Other HCU was only marginally predicted by PD and distress, even for patients with no CAD. ER visits were significantly predicted by CAD severity; however, less severe CAD predicted more ER visits. Hospitalization was predicted by CAD severity (OR=1.8; 95% CI=1.3-2.6) and also by MCM (OR=1.5; 95% CI=1.04-2.19).

To correct for possible effects of distance from care on HCU we separately analyzed data from the 134 patients living nearest to our VA. Again, there was no relationship between PD or distress and HCU in patients with and without CAD.

We conclude that although PD and distress were at expected or higher levels in our chest pain patients, they were poor predictors of HCU. PD may not predict HCU in chest pain when patients are older males with a spectrum of severity of CAD.

HEALTH-RELATED QUALITY OF LIFE IN A COHORT OF DRUG USERS WITH HIV INFECTION. RW Grant, JH Arnsten, PA Demas, MN Gourevitch, EE Schoenbaum, Department of Medicine, Department of Epidemiology and Social Medicine, Montefiore Medical Center, Bronx, NY.

Objective: To describe the impact of socioeconomic status (SES) and HIV-related factors on health-related quality of life (HRQOL) in a cohort of current and former drug users in the Bronx, New York.

Methods: Surveys were administered to subjects recruited from an ongoing prospective longitudinal study of patients in methadone maintenance clinics. The survey included the Medical Outcome Study-HIV Health Survey (MOS-HIV). The MOS-HIV measures HRQOL in the following 11 domains: general health perceptions (GH), physical function (PF), role function (RF), social function (SF), cognitive function (CF), pain, mental health (MH), energy/fatigue (EF), health distress (HD), quality of life (QL), and health transition (HT). HIV viral load was measured using a super-sensitive branched DNA assay. Univariate associations between HRQOL and both SES and HIV-related factors were analyzed by t-test and Pearson correlations.

Results: 53 patients were enrolled: 62% male, 66% Hispanic, 23% Black, 83% on methadone maintenance; mean age was 45, and mean number of anti-retroviral drugs taken was 2.3. Of the SES factors analyzed, higher HRQOL was significantly related ($p < 0.05$) to: marital status (GH, PF, RF, SF, HT) and not receiving governmental benefits (pain, MH, HD). HRQOL was significantly lower in patients reporting 2 or more medication side effects (GH, PF, SF, CF, pain, MH, EF, HD), 2 or more HIV-related symptoms (GH, PF, SF, pain), and having a lower CD4 count (GH, PF for CD4 <100, and GH, PF, RF for CD4<50). There was no correlation found between HRQOL and viral load ($p > 0.2$ for all domains).

Conclusions: In this population of primarily non-white current and former intravenous drug users, HRQOL was significantly higher in those patients who had a marital partner and did not rely on governmental benefits, and lower in those patients reporting more medication- and HIV-related symptoms and having lower CD4 counts. There was no correlation between viral load and HRQOL. Further research is needed to elucidate the relationship between HRQOL, CD4 count, and viral load.

RATIONING SCARCE MEDICATIONS: THE PUBLIC'S PERCEPTION OF ALLOCATION STRATEGIES. MJ Green, SP Fong, PA Ubel. Penn State University College of Medicine, Hershey, PA, University of Pennsylvania, Philadelphia, PA.

Background: New medications for treating patients infected with H.I.V. and hepatitis are effective but expensive, and many state programs lack sufficient funds to provide the medications to all patients who might benefit. This study is to further understand the reasoning of the public in favoring some allocation strategies over others.

Methods: We surveyed 201 prospective jurors in a Philadelphia courthouse, asking them to select the best and worst drug allocation policies from a list of seven. Subjects were instructed to assume that rationing was necessary, and to explain their reasoning. Two survey versions were randomly distributed which differed with respect to disease (H.I.V. vs. hepatitis). Using qualitative methods, we classified and analyzed responses according to themes.

Results: The H.I.V. version of the survey was completed by 100 subjects, and the hepatitis version by 101. 56% of respondents were male, 41% white, 54% black, and 17% completed college. There were no significant differences between demographic characteristics or responses across survey versions. A majority of respondents considered one of the following three policies to be "best": lottery, giving priority to the sickest, and withholding medicine unless it was available to all patients. Likewise, a majority considered the following policies as "worst": withholding medicine unless it was available to all patients, halting enrollment of new patients, and enforcing a spending cap. In explaining their choices, subjects placed a high value on offering all patients an equal chance to receive needed medicines, on avoiding favoritism and bias, and on helping those with the greatest medical need. They objected to the ineffective use or wasting of resources, stoppage of treatment once it was started, and gambling with patients' lives.

Conclusions: For rationing expensive medications, the public values equity and dislikes waste, even though policies consistent with such goals may result in distributions that fail to maximally benefit patients. This raises questions about the appropriate aims of medication allocation strategies and the role of public opinion in shaping rationing decisions.

PREDICTORS FOR VIOLENCE TOWARD A PARTNER IN AN URBAN PRIMARY CARE CENTER. RA Griffith, BA Toolan, KA McGarry, JG Clarke. Division of General Internal Medicine, Rhode Island Hospital and Brown University School of Medicine, Providence, RI.

Background: Domestic violence is a common cause of morbidity and mortality in the United States. The limited data that exists about perpetrators has focused on Caucasian and highly educated men. **Objective:** To identify variables associated with violent behavior in a relationship among men and women in a multi-ethnic population of lower socioeconomic position (SEP), presenting for primary care. **Methods:** An anonymous survey was distributed to patients for 6 weeks in the Medical Primary Care Unit (MPCU) of an urban academic medical center in Providence, RI. All patients were encouraged to participate, however, survey completion was voluntary and no incentives were offered. Main outcome data on violent behavior towards a partner was assessed by the Conflict Tactics Scale (CTS) which has been previously validated for marital violence. Violent behavior was classified as minor (throwing, pushing, hitting) or severe (kicking, beating, threatening to use or using a knife or gun). Data were also gathered on alcohol use, symptoms of depression (by DSM-IV criteria), previous exposure to violence (either victim of physical and/or sexual abuse as a child(<16 yo) or adult, or witness to violence as a child), demographics and current relationship status (defined as sexual or intimate relationship in the past 6 months). Data were analyzed for participants in a current relationship. **Results:** Of the 112 patients who completed surveys, 61% were in a current relationship. In this subgroup, the mean age was 37 years, 65% were women and 52% were Caucasian. The prevalence of minor violence was 41% and of severe violence 23%. Those who exhibited violent behavior (both men and women) were more likely to consume >2 alcoholic drinks per drinking episode ($p=0.05$), to meet criteria for major depression ($p<0.001$) and to have experienced prior victimization ($p<0.001$). There was no significant association between violence and years of education, household income, or country of birth (US vs. not US). However, recent immigrants (<5 yrs) were more likely to exhibit violent behavior ($p=0.009$). Interestingly, women were just as likely as men to exhibit violent behavior. **Conclusions:** This study confirms an association between violent behavior in a relationship and alcohol use, depression and history of victimization, in a multi-ethnic population, with low SEP. These characteristics may be predictive of a higher likelihood for violent behavior in a relationship. Although more study is required to assess the benefit of intervention with abusers outside of a court-mandated setting, the potential exists for primary care physicians to screen for aggressive behavior in patients with these characteristics and intervene before more harm is inflicted.

DOCTOR, HEAL THYSELF? UTILIZATION OF A REGULAR SOURCE OF CARE IN A COHORT OF PHYSICIANS CP Gross; LA Mead; DE Ford; MJ Klag. Robert Wood Johnson Clinical Scholars Program (CPG), Department of Medicine (CPG, LAM, DEF, MJK), Welch Center for Prevention, Epidemiology, and Clinical Research (LAM, DEF, MJK), Johns Hopkins University School of Medicine, Baltimore, MD.

BACKGROUND: Although it has been demonstrated that having a regular source of medical care is an important predictor of receiving preventive health services, it is not known what proportion of physicians have a regular source of medical care and whether this impacts their use of preventive services. METHODS: The Precursors Study is a cohort study of 1,337 members (121 (9%) of whom are women) of JHU School of Medicine's graduating classes of 1948-64. The independent variable, regular source of care, was assessed in 1991. In 1997, at an average age of 67 years, use of specific preventive services was ascertained. People who had received a test to diagnose a specific sign or symptom were excluded from the analysis. We calculated the proportion of eligible respondents who had received various cancer screening tests and the influenza vaccine. Logistic regression was used to determine whether having regular source of care in 1991 was associated with receiving preventive services in 1997, after adjusting for covariates. RESULTS: 915 people (81% of eligible respondents) responded to the 1991 survey; approximately 35% (312 of 915) had no regular source of medical care at that time. The table shows the proportion of eligible respondents who received specific preventive services in 1997, stratified by regular source of care in 1991.

SCREENING TEST (1997 Survey)	ALL RESPONDENTS	With Regular Care	Without Regular Care	Odds Ratio (95% C.I) (for (+) regular care; reference: (-) regular care)
Guaiac	57%	68%	36%	3.75 (2.67-5.26)
Scope	44%	50%	34%	2.00 (1.39-2.88)
Guaiac OR Scope	68%	77%	56%	3.35 (2.39-4.71)
Mammogram	70%	84%	47%	5.79 (1.66-20.2)
PSA	76%	84%	63%	3.09 (2.04-4.69)
Flu shot	72%	78%	59%	2.40 (1.73-3.34)

Respondents who had a regular source of care were significantly more likely to have had screening for colon cancer (OR: 3.35), breast cancer (OR: 5.79), and prostate cancer (OR: 3.09), as well as receive influenza vaccine (OR: 2.40). Adjusting for age, sex, functional status, and parental cancer history did not significantly alter these findings.

CONCLUSION: Over 1/3 of physicians had no regular source of care. Even in a sample of physicians who could have potentially accessed preventive services directly, a regular source of care was still a strong predictor of use of preventive services. These findings provide further evidence that a relationship with a primary care physician is key in maximizing use of preventive services.

QUALE: A QUALITY-OF-LIFE MEASURE FOR HEMORRHAGIC STROKE Hamedani AG, Wells CK, Cicchetti DV, Brass LM, Kernan WN, Viscoli CM, Maraire JN, Awad IA, Horwitz RI. Yale School of Medicine. New Haven, CT.

Introduction. Although hemorrhagic stroke (HS) patients (pts) suffer a high initial mortality rate, survivors often have few neurologic deficits. As a result, these pts score highly on available stroke outcome measures (meas.) focusing on neurologic impairment, disability, and/or handicap. Moreover, generic quality-of-life (QOL) meas. do not assess deficits recognized by pts as resulting from HS (e.g. personality changes). Thus, the purpose of this study is to develop and validate a HS-specific QOL meas. **Methods.** Before developing QUALE, we made a series of methodologic decisions resulting in asking pts to report change (positive or negative) in their QOL (rather than current QOL status) due to their HS (and not unrelated life events). QUALE, based on 40 pt interviews, included 38 items/7 domains: General Outlook, Physical Functioning, Cognitive Functioning, Relationships, Social & Leisure Activities, Emotional Functioning, and Work & Financial Status. QUALE was compared to often-used stroke outcome meas. (Canadian Stroke Scale, Barthel Index, Rankin Handicap Scale), and the most commonly used generic QOL meas. (SF-36). We used gathered data at 1 year to assess QUALE's reliability (test-retest and internal consistency) and validity (face, content, and construct). **Results.** The study population included 71 pts (63% women, 77% white; 18 to 49 years old). QUALE was reliable (test-retest weighted kappas ranged 0.40-0.96, indicating fair to excellent agreement. Cronbach's alpha's for internal consistency were > 0.80 for 5/7 domains). Face validity was judged present based on expert and pt review. QUALE avoided floor/ceiling effects prominent in comparison meas., e.g., 94% of pts scored in the highest decile on the Barthel Index, while < 20% scored in any single decile on QUALE Physical Functioning domain. At least 33% (40-58%) of pts scored in the top decile in 5/8 SF-36 domains, while < 33% scored in any single decile in all QUALE domains (content validity). QUALE discriminated between pts based on clinical characteristics- e.g., QUALE overall scores were lower for pts with intracerebral (mean=30±36) than subarachnoid (mean=50±34) hemorrhage ($p<0.05$; construct validity). In addition, 32% of pts reported increase in overall QOL with QUALE (no other meas. allowed for improvement). **Conclusion.** QUALE out-performed currently available stroke outcome and generic QOL meas. in range of deficits assessed and range of responses elicited, suggesting it may have an important role in evaluating pt outcome after HS.

THE TREATING PHYSICIAN AS ACTIVE GATEKEEPER IN THE RECRUITMENT OF RESEARCH SUBJECTS. J.H. Gurwitz, E. Guadagnoli, R. Silliman, J.C. Weeks. Meyers Primary Care Institute, University of Massachusetts Medical School and Fallon Healthcare System, Worcester, MA, Harvard Medical School, and Boston University School of Medicine, Boston, MA.

Purpose: Institutional review boards vary in regard to the conditions imposed on investigators to contact potential subjects for participation in research studies. We examined the impact of more active involvement of the treating physician in the approval process for recruiting study subjects.

Methods: In recruiting subjects for a Massachusetts, multi-hospital (n=17), health services research study of early stage breast cancer requiring patient interviews, four hospitals stipulated that the treating surgeon provide written permission to the investigators to allow any contact with a potential study subject for the purpose of recruitment (active physician response group); the remaining 13 hospitals stipulated that the treating surgeon need only respond to the investigators if contact with a potential subject was forbidden (passive physician response group).

Results: Of 1,401 potential subjects treated for validated early stage breast cancer, 697 patients were in the active physician response group with 734 in the passive physician response group. Of the 697 patients in the active physician response group, contact was approved by the treating surgeon for 72% (n=505), compared with 91% (n=638) of the passive response group (p=0.001). Overall, potential subjects in the active physician response group were significantly less likely to be enrolled in the study compared with those in the passive physician response group (relative risk 0.75; 95% CI 0.68 to 0.83). However, of patients approved for investigator contact, similar percentages of subjects were enrolled from each group: 81% (n=408) from the active physician response group compared with 79% (n=507) from the passive physician response group (p=0.58). Those enrolled from the active physician response group were similar to those not enrolled in terms of age (>70 vs ≤70), comorbidity burden, and surgical treatment (breast-conserving surgery vs mastectomy). Those enrolled from the passive physician group were significantly younger and less likely to have severe/moderate levels of comorbidity, but were similar in terms of surgical treatment compared to those not enrolled from that group.

Conclusion: Requiring more active involvement by the treating physician in approving access to patients for participation in health services research studies reduces overall enrollment of study subjects, and has an impact on the characteristics of the study population enrolled.

COST-EFFECTIVENESS OF AGGRESSIVE CARE FOR PATIENTS WITH NONTRAUMATIC COMA. MB Hamel, RS Phillips, J Teno, RB Davis, L Goldman, J Lynn, N Desbiens, AF Connors, J Tsevat. Beth Israel Deaconess Med Ctr, Boston, MA, Brown Univ, Providence, RI, Univ of CA San Francisco, San Francisco, CA, George Washington Univ, Washington, D.C., Univ of TN, Chattanooga, TN, Univ of VA, Charlottesville, VA, Cincinnati Univ, Cincinnati, OH.

We estimated the cost-effectiveness of a more aggressive treatment strategy, as opposed to withholding resuscitation and ventilator support, for patients (pts) hospitalized with nontraumatic coma. We studied 549 pts enrolled in SUPPORT (a 5-center study of seriously ill pts) who had nontraumatic coma (comatose pts with Glasgow coma scores ≤ 9 for ≥ 6 hours). A study done in the Marshfield Epidemiologic Study Area estimated that 40,071 pts meet these inclusion criteria annually in the U.S. We estimated and compared life-expectancy and health care costs of pts for whom decisions were made by study day 4 to withhold resuscitation and ventilator support if needed and of pts treated more aggressively. The time tradeoff was used to obtain utility estimates from pts or their surrogates. Hospital costs from study day 4 through discharge were estimated from SUPPORT data. Physician costs and future hospital costs were estimated from Medicare data for the pts studied. We discounted costs and survival at 3% per year. We divided pts into 2 risk groups based on a simple risk score we developed previously to identify pts at high risk for short term mortality. High Risk pts had 3 or more of the following risk factors on study day 3: abnormal brain stem response, absent verbal response, absent withdrawal to pain, creatinine level ≥ 1.5mg/dl, and age ≥ 70. Medium Risk pts had ≤2 risk factors. For each group, we calculated the marginal cost-effectiveness (1994 dollars per quality adjusted life year, QALY) of providing rather than withholding aggressive care.

For the 549 pts studied, the mean (SD) age was 65 (16), and 52% were female. By study day 4, decisions were made to withhold resuscitation and ventilator support for 31% of High Risk pts and 14% of Medium Risk pts. Survival and the marginal cost-effectiveness (C-E) for the more aggressive care strategy were as follows:

Prognostic group (N)	# Risk Factors	Actual 2 mo. survival	Marginal C-E
High Risk (259)	3-5	7%	$93,300/QALY
Medium Risk (290)	0-2	51%	$46,000/QALY

In sensitivity analyses varying each assumption across 2 standard errors of our baseline estimate, we found that even when we used extreme values favoring the aggressive strategy, the c-e of aggressive care for High Risk pts was > $50,000/QALY.

The cost-effectiveness of a more aggressive treatment strategy for pts with nontraumatic coma is highly dependent on pts' prognoses. For pts at high risk for short term mortality, aggressive treatment is associated with a high cost per QALY, but for pts at lower risk, the cost per QALY is similar to other accepted medical interventions.

NEEDS OF THE DYING IN NURSING HOMES LC Hanson,* M Henderson, A Schulman, K Reynolds; University of North Carolina, Chapel Hill, NC

Purpose: To describe the care needs of dying nursing home residents during their last three months of life.

Methods: Nurses, aides, and family completed structured interviews after all deaths in 2 facilities over a 1 year study period. To define care needs, respondents answered questions about the frequency of physical, psychiatric and emotional symptoms, and needs for assistance with hygiene and communication about treatment options. To measure unmet need, they then indicated whether the decedent needed more help or treatment than they received for each care need identified.

Results: Of 259 eligible respondents, 174 completed interviews (67%). Decedents' average age was 81, and 40% lived in the facility > 1 year. In the last 3 months of life 62% of decedents were hospitalized; however 90% died in the nursing home. Most deaths were expected; 85% were preceded by DNR orders and 43% by orders to limit other treatments. The most prevalent care needs were for poor hygiene (83%), incontinence (61%), fatigue (57%), and moderate or severe pain (56%). Decedents' greatest unmet needs were for psychiatric and emotional symptoms (37%), hygiene (28%), communication about treatment decisions (28%), and pain management (21%). Staff and family felt 72% of decedents were ready to die, yet only 54% had a good dying experience.

Conclusion: Nursing home residents are frequently ready to die and most forego aggressive medical care, yet they continue to have unmet needs for symptom management and personal care. Programs to improve terminal care in nursing homes should combine traditional symptom management with increased attention to psychiatric and emotional needs, communication about treatment decisions, and supportive care for personal hygiene.

THE NORTH CAROLINA NURSING HOME RESTRAINT PROJECT, LC Hanson,* K Clarke, J McArdle, D Biggs, R Simpson, M Williams; University of North Carolina, Chapel Hill, NC and Medical Review of NC, Raleigh, NC

Purpose: Physical restraints have many adverse effects on frail nursing home residents. Federal law requires documentation of rationale, alternatives, and release times. We designed a quality improvement intervention to reduce rates of physical restraint and to improve documentation in nursing homes with high baseline rates.

Methods: After a statewide review of rates of restraint use in 1996, high use facilities were identified. From a geographic cluster of high use facilities, 22 nursing homes agreed to participate. Restrained residents were identified using facility lists and chart review. Key nursing home staff received feedback of baseline performance data, intensive education, video and print educational aids to use in the facility, and follow-up consultation. Repeat chart review at 1 year follow-up was used to test impact of the intervention.

Results: Fifty-eight key staff members from 22 nursing homes took part in the intervention. At baseline 433 of 1674 residents were in physical restraints, compared to 276 of 1955 residents post-intervention (25.9% vs14.1%, $p<.05$). Required documentation for restraint use increased after the intervention, although absolute rates remained low (8.3% vs 13%, $p<.05$).

Conclusions: Restraint use in nursing homes can be decreased using a quality improvement intervention that includes intensive educational intervention, feedback of performance data, and follow-up consultation.

VALIDATION OF OSTEOARTHRITIS DIAGNOSES IN AN ADMINISTRATIVE DATABASE. L. Harrold, R. Yood, J. Reed, S. Andrade, J. Cernieux, B. Lewis, W. Straus, M. Weeks, J. H. Gurwitz. Meyers Primary Care Institute, Fallon Healthcare System, and University of Massachusetts Medical School, Worcester, MA and Merck & Co., West Point, PA.

Purpose: Administrative databases can provide extensive data on a population of patients, but the validity of the information contained in such databases needs to be established. Using administrative data from The Fallon Clinic, Inc., a group-model HMO in Central and Eastern Massachusetts caring for 130,842 members, we validated osteoarthritis (OA) diagnoses by review of medical records.

Methods: We identified all HMO members (≥18 years of age) with documentation of at least one health care encounter associated with an OA diagnosis (ICD-9 code 715.xx) during the period 1994 through 1996, and who continued to be enrolled in the health plan for one year following the health care encounter date. From this population, we randomly sampled 350 subjects. Trained nurse reviewers abstracted OA-related clinical, laboratory, and radiologic data from their medical records. Two pairs of physician reviewers evaluated the abstracted information and rated the evidence for the presence of OA according to three levels (definite, possible, and unlikely). Each physician within the pair independently rated the case; disagreements within each physician pair were resolved by consensus. Inter-rater reliability between the two physician pairs was assessed by comparing ratings by the pairs of a random sample of 10 abstractions performed by each of two different nurse reviewers.

Results: We identified 10,740 HMO members who fulfilled the inclusion criteria. Among the 350 randomly sampled subjects, 61% were rated as having definite OA, 10% possible OA, while 28% were rated as unlikely to have OA. When the sample of subjects was limited to those with at least two health care encounters with an OA diagnosis (n=232), the percentages of definite OA, possible, and unlikely were 66%, 10%, and 23%, respectively. While only 36% of the 350 had an encounter with a rheumatologist or orthopedic surgeon during the one-year follow-up period, this greatly increased the probability of having a definite diagnosis of OA; among these subjects (n=125), 83% were rated as having definite OA, 4% possible, and 13% unlikely. Kappa levels between the physician pairs ranged from 0.62 to 0.80.

Conclusion: Our validation procedure was unable to confirm a meaningful proportion of OA diagnoses based on administrative data. The validity of an OA diagnosis in this database was increased by selecting those subjects with a visit to a rheumatologist and/or orthopedic surgeon, but limiting the population in this way could impact seriously on generalizability.

HIGH-RISK URBAN POOR ASTHMATICS HAVE AN INAPPROPRIATELY HIGH PERCEIVED CONTROL OF ASTHMA SCORE. PDHart, JJShannon, R Abrams, C Kallal, M Lemon, R Barrt, G Schiff, A Evans. Department of Medicine, Cook County Hospital, & Rush Medical College, Chicago.

Purpose: Asthma morbidity and mortality rates are rising, with prevalence in a few urban centers including Cook County, driving the trends. High perceived control of asthma is thought to be associated with good health outcomes, but has never been studied in medically indigent patients in the USA. We hypothesized that perceived control may not be associated with improved health outcomes in this population, and that social and health care system factors were more important than psychological factors in determining health care utilization patterns in our patients.

Methods: We studied adults admitted to the emergency department and inpatient wards of Cook County Hospital in Chicago for 6-weeks in the fall of 1998. Perceived control of asthma was measured using a previously validated 11-item scale[1] with possible range of scores from 11-55 with higher scores representing perceptions of better control. Social instability was assessed using 8 domains of psychosocial factors; each had a 3 point scale (to a maximum composite score of 24 for social instability). Health care barriers were estimated by scoring system factors, with a possible range of scores from 0-84. Higher scores on both scales represented greater degrees of social instability and barriers. **Results:**

Variable scores	mean	SD	range	possible range
Perceived control of asthma	36.1	5.5	22-48	11-55
Perceived control of asthma[1]	39.6	6.0	21-55	11-55
Drug and Alcohol use	1.46	0.5	0-3	0-3
Homelessness	1.93	0.3	0-3	0-3
Feeling depressed	1.93	0.3	0-3	0-3
Total Social instability	9.01	3.9	2-17	0-24
Distance to clinic	4.28	1.3	1-5	1-5
Caring for dependents	4.36	1.3	1-5	1-5
Parking	3.45	1.8	1-5	1-5
Total barrier score	9.01	3.9	0-65	0-84

Perceived control of asthma scores were not significantly associated with social instability and barriers to health care($r=0.1$, $p>0.2$). **Conclusions:** Perceived control of asthma was inappropriately high among this population of high-risk, medically indigent urban asthmatics. This may represent a misconception of self-efficacy that leads to inappropriate utilization of available medical care. Social and health care system factors were not associated with the perceived control of asthma.

1. Katz PP et al: Perceived control of asthma: development and validation of a questionnaire. Am J Resp Crit Care Med 1997;155:577-582.

WHY DON'T URBAN POOR SEVERE ASTHMATICS COME TO ASTHMA CLINIC? PDHart, JJ Shannon, R Abrams, C Kallal, M Lemon, R Bartt, G Schiff, A Evans. Department of Medicine, Cook County Hospital, & Rush Medical College, Chicago.

Purpose: Patient education with regular follow-up improves health outcomes and decreases hospitalization among adult patients with asthma, yet the majority of urban poor asthmatics do not adhere to clinic appointment even after severe exacerbations. If it is possible to predict which patients will not adhere to their clinic appointments, special interventions might be targeted to these patients.

Methods: We performed a prospective single cohort study of adult patients with asthma exacerbation admitted to the emergency department and medical ward of Cook County Hospital, Chicago. Trained interviewers used a face-to-face structured questionnaire to measure factors that might be associated with or predict clinic adherence. Perceived control of asthma was measured using a previously validated 11-item scale with a possible range of scores from 11-55, with higher scores representing perceptions of better control. Social instability was assessed using 8 domains of psychosocial factors such as living conditions, abusive relationships, drug and alcohol use. Each domain was scored from 0-3, with a maximum composite score of 24; a higher score represented a greater degree of social instability. Barriers to health care were estimated by assessing system factors such as distance to clinic, difficulty scheduling appointments, parking, caring for dependents, etc. The possible scores for barriers to care ranged from 0-84 (higher scores representing more barriers). Patients were then given a dated, timed appointment for follow-up in the asthma clinic in 10-14 days.

Results: 7 of 76 patients (9.2%) kept their appointment in asthma clinic. The scores (mean, SD, range) for perceived control of asthma were 39.6, 6.0, 21-55; for social instability 9.01, 3.9, 2-17; for barriers to care 19.6, 13.8, 0-65. There was a significant inverse association between drug and alcohol use and clinic attendance (Fisher's exact test p=0.04, point estimate of risk 0.14) but no association between perceived control of asthma, social instability and barriers to care and clinic attendance (Mann-Whitney U test p>0.1).

Conclusion: Among high risk urban poor asthmatics, drug and alcohol use may predict patients that are unlikely to adhere to an asthma clinic appointment. We are conducting further studies to determine specific reasons for non-adherence to asthma clinic appointments.

PROGNOSIS AFTER CARDIAC CATHETERIZATION IN PATIENTS WITH NON-DIALYSIS DEPENDENT RENAL INSUFFICIENCY. BR Hemmelgarn, WA Ghali, and ML Knudtson for the APPROACH Investigators, Department of Medicine, University of Calgary, AB, Canada.

End stage renal disease is a well recognized cardiovascular risk factor. However, the association between non-dialysis dependent renal insufficiency (NDDRI) and cardiovascular disease, and specifically the prognostic impact of NDDRI among patients undergoing cardiac catheterization, remains uncertain. We used prospective cohort data from APPROACH (Alberta Provincial Program for Outcome Assessment in Coronary Heart Disease) to evaluate revascularization and mortality rates in patients with NDDRI (serum creatinine > 200 μmol/L but not on dialysis).

The cohort consisted of all subjects undergoing cardiac catheterization between January 1, 1995 and December 31, 1996. Patients on hemodialysis or peritoneal dialysis were excluded. Logistic regression was used to determine the association between NDDRI and two outcomes of interest, use of revascularization (angioplasty and/or coronary bypass surgery) and mortality at one year post cardiac catheterization.

Among the 11,693 patients studied, 178 (1.5%) had NDDRI. Revascularization rates at one year were 49.4% for patients with NDDRI compared to 48.8% for patients without NDDRI, while mortality rates were 33.7% and 4.1% respectively. Patients with NDDRI were more likely to have high risk coronary anatomy, low ejection fraction, congestive heart failure, diabetes, cerebrovascular disease and chronic lung disease. Multivariate analyses adjusting for these and other variables yielded the following results:

	Non-dialysis dependent renal insufficiency	
Outcome	Crude OR (95% CI)	Adjusted OR (95% CI)
Revascularization at 1 year	1.0 (0.8 - 1.4)	0.8 (0.6 - 1.1)
Mortality at 1 year	11.8 (8.6 - 16.4)	4.6 (3.2 - 6.6)

Although not quite statistically significant, we found a 20% lower risk-adjusted rate of revascularization in patients with, relative to those without, NDDRI. In addition, even after adjusting for severity of disease and comorbidity, patients with NDDRI were almost five times as likely to have died by one year post catheterization.

These results suggest a generally poor prognosis for patients with NDDRI undergoing cardiac catheterization. Considering the lower rate of revascularization in these patients, further research is needed to explore whether the poor prognosis is at least partially related to a reluctance by physicians to revascularize these patients.

THE "HEALTHY PEOPLE 2000" CANCER SCREENING GUIDELINES, AND THE ROLE OF LIFE EXPECTANCY. MA Hatahet and RC Burack. Division of General Internal Medicine, Wayne State University, Detroit, Michigan.

The " Healthy People 2000" guidelines recommend that up-to-dateness should be accomplished in at least 60% of women eligible for screening mammograms, 85% of women eligible for Pap smears, and 40% of men eligible for prostate cancer screening.

Purpose: Since faculty serve as role modes for residents, we assessed the self-reported adherence of physicians in an urban, academic teaching practice to the "Healthy People 2000" guidelines. Given uncertainty about the age at which to end screening, we were also interested in the extent to which these physicians considered life expectancy in their decision making.

Methods: 61-item questionnaire distributed to 23 faculty and 114 residents (with completed responses 78% and 81% among faculty and residents respectively).

Results: Faculty members were more likely than residents to consider life expectancy when approaching screening mammography, Pap smears, and prostate cancer discussion. Faculty and residents reported similar rates of adherence to the "Healthy People 2000" goal for screening mammography and for prostate cancer discussion. With regard to the goal of cervical cancer screening, 50% of residents reported meeting the guidelines, while only 6% of faculty reported that. However, without external validation, one can't determine the extent to which faculty and residents may over- or underestimate their own performance.

Life expectancy consideration (LEC) and self-reported adherence (SRA)

	Mammography		Pap Smear		Prostate Discussion	
	LEC	SRA	LEC	SRA	LEC	SRA
% Faculty	81	88	94	6	69	75
% Residents	52	87	64	50	67	71

In all three cancers, rates of reported screening were lower among providers who reported taking life expectancy in consideration, for mammography 87% vs. 94%, (p=0.000), for Pap smear 31% vs. 48 % (p=0.024), and for prostate cancer discussion 74% vs. 88% (p=0.027).

Conclusion: Neither faculty nor residents report having yet achieved Year 2000 goals. The lower screening rate reported among physicians who consider life expectancy in decision making may reflect potentially appropriate focusing of screening efforts towards those patients most likely to benefit.

ECG TIMING FOR PATIENTS WITH UNSTABLE ANGINA (UA): IMPORTANCE OF SECULAR TRENDS AND PATIENT CHARACTERISTICS. GR Heudebert, JJ Allison, S Baker, RM Centor, CI Kiefe, N Weisssman. Dept. of Medicine. University of Alabama-Birmingham.

Purpose: Early diagnosis and risk stratification of patients with suspected UA has important implications on initial diagnostic and therapeutic decisions. The AHCPR/UA guideline recommends completion of an ECG within the first 20 minutes in the evaluation of high-risk UA patients. We report adherence to this recommendation among patients with a confirmed diagnosis of high-risk UA.

Methods: Centrally trained abstractors reviewed medical records of Medicare patients hospitalized at 14 institutions in Alabama for calendar years '95 and'97. Potential cases of UA were identified by a stratified sampling scheme of ICD-9 codes obtained from claims data. An AHCPR/UA guideline-based algorithm confirmed the diagnosis of UA. Time to ECG (t-ECG) was obtained by subtracting ER arrival from time to ECG completion (from ECG strip). Proportion of patients having t-ECG < than 20 minutes were compared by year, sex, race, sex/race, and history of coronary artery disease (CAD). We performed Multiple Logistic Regression analyses (MLR) with t-ECG < 20' as dependent variable; independent variables included sex, race, age, and history of CAD in MLR1; in MLR2 we used sex/race combinations, age, and history of CAD.

Results: A total of 1767 charts ('95: 1,129 and '97: 638) had a confirmed diagnosis of UA. After excluding admission outside the ER, absence of ECG, and low risk UA 1096 records remained for analysis. Patients were predominantly female (60%), white (89%), and had history of CAD (66%). Overall 51% had an ECG done < 20'. There was no improvement over time for t-ECG < 20'. This adherence rate was not associated with the presence of CAD. Adherence rates of sex, race, and sex/race combinations were:

	M	F	B	W	BF	WF	BM	WM
'95 (%)	57	46	36	54	38	50	30	59
'97 (%)	53	48	51	50	49	48	54	53
Overall (%)	56	48	43	52	42	49	43	57

In the overall analysis adherence to guideline was statistically better in males (7.7%, p<0.05) and whites (9.6%, p<0.05). There was clinically but not a statistically significant trend towards improvement among blacks. In MLR1 sex was the only independent predictor (OR 0.77[0.6-0.99]). In MLR2 both BF (OR 0.57[0.36-0.91]) and WF (OR 0.74[0.57-0.97]) were significant independent predictors.

Conclusions: Only half of high-risk UA patients had a timely ECG done. Clinically important secular improvements may have occurred among black patients with UA. However, gender differences remain in '97. Quality Improvements efforts need to focus on increasing the timeliness of ECG as well as decreasing racial and gender differences.

INDICATIONS FOR PROSTATE-SPECIFIC ANTIGEN TESTING IN PROSTATE CANCER CASES AND CONTROLS. RM Hoffman, ML Adams-Cameron. Division of General Internal Medicine, Albuquerque VAMC; Epidemiology and Cancer Control Program, University of New Mexico Health Sciences Center, Albuquerque, NM.

Observational studies of cancer screening tests are subject to misclassification bias if a test was not ordered for screening. We performed a case-control study to determine how the rates and odds ratios for PSA screening were affected by changing the definition of a screening test.

Methods: A computerized VAMC database provided data on subjects undergoing PSA testing in 1996. Prostate cancer cases were then identified through the New Mexico Tumor Registry. Trained abstractors obtained medical records data for cases and randomly-selected controls on demographics, PSA testing, digital rectal examinations, clinical symptoms, and history of prostate biopsies. A classification scheme was developed to characterize the most recent PSA into the categories of definite, likely, or possible screening, and not screening. Screening was classified as definite if the subject was asymptomatic, had a normal or no digital rectal examination (DRE), and had no previous history of elevated (> 4.0 ng/ml) PSA levels or prostate biopsy. Likely screening also included abnormal DRE findings, and possible screening further included men with irritative or obstructive urinary symptoms. Multivariate logistic regression, using the different definitions for screening, determined the age-adjusted odds ratios (OR) and 95% confidence intervals (95% CI) that a man with prostate cancer had been screened with PSA.

Results: We analyzed 45 cancer cases, mean age 68.0 years (SD = 6.9), median PSA of 10.6 ng/ml; and 199 controls, mean age of 59.2 years (SD = 10.7), median PSA of 0.9 ng/ml. Seventy-three (29.9%) had benign urinary symptoms, 62 (25.4%) had an abnormal DRE, and 46 (18.9%) previously had a biopsy or elevated PSA. Cases were significantly less likely than controls to undergo either definite (6.7% vs. 60.3%, $p < 0.0001$), definite and likely (33.3% vs. 68.4%, $p < 0.0001$) or definite, likely, and possible screening (44.4 % vs. 81.9%, $p < 0.0001$). The adjusted OR for definite screening was 0.05 (95% CI 0.002 – 0.97), for definite and likely screening, OR = 0.34 (0.18- 0.65), and for definite, likely, and possible screening, OR = 0.25 (0.14 – 0.46).

Conclusions: Prostate cancer patients were significantly less likely than controls to have undergone a screening PSA, regardless of the definition of screening. However, changing the definition affected the rate of screening in cases more than in controls and substantially altered the odds ratios for screening. PSA testing must be appropriately classified in observational studies to avoid biasing estimates for the efficacy of screening.

PATIENT'S AWARENESS OF RISK ASSOCIATED WITH THERAPY FOR LOCALIZED PROSTATE CANCER. ES Holmboe and JC Concato. Robert Wood Johnson Clinical Scholars Program. Yale University, New Haven, CT, and West Haven VA Medical Center, West Haven, CT.

Without convincing evidence to favor one therapy over another for localized prostate cancer, men must make a therapeutic decision based on personal preference, incorporating information about the potential benefits and risks associated with each treatment. The purpose of this study was to investigate men's understanding of the risks associated with their choice of treatment for either radical prostatectomy (RP), radioactive "seeds" or brachytherapy (BT), or external beam (EB) radiation.

Methods: Men who chose either RP, BT, or EB for newly diagnosed localized prostate cancer from June 1997 to March 1998 were prospectively identified from pathology reports at the Yale-New Haven and West Haven Veteran's hospitals. As part of a study on patient decision-making, a structured questionnaire was used to interview men in person after they had made a treatment choice *but before* actual receipt of the treatment. Men were asked open-ended questions about potential side effects or complications that might occur with their chosen treatment. For each response, they were also asked to estimate the probability of occurrence ("percent chance"), for all men who received that treatment, using five categories: < 5 %, 5-10%, 11-25%, 26-50%, or > 50%. Patients were also asked what sources of non-physician information (e.g., pamphlets, books, etc.) they used to help with their decision, and whether they knew a family member or friend with prostate cancer. Spearman correlation was used for statistical analysis.

Results: Among 102 men interviewed, 87 (85%) chose one of the 3 "main" treatments: 20 RP, 52 EB, and 15 EB. The mean age was 65.6 years, 91% were Caucasian, and 60% had at least some college education. The median number of non-physician sources of information sources used was 3, and 68 men knew someone with prostate cancer. For RP, 17 (85%) and 20 (100%) men reported that impotence and incontinence, respectively, were possible complications. Estimates of the probability varied widely: from <5% (n=8, 40%) to >50% (n=3, 15%) for incontinence and from < 5% (n=1, 5%) to >50% (n=7, 35%) for impotence. Only 2 men (10%) each mentioned rectal injury, infection, or venous thrombosis as possible complications. For BT, 17 (33%) and 19 (37%) men reported incontinence and impotence, respectively, as possible complications. The majority of BT patients estimated the probability of incontinence (n=12, 80%) and impotence (n=9, 53%) to be less than 10%. Other complications noted were cystitis (n=4, 8%) and proctitis (n=9, 17%). For EB, the two most commonly cited complications were proctitis (n=10, 67%) and impotence (n=8, 53%). Only 5 (33%) patients provided an estimate of the probability for proctitis, with estimates ranging from <5 to > 50%. Other potential EB complications reported were incontinence (n=5, 33%), cystitis (n=3, 20%), and urethral injury (n=1, 7%). No significant association was found between assessment of risk and type or amount of information used, or knowing an acquaintance with prostate cancer.

Conclusions: Despite a high level of education, use of multiple sources of information, and knowing someone with the disease, these men's understanding of the specific risks associated with their chosen treatment varied widely. Regardless of actual rates of side effects and complications, our findings raise questions concerning what information about risk men are receiving, how they receive the information, and what they desire to know about risk. Physicians treating men with prostate cancer should encourage frank discussions of risk.

AFRICAN-AMERICAN MEN ARE AT INCREASED RISK FOR PRESENTING WITH CLINICALLY ADVANCED PROSTATE CANCER: RESULTS FROM THE PROSTATE CANCER OUTCOMES STUDY. RM Hoffman, WC Hunt, FD Gilliland. Division of General Internal Medicine, Albuquerque VAMC; Epidemiology and Cancer Control Program and New Mexico Tumor Registry, University of New Mexico Health Sciences Center, Albuquerque, NM. Department of Preventive Medicine, University of Southern California, Los Angeles, CA.

African-American men have a higher incidence of prostate cancer than white men and are more likely to present with clinically advanced disease. We used data from the population-based Prostate Cancer Outcomes Study (PCOS) to determine whether race was a significant risk factor after adjusting for demographic, socio-economic, and clinical variables.

Methods: The Prostate Cancer Outcome Study evaluated 3830 incident cases of prostate cancer reported in 6 regional Surveillance, Epidemiology, and End Results (SEER) programs between October 1, 1994 and October 31, 1995. African-American and Hispanic men, as well as men less than age 60, were oversampled. Our analysis was restricted to subjects with data from medical records abstraction and self-administered mailed questionnaires. Multivariate logistic regression was used to determine the association between race and presenting with clinically advanced (Stage T4) prostate cancer adjusted for age, region of the country, marital status, income, insurance, education, employment, previous PSA testing, urinary symptoms, and medical comorbidity. The data presented have been weighted to reflect the overall distribution of prostate cancer cases in the SEER areas.

Results: The 3175 eligible subjects had an average age of 66.7 years (SD= 8.7); 68.9% were non-Hispanic white, 17.0% African-American, and 14.0% Hispanic. Clinically advanced disease was found in 244 (7.7%) cases. In univariate analysis, African-American men had a significantly increased risk for presenting with clinically advanced disease: OR = 1.87 (95% CI 1.33 - 2.64). After adjusting for demographic, socio-economic, and clinical variables, African-American men were at even higher risk, OR = 2.58 (95% CI 1.60 - 4.14). Other significant variables were previous PSA testing (OR = 0.63, 95% CI 0.43 - 0.91), public insurance vs. any private insurance (OR = 1.83, 95% CI 1.14 – 2.93), being unemployed vs. working or being retired (OR = 2.44, 95%CI 1.07 - 5.58), and having symptoms of urinary frequency (OR = 2.10, 95% CI 1.42 – 3.11).

Conclusions: African-American men were at increased risk for presenting with clinically advanced prostate cancer, suggesting that they may have more biologically aggressive tumors. Having public insurance, being unemployed, and having no record of previous PSA testing were also related to clinically advanced disease, suggesting that access to care is an important determinant of clinical stage at presentation.

ALCOHOL WITHDRAWAL TREATMENT: KEY CLINICAL PATHWAY VERSUS SYMPTOM TRIGGERED. N Honz, M Earnest, P Parsons, J Ritvo, PS Mehler, Departments of Quality Improvement, Medicine, Psychiatry and General Internal Medicine, Denver Health Medical Center.

The successful treatment of the alcohol withdrawal syndrome can be accomplished either through a symptom-triggered approach, wherein sedatives are only administered if there are a clinical indications, or according to a standardized key clinical pathway (KCP). Our large public hospital recently reinstituted the (KCP) approach. The purpose of this study is to determine whether the symptom-triggered or KCP approach is most efficacious. Sixty-one historical control patients admitted during the same time period with the primary diagnosis of alcohol withdrawal, age, and sex matched, and treated by the symptom-triggered approach were compared with 53 primary alcohol withdrawal patients treated with a new alcohol withdrawal KCP. The mean doses of the long-acting benzodiazepine, clorazepate, were not significantly different between the historical group (119.54 mg) and the KCP group (150.19 mg) ($p=.18$). Usage of intravenous lorazepam was also similar, as was the average time for receiving medications.. The historical group used more oral lorazepam (4.71 mg v. 2.5 mg) ($p < .037$). Of those patients requiring ICU care, the KCP group had a trend towards a longer stay in the intensive care unit (4.45 days v. 6.71 days; $p = .072$). There were no cost savings associated with the KCP as the charges in this group were higher than the historical control group ($8,427 v. $7,773; $p = .05$). There was a trend towards less usage of antipsychotic medications in the KCP group ($p = .092$) and for less falls in the control group ($p = .099$). The usage of restraints was less in the KCP group ($p = .044$). Symptom-triggered treatment for alcohol withdrawal should not be dismissed as an effective mode of treatment in favor of a KCP approach, although other potential benefits of a KCP approach were not directly investigated.

CHRONIC LOW BACK PAIN IN PATIENTS WITH PREMATURE ATHEROSCLEROTIC OCCLUSIVE DISEASE OF THE CAROTID OR PERIPHERAL CIRCULATIONS. CA Hornung and PJ Levy. University of Louisville School of Medicine, Division of General Internal Medicine, Louisville, KY and Center for Hypertension and Vascular Disease, Wake Forest University School of Medicine, Winston Salem, NC.

Chronic low back pain is a major debilitating condition affecting millions of Americans and costing many millions of dollars in lost wages, reduced productivity and diminished quality of life. In addition, countless millions are spent annually on over-the-counter pain medications, chiropratic services and surgical interventions. We studied 138 (86 Male, 52 Female) consecutive patients less than 50 years of age (Mean 45.7; Std. Dev. 4.3; Range 26 to 50) presenting for evaluation of premature atherosclerotic occlusive disease of the carotid or lower extremity circulation. We noted that a high proportion of these patients (N = 40; 29%) reported a history of chronic low back pain (Median 5 years; range <1 to 22 years) and that only half of the 40 patients had a history of lower back trauma with or without lower back surgery (N=10). The remaining 20 patients without a history of trauma or surgery had no apparent etiology for their chronic low back pain. These patients comprise the 'case' group in our analysis. The 'control' group is 94 patients who reported no history of back trauma or surgery and denied chronic low back pain. All data were collected retrospectively.

There were no significant differences between cases and controls in age (44.1 vs. 46.0), gender (50% vs. 68% male) or body mass index (28.7 vs. 26.7). Severe (i.e., ≥70% stenosis) infrarenal aortic disease was statistically associated with low back pain with and odds of 5.03 (p = 0.005; 95% CI: 1.69-15.01). Significant disease in the inferior mesenteric, common iliac or internal iliac tended to be associated with an increased likelihood of low back pain but these odds ratios were not significant (i.e., p > 0.05). In contrast, significant stenosis in arteries of the legs tended to be negatively associated with low back pain. A logistic regression model was created to assess the independent effects age, gender, body mass index and significant stenosis in these arteries on the presence of chronic low back pain. Increasing age was found to be protective (OR = 0.85; p = 0.009; 95% CI = 0.75 to 0.96) while increases in body mass index were associated with greater risk of chronic low back pain (OR = 1.11; p = 0.028; 95% CI = 1.01 to 1.21). Most notably, stenosis of 70% or greater in the infrarenal aorta was associated with a nearly 8 times greater risk of chronic low back pain (OR = 7.67; p = 0.002; 95% CI = 2.11 to 27.95). These findings suggest that it is prudent to explore a vascular etiology for chronic low back pain in patients in the 30 to 50 age range and particularly in those patients who are smokers or who have other established risk factors for atherosclerotic vascular disease.

THE PROJECTED PREVALENCE OF DIABETES MELLITUS IN THE INCARCERATED POPULATION. CA Hornung, RB Greifinger and WP McKinney. University of Louisville School of Medicine, Division of General Internal Medicine, Louisville, KY and Dobbs Ferry, NY.

Approximately 1.6 million persons are incarcerated in US prisons and jails. Just over 1 million are housed in state prisons with an additional 91,000 in the Federal prison system. Local jails house approximately 500,000 individuals. Little is known about the prevalence of chronic diseases in this population. Still less is known about the impact on the community when inmates with chronic diseases, particularly those whose disease is undiagnosed, untreated or under-treated, are released. In the absence of accurate prevalence data, we projected the age, race and gender specific prevalence rates of diabetes mellitus (DM) and number of inmates with DM and abnormal glucose metabolism in the incarcerated population using the NHANES III data. We analyzed data from the adult questionnaire as well as the laboratory results for respondents in the lowest quartile of socio-economic status surveyed by NHANES III under the assumption that this group provides the best available approximation of the inmate population. Rates calculated from this group were applied to the prison population.

Nearly 154,000 inmates (96.2/K) are predicted to have abnormal glucose metabolism (i.e., ≥ 110 mg/dl) with half of these having values ≥ 126 mg/dl (46.2/K) and 43,500 (27.2/K) having values ≥ 140 mg/dl. Rates are predicted to be highest in the federal prison system (141/K) followed by state prisons (96.9/K) and local jails (86.5/K). However, 63% of the cases of abnormal glucose metabolism are predicted to be in state prisons and 28% in local jails. Rates of DM (i.e., ≥ 126 mg/dl) are predicted to be highest among Hispanic females (64.1/K) and lowest among non-Hispanic white women (33.2/K). Nevertheless, the single largest group of more than 23,000 with abnormal glucose metabolism is non-Hispanic black males in state prisons (52.7/K).

Not all state prisons and probably few local jails adequately screen inmates for DM and those that do are likely to have followed older clinical guidelines (i.e.; ≥ 140 mg/dl). The old guidelines, even if applied appropriately to all inmates, would mean that at least 30,000 cases of DM are undiagnosed including some 15,000 non-Hispanic black males, 7,000 non-Hispanic white males and 5,500 Hispanic males.

Further, few state prisons or local jails provide discharge planning for inmates with chronic disease or routinely provide inmates with a supply of medication upon their release into the community. The undiagnosed inmate with DM and those with inadequate management within the prison setting coupled with an absence of continuity of care upon release creates a significant threat to inmate health and potential burden to the community. Our estimates, although based upon prevalence in a low socio-economic group, an economic background common among inmates, probably underestimates the true prevalence of this chronic disease.

IDENTIFICATION OF INDIVIDUALS WITH UNTREATED DEPRESSION THROUGH THE INTERNET. T Houston, L Cooper-Patrick, J Kahn*, H Vu, D Ford. Division of General Internal Medicine, Johns Hopkins Medical Institutions. Baltimore, MD. *Intelihealth. Blue Bell. PA.

Introduction: Between 25% and 50% of those with major depression are not receiving treatment. The internet is becoming an accepted source of health information. and might be used to encourage treatment seeking among persons with depressive symptoms.

Purpose: To determine prevalence of no prior diagnosis/treatment among persons with a high score on an internet-based depression screening test, and to compare undiagnosed and diagnosed persons with respect to presence of comorbidities, preferences for treatment and fear of stigma.

Methods: The Centers for the Epidemiological Study of Depression (CES-D) scale was used to screen for depression on an active general health web site (Intelihealth.com). Users that scored above 22 on the CES-D, a high cutpoint, were considered to have major depression. Persons with high CES-D were recommended to seek a medical opinion and asked to complete a survey which could be printed and taken to a physician. Responses to the CES-D and survey were anonymously compiled over the first month after posting.

Results: The CES-D was completed 5,582 times within the month and 47%(2,650) were considered depressed(CES-D > 22). 39% (1,025/2,650) of those with depression had never been told they had the diagnosis or been treated. Undiagnosed depressed persons were more likely than diagnosed depressed persons to report problem drinking, Odds Ratio(OR) = 1.44(95%CI 1.20-1.75); less likely to report anxiety, OR .63(.54-.75); more often preferred counseling OR 1.55 (1.34-1.80); less often preferred drug treatment, OR 0.58(.50-.67); and were more likely to misclassify antidepressant drugs as addictive, OR 1.69(1.44-2.00). These undiagnosed depressed persons were more likely than previously diagnosed patients to report that if diagnosed: they would be embarrassed if their friends found out, OR 2.06(1.75-2.42), their employer would be upset if he knew, OR 1.65(1.40-1.95), and they would have difficulty accepting the diagnosis of depression (OR 2.49, (1.67-3.72)).

Conclusion: An internet site appears to be an effective way of identifying large numbers of previously undiagnosed persons with depression. Interventions should address barriers to diagnosis such as comorbidities, stigma and fear of antidepressant medication treatment.

TENNIS, FOOTBALL AND RISK OF CARDIOVASCULAR DISEASE. T Houston, LA Mead, DE Ford, F Brancati, L Cooper-Patrick, DM Levine, MJ Klag. Division of General Internal Medicine, Johns Hopkins Medical Institutions, Baltimore, MD.

Introduction: Tennis, an aerobic sport, may impart a lower risk of cardiovascular disease (CVD) than football, a less aerobic sport, and may be easier to continue throughout adulthood because it is an individual sport.

Purpose: To compare incidence of CVD during a median follow-up of 40 years in young tennis and football players (mean age 22 yrs) and to determine whether type of sport activity predicts midlife level of physical activity.

Methods: Prospective cohort study of 1026 white male medical students. Self-reported ability in sports prior to medical school was recorded as none, poor/fair (low), or good/excellent (high). CVD was defined as coronary heart disease, stroke, or peripheral vascular disease. CVD incidence was assessed by annual questionnaires, review of medical records and death certificates. Response rates were approximately 90% during follow-up through 1995 and vital status was known for >99% of the cohort. Physical activity was assessed in 1978 (mean age 48 yrs) using the Harvard Alumni Questionnaire and characterized as episodes of vigorous activities per week.

Results: 251 tennis players and 319 football players reported good/excellent ability prior to medical school. At 40 years of follow-up in Kaplan-Meier analysis, overall CVD incidence (95% CI) was 24% (21-27%). CVD incidence declined progressively with higher levels of tennis ability from 37% in men with no tennis ability, 23% in low, and 17% in the high ability men (p= 0.0003). In contrast, CVD incidence did not vary across groups of football ability: 22% in none, 22% in low, and 26% in the high group (p=0.6). After adjustment for father's occupation, parental incidence of CVD during follow-up, and baseline age, number of cigarettes smoked, body mass index, blood pressure, and serum cholesterol in proportional hazards analysis, the risk of developing CVD was 25% lower in the high compared to the no ability tennis group (p=0.035). In analyses excluding men who developed CVD prior to 1978 and adjusting for age, tennis ability at age 22 years predicted greater midlife physical activity (Odds ratio (OR) 3.7 for high, p<0.001; OR 2.1 for low, p<0.001, reference group no ability) while high and low football ability did not (both p>0.2).

Conclusion: These results suggest that greater self-reported ability in tennis, but not football, in early adulthood is associated with a lower incidence of CVD that is mediated in part by greater maintenance of physical activity in midlife.

THERAPY FOR ERECTILE DYSFUNCTION: PATIENT EXPERIENCE IN A PRIMARY CARE SETTING. K Hoyt, F Gadici, CL Karmen, S Warshafsky, L Osvath, and SJ Peterson, Division of General Internal Medicine, Department of Medicine, New York Medical College, Valhalla, NY.

Purpose. To assess the experience of patients receiving an oral agent for erectile dysfunction, sildenafil citrate.

Methods. Primary care physicians contacted patients for whom sildenafil citrate had been prescribed. Patients were asked whether the gender of their physician influenced their willingness to discuss the problem of sexual dysfunction, and whether they had ever discussed this problem before sildenafil citrate became available. The influence of the media in its presentation of this medication and the effect of health insurance benefits were explored. The efficacy of the medication and side effects were assessed. Permission to interview sexual partners was requested.

Results. Of 29 patients contacted, 26 were interviewed. Mean age is 65 years and education level 15.1 years. Sixteen patients are married, 2 single, and 8 divorced. Nineteen are Caucasian, 5 African-American, 1 Hispanic and 1 Asian. All are heterosexual. Twenty patients received their prescriptions from internists. Seventeen patients seek medical care from a male physician, and 9 from female physicians. Four patients felt that physician gender influenced their willingness to discuss the problem of impotence, while 22 did not. Fourteen had discussed difficulty with erectile dysfunction with a physician before the availability of this drug and 12 had not. Only 5 patients had tried other therapies for impotence; 21 had not. All of the patients first learned of this medication from the media or advertisements; none first learned of the medication from a physician. Fourteen patients felt that presentation by the media made it easier to discuss the problem with a physician, while 12 did not. Nineteen of the 26 patients who received a prescription took the medication; seventeen men achieved erection, 16 orgasm, and 18 sexual gratification. Two patients complained of headache and 5 of unspecified adverse effects. Health insurance benefits did not cover the cost of the medication in 23 patients, and 9 patients felt that cost constraints would affect their decision to use the medication again. Nine patients permitted sexual partners to be interviewed.

Conclusions. The availability of a new therapy and its presentation by the media has brought the problem of male erectile dysfunction to the attention of patients and physicians who may have been reluctant to discuss this condition before. Physician gender did not influence patients' decision to discuss this problem, although most of the patients interviewed receive their medical care from male physicians. Almost all of the patients who took the medication noted improvement in sexual experience with few adverse effects. Patients who receive a prescription for sildenafil citrate do not always take it; cost constraints may be only one of the reasons. Few patients allowed their sexual partners to be interviewed.

PROMOTING INFLUENZA VACCINATION OF DIABETIC PATIENTS. JP Humair, S Gueddi, and H Stalder, Department of Community Medicine, Geneva University Hospital, Geneva, Switzerland.

Background: Despite its efficacy, influenza vaccination levels remain low among people at high risk of complications. Since 1996, a community-wide campaign involving primary care providers has been launched each fall in Geneva to promote influenza vaccination of high-risk people, including diabetics. This study examines influenza immunization rates of diabetic patients attending an academic primary care center and the impact of a multifaceted intervention on vaccination coverage.

Methods: This pre-/post-intervention study included 137 and 120 patients with diabetes mellitus who consulted in the last trimester 1995 and 1996 respectively. 93 diabetics attended during both periods. The intervention combined multiple strategies: patient information by leaflets and posters, a training workshop for physicians, chart reminders, regular peer comparison feedback on vaccination performance, standardized procedures and a walk-in immunization clinic. Data were collected from the computerized billing system, review of medical records and appointment books to measure influenza vaccination coverage and covariates.

Results: Influenza vaccination of diabetic patients increased globally from 21.9% to 57.5% (odds ratio (OR)=4.8 [95% confidence interval (CI): 2.8-8.3]). Initial immunization rates were 20 to 30% in most sub-groups, except for diabetics with a lung disease (46.7%). During the intervention, the vaccination coverage of diabetic patients improved significantly to reach 50 to 70% in most sub-groups. Vaccine uptake particularly increased among diabetics with a pulmonary disease (84.6%; OR=6.3 [95% CI: 1.02-38.6]), Swiss nationals (69.6%; OR=7.8 [95% CI: 3.5-17.5]) and those aged 65 and over (67.3%; OR=6.7 [95% CI: 2.8-15.8]). A multivariate analysis confirmed the independent effect of intervention on influenza vaccination for the 93 diabetics attending before and during the campaign (adjusted OR=5.9 [95% CI: 1.9-18.7]), as well as for the 71 patients consulting in a single trimester (adjusted OR=4.8 [95% CI: 1.1-21.1]).

Conclusion: Influenza vaccination of diabetic patients attending in primary care was initially low but increased after an intervention combining multiple strategies directed at patients, physicians, practice organization and the community. The largest impact was observed among diabetics with another risk factor for influenza complications. Implementation of multifaceted interventions promoting influenza vaccination should be considered for all groups of high risk-patients and tested by randomized controlled trials in various primary care settings.

PATIENTS' VIEWS OF THE HOSPITALIST SYSTEM. M Hruby, SZ Pantilat, and B Lo, University of California, San Francisco, San Francisco, CA.

Increasingly, hospitalists, rather than primary care physicians (PCPs), are caring for inpatients. Hospitalist systems create a discontinuity in care when patients are sickest. While such systems may reduce length of stay and cut costs with equal or better outcomes, little is known about patients' views of the hospitalist system.

We completed a cross-sectional survey to determine hospitalized patients' views of a hospitalist system. We conducted face-to-face interviews with inpatients admitted to the care of hospitalists on a general medical service in a teaching hospital who stayed in the hospital for longer than one day. We surveyed the relatives of patients who were too ill to participate or who did not speak English. We completed 85 interviews, 73 with patients and 12 with relatives.

Overall, 87% (74/85) of patients had a PCP. Of these, one third (23/74) of patients had some contact with their PCP while in the hospital, and 65% were very satisfied with the contact. Sixteen patients received a visit from their PCP and seven a phone call. There was a trend towards higher satisfaction in patients with some contact. Of patients with a PCP, 61% (45/74) knew that communication had occurred between their inpatient and primary care physicians and of these patients, 93% (42/45) were satisfied with this communication. The overwhelming majority of patients, (90%, 66/73) thought their PCP had information that the hospital team should know, and 84% (61/73) thought their hospitalist had information that the PCP should know. Patients generally had positive opinions of the hospitalist system. Most patients agreed that hospitalists are more skilled (74%) and more available to inpatients (89%) than clinic doctors. However, 65% patients also agreed that they received better care from doctors they had known a long time compared to doctors they had just met, and 73% had more trust in doctors they had known a long time. Patients' opinions regarding hospitalists did not differ according to their education, age, gender, or ethnicity. We asked patients their preferences for the involvement of the PCP in two scenarios. Over half (56%) felt the PCP should discuss with the patient choices between medical and surgical management, and 42% believed that the PCP rather than the hospitalist should tell a hospitalized patient the diagnosis of cancer.

Patients on a hospitalist service value contact with their PCP and good communication between the PCP and the hospital doctors. Patients also want their PCP available to discuss important clinical information and decisions. The best hospitalist systems will incorporate these patient values into their structures.

DEPRESSION CAUSES SUBSTANTIAL PERMANENT WORK DISABILITY IN THE UNITED STATES. N Hupert, EP McCarthy, RB Davis, LI Iezzoni. **Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA**

BACKGROUND: Depression contributes to substantial morbidity and lost productivity. Many people who state they are permanently unable to work also report major depression or depressive symptoms alone without a major mental disorder. We investigated how often depression causes permanent inability to work.

METHODS: We used data from the National Health Interview Survey, a nationally representative sampling of non-institutionalized, civilian, U.S. residents. The 1994 NHIS disability supplement asked whether "mental or emotional problem(s)" caused permanent work disability (WD). Major depression (MajD) was defined by self-report of major depression or depressed mood and loss of interest in activities for ≥ 2 weeks within the last year. Those who reported being frequently depressed or anxious without concurrent major psychiatric illness were considered to have depressive symptoms (DSx). For all working-age (18-64yo) respondents (63,896 persons), we used multivariable logistic regression to find independent associations with WD controlling for MajD, DSx, and the following: age; sex; race; education; living alone; use of mobility aids; ADL/IADL status; and physical functional limitation (PFL), measured as "a lot of difficulty" or inability to lift, bend, walk, stand, reach, or get around at home. We calculated the proportion of WD caused by mental or emotional problems. We used Taylor series linearization for U.S. population estimates.

RESULTS: In this working-age population, the mean age was 38 years, 52% were male, and 76% were white; 6.0% reported WD, while 1.7% reported MajD and 3.6% reported DSx. After adjusting for all other factors including physical limitations, the odds ratio for reporting WD was 8.8 and 3.9 for people with MajD and DSx, respectively. Overall, 22% of those who reported WD claimed a mental or emotional cause for their inability to work.

Variable	% of tot. with WD	Crude OR	Adj. OR (95% CI)	"Mental cause"
MajD	11%	11.6	8.8 (7.0-11.2)	71%
DSx	18%	7.9	3.9 (3.3-4.7)	33%

Of the estimated 9.5 million working-age U.S. residents with self-reported permanent work disability, these results indicate that major depression causes inability to work among 750,000 (11x 0.71=7.9%), while depressive symptomatology causes inability to work in another 560,000 (18 x 0.33=5.9%).

CONCLUSION: Major depression and depressive symptoms are significantly associated with permanent inability to work, controlling for many other factors. Over one fifth of all persons unable to work and 71% of those with major depression who cannot work cite emotional problems as the cause. Intensive screening for and treatment of depression and other mental illnesses among persons with work disability may improve their ability to work.

MORTALITY AMONG HOMELESS MEN IN TORONTO, ONTARIO

Stephen Hwang, Inner City Health Program, St. Michael's Hospital, Toronto, Ontario, Canada.

Purpose: To determine mortality rates among homeless men in Toronto, Ontario, and to compare these rates to that of the general population of Toronto and homeless men in Boston.

Methods: We compiled a database of men who used homeless shelters in Toronto in 1995. Toronto's Community Services Department, which administers the financing of all shelters in the city, maintains a master file that assigns a non-nominal unique identifier to each shelter user. We obtained the name and date of birth of 93% of the men in the master file by matching unique identifiers to registration data from each homeless shelter. Deaths were ascertained by searching Ontario death certificate records for the years 1995-1997. We calculated mortality rates (deaths per 100,000 person-years of observation) and rate ratios in comparison to mortality rates in the general population of Toronto and published data for homeless men in Boston, adjusted for race.

Results: We identified 196 deaths among 8426 men aged 18-64 over a mean observation period of 2.6 years.

Age Range (years)	18-24	25-44	45-64
Mortality rate	341	677	1600
Rate ratio – Toronto homeless vs. Boston homeless (95% CI)	0.6 (0.2-1.7)	0.5 (0.4-0.6)	0.7 (0.5-0.9)
Rate ratio – Toronto homeless vs. Toronto population (95% CI)	6.7 (3.1-14.6)	3.8 (3.1-4.6)	2.2 (1.7-2.8)
Rate ratio – Boston homeless vs. Boston population (95% CI)	5.9 (2.1-17.0)	3.0 (2.6-3.5)	1.6 (1.3-1.8)

Conclusions: Homeless men in Toronto have mortality rates that are 30-50% lower than that observed among homeless men in Boston. Compared to the city's general population, however, homeless men in Toronto experience an excess mortality ratio very similar to that seen in Boston.

SHORT-TERM INCIDENCE OF MAJOR/FATAL HEMORRHAGE AMONG OUTPATIENTS TAKING WARFARIN WITH AN INTERNATIONAL NORMALIZED RATIO (INR) >6.0.

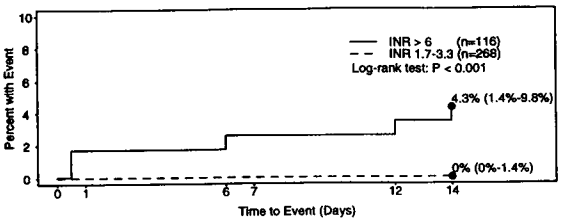
EM Hylek, Y Chang, L Henault, H Heiman, M Sheehan, DE Singer. General Medicine Division, Massachusetts General Hospital, Harvard Medical School, Boston, MA.

Warfarin is highly effective in preventing thromboembolism. Its major toxicity is hemorrhage, the risk of which increases with INR level. Data on the rate of major hemorrhage attributable to an episode of excessive anticoagulation would help guide the management of elevated INRs in the outpatient setting.

Methods: Outpatients in our anticoagulation unit were followed prospectively, April 1995-March 1996. Patients had to be taking warfarin for >1 month and have an INR target range of 2-3 (total n=2216). Consecutive outpatients with INR >6 were identified and compared to a randomly selected concurrent set of controls whose INR was in range. Major hemorrhage was defined as fatal, intracranial, or requiring hospitalization with transfusion of >=2 units of blood. The Kaplan-Meier method was used to calculate the risk and the Wilcoxon test was used to compare groups.

Results: Two-week follow-up was obtained on 100% of cases (n=116) and controls (n=268). The mean INR for cases was 8.1 (range 6.1-29.8). Patients did not differ in age, sex, indication, or length of warfarin therapy. Of the 116 patients with an INR >6, five sustained a major hemorrhage (2 fatal) during the 14-day follow-up period (4.3%; 1.4-9.8) compared to none of the controls, p <0.001.

Conclusions: Outpatients with INR >6 face a small but significant short-term risk of major hemorrhage. Our results reinforce the need to keep patients' anticoagulation within the target range. Intervention with phytonadione warrants study.



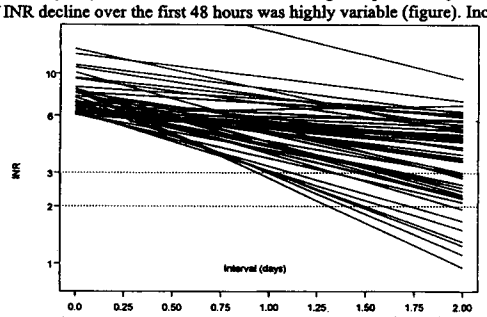
IMPACT OF AGE ON THE RATE OF DECLINE OF THE INTERNATIONAL NORMALIZED RATIO (INR) IN ANTICOAGULATED PATIENTS WITH INR >6.

EM Hylek, SJ Skates, L Henault, DE Singer. General Medicine Division, Massachusetts General Hospital, Harvard Medical School, Boston, MA.

Risk of hemorrhage on warfarin is strongly associated with high INR levels. Improved understanding of the determinants of the rate of normalization of INR level following an episode of extreme elevation would help guide management.

Methods: Outpatients were followed prospectively in our anticoagulation therapy unit from April 1995-March 1996. Eligible patients were those taking warfarin for >1 month with INR target of 2-3 (n=2216). Consecutive outpatients with INR >6 were identified. The rate of INR decay was determined for the subset of patients who had an INR drawn after 2 daily doses were held and prior to resumption of a reduced warfarin dose. Independent predictors of the decay slope were sought with linear regression models.

Results: Of 116 patients identified with an INR >6, 105 had follow-up outpatient INRs, and 55 (52%) had the INR drawn after holding 2 sequential days' dose. The rate of INR decline over the first 48 hours was highly variable (figure). Increasing age



was significantly associated with slower return to target INR (p=.01) in models that included terms for weekly dose of warfarin, entry INR, number of medications, length of therapy, weight, and sex. Given a warfarin dose of 10 mg per week, model predicted INR half-lives by age were: 70, 2.7 days; 80, 3.7 days; 90, 5.9 days. Larger usual dose of warfarin predicted more rapid return to target.

Conclusion: Elderly patients, particularly those sensitive to warfarin, take longer to return to target levels following an episode of INR >6. This subset of patients may warrant more aggressive intervention such as supplementation with vitamin K.

CHARACTERISTICS AND OUTCOMES OF WOMEN UNDERGOING HYSTERECTOMIES IN VA FACILITIES.

F Weaver, D Hynes, D Ippolito, W Cull, B Thakkar, and J Gibbs, Midwest Center for Health Services and Policy Research, Hines VA Hospital, Hines, IL.

Purpose: The objectives of this research are to: describe and examine the relationship between sociodemographic, preoperative risk, structure and process characteristics and outcomes of women undergoing hysterectomies at VAMCs using multivariate modeling techniques.

Methods: This study is a secondary analysis of the National Surgical Quality Improvement Program (NSQIP) database. All hysterectomy procedures (vaginal, abdominal and laproscopic-assisted) collected by the NSQIP between FY92 and FY97 were selected. The NSQIP contains data on 62 preoperative risk and demographic characteristics, four process, and 23 outcome variables. We supplemented the NSQIP with data from the VA's Patient Treatment File for readmission data, pathology reports from sites, and facility characteristic data. Data from these sources were merged on patient identifiers and procedure date. Any hospitalizations that occurred within one year of the procedure were captured. Outcomes of interest include: postoperative length of stay, morbidity within 30 days (i.e., one or more of 21 complications monitored by the NSQIP), and any readmissions that occurred as a result of a complication of the procedure within one year post surgery. Complications were defined by an expert panel of surgeons who identified relevant diagnostic codes and assigned a time period within which the diagnosis would be considered a complication.

Results: Over a six year period, VA performed 1,758 hysterectomies. The majority were for abdominal hysterectomies (75%), whereas 22% were vaginal, and less than 4% were laproscopic-assisted. The most frequent indications for surgery included leiomyomas of the uterus (31%), bleeding problems (16%), and endometriosis (10%). Women were predominately white (64%), with an average age of 42.8 years, and a minority were married (37%). Preoperatively, 40% of these women were smokers, 14% had a history of hypertension requiring medications, and 5% were frequent alcohol users. The mean length of stay was 4.2 days (sd=3.7) and almost 9% experienced one or more of the 21 complications defined by the NSQIP within 30 days of the procedure. Thirty-six radical hysterectomies were excluded from further analysis due to the uniqueness of these cases. Logistic regression modeling of 30-day morbidity identified 6 significant predictors, including impaired functional status, current smoker, alcohol use within two weeks of admission, dyspnea, and infection, as well as, longer operation times were associated with greater probability of morbidity (c-index=0.673).

Conclusions: Research on hysterectomy outcomes have focused on single outcomes and limited examination of preoperative characteristics. This work examining multiple preoperative characteristics and outcomes indicates that risky health behaviors and poorer health status prior to surgery were significant predictors of 30-day morbidity.

A RETROSPECTIVE STUDY OF 63 CASES OF PATIENTS WHO UNDERWENT TRANSJUGULAR LIVER BIOPSY (TJB)

M. J. Iqbal, D.C. Wolf, G. Rozenblit. New York Medical, Valhalla , New York

Purpose: For many patients with liver disease, the traditional percutaneous approach is contraindicated because of coagulopathies and ascites, both of which are common sequelae of decreased hepatic synthetic function. The purpose of this study was to evaluate the safety and efficacy of transjugular liver biopsy in such patients at a University hospital.

Methods: The charts of all patients who underwent TJB during the months of May 1995- November 1998 were reviewed. There were no exclusion criteria. A total of 63 patients were included. The following parameters were used to analyze the data: indication for the TJB, complications of the procedure (if any), and adequacy of tissue yield.

Results: Of the 63 patients, 25 were male and 38 were female. The mean patient age was 48.3 years (range 7-79yrs). 47 were inpatients (one-third of these were critical care settings) and the remaining 16 were outpatients. The indications for TJB were coagulopathy (57%), ascites (8 %), coagulopathy and ascites(12%), and others, such as obesity, other ancillary procedures being done, failure of percutaneous approach, agitated or uncooperative patient for percutaneous approach (23%). Adequate tissue was obtained in 100% of patients. The total number of procedure related complications were 8 (in 8 different patients) . 6 complications were considered minor (small hematoma, pain at biopsy site, numbness inipsilateral arm) and 2 were considered major (perforation of liver capsule, hemobilia). There were no deaths as a direct result of a TJB.

Conclusions: TJB is a relatively safe and uncomplicated procedure with an adequate tissue yield and can even be performed in patients with advanced manifestations of liver disease who may not be able to tolerate the percutaneous approach.

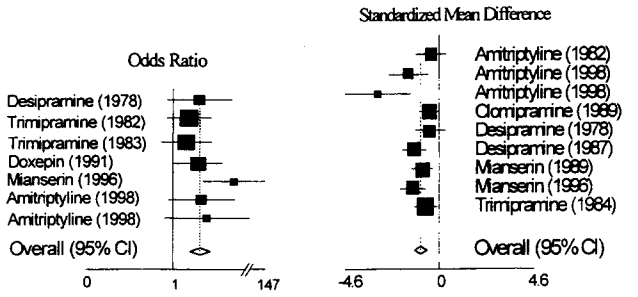
TREATMENT OF FUNCTIONAL GASTROINTESTINAL DISORDERS WITH ANTI-DEPRESSANTS: A META-ANALYSIS.

JL Jackson, PG O'Malley, G. Tomkins, E. Balden, J Santoro, K. Kroenke Dept of Medicine, USUHS, Bethesda, MD.

Functional gastrointestinal disorders are common and account for up to 50% of referrals to gastroenterologists. A number of randomized controlled trials have evaluated antidepressant therapy efficacy in functional gastrointestinal disorders.

Methods Meta-analysis of English-language, randomized clinical trials.

Results Eleven trials were identified, eight focusing exclusively on irritable bowel syndrome (IBS), one including both IBS and nonulcer dyspepsia (NUD), and two studying just NUD. Tricyclic antidepressants were used in most (9/11), with mianserin studied in two. Included studies had moderate quality scores. Data were abstractable from all eleven studies: dichotomous (symptom improvement) in seven, continuous (pain score) in nine. The dichotomous data were found to be homogenous (χ^2 =6.7, df=6; p=0.35), without evidence of publication bias (p=0.46) and were combined using a fixed-effects model (Mantel Haenszel). The continuous data were inhomogenous, (χ^2 =18.7, df=8; p=0.02), without publication bias (p=0.08) and were combined using a random-effects model (DerSimonian and Laird). The summary odds ratio for improvement (dichotomous) with antidepressant therapy was 4.4 (95% CI: 2.5-7.7), with the standardized mean improvement in pain score -0.91 standard deviations (95% CI: -1.23,-0.6). Meta-regression found no effect of study quality scores, particular antidepressant or symptom-type.



Conclusion Treatment of functional gastrointestinal disorders with tricyclic antidepressants appears to be effective. Patients were more than four times as likely to report improvement, with an average reduction in pain scores of 0.91 standard deviation units. Whether this is independent of an effect on depression can not be determined.

CERVICAL CANCER SCREENING AMONG CAMBODIAN IMMIGRANT WOMEN: THE SIGNIFICANCE OF TRADITIONAL HEALTH BELIEFS

Carey Jackson, Kamolthip Chitnarong, Paularita Seng, Vicky Taylor, Beti Thompson. University of Washington and Fred Hutchinson Cancer Research Center in Seattle, WA.

Objective: Cambodian women are among the Southeast Asian immigrants known to have the highest rates of cervical cancer in the United States (35/100,000 compared to 8/100,000 for non-Latina whites). Cambodian women have low rates of cervical cancer screening (Yi, 1996) validating the apparent aversion to Pap testing well known to clinicians providing primary care to this immigrant community. Cultural and social practices that might explain the resistance to Pap testing have not been well described. We undertook an ethnographic study among Cambodian refugees to identify traditional practices thought to sustain gynecologic health and to understand the cultural significance of common gynecologic symptoms.

Methods: We interviewed a network sample of 68 women individually and in groups. Interviews were unstructured, translated on-site, audio-taped, and later transcribed for review and coding by 6 independent coders. We derived a model of Cambodian gynecologic health and illness from the qualitative data. We validated this model through focus group review, and by a population based in-person survey (n=413, response rate=89% among reachable eligible households).

Results: Respondents described a detailed model of gynecologic health that begins in the peri-partum period and becomes critical post-partum. Failure to observe preventive recommendations and taboos during this time can result in chronic gynecologic illnesses that include cancer. Conversely, according to this model women who observe these traditional recommendations and who are asymptomatic have little risk of cervical cancer. In contrast, uterine prolapse is of real concern to Cambodian women, and is considered a precursor of uterine inflammation and cancer. Cambodian women also identified linguistic and social barriers to care such as lack of interpreters, female providers, child care, and transportation.

The population based survey validated these findings. Eighty nine percent of the women validated the traditional model and confirmed the relevance of traditional illnesses and preventive measures for gynecologic health.

Conclusions: Cambodian immigrant women have a rich tradition of gynecologic illness prevention and health promotion that does not include Pap testing. This model of health and illness is in operation for women long after relocation to this country. Traditional health beliefs and practices, lack of interpreters, and limited resources all play a roll in the willingness of Cambodian women to undergo cervical cancer screening. Physicians providing primary care to women in the Cambodian community may want to become familiar with key health beliefs and practices that influence health care decisions

THE IMPACT OF ADEQUATE INTERPRETER SERVICES ON HEALTH CARE DELIVERY TO LIMITED ENGLISH-SPEAKING PATIENTS.

EA Jacobs*, DS Lauderdale, DO Meltzer, JM Shorey**, W Levinson, RA Thisted. *Cook County Hospital & Rush Medical College, Chicago, IL, University of Chicago, Chicago, IL, ** Harvard Pilgrim Health Care, Boston, MA.

Communication between physician and patient is critical to the provision of medical care. More than 32 million US residents may not benefit from this fundamental interaction because they have limited English-speaking skills. Interpreter services have been the standard solution to overcoming these language barriers to access to medical care, yet the impact and benefit of these services has not been demonstrated. We hypothesized that a program of adequate interpreter services would improve delivery of health care services to limited English proficient (LEP) patients.

We conducted a 2-year historical cohort study of adult members of a large staff model HMO where new, comprehensive interpreter services for Spanish and Portuguese-speaking patients were implemented at the beginning of the second year. In year 1, LEP patients received the usual ad hoc interpreter services. In year 2, LEP patients who spoke Spanish or Portuguese received the new comprehensive interpreter services. Two groups of patients who were continuously enrolled over the 2-year period were studied: an interpreter service group (ISG) consisting of members who used the new services at least once during year 2 and a comparison group (CG) consisting of a 10% random sample of all other members who had contact with a health center at least once during year 2. Data were abstracted from the HMO's administrative database and included demographic information, use of preventive services, health care contact pattern (outpatient, inpatient, ED), and counts of prescriptions written and filled. Service use rates were calculated for year 1 and year 2 in both the ISG and the CG.

We found an overall increase in utilization of all services over time in both groups, a generally greater increase in use of preventive services in the ISG, and a significantly greater increase in utilization of office visits, prescriptions written and prescriptions filled in the ISG as compared to the CG. The increase in the number of office visits made in the ISG was 1.75 /person/yr over the study period, compared to 0.70/person/yr in the CG ($p<0.00$ for difference). The number of prescriptions written for the ISG increased by 1.17/person/yr relative to 0.53/person/yr in the CG ($p<0.00$) and the number of prescriptions filled for the ISG increased by 2.38/person/yr relative to 0.87/person/yr in the CG ($p<0.00$). We have found that comprehensive, professional interpreter services increase quantifiable measures of health care delivery, suggesting that these services can be shown to improve health care delivery for limited English-speaking patients.

IMPROVING ACCESS TO MAMMOGRAPHY IN AN OUTPATIENT RESIDENCY SETTING: DOES SAME-DAY MAMMOGRAPHY IMPROVE COMPLIANCE? CL Karmen, RJ Stack, D Kombert, B Wetmur, N Latterman, and SJ Peterson, Departments of Medicine and Radiology, New York Medical College, Valhalla, NY.

Purpose. Although breast cancer screening reduces mortality, breast cancer screening techniques are underutilized in minority and low-income populations. Barriers to mammography include access-related factors such as inconvenience and lack of time. In the Adult Primary Care Center (APCC) of Westchester Medical Center, medical residents participate in a continuity clinic where patients are seen regardless of ability to pay. In a prior study, we found that 73% of mammograms recommended were completed. In this study, we attempt to improve the accessibility to mammography by offering the option of having the mammogram done on the same day as the physician appointment.

Methods. At the conclusion of the physician visit, patients for whom a mammogram was ordered were offered the option of having the mammogram done on the same day or on an alternate day, and an appointment was scheduled for each patient. Information was gathered concerning the mode of transportation patients used to travel to the hospital, whether the patient agreed to the same-day appointment, and if not, the reasons the mammogram was not done. All patients for whom a mammogram was recommended in a four-month period were enrolled in the study group.

Results. Of 123 patients referred for mammography, 49 patients agreed to have the mammogram done on the same day, and 74 were scheduled for another day. Twenty-five of those 74 patients could not have the study done on the same day because they attended the clinic in the evening when mammography services are not available. Of the remaining 49 who did not stay, most stated that it was too late in the day or needed to leave the hospital for another reason. Forty-nine patients agreed to same-day mammography, but only 19 had the mammogram done the same day. Many of the patients decided not to stay once the mammogram had been arranged because of time restraints. Forty-seven patients traveled to the hospital by car, and 76 by public transportation. Twenty-two/47 (44%) of patients traveling by car agreed to same-day mammography, while 27/76 (36%) who traveled by public transportation agreed. Eighty-six of 123 (69%) women initially referred eventually did have a mammogram, while 37 did not.

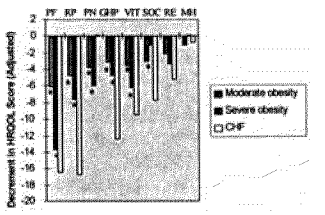
Conclusions. Despite individualized attention to scheduling, patient compliance with recommended mammography did not improve during the study period. Offering mammography on the same day as the physician visit did not increase the number of mammograms done. There were, however, obstacles to arranging mammograms, even when the patient agreed. Transportation issues may affect patient compliance.

THE IMPACT OF OBESITY ON HEALTH-RELATED QUALITY OF LIFE (HRQOL) IN PATIENTS WITH CHRONIC ILLNESS. DA Katz, CA McHorney, RL Atkinson. Dept of Medicine, University of Wisconsin, Madison, WI

While the association between obesity and increased morbidity and mortality is well established, it is less clear whether mild to moderate levels of obesity are independent determinants of HRQOL.

To address this issue, we analyzed baseline questionnaires of 2931 pts in the Medical Outcomes Study (MOS) who had at least one of five MD-identified chronic conditions (hypertension, diabetes, congestive heart failure, myocardial infarction, or depression) and height and weight data (to calculate body mass index, BMI). Using NCHS criteria, obesity was coded as a dummy variable (for men: mild 24-27.8, mod 27.8-34, severe >34, where <24 kg/m^2 was reference category; cutoff values for women were 0.5 BMI units lower). We used multiple linear regression to identify the association between BMI and SF-36 scores (0-100 scale), adjusting for demographics, health habits, medical conditions, and depression. We also examined the association between BMI and sleep disturbance (measured using a validated 6-item questionnaire).

The prevalence of mild, mod and severe obesity was 30, 29, and 15%. Obese pts were more likely to have hypertension, diabetes, osteoarthritis, back pain, and depression. The graph shows the adjusted decrement in HRQOL scores for mod and severe obesity, relative to pts without obesity. Mild obesity did not reduce HRQOL significantly. Sleep disturbance was significantly greater in mod-severe obese vs. non-obese pts ($p<0.05$). Mod-severely obese women tended to show larger decrements in PF, RP, VIT, and SOC scores, as shown by analysis of interaction between gender and BMI.



Health domains: physical function (PF), role-physical (RP), pain (PN), general health perceptions (GHP), vitality (VIT), social function (SOC), role-emotional (RE), and mental health (MH). Congestive heart failure (CHF) is comparison condition. (*) indicates $p<0.05$.

Moderate and severe obesity were independently associated with worsened HRQOL esp. in women, even after adjustment for comorbid obesity-related complications. Effects on physical function and vitality were comparable to those of other chronic conditions. Our analysis supports current national standards for defining obesity and suggests that population-based strategies to reduce obesity have potential to significantly improve HRQOL even at moderate levels of obesity.

COLON CANCER SCREENING IN WOMEN WITH HISTORY OF BREAST CANCER. CL Karmen, A. Hsieh, B. Dworkin, and SJ Peterson, Divisions of General Internal Medicine and Gastroenterology, New York Medical College, Valhalla, NY.

Purpose. Previous studies have shown increased prevalence of colon cancer in women with history of breast cancer, while others have not. In this study, we attempt to clarify the association between breast cancer and colorectal neoplasm.

Methods. The reports of 690 women who underwent colonoscopy during a two-year period were reviewed retrospectively. Thirty-three patients with history of breast cancer were identified. Five age-matched cases for each index case were reviewed as control. Control cases were excluded if there was prior history of colorectal neoplasm or inflammatory bowel disease. High-risk polyps were defined as three or more adenomas, villous adenomas or polyps larger than 2 cm.

Results.

	Breast Ca (N=33)	Control (N=165)
Any Polyp Present	11 (33%)	68 (41%)
Adenomas Present	5 (15%)	31 (19%)
High Risk Polyps	3 (9%)	25 (15%)
Cancer of the Colon	3 (9%)	5 (3%)
Age (years)	63.1 ± 9.4	63.4 ± 9.2
Family History of Colon Cancer	12%	12%
History of other Cancer	9%	8%

Conclusion. Women with history of breast cancer are no more likely to have adenomous polyps, high-risk polyps or colon cancer than age-matched controls. The incidence of colon cancer in this group is higher, however, than that of the general population. These data suggest that screening colonoscopy be recommended to these patients.

PHYSICIANS' MISINTERPRETATION OF THE MEANING OF DNR ORDERS. JA Katz, HH Liu, AS Steimle and NS Wenger, Harbor/UCLA Medical Center, Torrance, CA and UCLA Department of Medicine, Los Angeles, CA.

Objective: Do not resuscitate (DNR) orders are essential to guide care of seriously ill patients. Despite increasing use, many physicians are reluctant to use DNR orders and they often are assigned late in the course of care. To better understand obstacles to DNR order use, we examined how physicians rated the appropriateness of common medical treatments for a patient with a DNR order, and evaluated variation of ratings among internal medicine residents and generalist and specialist attending physicians.

Methods: For patients with several clinical conditions, respondents rated the appropriateness of nine interventions: intensive care unit admission (ICU), cardiopulmonary resuscitation (CPR), intubation, pulmonary artery catheter (PAC) insertion, vasopressors (VP), antibiotics (ABX), total parenteral nutrition (TPN), blood transfusion (RBC), and hemodialysis (HD). One of the conditions was a patient with a DNR order. Responses were rated on a five point scale from very appropriate (1) to very inappropriate (5). We compared the proportion of respondents rating interventions as inappropriate (4 or 5) among resident and attending groups.

Results: Ninety-six percent of residents (65/68) and 73% of attendings (176/241) responded to the survey. Nearly all physicians rated CPR and intubation as inappropriate for a patient with a DNR order. More invasive interventions were more often rated inappropriate for a patient with a DNR order: PAC 59%, VP 46%, ICU 45%, HD 44%, TPN 33%, RBC 18%, and ABX 13%. Overall, subspecialists favored fewer interventions for a patient with a DNR order than generalists, and residents chose the most treatments. Groups differed most on appropriateness ratings for the least invasive interventions. For example: ABX were rated inappropriate by 2% of residents, 16% of general internists, 21% of cardiologists and 36% of gastroenterologists. RBC was rated inappropriate by 3% of residents, 21% of general internists, 29% of cardiologists, and 45% of gastroenterologists. HD was rated inappropriate by only 15% of nephrologists, compared with 38% of generalists and 54% of subspecialists. Of all subspecialty groups, cardiologists and gastroenterologists favored the fewest interventions for a patient with a DNR order.

Conclusion: Many physicians perceive that common interventions are inappropriate for a patient with a DNR order and this perception is predominant among several specialist groups that care for seriously ill patients. This attitude may lead to resistance to provide treatments to patients with DNR orders, to insistence that DNR orders be reversed prior to procedures, and to underutilization of DNR orders. Attending and resident physicians demonstrated important misunderstandings in the interpretation of DNR orders that may be amenable to educational intervention.

IMMEDIATE THROMBOLYTIC THERAPY VERSUS DELAYED PRIMARY ANGIOPLASTY: MODELING TIME INTERVAL TO THERAPEUATIC EQUIVALENCE, DM Kent, JL Griffith, HP Selker, Departments of Medicine, University of Michigan, Ann Arbor and New England Medical Center, Boston.

Reestablishing coronary perfusion in acute myocardial infarction (AMI) can be achieved pharmacologically with thrombolytic therapy (TT) or by primary angioplasty (PTCA). A recent meta-analysis of ten published trials indicated that PTCA was superior to TT, with a 30-day mortality of 4.4% compared to 6.5% for those who received TT. The putative superiority of PTCA has created the following clinical dilemma: Is it acceptable to delay reperfusion for the time required for transport to PTCA-capable center when immediate TT is available? With the goal of creating a decision-support tool that might be useful in this situation, we explored how "time interval to therapeutic equivalence" (TITE), defined as the acceptable delay to PTCA when immediate TT is available, might vary with specific patient characteristics using The Thrombolytic Predictive Instrument (TPI).

The TPI employs validated logistic regression equations to make patient-specific prediction for outcomes in AMI with and without TT. For the purposes of predicting TITE, we assumed that PTCA has an incremental mortality reduction 33% greater than the mortality reduction predicted with thrombolysis. (This represents a conservative estimate based on the results of the meta-analysis and TPI predictions of thrombolytic benefit.) TITE was defined as the delay in hours at which the mortality with PTCA is predicted to be equivalent to the mortality with immediate TT.

We tested how TITE varied with different patient characteristics by generating predictions on a sample of 435 patients who received thrombolytic therapy as part of a prospective clinical trial. The average predicted TITE was 1.3 hr (range 0.3 hr to 2.5 hr). Predicted TITE varied with patient characteristics, especially with time to presentation from symptom onset. Patients presenting between 3 and 4 hr after symptom onset had the longest predicted TITE. For patients presenting earlier, time is more critical and delays in reperfusion therapy have a large effect on mortality reduction. Later, the difference in mortality between PTCA and thrombolysis were too small to warrant long delays. A patient's predicted mortality risk had only a modest effect on TITE.

Assuming a constant incremental benefit of PTCA relative to the predicted benefit of TT, our model predicts that the length of acceptable delays to PTCA vary with patient characteristics, particularly time to presentation. Further work is needed before this tool can be applied to make treatment decisions in the field.

AFRICAN AMERICAN VETERANS WITH CORONARY ARTERY DISEASE REPORT WORSE HEALTH AND LESS SATISFACTION WITH CARE. CI Kiefe, MB McDonell, DM Martin, SD Fihn. Dept of Medicine, University of Alabama at Birmingham, Birmingham, AL, and VA Puget Sound, Seattle, WA.

Background: Racial differences in management of coronary artery disease (CAD) are well known but poorly understood. Several studies document less intense management of African Americans (AA) compared to Whites (W), even within the Department of Veteran Affairs (DVA). We examined AA vs. W differences in self-reported health status and satisfaction among veterans with CAD.

Methods: Cross-sectional analysis of surveys mailed to 38,642 General Internal Medicine Clinic patients at 7 VAs. Patients reporting CAD on an initial checklist received follow-up surveys including: the Seattle Angina Questionnaire (SAQ); the Seattle Outpatient Satisfaction Questionnaire (SOSQ) which measures satisfaction with humanistic and organizational aspects of care; and the Medical Outcomes Study SF36. All scales were scored from 0 (worst) to 100 (best).

Results: 66% of patients responded to the baseline surveys; 4,204 (16.4%) classified themselves as AA, and 15,391 (63.5%) as W. AAs compared to Ws were younger (58.9 vs. 62.8 years), less likely to use non-VA health care (27.9% vs. 37.2%) or to be married (44.8% vs. 59.2%); more likely to have income below $10,000 (39.9% vs. 24.8%), to smoke (33.6% vs. 25.6%), and to screen positive for drinking problems (39.2% vs. 30.4%). AAs were also more likely to report diabetes (25.8% vs. 20.2%) and hypertension (65.4% vs. 52.0%), but less likely to report CAD (26.6% vs. 37.9%); $p<0.001$ for all contrasts. CAD was reported by 9,287 patients (36%); 1,118 AAs, 5,836 Ws and 2,333 other, and the contrasts between Ws and AAs reported above were also observed in CAD patients. Among CAD patients, 61.3% returned the SAQ SF36, and SOSQ. Statistically significant differences were:

	SF-36		SOSQ		SAQ		
	Vitality**	Emotnl Func**	Humanistic**	Organizatnl**	Phys Func*	Disease Percept**	Satisfaction**
AA	40.9	41.0	65.6	58.7	48.6	58.8	77.1
W	35.2	54.7	74.3	64.2	52.4	64.1	84.4

**AA vs. W contrast significant at $p<0.005$; **$p<0.001$.*

AAs and Ws did not differ on the other 6 SF36 scales at $p<0.01$, but AAs tended to score lower; nor did they differ on angina frequency and stability. All significant differences persisted after adjustment for age, income, education and marital status.

Conclusions: Compared to Ws, AAs in this DVA sample had poorer socioeconomic circumstances, were markedly less satisfied with all aspects of their care, and, for most measures, tended to have worse self-reported health status, both general and specific to CAD. These differences remained after adjustment for socioeconomic factors, and parallel differences in treatment observed in other studies.

THE PREVALENCE AND HEALTH EFFECTS OF HUNGER IN AN ADULT EMERGENCY DEPARTMENT POPULATION. MA Kersey, MS Beran, N Lurie, M Biros, P McGovern, Hennepin County Medical Center and the Schools of Medicine and Public Health, University of Minnesota, Minneapolis, Minnesota

Purpose: To determine the prevalence of hunger and food insecurity among patients using a large urban emergency department (ED), and to examine whether hunger has adverse health effects. **Methods**: Adult patients were surveyed during randomly selected shifts about hunger, needing to choose between buying food and medicine, and adverse health consequences of food inadequacy . **Results**: 297/302(98%) of eligible patients responded. 18% reported not having enough to eat at least once in the past 12 months. 14% reported they had "gotten sick" as a result of choosing to buy food instead of medicine, resulting in an ED visit or hospital admission 50% of the time. Logistic regression indicated that independent predictors of making choices to buy food vs medicine include having a chronic health condition (OR=2.56, 95% CI-1.14-4.34), a reduction in food stamps (OR=2.24, 95% CI-1.19-4.18), income<$10,000 (OR=2.56, 95% CI=1.42-4.64), and cigarette use (OR-2.06,CI=1.17-3.64). Having had a reduction in food stamps was an independent predictor of having had an ED visit or hospitalization as a result of making choices about buying food instead of medicine (OR=2.55, CI=1.002-6.47). **Conclusion**: ED patients in our urban setting have high rates of hunger and many must make choices between buying food and medicine, often resulting in otherwise preventable ED visits and hospitalization. Loss or reduction of food stamps is associated not only with increased hunger and making choices to buy food vs. medicine, but adverse health outcomes as a result of not being able to afford medicine. Future social policies should consider the relationship between food support and health.

ALGORITHM-BASED MANAGEMENT OF HYPERTENSION AND DIABETES: PATIENT SATISFACTION, QUALITY OF LIFE, AND EFFECTIVENESS. CM Kippes, LA Planavsky, and DG Litaker, Division of Medicine, Department of General Internal Medicine, The Cleveland Clinic Foundation, Cleveland, Ohio.

Managing hypertension and diabetes poses a labor-intensive challenge for health care providers. Studies have demonstrated the clinical effectiveness of disease management strategies by non-physicians for select conditions. With physician backup, nurse practitioners (NPs) utilizing specific treatment algorithms may be able to maintain patient satisfaction and self-reported quality of life without compromising clinical effectiveness in patients with hypertension and diabetes.

One hundred fifty-seven adult patients with both Type II diabetes mellitus (without clinically apparent end-organ damage) and essential hypertension (stages I-II, using two or fewer medications), were randomly assigned to receive hypertension and diabetes care by an NP or to continue seeing their primary care physician (PCP). Each patient was followed for 12 months. NP disease management followed treatment algorithms based on guidelines from the American Diabetes Association and Joint National Committee V for the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. Assessment of clinical effectiveness included overall changes in baseline and 12-month HbA_{1c} and lipid profile (total cholesterol, HDL, LDL, and triglyceride) values. Assessment of patient satisfaction and quality of life included overall changes in the Group Health Association of America's Consumer Satisfaction Survey, SF-12 Health Survey, and Diabetes Quality of Life Measure survey.

Data for 133 patients completing the program were available for analysis. Baseline characteristics between the two groups did not differ by age ($p=0.980$), gender ($p=0.566$), race ($p=0.117$), or number of comorbid conditions measured by the Charlson Comorbidity score ($p=0.674$). There was a significant increase in the general satisfaction domain of the satisfaction survey for the NP (mean difference = 7.4, $p=0.031$). The NP's rating was equal to that of physicians for all other domains in the satisfaction and quality of life surveys. There were no clinically significant differences in HbA_{1c} and lipid profile values between patient groups, although a statistically significant decrease in HbA_{1c} ($p=0.025$) and increase in HDL ($p=0.030$) was observed among those treated by the NP.

Patient satisfaction and quality of life are preserved among patients treated by an NP for hypertension and diabetes. The increase in overall satisfaction may reflect NP availability and the patient education-focused management provided by the NP. Because clinical effectiveness is maintained, this strategy may represent a cost savings for the management of these diseases. Integrating this strategy may enhance efficiency within a capitated practice environment by allowing physicians to concentrate their attention on patients with more complex medical issues.

SERUM LDL LEVELS ARE UNDERTREATED IN PATIENTS UNDERGOING A REPEAT REVASCULARIZATION PROCEDURE

Hani Kozman, Dennis A. Tighe, James R. Cook. Baystate Medical Center, Springfield, MA

For patients (pts) with overt atherosclerotic heart disease an aggressive approach to cholesterol reduction is recommended. **Methods**: The adequacy of lipid therapy among pts referred for a repeat revascularization procedure was evaluated in 60 consecutive pts (age 63±11 yrs; 42 men, 18 women) with prior revascularization (CABG or PTCA; median time 43 mos earlier) referred for an elective PTCA. No patient had an MI in the proceeding 8 weeks. Twenty-one (35%) pts had their lipid therapy directed by a cardiologist (CARD) and 39 (65%) by a primary care physician (PCP). A lipid panel was obtained after an overnight fast at the PTCA and compared to the earliest available fasting lipid profile (median 19 mos prior). Current lipid therapy was recorded. **Results**: Twenty-two (37%) pts had an LDL <100 mg/dl at the time of the PTCA. Of the 38 pts not at goal, 15 (39%) received no drug therapy, and 16/23 (70%) drug-treated pts were receiving a starting dose of medication only. When dichotomized by treating physician, 14/21 (67%) pts treated by CARD and 24/39 (62%) treated by PCP did not achieve LDL goal (p=NS). Mean LDL for CARD pts was 108±27 mg/dl versus 109±40 mg/dl for PCP pts (p=NS). ΔLDL was similar for CARD and PCP (28±45 vs 30±41 mg/dl). Among CARD, 4/14 (29%) pts not at goal were on no drug therapy and 8/10 (80%) were on starting doses. Similarly, among PCP 11/24 (46%) pts not at goal were on no drug therapy and 8/13 (62%) were at starting dose only.

Conclusions: (1) Despite recommendations for aggressive LDL control, the majority pts having a repeat revascularization procedure do not have their LDL lowered to an optimum level. (2) CARD and PCP equally undertreat these high risk pts.

THE EFFECTIVENESS OF PRIMARY CORONARY ANGIOPLASTY VERSUS THROMBOLYTIC THERAPY FOR ELDERLY PATIENTS WITH ACUTE MYOCARDIAL INFARCTION.

BE Landon, MB Landrum, SL Normand, TJ Ryan, P Gaccione, E Guadagnoli, BJ. McNeil. Division of General Medicine and Primary Care, Beth Israel Deaconess Medical Center, Department. of Health Care Policy, Harvard Medical School, Boston, MA.

Background: In many centers, primary coronary angioplasty is increasingly becoming the treatment of choice for restoring coronary perfusion in patients who present with acute myocardial infarction. This has occurred even though data on its effectiveness are limited and long-term data are lacking.

Methods: We compared short and long-term mortality for Medicare patients discharged after an acute myocardial infarction who presented to hospitals capable of performing angioplasty and were treated within 6 hours of presentation with either primary angioplasty or thrombolysis. We constructed a propensity score for primary PTCA using all known clinical and site of care factors that might influence the treatment decision. We then used case-matching techniques based on the estimated probabilities to develop matched groups of patients (n= 1947 pairs) with similar propensity of receiving angioplasty.

Results: Patients treated with primary angioplasty had marginally significant lower in-hospital mortality (OR .80; 95 percent confidence interval, .66 to .96) than patients treated with thrombolysis. This difference strengthened at 2 years (OR .79; .68 to .91). These results were consistent for more than 10 additional samples that were drawn though the confidence limit for in-hospital mortality crossed one for several of the samples. There was also a trend toward decreased incidence of in-hospital stroke in primary angioplasty patients (.73; .48,1.11).

Outcomes	Angioplasty (n=1947)	Thrombolysis (n=1947)	Odds Ratio (95% CI)	P-value
In-Hospital:	(%)	(%)		
Death	11.9	14.5	.80 (.66, .96)	.016
Stroke	2.1	3.0	.73 (.48, 1.11)	.06
Reinfarction	4.3	5.1	.94 (.70, 1.27)	.98
2 years:				
Mortality	22.3	26.7	.79 (.68, .91)	.002

Conclusions: After adjustment for important clinical and site of care characteristics, we observed a clear long term mortality benefit for elderly AMI patients treated with primary angioplasty over thrombolysis in this observational study in the community setting. Our study supports a policy favoring primary angioplasty for patients who present to hospitals capable of administering either therapy.

ELDERLY CANCER PATIENTS: TREATMENT DECISIONS

JS Kutner; K Vu; SA Prindiville; TE Byers; University of Colorado Health Sciences Center, Denver, CO.

Purpose: The objective was to examine factors influencing the decision to use adjuvant chemotherapy for stage III colon cancer in elderly persons.

Methods: Patients age 65 years of age and older who had undergone surgical resection for stage III colon cancer in Colorado between August 1995 and December 1997 were identified by the statewide cancer registry (n=276). A questionnaire about the treatment decision making process was mailed to all patients for whom physician permission was granted (n=119). A similar questionnaire was sent to treating physicians. We explored determinants of having receiving adjuvant chemotherapy and compared physician and patient rankings of influencing factors.

Results: Ninety-two physicians (23% internal medicine, 12% family medicine, 37% surgery, 24% oncology) and 67 patients (mean age 76; 55% female) completed surveys. The major determinants of receiving adjuvant chemotherapy were having seen an oncologist (p=0.003), being younger (p=0.006), and being married (p=0.021). Physicians and patients differed in their views about the relative impact of various factors on treatment decisions. Physicians were more likely to rank co-morbid conditions (39.1% vs 3%, p<0.001), and the medical literature (20.7% vs 4.5%, p=0.004) as important factors; while patients were more likely to rank physician opinion (73.1% vs 26.1%, p=0.001), family preference (31.3% vs 9.8%, p=0.001), and family burden (10.4% vs 2.2%, p=0.038).

Conclusions: Although patient age is an important determinant of the decision to use adjuvant chemotherapy, other factors are important, and the perspectives of physicians and patients differ regarding the relative importance of these factors.

THE EXPLOSION IN PAID HOME HEALTH CARE: ARE THE ADDITIONAL SERVICES GOING TO THOSE WITH GREATEST NEED?

KM Langa, ME Chernew, SJ Katz. Department of Medicine and Department of Health Management and Policy, University of Michigan, Ann Arbor, MI.

Medicare spending for home health care increased from $4 billion in 1990 to $19 billion in 1997. To examine whether this explosive increase in funding was targeted to those with greatest disability and least social support, we used data from the Asset and Health Dynamics (AHEAD) Study, a national longitudinal survey of community-dwelling elderly aged 70 or older (N=7,443), to determine the likelihood of receiving any paid home care and the number of weekly hours of care, among the disabled elderly in 1993 and 1995. Logistic and OLS regression models were used to assess the association of receipt of paid home care with number of Activity of Daily Living (ADL) limitations and living alone (measures of disability and social support, respectively) in 1995 as compared to 1993, controlling for sociodemographic measures, health status (cognitive impairment, recent hip fracture or stroke), receipt of informal home care from family, and any recent hospital or nursing home stay.

In the 1993 baseline survey, 41% were disabled (reported difficulty or getting help with any ADL or Instrumental ADL), of whom 46% were married, 20% were unmarried and living with others, and 35% were unmarried and living alone. The sample of those unmarried and living alone (N=1,073) was composed mostly of women (82%) and those with 3 or fewer ADL limitations (87%). In both 1993 and 1995 about 12% of the study population used paid home care (users). By contrast, paid care per user increased dramatically between 1993 and 1995 from a mean of 23 hours per week to 33 hours per week. Among users, weekly hours were significantly greater for those with greater disability (4 or more ADL limitations) in both 1993 and 1995. However, growth in the use of paid home care was much greater for those who were unmarried and living with others (those with greater social support) compared to those who were unmarried and living alone. In 1993, those living alone received significantly more paid home care (24 hours per week vs. 15 hours for those living with others, p<.01), but by 1995 those living alone were receiving less paid home care (30 hours vs. 40 hours for those living with others).

Changes in Medicare payments policies for home health care services to the elderly were associated with a dramatic increase in the intensity of home services per user. This increase in paid home care services has gone disproportionately to those with greater social support. While such services may be providing some benefit to these less needy elderly and their families, policies that better target home care services to those with less social support may be a fairer and more efficient allocation of society's resources.

GLYCEMIC CONTROL IN ENGLISH-SPEAKING VERSUS SPANISH-SPEAKING ONLY LATINOS WITH TYPE 2 DIABETES MELLITUS. L Lasater, J Boltax, B Jeffers, P Mehler, Division of General Internal Medicine, Denver Health, Denver, Colorado.

Background: Latinos are the fastest growing segment of our population, yet defining their unique health care needs has been poorly addressed. Despite the increased prevalence and severity of diabetes among Latinos (as compared to Caucasians), much remains unknown about the interplay of genetics, acculturation, health care access, lifestyle, socioeconomic status and language barriers.

Objective: To determine whether inability to speak English adversely impacts glycemic control in Latinos with type 2 diabetes mellitus.

Methods: A retrospective cohort study of 188 diagnosed type 2 diabetics, treated in a public hospital health care system, using hemoglobin A1C (HbA1C) values obtained for patients between June 1997, and December 1997, as a measure of control. Additional demographic (including language fluency) and health-related information were collected via a telephone survey. Participants were Latino (confirmed by self-report), aged 35-70, and seen in the outpatient setting at least one time between 1995 and 1997.

Results: Overall mean HbA1C values (x=9.0, range: 4.9-16.2) did not differ significantly between the two groups based on language fluency (p=0.6702). There was a trend toward decreased prevalence of insulin use among Spanish-speaking (SS) only patients (30%) as compared to English-speaking (ES) (42%, p=0.080). SS were less likely to understand the labels on their prescription bottles with 22% reporting no comprehension at all versus 3% in ES (p=0.001). In addition, SS had completed a mean of three years of schooling in contrast to nine years (p=0.0001) of schooling completed by ES Latinos. There was no significant difference in the number of hospitalizations or emergency department visits between the two groups.

Conclusions: Although glycemic control in Latinos was not adversely affected by language fluency, other potential barriers to providing quality care to SS diabetics were identified. A high prevalence of illiteracy (as defined by years of schooling completed) was found among our SS diabetics. This may contribute to their reported difficulty in understanding both the labels on their prescriptions and their providers. Future research needs to focus on the opportunity which exists to improve the process of care for SS Latinos.

BENEFITS OF COMPUTERIZED GUIDED DOSING IN INPATIENTS WITH RENAL DYSFUNCTION. J Lee, GM Chertow, GJ Kuperman, R Lee, A Mekala, JJ Song, J Ko, J Fiskio, L Burdick, J Horsky, AL Komaroff, DW Bates. Brigham and Women's Hospital, Boston.

We built a special component of a computerized order entry program, *Nephros*, that guides medication dosing in renal dysfunction. The application estimated patients' creatinine clearance (CrCl) by Cockroft-Gault and, in cases of reduced CrCl, suggested an appropriate alteration in dose and frequency for specific nephrotoxic and/or renally cleared medications.

We then evaluated if *Nephros* could improve dosing of these medications, reduce length of stay or lower pharmaceutical costs. The evaluation consisted of 4 alternating periods, each of which was 2 months long, and the study was conducted in one tertiary care hospital in which all orders are written on-line by physicians. During control periods, *Nephros* calculated and recorded, but did not report, CrCl data or dose/frequency alteration suggestions, while during intervention periods, suggestions regarding dose/frequency change were offered.

The study population included 17,924 patients, who had 103,942 medication orders written over the 4 periods. Of these, 13% of orders triggered a dose change suggestion and 12% a frequency change suggestion. *Nephros* reduced the number of orders that exceeded the optimal dose for CrCl by 56% (from 70% in intervention periods to 30% in control) and the number of orders that exceeded the optimal frequency by 61% (from 72% to 28%; both p<0.001). LOS was reduced by 0.21 days (p=0.0001) and savings in key drug classes resulted in a projected annual savings of $515,000 for the hospital.

These data suggest that this application which provided suggestions to physicians both improved quality and reduced the costs of care for patients with renal dysfunction.

A SURVEY OF PATIENT NON-ADHERENCE TO POLYPHARMACY MEDICATIONS IN A COMMUNITY HEALTH CENTRE. A Catania, S Wallenius, HN Lee, Group Health Centre, Sault Ste Marie, and University of Ottawa, Ontario, Canada.

Polypharmacy, defined as having five or more prescription medications, is a potentially serious problem, particularly among the elderly. Polypharmacy is associated with adverse events, which may be worsened by non-compliance. This study was designed to evaluate the extent of the problem of non-adherence, to determine potential reasons and propose solutions.

Methods: Consecutive patients presenting at the local pharmacy for refills of five or more chronic medications were considered eligible, and were approached by telephone for informed consent. Study subjects were interviewed by a research assistant (RA) to gather data on knowledge and use of prescribed medications. This were cross-verified with the pharmacy records and then the patient charts were scrutinized by the RA to determine patient demographics, clinical condition and charting of prescription meds.

Results: From July 1997 to February 1998, 120 patients were identified and 64 consented to the study. Mean age was 65 years, with an average of 9 different medications, 13 different daily pills from 2 different prescribing physicians. On average, these patients had at least two chronic conditions and also took one over the counter (OTC) medication. 20/64 (31%) patients took the incorrect dose of at least one medication, while a further 35/64 (55%) admitted to being non-compliant with at least one medication. Of the non-compliant patients, one-fifth admitted to not taking even half of all their prescribed medications. Thus 44/64 (69%) either took to wrong dose or were non-compliant with at least one prescribed medication. Only 10% of clinic charts had all the medications correctly listed and easily available. Non-adherence was pervasive and not correlated with age, sex, number of prescribing providers, number of pills, use of aids or number of chronic disorders.

Conclusion: Patients with polypharmacy are frequently not adherent to their prescribed medications. This problem may be exacerbated by lack of proper charting of medications but the solutions will probably need to be multifaceted and require further study.

RISK FACTORS FOR MAJOR CORONARY EVENTS AFTER ISCHEMIC STROKE AND TRANSIENT ISCHEMIC ATTACK. KM Lee, WN Kernan, CM Viscoli, LM Brass, PM Sarrel, RI Horwitz, Department of Medicine, Yale University School of Medicine, New Haven, CT.

Background: Coronary artery disease is the leading cause of death among stroke survivors. Compared to age-matched controls, patients who have a transient ischemic attack (TIA) or ischemic stroke are at increased risk for fatal and non-fatal myocardial infarction. To reduce coronary mortality and morbidity, clinicians might consider screening and treating stroke patients at highest risk. Unfortunately, no methods exist to identify high-risk patients. The purpose of this research was to identify risk factors for myocardial infarction or coronary death after a TIA or ischemic stroke and to create a risk stratification system.

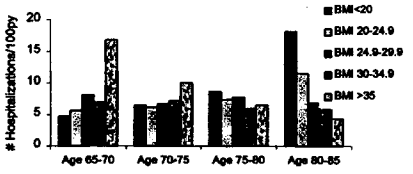
Methods: The patients comprised 652 women enrolled in The Women's Estrogen for Stroke Trial, a double-blind, placebo controlled trial of estradiol for the prevention of recurrent stroke and death. All participants were over age 45, postmenopausal, and had experienced a TIA or non-disabling ischemic stroke within 90 days of enrollment. Follow-up was by telephone contact every three months and in-home visits annually. The occurrence of myocardial infarction (MI) was classified according to standard criteria using clinical, electrocardiographic, and serum creatinine kinase data. Coronary death was classified by World Health Organization criteria. 13 pre-specified baseline variables were examined in bivariate analysis for association with the occurrence of non-fatal MI or coronary death. Those variables with an unadjusted relative risk (RR) $\geq$1.4 were further examined in Cox proportional hazards multivariable model.

Results: Among 652 women, 39 (6%) had a non-fatal MI or coronary death during an average follow-up period of 3 years. Quantitatively significant baseline predictors of these events (relative risk $\geq$1.4) included: 1) carotid stenosis over 70% (RR=2.7), 2) congestive heart failure (2.4), 3) age over 70 years (RR=2.3), 4) prior MI (RR=1.6), 5) prior stroke (RR=1.6), 6) stroke for the index event (not TIA) (RR=1.5), 7) diabetes (RR=1.5), and 8) atrial fibrillation (RR=1.4). In multivariable analysis, four of these eight variables were statistically significant (p<0.05): congestive heart failure (RR=2.6, p=0.02), carotid stenosis over 70% (RR=2.6, p=0.03), age over 70 years (RR=2.4, p=0.02), and diabetes (RR=2.3, p=0.4). Event rates within three years of trial enrollment increased according to number of risk factors: 1% for no risk factors (130 women), 8% for one or two factors (495 women), and 27% for three or four factors (27 women) (p<0.001 by log rank test).

Conclusion: In this cohort of postmenopausal women with cerebrovascular disease, four clinical features influenced risk for major coronary events. If confirmed, our findings may provide the basis for a directed intervention strategy to reduce coronary mortality and morbidity after TIA and ischemic stroke.

EFFECT OF OBESITY ON HEALTH SERVICES UTILIZATION IN THE ELDERLY. W. Lee, O. Carrasquillo, S. Mota, A. Pablos, S. Shea, NY Presbyterian Hospital, NY

Background: Among the elderly, data suggests that mild and moderate obesity is not associated with increased mortality. To date, there have been no studies describing the effect of obesity on health services utilization in this group. In this study we examine the relationship between obesity and hospitalization among the elderly. **Methods:** We analyzed data from the Medicare Current Beneficiary Survey Cost and Use File, a 5 % randomly selected prospective cohort of Medicare beneficiaries from 1992-1994. Community dwelling subjects, ages 65 – 85, without a history of cancer were included in the analysis. Chi-square and t-test analyses were used to check for crude associations between body mass index (BMI) categories <20, 20-24.9, 25-29.9, 30-34.9, and >35 and number of hospitalizations and total number of hospital days/person-year (py). We used linear regression (SAS) among beneficiaries followed for all three years to adjust for baseline differences in age, gender, educational status, race and smoking status. **Results:** 6,000 subjects with 16,443 person years were studied. Compared to subjects with BMI 20-24.9, patients with BMI 25-29.9 and 30-34.9 had a lower incidence of hospitalizations, relative risk (RR)0.96 (95% Confidence Interval [95%CI].90-1.02) and 0.84 (95%CI .76-.93) respectively, while subjects with BMI>35 had increased hospitalization (RR 1.23, 95%CI 1.07-1.40). Hospitalization rates by BMI, though, varied by age. (Figure below) For hospital days, subjects with BMI of 25-29.9 had a mean of 1.11 days/1000py, similar to 1.13 days/1000py for BMI 20-24.9. Subjects with BMI 30-34.9 had a mean of 3.57 days/1000py (p<.001), while those with BMI>35 had a mean of 11.63 days/1000py (p<.001). Multivariate models showed subjects age<75 with BMI >35 tended to have a greater number of hospital days. (p<.05) For subjects age>75, BMI 30-35 was associated with decreased number of hospital days and hospitalizations (p<.05). **Conclusions:** The effect of obesity on hospital utilization among the elderly is modified by age. For subjects age <75, obesity is associated with increased utilization, while it is associated with decreased utilization over age 75. Whether this is due to a protective effect of obesity or concurrent illness resulting in lower BMI will need to be examined in future studies.



GENETIC TESTING FOR BREAST CANCER SUSCEPTIBILITY: A POPULATION-BASED SURVEY OF THE ATTITUDES OF ASHKENAZI JEWISH WOMEN. LS Lehmann[1], JC Weeks[2], N Klar[2], JE Garber[2]. [1]General Medicine Division, Massachusetts General Hospital, [2]Dana-Farber Cancer Institute, Boston, MA.

BACKGROUND: The total prevalence of three common mutations in *BRCA1/2* (breast cancer gene 1/2) is 2.3% among Ashkenazi Jewish women, compared with a 0.16% frequency of all mutations among non-Jewish women. The relatively high prevalence of common mutations and the resultant lower cost of genetic testing has raised the possibility of population-based *BRCA1/2* testing among Jewish women. We conducted a population-based study in order to gain a better understanding of Jewish women's concerns about discrimination resulting from genetic testing and to determine the degree of interest in *BRCA1/2* testing.

METHODS: We assessed the attitudes of a population-based sample of 200 Jewish women in Boston toward breast cancer susceptibility testing. Respondents participated in a 30 minute telephone interview to assess their concerns about discrimination against Jews, attitudes toward prophylactic mastectomy, and interest in *BRCA1/ 2* testing. Ordinal logistic regression models were used to identify variables predictive of interest in genetic testing.

RESULTS: The mean age of the sample was 46 years (range 18-69 years). 75% of women college graduates. 15% had no Jewish religious affiliation, 39% identified as Reform Jews, 32% Conservative, 1% Orthodox. 17% of women were concerned about genetic testing being offered to Jews; 52% said that genetic research on Jews was good for Jews; 42% felt it was neither good nor bad. 90% of women would do more frequent breast self exams and 89% would have more frequent mammography if they knew they had a mutation in *BRCA1/2*. 48% said they would be likely to have a prophylactic mastectomy if it would prolong their life by 2 years. 40% of respondents said they would be interested in being tested; 40% were not interested in testing; and 20% were uncertain. Interest in genetic testing was associated with the likelihood of having a prophylactic mastectomy (OR 2.1, 95% CI 1.2-3.6), valuing the possibility of detecting breast cancer at an earlier stage (OR 1.8, 95% CI 1.2-2.6), Jewish religious affiliation (OR 1.5, 95% CI 1.2-2.0), and valuing information from a genetic test even without clear options for prevention (OR 1.2, 95% CI 1.1-1.3).

CONCLUSIONS: Less than 20% of Boston Jewish women who participated in this survey expressed concern about discrimination against Jews that may result from genetic testing and research. Jewish women are, however, divided in their interest in breast cancer susceptibility testing. Interest in genetic testing was associated with the perceived value of the information derived from the test to the individual and beliefs about how the information affects the broader Jewish community.

TEMPORAL TRENDS IN HEALTH CARE SEEKING BEHAVIOR AMONG HIV-INFECTED PATIENTS: IMPACT OF EARLY INTERVENTION SERVICES. DW Lehman, AJ Davidson and DL Cohn. Denver Community Health Services and Denver Public Health, Denver Health, and University of Colorado Health Sciences Center, Denver, CO.

Background: Reasons for delay in health care seeking behavior (HCSB) among minorities and special populations after HIV diagnosis are numerous. Federally-funded HIV early intervention services (EIS) for these populations are intended to reduce financial barriers, increase access and improve outcomes. More effective combination therapies have increased the perceived benefit of early HCSB.

Objective: To compare time reported seropositive ([TRS], time from first HIV antibody test to EIS enrollment) as surrogate outcome measure for HCSB between subgroups.

Setting/Population: Of 1252 EIS patients (pts), 628 identified a first positive (FP) HIV antibody test between 1990-96. Minorities (i.e., Black and Hispanic) comprised 37% of EIS pts vs. 25% of Denver's HIV-infected population.

Methods: Demographic, clinical, and psychosocial characteristics defined pt subgroups. Market penetration (MP) compared EIS HIV-infected pts to all 2648 surveillance reported HIV-infected pts for a primary geographic area ([PGA], defined by ZIP codes) surrounding clinic sites.

Results: Among the 628 FP pts, EIS MP for women was 38% (of all PGA reported HIV-infected women), for white men 23%, for Black and Hispanic pts 37%, and for injection drug users (IDU) 27%. Of 133 EIS pts (FP in 1990), 29% had TRS ≤ 2 month (mo) while 50% had TRS ≤12 mo. Of 58 EIS pts (FP in 1996), 59% had TRS ≤ 2 mo (RR=2.0, CI=1.4-2.8) and 90% had TRS ≤ 12 mo (RR=1.8, CI =1.5-2.2). White men comprised 55% of all EIS pts; among those with FP in 1990, 47% had TRS ≤ 12 mo; this increased to 96% for FP in 1996 (RR=2.1, CI=1.6-2.6). Comparing FP in 1990 to 1996, earlier HCSB (TRS ≤ 12 mo) was observed in Hispanics 47 vs. 78%, Blacks 58 vs. 92%, women 75 vs. 100% and IDU 44 vs. 100%. Among FP in 1990-94, on average 9% (range: 6.8 - 11.4) delayed access (TRS > 3yrs). Of all HIV-infected PGA persons (1989-96), EIS patients comprised 21%, increasing between 1995 and 1996 (16 to 26%, RR=1.6, p=0.012).

Conclusions: HIV EIS pts showed more prompt HCSB in recent years. EIS MP for FP in 1996 cohort exceeded the previous 7-year average. These findings are likely due to coordination between case identification sites and EIS, and patient awareness of recent advances in drug therapy.

FREQUENCY OF EPISODES OF ANGER AND SURVIVAL AFTER MYOCARDIAL INFARCTION. JW Levenson, RB Davis, MA Mittleman. Department of Medicine, Beth Israel Deaconess Medical Center, Boston, MA.

Background: Behavioral traits related to anger have been shown to increase risk for acute ischemic events including myocardial infarction (MI), and episodes of anger may be potent triggers for such events. Although several studies have shown that mood states such as depression affect post-MI prognosis, few studies have explored the effect of trait anger on survival after MI.

Methods: Between 1989 and 1993, 1117 men and 501 women (median age 62) were interviewed a median of 4 days following acute MI, and their charts reviewed, as part of the Determinants of Myocardial Infarction Onset Study (ONSET). We used the ONSET anger scale to evaluate the frequency and intensity of outbursts of anger over the prior year. Trait Anger Scores (TAS) were calculated, with higher scores indicating more frequent high-intensity anger episodes. Deaths were ascertained via the National Death Index for the years 1989-1996, and confirmed by review of death certificates. We used Cox proportional hazards regression to evaluate the impact of high versus low TAS on the total mortality rate, controlling for potentially confounding variables. Results are expressed as hazard ratio (HR) for death with associated 95% confidence interval (CI).

Results: Of the 1618 subjects, 284 (18%) died over a median follow-up of 49 months. In a univariate analysis, high TAS (top quartile versus lower quartiles) had a significant protective effect (HR 0.54, CI 0.38-0.75), but inclusion of age in the Cox model reduced the magnitude of this effect, rendering it non-significant (HR 0.84, CI 0.60-1.19). In the final model (which controlled for age, sex, race, education, employment status, smoking, diabetes mellitus, prior MI, hypertension, obesity, complicated index MI or thrombolytic therapy), the hazard ratio was 0.81 (CI 0.55-1.20).

Conclusions: In this group of early survivors of acute MI, reporting more frequent episodes of high intensity anger in the past year was associated with a lower mortality rate in the years after MI. However, the effect of anger was highly confounded by other factors in the final model and was associated with wide confidence intervals. Nonetheless, high levels of trait anger are unlikely to be associated with a substantially higher rate of total mortality following acute MI.

VARIATION IN ARTERIAL BLOOD GAS AND PULSE OXIMETRY USE IN COMMUNITY-ACQUIRED PNEUMONIA: FACTORS ASSOCIATED WITH TEST USE AND ARTERIAL HYPOXEMIA KP Levin, BH Hanusa, A Rotondi, MJ Fine. Center for Research on Health Care, Univ. of Pittsburgh, Pittsburgh, PA

Aims: Although testing for arterial hypoxemia (hypox) is an important initial process of care for patients (pts) with community-acquired pneumonia (CAP), prior studies have not evaluated factors associated with variation in test use or with the identification of hypox. The aims of this study were 1) to assess the factors associated with the use of arterial blood gas (ABG) and pulse oximetry (PO) in the initial management of pts with CAP and 2) to determine the baseline factors associated with discovering hypox on either ABG or PO.

Methods: From the Pneumonia PORT 5-site, prospective cohort study, data for 944 outpatients and 1332 inpatients with clinical and radiographic evidence of CAP were analyzed for this study. Multivariate logistic regression analyses were used to assess factors independently associated with obtaining ABG and PO within 48 hours of presentation and to determine factors independently associated with hypox while breathing room air (pO_2<60 mm Hg by ABG or SaO_2<90% by PO for non-blacks and <92% for blacks).

Results: ABG use by site ranged from 0.0% to 6.4% (p=0.06) for outpts and from 49.2% to 77.3% for inpts (p<0.001), while PO use ranged from 9.4% to 57.8% for outpts (p<0.001) and from 47.9% to 80.1% for inpts (p<0.001). Sites with the highest ABG use had the lowest PO use, even after controlling for pt demographics, comorbidity, and illness severity. Adjusted odds ratios (95% CI) for ABG and PO use, respectively, at three inpt institutions were (a) 1.7 (95% CI 1.0-2.8) and 0.3 (95% CI 0.2-0.5), (b) 2.5 (95% CI 1.8-3.5) and 0.4 (95% CI 0.3-0.6), and (c) 2.8 (95% CI 2.0-4.1) and 0.1 (0.1-0.2). Factors independently associated with hypox at presentation were age>30 years (OR 3.5; 95% CI 1.5-7.9), chronic obstructive pulmonary disease (OR 1.7; 95% CI 1.2-2.4), congestive heart failure (OR 1.6; 95% CI 1.1-2.5), respiratory rate >24 per minute (OR 2.4; 95% CI 1.8-3.3), altered mental status (OR 2.1; 95% CI 1.4-3.1), and x-ray infiltrate involving >1 lobe (OR 1.9; 95% CI 1.4-2.7). The prevalence of hypox ranged from 3.2% in outpts with no risk factors to 50% in outpts with ≥ 4 risk factors; the prevalence ranged from 16.3% for inpts with no risk factors to 58.1% for inpts with ≥ 4 risk factors. Of the outpts who had ≥2 risk factors (9.7% of outpts tested had hypox), 69.6% did not receive PO or ABG.

Conclusions: ABG and PO use varied in an inverse relationship across study sites after adjusting for baseline differences in patient characteristics. Programs to reduce variation in ABG and PO use by specifying testing criteria and increase the use of PO among outpatients are likely to increase the detection of arterial hypox among outpts with CAP and improve the quality of care for all pts with this illness.

PHYSICAL AND SEXUAL ABUSE AMONG HIV-INFECTED WOMEN: INCREASED ILLNESS AND HEALTH CARE UTILIZATION JM Liebschutz, G Feinman, L Sullivan, MD Stein, and JH Samet, Boston Medical Center, Boston University School of Medicine, Boston, MA, Rhode Island Hospital, Brown University School of Medicine, Providence, RI

Purpose: A study of substance-abusing women showed an increase in self-reported medical illnesses associated with a history of physical and sexual abuse. Studies in other clinical settings have not shown such an association with victimization experience. We examined whether victimization experience was associated with increases in documente medical illness and health care utilization among a group of HIV-infected women.

Methods: Subjects were consecutive adult women seeking initial primary care for HIV infection at two urban hospitals: Boston City Hospital and Rhode Island Hospital. History of physical and sexual abuse was assessed in two ways: during a structured interview and by medical record evidence of interpersonal injury or sexual assault. Medical illness history, abstracted from hospital medical records, was divided into the following categories: episodic illness [e.g. bacterial pneumonia, cellulitis, pulmonary embolus], chronic illness [e.g. anemia, diabetes, hypertension], sexually transmitted disease(STD) [e.g. chlamydia, gonorrhea], chronic pain syndrome [e.g. low back pain, chronic pelvic pain], opportunistic infection [e.g. oral candidiasis, toxoplasmosis], cervical dysplasia [by pathology report], obstetrical history [gravida, live births, therapeutic abortions], number of injuries, and number of surgeries. Two periods were assessed: birth to study entry (ENTRY) and the subsequent 2 years (2 YR). Utilization measures, abstracted from medical records for the 2YR time period, included the number of hospitalizations, surgeries, ambulatory care and Emergency Department (ED) visits. We assessed the association between history of physical and sexual abuse (independent variable) and medical disease and utilization (dependent variables) by multiple regression analysis, while controlling for CD4 count, alcohol and drug use.

Results: Subjects were women (n=50), mean age 34, racially heterogeneous, and poor. Mean CD4 cell count was 400(± 300) /µl , and the predominant HIV risk behavior was heterosexual contact. Evidence of physical or sexual abuse was found in 34/50 (68%). Of those abused, 32% did not disclose the abuse during the interview. At ENTRY, episodic illness (OR 9.8, 1.6-58.5), chronic pain syndrome (OR 6.1, 1.3-29.6), and STD (OR 4.3, 1.1-17.1) were greater among those with abuse histories. At 2 YR, episodic illness (OR 9.1, 1.6-50.7) and chronic illness (OR 6.7, 1.3-35.3) were greater among those with abuse histories. At 2 YR, injuries (mean 3.8 vs. 0.6, p=0.02), ED visits (2.8 vs. 1.0, p=0.05) and hospitalizations (2.8 vs. 0.8, p=0.04) were all more likely in abused women. There were no significant differences in other variables examined.

Conclusion: Physical and sexual abuse is common among urban HIV-infected women. It is associated with increased medical illnesses and health care utilization. Future studies are needed to elucidate the mechanism of this relationship.

DECISION MAKING SURROUNDING GASTROSTOMY PLACEMENT CL Lewis, TS Carey, S Bernard, L Hanson, A Jackman, Division of General Internal Medicine and Epidemiology, University of North Carolina, Chapel Hill, NC.

Placement of non-surgical gastrostomy feeding tubes has rapidly increased over the last decade. Ethical concerns about the utilization in patients at the end of life have been raised since mortality in these groups remains high. We undertook this study to better understand the perceptions of health care providers, patients, and/or surrogates in making decisions to place gastrostomy feeding tubes.

Adults in a major teaching hospital who received a gastrostomy feeding tube were identified by daily procedural logs of gastroenterology and interventional radiology. Patients and/or surrogates were interviewed within several weeks of the procedure. Focus groups with nurses and speech therapists were conducted.

Speech therapists reported that requests for swallowing evaluations varied by service and physician. When involved they tried to educate patients and surrogates about swallowing abnormalities during their evaluation but did not participate in the decision making process unless requested by physicians. Nurses were concerned that patients and surrogates were not adequately informed about the procedure or trained in caring for the tube. Both groups reported that no formal educational materials were provided to patients/surrogates. To date, four patients and thirteen surrogates have been interviewed. Patients are 53 % white, 53 % female with an average age of 60. Preliminary data from the interviews contradicted the nurses' perceptions. Patients/surrogates reported that they had been told about the benefits (13/15) and risks (14/15) of the procedure. Most had discussions with medical practitioners about what life would be like with the feeding tube (12/15) and without it (12/15). Medical practitioners asked for their opinions (13/15) and asked if they understood the information (11/15) during these discussions. Only 1 of 17 believed that the doctor had made the decision alone. The rest reported they had made the decision or shared the decision with the doctor.

Patients and surrogates reported that they were well informed and actively participated in the decision for feeding tube placement. Despite discussing alternatives with providers, patients and surrogates chose to proceed with feeding tube placement. Although providers may have ethical concerns in placing feeding tubes in some patients, they facilitated shared decision making in patients who chose to proceed with feeding tube placement. Follow up interviews will determine the important question of patients' perceived quality of life with a feeding tube.

IS TIME SPENT WITH THE DOCTOR A DETERMINANT OF AMBULATORY INTERNAL MEDICINE VISIT SATISFACTION? C. T. Lin, Gail Albertson, Lisa Schilling, Lisa Cyran, Susan Anderson, Lindsay Ware, and Robert J. Anderson, University of Colorado Health Sciences Center, Denver, CO.

Background: The duration of ambulatory visits to primary care providers (PCPs) has declined dramatically. Decreasing duration of ambulatory encounters may be associated with PCPs feeling rushed, increased malpractice claims and diminished patient satisfaction.

Objective: To ascertain if a relationship exists between patient expectation of ambulatory visit time with internist PCPs and visit satisfaction.

Methods: Pre-visit, patients were queried as to their expectation of time to be spent with the PCP. Post-visit, patients estimated the amount of time actually spent, noted whether or not the PCP appeared "rushed" and rated their overall satisfaction with the visit. Post-visit, PCPs estimated time spent with the patient, patient satisfaction with the visit and whether or not they felt "rushed". In 12% of randomly selected encounters, the visit was timed.

Results: In 69% of 1,486 consecutive visits, patient pre-visit expectation was 20 minutes or less (10 minutes or less in 11% and 10-20 minutes in 58%). Patient and PCP post-visit estimates of time spent and actual time spent did not differ while significantly (p<.05) exceeding patient pre-visit time expectation. Patient visit satisfaction increased significantly (p<.005) as a function of increasing post-visit estimate of time spent with the PCP. When patient post-visit estimate of time spent was less than pre-visit expectation, visit satisfaction was significantly lower (p=0.05) independent of time spent. By self-assessment, PCPs felt rushed in 9.8% of encounters. Both PCPs and patients estimated significantly longer visit duration when PCPs felt "rushed" versus when they did not feel "rushed". Although PCPs estimated patient satisfaction significantly lower when they felt "rushed", patient self-rating of satisfaction was identical when PCPs did and did not feel "rushed". Patients indicated that PCPs appeared "rushed" in 3.3% of encounters. The presence or absence of patient perception that the PCP was "rushed" was not associated with differences in overall patient satisfaction.

Conclusion: These data indicate that patients generally spend more time with an internist PCP than they expect to spend prior to their ambulatory visit. Visit satisfaction appears related to not only quantity of time patients spend with PCPs, but also with whether the patients' pre-visit estimate of time expectation was met or exceeded. While PCPs feel "rushed" in a significant percentage of visits, patients perceived PCPs to be "rushed" less frequently and neither PCP nor patient perception of PCP being "rushed" impacted patient rating of visit satisfaction.

PATIENT PREFERENCES IN SCREENING FOR COLORECTAL CANCER
BS Ling, PC Schroy, and MA Moskowitz. Sections of General Internal Medicine and Gastroenterology, Boston University, Boston, MA.

An expert panel established by the Agency for Health Care Policy and Research and sponsored by the American Gastroenterological Association has recommended five comparable methods for colorectal cancer screening. The purpose of this study is to examine patients' preferences towards the comparable screening methods and the reasons for these preferences.

A survey instrument was developed and pilot tested which describes the five screening methods, including features such as the recommended frequency of testing, level of discomfort, complications, inconvenience, time to complete the test, accuracy of the test, and the need for further work-up for a positive test. This instrument was administered in an interviewer format to patients in a hospital-based general medicine practice. After reading and hearing a detailed description of the screening methods, patients were asked to select the method they prefer for colorectal cancer screening, evaluate the importance of the various features of the tests in influencing the decision, and rank the features in the order of importance. Inclusion criterion was age 40 to 75 years. Descriptive statistics were computed for patient preferences for specific methods of colorectal cancer screening and the test features that influenced the decision.

The survey instrument was administered to a total of 217 patients (76% response rate). Patients preferred fecal occult blood test (43%) or colonoscopy (40%) as the screening method of choice for colorectal cancer over flexible sigmoidoscopy (2%), combination of fecal occult blood test and flexible sigmoidoscopy (12%), or double-contrast barium enema (3%). Accuracy (54%) and discomfort (15%) were the most important considerations in the selection of a screening method. For those whom accuracy was the most important feature, colonoscopy (62%) was the most preferred screening method while patients in which discomfort was the most important feature selected fecal occult blood test (91%) more often ($p<.01$). Fecal occult blood testing was also preferred by those patients that considered frequency of testing, complications, or inconvenience as the most important test feature. Higher educated patients (60%) were more likely influenced by the accuracy of the test than those with a lower education level (48%) ($p<.05$). Statistical differences were not seen when comparing across age, gender, or race for the importance of test features.

Patients prefer fecal occult blood test or colonoscopy as the method for colorectal cancer screening. The preference for a certain screening method depends on the particular test features the patient values the most. By understanding which test features an individual patient values, health care providers can better make recommendations for a particular screening method to their patient. Ultimately, it is hoped that this would lead to improved patient satisfaction and compliance for colorectal cancer screening.

SOCIAL CLASS: A PREDICTOR OF SURVIVAL AND HEALTH PRESERVATION IN AN ELDERLY COHORT. J.A. Long, J.R. Ickovics, T.M. Gill, R.I. Horwitz. Yale University, New Haven, CT.

Although social class is an important determinant of health outcomes in middle-aged adults, relatively little is known about the effect of social class in the elderly and whether there are differences by gender. In this study we evaluated the relationship of social class to survival and to preservation of physical and cognitive function at 3 years in a previously investigated probability sample of 1,103 community-living persons, age 72 years and older. Social class was categorized as low, middle, and high based on participants' education, occupation, and income; data were complete for 579 women and 234 men. Preservation of physical and cognitive function were defined, respectively, as no change or improvement in activities of daily living (ADLs), and as less than a three point decline on a modified version of the Folstein Mini-Mental Status exam (MMSE).

At baseline, as social class increased, participants were increasingly likely to be white, and to have higher MMSE scores, and lower levels of anxiety and depression. At 3 years, both women and men of high social class had better outcomes relative to those of low and middle social class. The table below lists the number of persons in each category and the corresponding rates for each outcome.

	Survival		ADL preservation		MMSE preservation	
Class	Women	Men	Women	Men	Women	Men
Low	143 (83%)	37 (73%)	106 (77%)	21 (66%)	102 (80%)	17 (63%)
Middle	236 (84%)	68 (77%)	172 (76%)	52 (79%)	166 (81%)	40 (73%)
High	114 (92%)	9 (83%)	88 (81%)	68 (88%)	91 (89%)	58 (84%)

The results show that men had a monotonic gradient across levels of social class, while the effect in women was restricted to those in the highest social class. Furthermore, for survival and MMSE preservation women had better outcomes than men at each level of social class. In logistic regression analysis, after adjusting for demographic variables and medical and psychiatric comorbidity, these results were essentially unchanged, indicating that high social class was protective and had an independent effect on outcomes.

In conclusion, among community-living elderly, at baseline participants were significantly different by social class, which also acted as a strong and independent determinant of survival and health preservation. Moreover, the observed distinctive patterns by gender may indicate that the effects of social class on health should not be interpreted similarly for women and men.

HOW BEST TO MEASURE MEDICATION ADHERENCE? HH Liu, NS Wenger, C Golin, L Miller, RD Hays, K Beck, S Sanandaji, J Christian, T Maldonado, D Duran, A Kaplan. Dept of Medicine, University of California, Los Angeles, CA; University of North Carolina, Chapel Hill, NC; and Harbor/UCLA Medical Center, Torrance, CA.

Background: Adherence to medication is essential to optimal medical care and evaluation in clinical trials. This is particularly true in HIV therapy, where general consensus is that at least 85% of antiretroviral doses must be accurately taken to suppress HIV and prevent viral resistance. Despite a widespread need to measure adherence and many available methods, these have not been directly compared.

Methods: We compared adherence to antiretroviral protease inhibitor medication among subjects enrolled in an observational HIV trial using 3 different methods: Medication Event Monitoring System (MEMS) that records each instance of bottle opening, pill count (PC) and interview asking about doses missed in the past 7 days (INT). MEMS and PC information was obtained at visits with study nurses about every 4 weeks (WAVE); interview was performed only at WAVE 2. A "gold standard" adherence measure (BEST) was constructed from these 3 measures plus additional interview items by accounting for intra-WAVE medication changes, use of pill boxes and other medication administration devices, medication sharing and lost and misused bottles, tops and pills. We compared BEST, MEMS, PC and INT measures.

Results: Eighty-one patients (mean age 37, 80% male) participated in 314 WAVES; MEMS data were available for 303 (96%), PC for 294 (94%), and INT for 55 of 76 patients (72%). Mean BEST adherence was 80.4% (median 92.8%), mean MEMS 72.8% (median 88.3%), mean PC 86.0% (median 95.8%), and mean INT 93% (median 90%). Pearson correlation coefficients between BEST and MEMS, PC and INT were 0.69, 0.68 and 0.39, respectively. Correlation between MEMS and PC was 0.46, MEMS and INT was 0.28, and PC and INT was 0.54.

For 123 WAVES (39%), BEST adherence was <85%. Sensitivity (Sn) and specificity (Sp) of <85% adherence were as follows: MEMS Sn 100% and Sp 86%, PC Sn 70% and Sp 92%, and INT Sn 9% and Sp 97%. When MEMS data were missing, BEST was 56% (73% with <85% adherence), when PC was missing, BEST was 50% (75% with <85% adherence), and when INT was missing, BEST was 74% (52% with <85% adherence).

Conclusions: Interview measurement of adherence is inaccurate and for both clinical and research purposes should be supplemented by objective measures. Caution should be exercised with missing adherence measurements, even with intensive measurement methods, because missing data are highly likely to represent episodes of poor adherence. A measure combining multiple objective determinations permits comprehensive evaluation of medication adherence.

USE OF ANTICHLAMYDIAL ANTIBIOTICS AND RISK OF MYOCARDIAL INFARCTION. José A. Luchsinger, Ariel Pablos-Mendez, Charles Knirsch, Dan Rabinowitz, Sean Mota, Steven Shea. Division of General Medicine, Columbia-Presbyterian Medical Center, NY, NY.

Background: Chlamydia pneumoniae seropositivity has been linked to coronary artery disease (CAD), and small randomized clinical trials have found that anti-chlamydial antibiotics can reduce coronary events. Our objective was to see if use of antichlamydial antibiotics in the general population was associated with a lower rate of myocardial infarction (MI). **Methods:** We analyzed data from a Proprietary Managed Care Database comprising 377,398 enrollees of both sexes, aged 31 and over, who had 2 to 7 years of continuous health and drug benefits. Data were available on demographic characteristics, inpatient and outpatient diagnoses, and medication use. Use of antichlamydial antibiotics prior to MI or loss to follow-up was defined as use of a macrolide, a quinolone, or a tetracycline identified by national drug code, and was coded as a dichotomous variable. The outcome was MI (ICD-9 code 410). The covariates included age, gender, diabetes (DM), CAD, hypertension (HTN), hyperlipidemia (CHOL) defined by ICD-9 codes, and in the case of DM and CHOL, also by medication use. Crude and stratified analyses were tested using chi-square statistics. Multivariate analyses were performed using logistic regression. Time to MI or censoring was analyzed using a Cox proportional hazards model with antibiotic use as a time-dependent covariate. **Results:** The average age of the sample was 65 years; 44 % were male. The prevalences of the covariates were: DM 17.5%. CHOL 35.6%. CAD 22.3%. HTN 59.4%. The incidence of first MI in the period of observation was 4.6%. The incidence of use of antichlamydial antibiotics was 35.5%. The age and sex distributions were similar between those who used antibiotics and those who did not. DM, HTN, CAD, CHOL were more prevalent in the antibiotic group. The incidence of MI was 2.7 % in those who used antibiotics and 5.5% in those who did not.

The result of the multivariate analyses with logistic regression and Cox proportional hazards are summarized in the following table:

Variable	Odds ratio(95% CI)	Hazard ratio (95% CI)
Antibiotic	*0.37 (0.35-0.38)*	*0.35 (0.33-0.36)*
Age>65	1.72 (1.66-1.78)	1.46 (1.41-1.51)
Sex (male)	1.76 (1.71-1.82)	1.75 (1.69-1.80)
Diabetes	1.85 (1.79-1.92)	1.64 (1.59-1.69)
Hyperlipidemia	1.47 (1.42-1.51)	1.38 (1.34-1.43)
Coronary Disease	1.85 (1.79-1.92)	1.73 (1.67-1.78)
Hypertension	2.80 (2.68-2.93)	2.38 (2.28-2.48)

Conclusions: Use of antichlamydial antibiotics is associated with a decreased incidence of myocardial infarction in the adult general population.

HORMONE REPLACEMENT THERAPY: KNOWLEDGE OF ITS BENEFITS IS A GOOD PREDICTOR OF ACCEPTANCE. V Machicao, S Kamarei, F Alarcon, T Jones, S Madwar, B Larive and A Jaffer. Departments of General Internal Medicine and Biostatistics. The Cleveland Clinic Foundation. Cleveland, OH

Purpose: To explore the degree of knowledge women have about the risks and benefits of Hormone Replacement Therapy (HRT), and whether this knowledge will predict acceptance.

Methods: A cross-sectional survey was conducted in women older than 40 who visited the Outpatient Clinics of the Department of General Internal Medicine at our institution between the months of September and October 1997.

Women who agreed to participate were given an anonymous standard questionnaire to complete. Demographic data were collected for each participant. The knowledge of patients regarding HRT and cardiovascular disease, osteoporosis and breast cancer was assessed in each participant. Likewise their willingness to use HRT was evaluated.

Results: A total of 162 women completed the questionnaire. Of these 75 (46.3%) were 40 to 49 year-old, 46 (28.4%) were 50 to 59, 31 (19.1%) between 60 to 69 and 10 (6.2%) were older than 70. Of the 162 women, 65 (40.1%) were willing to use HRT, 30 (18.5%) refused to use HRT if offered while 67 (41.4%) were unsure about their willingness to use hormones.

Among the 65 women that were willing to use HRT, 52 (80%) reported that HRT protects against osteoporosis and 45 (69.2%) believed it protects against cardiovascular disease. Among the 30 women not interested in HRT 15 (50%) reported that HRT helps in osteoporosis prevention and 11 (36.7%) stated it protects against cardiovascular disease. The knowledge of the beneficial effects of HRT in osteoporosis and cardiovascular disease between users was better than between non-users ($p<0.005$). In both groups a comparable percentage reported that HRT increases the risk of breast cancer (44.6% vs. 46.7%).

Conclusions: Women's knowledge of the beneficial effects of HRT in the prevention of osteoporosis and cardiovascular disease are important predictors of hormone use. The concept of increased breast cancer risk with HRT use does not influence the use of hormones. These findings suggested that women's acceptance of HRT can be improved by increasing their knowledge via patient education.

SMOKING ABSTINENCE AFTER HOSPITALIZATION: PREDICTORS OF SUCCESS. TD MacKenzie, RI Gianani. Division of General Internal Medicine, University of Colorado Health Sciences Center, Denver, CO.

Objectives: To explore the relationship between baseline characteristics of hospitalized smokers and 6 month to 2 year self reported quit rates.

Methods: Consecutive adult smokers (n=154) admitted to the Medicine service of an urban public hospital were surveyed using a written questionnaire. The pharmacy database, a follow-up telephone survey, and medical records were used to characterize nicotine patch use and subsequent smoking abstinence.

Results: Among the 97 patients for whom current smoking status at least 6 months after discharge was recorded in the medical record and/or obtained by telephone survey, 16 (16.5%) were not smoking at last contact (mean follow-up 20 months). Factors associated with quitting include self-efficacy to quit within 1 week (OR 10.3, CI 3.0, 36.0) and within 6 months (OR 12.6, CI 2.6, 56.9), stage of change other than pre-contemplation (OR 5.8, CI 1.5, 21.9), Hispanic race (OR 3.7, CI 1.2, 11.1), receipt of nicotine patches at discharge (OR 3.6, CI 1.0, 12.8), patient belief that smoking was related to the admission (OR 2.9, CI 1.0, 9.0), and having a smoking-related admission diagnosis (OR 2.7, CI 0.9, 8.0). Nicotine dependence was not significantly associated with future abstinence. With a multivariate model adjusting for age, education level, race, gender, and all of the variables above, only Hispanic race (OR 4.8, CI 1.1, 20.2) and self-efficacy to quit (OR 11.1, CI 2.7, 45.4 for 1-week) remained associated with future abstinence.

Conclusions: These data suggest that the degree of self-confidence to quit within one week or within 6 months is strongly associated with future abstinence among hospitalized medical patients who smoke.

ETHNIC DIFFERENCES IN HORMONE USE IN PATIENTS PRESENTING TO A BREAST HEALTH CLINIC. AK Madan, C Barden, B Beech, K Fay, M Sintich, DJ Beech; Department of Surgery, Tulane University School of Medicine, New Orleans, LA.

Introduction:

Great debate over the effects of hormone use on breast cancer still exists. Whether hormonal use increases the risk of breast cancer or the risk of more invasive breast cancer still has not been determined. However, the beneficial effects of estrogen replacement such as the cardio-protective effects have been well documented. This investigation evaluates differences in the use of estrogen hormone supplements by ethnicity.

Methods:

Over a one year period, patients presenting to the Breast Health Center at Tulane University Medical Center for the first time where given a questionnaire (n = 675). Included in this survey were questions concerning birth control pill use, estrogen replacement therapy, and progesterone replacement therapy. Chi^2 analysis was used for statistical analysis.

Results:

Type of Hormone Use	AA	CA	P Value
Birth Control Pills	49%	63%	$p < 0.0005$
Estrogen Replacement Therapy	26%	44%	$p < 0.0005$
Progesterone Replacement Therapy	5%	20%	$p < 0.0001$

AA - African Americans; CA- Caucasians

Conclusions:

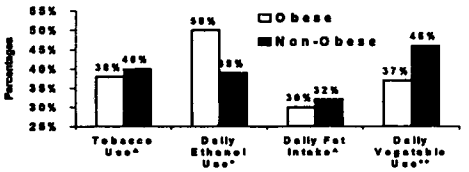
Differences in hormone replacement therapy might explain ethnic differences in breast carcinoma outcomes and that with cardiovascular disease. Estrogen replacement therapy is decreased in African Americans in our study populations. Further investigations may define on the reasons behind this ethnic difference and its relevance.

CHARACTERIZATON OF OBESITY IN WOMEN PRESENTING TO A HEALTH CLINIC. AK Madan, C Barden, B Beech, K Fay, M Sintich, DJ Beech, Tulane University School of Medicine, New Orleans, LA.

Obesity is a risk factor in a multitude of diseases including cardiovascular illness and breast cancer. While genetic factors have been determined to play a role in obesity, health beliefs and practices may also play a role. This investigation sought to characterize associated factors in obesity in women presenting to our breast health clinic.

Over a one year period, patients educated at our Health Center for the first time were administered a questionnaire. Included in this survey where questions concerning demographic data, tobacco use, ethanol use, dietary habits, height, and weight. The data was computed to determine the obesity by calculating the body mass index of each patient. Patients with obesity were compared with patients without obesity.

Five hundred ninety-three patients were evaluated. The overall prevalence of obesity was 46%. Ethnic distribution was African-American 47%, Caucasians 44%, and Others 9%. Higher percentage of African-Americans (63%) were obese compared to Caucasians (30%) ($p < 0.0001$).



*(^p = NS; *p < 0.008; **p < 0.03)*

Our investigation demonstrated that obesity was more prevalent in African-Americans in our study population. Lifestyle issues that correlated with obesity were daily alcohol and low vegetable intake. Targeted programs which optimize positive dietary health behaviors may lower the rates of obesity. These programs need to focus on not only dietary changes such as decreasing daily fat and increasing daily vegetables, but also changes in lifestyles such as decreasing daily alcohol use.

DIFFERENCES BETWEEN SURGEONS AND ONCOLOGISTS IN BREAST CANCER MANAGEMENT. M Mancuso, A Scaramucci, A Ash, R Boss, MA Moskowitz, KM Freund, Section of General Internal Medicine, Boston Medical Center, Boston, MA .

Previous work has documented substantial variation in breast cancer management. We asked physicians how they would manage patients in videotaped clinical scenarios, in order to examine the influence of physician specialty (surgery and medical oncology) on the diagnosis and treatment of breast cancer.

Oncologists and surgeons were asked to view two 5-minute videotapes, the first of a woman presenting with a possible breast mass and the second of a woman presenting with stage IIA breast cancer and equivocal estrogen receptors. Both scenarios are without clear guidelines for management. Sixteen versions of each videotape were professionally produced using actresses and holding all the clinical features of the case constant. Each physician viewed one of 16 versions of each scenario as specified by a factorial design, where we systematically varied the patient's age (65 vs. 80 years), race (black vs. white), socioeconomic status (high vs. low), health status (no comorbidities vs. diabetes and hypertension), and mobility (agile vs. frail). A total of 192 physicians, 96 male and 96 female surgeons and medical oncologists, randomly selected from 3 areas across the United States, were asked their management recommendations for the case viewed. Chi square analyses of 2X2 tables and Breslow-Day tests of homogeneity were used to test for differences by physician specialty.

When evaluating a possible breast mass we found oncologists gave higher estimates of the probability of cancer than surgeons (43% v. 33%, p=.009). However, surgeons were more likely than oncologists to perform a biopsy (78% v. 58%, p=.003), and specifically more likely to perform needle biopsies (56% v. 33%, p=.002). When recommending a management plan for a stage IIA breast cancer, oncologists were more likely to perform axillary node dissection (75% v. 61%, p=.04), and to recommend adjuvant therapy (78% v.66%, p=.07). Oncologists were more likely than surgeons to recommend chemotherapy (51% v. 18%, p<.001), while surgeons were marginally more likely to recommend tamoxifen (57% v. 43%, p=.07). We also found significant interactions between the physician's specialty and their recommendations depending on the patients' age, health status, and mobility.

Physician specialty influenced the evaluation and treatment of breast cancer. In evaluation, oncologists estimate a higher likelihood of breast for the patient, while surgeons are more likely to recommend and perform biopsies. In treatment, oncologists are more likely to recommend complete staging and chemotherapy than surgeons, while surgeons are more likely to recommend the use of tamoxifen.

RACIAL DIFFERENCES IN BLOOD PRESSURE CONTROL IN THE ANTIHYPERTENSIVE AND LIPID LOWERING TREATMENT TO PREVENT HEART ATTACK TRIAL (ALLHAT). KL Margolis, WC Cushman, JT Wright, RH Grimm, CE Ford, JA Cutler for the ALLHAT Research Group, Hennepin County Medical Center, Minneapolis, MN.

Compared with whites, African Americans (AA) have a higher prevalence of hypertension, higher blood pressure (BP) on antihypertensive treatment, and an increased burden of hypertension-related morbidity. ALLHAT is a double-blind randomized controlled trial in high-risk hypertensives over the age of 55 comparing the effects of chlorthalidone, amlodipine, doxazosin and lisinopril on coronary events. Open label treatment with atenolol, clonidine, reserpine, and hydralazine may be added as necessary to achieve the BP treatment goal of <140 systolic (SBP) and <90 diastolic (DBP). There are 42,452 participants in ALLHAT, of whom 28,494 have completed 12 months of follow-up. Of these, 34% are non-Hispanic AA, 13% are Hispanic and 53% are White or other non-Hispanic ethnicity. At the screening exam, mostly on antihypertensive drugs, BP was 145/84 in non-Hispanic AA, 147/86 in Hispanics and 146/83 in non-Hispanic Whites/Others. BP means, changes and control rates at 12 months are shown:

	AA (N=9,709)	Hispanic (N=3,706)	White/Other (N=15,079)
SBP Mean, mm Hg	140.5	137.4	137.8
SBP Change, mm Hg	-4.9	-9.5	-8.1
SBP <140, %	51.7	56.7	59.2
DBP Mean, mm Hg	80.9	79.5	78.1
DBP Change, mm Hg	-3.3	-6.2	-4.6
DBP <90, %	80.1	84.0	89.2
BP <140/90, %	48.4	53.7	57.3

Because of the large sample size, the differences between Whites/Others vs. AA and Hispanics are statistically significant (p<0.001) for each follow-up measure except for mean SBP in Hispanics. Although BP was similar at entry, AA had less decrease in SBP and DBP, and had substantially lower BP control rates than whites. While Hispanics had the highest SBP and DBP at entry, these were offset by greater BP changes at 12 months. BP control rates in Hispanics were intermediate between AA and whites. The higher SBP and DBP in AA were not explained by less intensive drug treatment. In fact AA were more likely than other groups to be receiving the highest dose of blinded medication, and were equally likely to be receiving a second or third step protocol medication. Further analyses, including stratification by treatment at baseline, co-morbidity, and blinded medication class, will be needed to explain racial variations in BP levels and control in ALLHAT.

QUALITY OF LIFE IN AMBULATORY VETERANS WITH ALCOHOL DISORDERS: DOES ABSTINENCE MATTER?. DL Mansell, A Spiro III, C Hankin, A Lee, and L Kazis. Division of General Internal Medicine, University of Alabama at Birmingham, Birmingham, AL, and Bedford VA HSR&D Field Program, Bedford, MA.

Purpose: Although health-related quality of life (HRQOL) is an important outcome in the treatment of alcohol disorders (AD), little is known about the role of abstinence in HRQOL for primary care patients with AD. We describe the roles of abstinence in HRQOL for veterans with AD in ambulatory care.

Methods: Cross-sectional sample and survey of 6829 males who use VA ambulatory services in the greater Boston area. AD was classified as current AD (CAGE>=2 and having had a drink in past year), abstinent (CAGE >=2 and no drink in past year) and no AD (CAGE score of 0 or 1 and no prior treatment for substance abuse). Treatment was defined as any patient report of treatment. HRQOL was measured with the SF-36 from the Medical Outcomes Study; two summary scores, PCS(physical component summary scale) and MCS(mental component summary scale) are expressed as linear T scores with a mean of 50 and standard deviation of 10 in a normal population. Higher scores denote better function. Patients with current AD completed the alcohol section of the QDIS, a diagnostic interview for DSM-III-R. ANCOVA adjusted for multiple comparisons was used to adjust PCS and MCS for age, marital status, education, physical and psychiatric comorbidities.

Results:2425 of 4236 (57%) eligible patients completed the survey. 311 had current AD, 193 had former AD, 1454 had no AD (120 gave a history of treatment but CAGE<2, and 347 had incomplete data). 81% of those with current AD had alcohol abuse or dependence by QDIS criteria. Patients with current AD were younger and less likely to be married than those with no AD. There were no differences with regard to race, education, or income between the three groups. Adjusted PCS and MCS scores are shown below.

	Current AD N=311	Abstinent N=193	No AD N=1454
PCS	37.4	37.7	36.2
MCS	43.5[A,B]	46.3	46.7

A p<0.05 compared to abstinent, B p<0.001 compared to those with no AD

Conclusion: Patients with AD have physical function similar to that of patients without AD. However, patients with current AD have poorer mental health status than do patients without AD. Abstinent patients with AD have mental health status comparable to that of patients without AD, which suggests that mental health status improves with abstinence. More than a third of ambulatory VA patients with a history of AD achieved abstinence.

EFFECTS OF PROVIDING GERIATRICS OVERSIGHT ON IMMUNIZATION RATES OF OLDER PERSONS IN A TEACHING CLINIC. S. Master, M. Lindberg. Department of Medicine, Hartford Hospital, Hartford, CT.

Purpose: To study the effects of providing geriatrics oversight of medical residents and APRN's on the rates of immunizations of older patients in an urban teaching clinic.

Methods: Ninety-six charts of patients older than 70 years were randomly selected and audited for documentation of vaccination status (influenza, pneumococcal, tetanus) prior (November, 1997) to initiation of geriatrics oversight. Oversight consisted of a daily review of charts of older patients to be seen that day with brief written recommendations left on preventive care issues. A geriatrician was always available in clinic or by telephone to answer questions. One hundred randomly selected charts of patients older than 70 years were audited one year after the inception of geriatrics oversight (December 1998). Pre and post rates of vaccination are compared. The outcomes measures of total number of influenza, pneumococcal and tetanus vaccinations administered each month were recorded from January 1996 to December 1998 and plotted as control charts to determine if geriatrics oversight had an effect on the total number of vaccinations administered in the clinic.

Results: The documentation of influenza vaccination rate rose from 38.5% of patients prior to initiation of geriatrics oversight to 55% one year later (p=0.02). Pneumococcal vaccination increased from 31.3% to 67% (p=0.02) over the same period. The rate of documented tetanus vaccination increased from 17.7% to 45% (p=0.01). Control charts of the total number of either influenza, pneumococcal, or tetanus vaccinations administered monthly all showed a significant (≥ 3 σ above mean) improvement following initiation of geriatrics oversight.

Conclusions: Geriatrics oversight, consisting of approximately 30 minutes spent reviewing charts of older patients to be seen each day and writing a brief list of simple recommendation for preventive care, can significantly impact in a positive manner the rates of influenza, pneumococcal and tetanus vaccination of older patients. Control charts suggest that the oversight project also increases the number of vaccinations given to younger patients at risk as demonstrated by the large overall increase in total doses administered.

NATIONAL ESTIMATES OF HIV-RELATED SYMPTOMS. W Mathews, JA McCutchan, MF Shapiro, SA Bozzette for the HIV Cost and Services Utilization Study Consortium. UC San Diego and Los Angeles Departments of Medicine, VA San Diego Healthcare System, and RAND Health, Santa Monica, California.

Purpose: To estimate the prevalence, intensity, and variation of HIV-related symptoms in a nationally representative of HIV-infected adults receiving medical care.

Methods: During the first 2 months of 1996, 76% of a multistage national probability sample of 4042 adults (≥ 18 years) with HIV infection were interviewed. Participants endorsed the presence and degree of bothersomeness of 14 HIV-related symptoms during the preceding 6 months. Gender standardized symptom number and intensity indices (range 0-100) were constructed and transformed to decile ranks (1=fewest symptoms/bother, 10=most symptoms/bother). After incorporating sampling weights, distributions were compared according to selected characteristics using ordinal logit modeling implemented in Stata software.

Results: Prevalence of specific symptoms in the reference population of 231,400, by rank order, was: fever/night sweats (51%), diarrhea (51%), nausea/anorexia (50%), dysaesthesias (49%), severe headache (39%), weight loss (37%), vaginal symptoms (36% of women), sinus symptoms (35%), eye trouble (33%), cough/dyspnea (30%), thrush (27%), rash (24%), oral pain (24%), Kaposi's sarcoma (4%). After adjustment for CD4 count, both symptom number and intensity varied significantly ($p<0.05$) by teaching status of care setting, exposure/risk group, income, employment status, insurance category, year of HIV diagnosis, clinical stage. The most symptomatic patients were cared for at teaching hospitals, had histories of injection drug use and were of low income. They were also on disability, on Medicare, were diagnosed with HIV between 1978-88, and had clinical AIDS.

Conclusions: The burden of HIV-related symptoms is substantial and disproportionately borne by patients who are poor, acquired HIV through injection drug use, and are cared for at teaching hospitals.

ACCULTURATION OF END-OF-LIFE DECISION MAKING ATTITUDES: CROSS-CULTURAL SURVEY IN NAGOYA AND LOS ANGELES. S Matsumura, S Bito, HH Liu, S Fukuhara, K Yamamoto and NS Wenger. University of California, Los Angeles, CA; National Tokyo Medical Center, Tokyo, Japan; University of Tokyo, Japan.

Background: End of life decisions may be difficult for Asian Americans because of differences between Western and Asian medical decision making models. Little is known about how and to what extent attitudes about end-of-life care change with acculturation. We explored these attitudes in Japanese and Japanese-American cohorts.

Methods: Based on focus groups conducted in the US and Japan, a self-administered questionnaire about end-of-life attitudes was developed and then culturally translated. This survey was administered to 3 samples: community center members in Nagoya, Japan (JJ); Japanese-speaking Japanese-Americans (JJA) in Los Angeles derived from a Japanese social club, social service center and apartment complex; and English-speaking Japanese-American (EJA) members of Los Angeles Japanese American community centers. Using 5-point scales, the survey asked about physician-patient relationship, preference for autonomy in medical decisions, willingness to live in adverse health states, and attitudes toward advance care planning and withdrawing care. A scenario elicited attitudes toward information disclosure to a cancer patient.

Results: Overall, 539 of 589 EJA (91%), 310 of 415 JJA (75%) and 304 of 315 JJ (91%) responded. Because groups differed in mean age (JJ 64 years, JJA 74, EJA 63) and gender (JJ 46% male, JJA 35%, EJA 66%), all analyses were adjusted for age and gender. JJ respondents were less likely to have a regular doctor (JJ 66%, JJA 93%, EJA 97%, p=0.001), and trusted this physician less to make decisions (JJ 3.7, JJA 4.1, EJA 4.4, p=0.001). EJA desired greater autonomy in decision making (JJ 2.3, JJA 2.0, EJA 3.1, p=0.001). Few respondents had discussed end-of-life issues with their physician (JJ 4%, JJA 6%, EJA 12%, p=0.001), and about half of those who had not had a discussion desired one (JJ 59%, JJA 59%, EJA 44%, p=0.001). All preferred a group decision making model rather than individual decisions (JJ 81%, JJA 78%, EJA 78%, p=0.7).

The disclosure of a cancer diagnosis to a patient was increasingly acceptable with acculturation (JJ 55%, JJA 80%, EJA 96%, p=0.001), whereas disclosure to a family member was universaly accepted (JJ 96%, JJA 97%, EJA 97%, p=0.7). While there was no difference in willingness to tolerate adverse outcomes (JJ 1.9, JJA 1.8, EJA 1.9, p=0.7), EJA were more inclined to participate in advanced care planning (JJ 2.8, JJA 2.5. EJA 3.7, p=0.001) and to withdraw care (JJ 3.3, JJA 3.4, EJA 3.9 p=0.001).

Conclusion: Group-oriented decision-making for end-of-life care and unwillingness to live in future adverse health states is similar among Japanese Americans and Japanese. Autonomy, information disclosure, and acceptance of advance care planning and care withdrawal are modified by acculturation. Physicians should recognize that although the group decision model remains intact, disclosure and advance care planning acculturate

EARLY ADHERENCE PATTERNS AND VIROLOGIC OUTCOMES AFTER INITIATION OR CHANGE OF ANTIRETROVIRAL THERAPY. M Mar-Tang, C Noonan, C Ballard, B Colwell, K Abulhosn, T Wall, W Mathews. University of California, San Diego Medical Center, San Diego, CA

Objectives: (1)To estimate prevalence, patterns, and predictors of early adherence, (2) to estimate adherence effect on short term virologic outcomes in HIV primary care setting.

Methods: Eligibility: HIV-infected adults referred for antiretroviral therapy (ART) initiation or regimen change to ART monitoring clinic. Measures: Baseline and 30 day survey, CD4 and HIV viral load (VL); MEMS monitoring of 1 component of ART regimen for 4 weeks.

Results: Between April-August 1998, 70 enrolled patients had analyzable MEMS data. Of these, 3 were excluded because of early adverse drug reactions(ADRs), 1 because of voluntary withdrawal. Of the remaining 66, 30d viral response was available for 60. Baseline characteristics: 10% female; 40% nonwhite; HIV risk factor: 56% MSM, 11% IDU; median age 37; baseline CD4 median= 172; HIV VL median=4.8 log. 19% were ART naive and 81% were referred for regimen change. Adherence(d1-d28): mean 84.5%, median 91.2%, range 10.7%-100%. Mean adherence was ≥80% in 44 (72%) and ≥90% in 33 (54%). Mean VL responses (30d – baseline), by adherence group were: -0.81 log (adherence 10.7%-79%), -0.98 log (adherence 80-89%), -1.30 log (adherence ≥90%). Controlling for baseline VL, least square mean VL responses were: -0.66, -1.29, and –1.28 log, respectively ($F_{2,57}$=2.36,p=0.10). By week number (1-4), mean adherence was 90.1%, 85.1%, 82.9%, and 80.4%, respectively, and the proportion with ≥90% adherence was 70.8%, 55.4%, 58.5%, and 55.4%. Factors not associated with adherence were: age, HIV risk factor, gender, number of dosing events/day, and ART regimen complexity. Prior ART failure (p=0.03) and non-white race (p=0.05) were associated with poorer adherence.

Conclusions: Over first 4 weeks of ART, target adherence levels were not achieved in 28% (>80%) to 46%(>90%), and declined each week. VL response was better in those with at least 80% adherence.

ASYMPTOMATIC PERIPHERAL ARTERIAL DISEASE IS INDEPENDENTLY ASSOCIATED WITH IMPAIRED LOWER EXTREMITY FUNCTIONING: THE WOMEN'S HEALTH AND AGING STUDY. MM McDermott, L Fried, E Simonsick, S Ling, JM Guralnik. Northwestern Univ Medical School Chicago IL, Johns Hopkins Univ Medical School, Baltimore MD, National Institute on Aging, Bethesda MD.

Background: Lower extremity peripheral arterial disease (PAD) is common among older, community dwelling men and women. Available data suggest that PAD may frequently be asymptomatic. We report the relationship between asymptomatic lower extremity arterial ischemia and lower extremity functioning among older, disabled women participating in the Women's Health and Aging Study. **Methods:** The ankle brachial index (ABI), a measure of PAD severity, and measures of upper and lower extremity functioning were performed among participants in the Women's Health and Aging Study (WHAS). The WHAS is a prospective observational study of disabled women age 65 and older living in and around Baltimore. Medical record review and a primary care physician questionnaire were used to verify patient reported comorbidities. **Results:** Of 933 WHAS participants with ABI ≤ 1.50, 328 (35%) had an ABI < 0.90, consistent with PAD. Sixty-three percent of PAD participants and 63% of participants without PAD had no exertional leg pain. A subset of results for WHAS participants without exertional leg pain are as follows:

	ABI < 0.40 (n=48)	ABI 0.40-0.90 (n=150)	ABI 0.90-1.50 (n=376)	Trend p value
Walking speed (meters/second)	0.76 ± 0.33	0.84 ± 0.40	0.98 ± 0.42	<0.001
Standing balance score (0-4 scale, 4 = best)	1.77 ± 1.22	1.76 ± 1.31	2.23 ± 1.34	<0.001
# times leaving home per week	5.26 ± 4.99	5.45 ± 4.69	6.80 ± 4.96	0.005

In multivariable analyses controlling for age, race, and comorbidities, ABI was independently associated with walking velocity (0.04 meters/second/0.40 units ABI, p=0.016), standing balance score (0.21/0.40 units ABI p=0.016), number of times leaving the neighborhood per week (0.041/0.40 units ABI, p=0.038), and other measures of lower extremity functioning. In contrast, we found no significant relationship between ABI and upper extremity functioning. **Conclusion:** Asymptomatic PAD is common and is measurably and independently associated with impaired lower extremity functioning among community dwelling disabled women.

"COUMADIN CARE" (CC): A PRIMARY CARE, MULTI SITE, INNER CITY BASED FEASIBILITY STUDY IN A MANAGED CARE SETTING. J McCauley, MJ McGuire, A Lu, MW Jenckes, AM Warwick . Department of Performance Improvement, Johns Hopkins Medical Service Corporation, Baltimore, MD.

Background Coumadin (warfarin) is increasingly used in clinical practice to decrease potentially fatal thromboembolic events. Despite clear guidelines for frequency of lab checks and goal lab levels (INR 2-3.5), coumadin continues to be frequently associated with serious side effects and preventable hospitalizations in the US and in our practices. Studies have shown that hospital based or pharmacist run coumadin clinics with improved monitoring can decrease hospitalizations. A primary care, multi-site, inner city, cost effective, education approach to improve outcomes has not been reported. We implemented patient and clinician education programs at six inner city primary care practices, with no-show rates up to 36%, to improve patient knowledge, regular lab visits and numbers within goal INR and decrease preventable adverse outcomes. We are reporting our preliminary results on feasibility and effectiveness.

Methods We trained office site nurses and clinicians with guidelines and protocols. Patients received individual, 45 minute Coumadin education program by a RN at their site. One nurse at each site had primary responsibility for the program at that site; doctors and nurse practitioners made dosage changes. We used our regular laboratory (no rapid check monitors) to minimize cost. Starting in October 1998, office managers and coumadin nurses received feedback as to number of educated patients, number within goal INR, number with adverse events.

Results Of the 278 eligible, inner city patients, 245 (88%) received education in an eight month period. Of these, 47% were male, 57% were $\geq$ age 65, 62% were African American, 49% rated their health as fair or poor. Before education, 24% did not know they should come in monthly for lab visits; 61% did not know their goal INR.

After implementation, 73% of patients came in for lab visits in October, 73% in November and 84% in December. Percentages within goal INR were 39%, 36%, and 44% respectively for the 3 months. Collection of baseline data (before the program) is ongoing. In the 8 months of the program, only 1 potentially preventable coumadin related hospitalization occurred in-patients enrolled in CC as compared to 10 in the 8 months before. Nurses were able to carry out the CC in addition to regular responsibilities; only one FTE had to be hired.

Conclusions A primary care, multi-practice, inner city coumadin program run primarily by designated, trained nurses is feasible even with little additional staff. The program was able to individually educate the majority of patients and appears to decrease preventable Coumadin related hospitalizations. However the percentage of patients within goal INR is suboptimal which may reflect a deficiency in clinician adherence to the INR guidelines. Additional clinician feedback and education is planned to improve clinician compliance with guidelines.

PATIENT DEMOGRAPHICS AND KNOWLEDGE IN AN 18 SITE PRIMARY CARE ANTICOAGULATION MONITORING PROGRAM. MJ McGuire, J McCauley, MW Jenckes, A Lu, AM Warwick, Department of Performance Improvement, Johns Hopkins Medical Services Corporation, Baltimore, MD.

Background The Johns Hopkins Medical Services Corporation (JHMSC) is a managed care organization with 18 primary care sites staffed by 75 primary care physicians and 50 medical residents caring for 115,000 patients. Six inner city practices care for 48,000 patients; the missed appointment rate for city practices is up to 36%. In 1997 the JHMSC initiated a system-wide nurse-run anticoagulation monitoring program (Coumadin Care, CC) designed to (1) establish a patient database (2) assess patient and clinician education (3) improve quality of care for this population, in response to preliminary studies demonstrating need for these interventions.

Methods Patients were identified by review of pharmacy, encounter and lab databases and by physician-referral; databases could identify only about half of patients ultimately enrolled. At baseline, physician satisfaction with delivery of care to this population was measured and patient education and demographics were assessed. A disease management process, including patient and physician guidelines-based education, outreach, and reporting protocols were initiated and central data collection for outcomes evaluation was established.

Results After the first 8 months, 384 patients have been enrolled in CC out of 422 eligible (91%); 245 (64% of all enrollees) were in the city practices. Diagnoses in anticoagulated patients in the city practices were 32% atrial fibrillation, 11% cardiomyopathy, 9% DVT, 8% prosthetic valve, 7% PE, and 33% other. Baseline demographics were completed for 356 patients (93%): 52 % were male, 21% lived alone, 18% completed less than 8th grade, 42% were black, 9% admitted problems getting to appointments (1/5 transportation related) 20% admitted reading problems, 42% rated their health as fair or poor. Baseline patient knowledge indicated a significant deficit; 28% did not know how often to come in for INR checks and 57% did not know their goal INR. There were significant differences in demographics between city & non-city populations in all areas except education. Interestingly, 89% of patients rated their anticoagulation related care as very good to excellent before initiation of the CC program.

Conclusion We studied the demographics and knowledge of anticoagulated patients from a group practice caring for inner city as well as non-city patients. Baseline data revealed more city patients lived alone, were African American, had problems keeping appointments, rated health as poor, admitted reading problems, and did not know goal INR, than non-city patients. Both groups needed more education. Results of patient knowledge after implementation of CC are being assessed.

LEFT VENTRICULAR MASS IN TYPE II DIABETES. PS Mehler and SL Biggerstaff, Division of General Internal Medicine, Denver Health and Colorado Prevention Center.

The relative mortality from cardiovascular disease is markedly increased in type II diabetic patients. Compared with the general population, increases in left ventricular mass (LVM) may contribute to this increased cardiovascular risk. The purpose of our study was to assess the affect of blood pressure control, in type II diabetic patients, on the progression of LVM. A cohort of 199 subjects with type II diabetes, participating in the prospective Appropriate Blood Pressure Control (ABCD) trial, had serial echocardiogram performed at baseline and at the five years post-randomization. Left ventricular hypertrophy (LVH) was quantified using M-mode echocardiographic criteria as left ventricular mass (grams) standardized for height (meters). Chi-square analyses and two-sample t-test were used. A p-value less than 0.05 was considered statistically significant. One hundred subjects (50.3%) had LVH at baseline, and 99 (49.7%) did not. Five years post-randomization, despite moderate or intensive blood pressure control, 124 subjects had LVH: 80 patients maintained their LVH and 44 developed it. Intensive blood pressure control (diastolic blood pressure of less than 75 mm Hg) did not predict less LVH compared with moderate control (diastolic blood pressure of 80-89 mm Hg) ($p = 0.656$). The change in LVM over five years from baseline was 17.1 ± 3.7 g/m^2 in the moderate group and 14.9 ± 3.59 g/m^2 in the intensive group ($p = 0.661$). Similarly, the type of antihypertensive medication utilized (angiotensin converting enzyme [ACE] inhibitor or calcium channel blocker [CCB]) did not predict a more favorable change in LVM (ACE-I 16.3 ± 3.5 v. CCB 17.0 ± 3.8) ($p = 0.888$). Our findings suggest that there may be a blood pressure independent increase LVM in type II diabetic patients.

CARDIOVASCULAR DISEASE PREVENTION PRACTICES IN AN ACADEMIC MEDICAL CENTER FOR PATIENTS WITH TYPE 2 DIABETES. James B. Meigs, Enrico Cagliero, Patricia Murphy-Sheehy, David M. Nathan, Daniel E. Singer, Michael J. Barry, Massachusetts General Hospital, Boston, MA

Background: Cardiovascular disease (CVD) is the primary cause of morbidity and mortality among patients with type 2 diabetes, but little is known about primary or secondary CVD prevention practices by physicians caring for these patients.

Methods: Patients visiting a teaching general medicine practice or the diabetes clinic at a large urban teaching hospital March 1996–August 1997 were identified with ICD-9 diagnoses 250.x0. Of 2862 patients, 789 were randomly selected for office chart review; of these, 601 met inclusion criteria (type 2 diabetes diagnosed prior to March, 1996). Patients were classified with CVD if charts noted coronary heart disease (CHD), peripheral vascular disease (PVD), stroke, or TIA. Significance of differences between patients with CVD (2° prevention) or without (1° prevention) were assessed using chi-square or t-tests.

Results: Of 601 patients, 59% had CVD (45%, CHD; 25%, PVD; 11%, stroke or TIA). Patients with CVD were older (68 years with CVD vs. 59 years without, p=0.0001), had diabetes longer (9 vs. 6 years, p=0.0001), were more likely to be on insulin (48 vs. 31%, p=0.001), to have nephropathy (17 vs. 4%, p=0.001), hypertension (HTN; 79 vs. 65%, p=0.001), or hyperlipidemia (54 vs. 42%, p=0.003), but equal proportions were women (40 vs. 44%), current cigarette smokers (11 vs. 10%) or had HbA1c levels <7% (32 vs. 31%). Patients with CVD were more likely to be on aspirin (49 vs. 21%, p=0.001) or beta-blocker (42 vs. 14%, p=0.001) therapy. Among patients with HTN, those with CVD were more likely to be on an antihypertensive medication (88 vs. 80%, p=0.02), but of those with HTN on medication, patients with CVD were equally likely to have a most recent BP <130/85 mm Hg (20 vs. 18%). Among patients with hyperlipidemia, those with CVD were more likely to be on a lipid-lowering medication (63 vs. 46%, p=0.004), and of those with hyperlipidemia on medication, patients with CVD were more likely to have a most recent LDL cholesterol level <100 mg% (31 vs. 11%, p=0.01). Among smokers, those with CVD were not significantly more likely to have smoking cessation counseling recorded in the chart during the 18 month sampling frame (28 vs. 17%, p=0.4).

Conclusion: Patients at this academic medical center with type 2 diabetes and CVD were consistently more likely to receive appropriate CVD prevention interventions than patients without CVD, but absolute rates of 2° prevention practices or achievement of recommended treatment goals were lower than anticipated based on their evidence-based expected benefit. Because patients with diabetes but without clinical CVD are also at very high risk for CVD events, their very low rates of prevention practices or achievement of treatment goals also represent an important target of opportunity to reduce CVD morbidity and mortality in type 2 diabetes.

USE OF A SIMPLE CLAIMS-BASED ALGORITHM TO IDENTIFY TYPE 2 DIABETES PATIENTS FOR INTENSIVE MANAGEMENT. James B. Meigs, Enrico Cagliero, Patricia Murphy-Sheehy, David M. Nathan, Michael J. Barry, Daniel E. Singer, Massachusetts General Hospital, Boston, MA.

Background: Claims databases are increasingly used to identify and risk-stratify patients with chronic disease. We assessed a simple ambulatory claims-based algorithm identifying patients with type 2 diabetes who might benefit from more intensive management (IM).

Methods: Patients visiting a teaching general medicine practice (75% of sample) or the diabetes clinic (25%) at a large urban teaching hospital March 1996–August 1997 were identified with ICD-9 diagnoses 250.x0. Of 2862 patients identified, 789 were randomly selected for office chart review, and of these, 601 met inclusion criteria (type 2 diabetes diagnosed prior to March, 1996). An additional 103 randomly selected charts without claims for diabetes were reviewed to confirm the absence of diabetes. Patients were identified for possible IM if there was a claim for hospitalization for any reason and a claim for diabetes with complications (250.10–90) during the sampling period, or non-IM otherwise. Significance of differences between groups were assessed with chi-square, Wilcoxon rank-sum, or t-tests.

Results: Sensitivity (97%) and specificity (87%) of ambulatory billing claims for chart review-confirmed type 2 diabetes were excellent. Of 601 eligible patients, 16% were classified as IM. IM patients were older (66 years IM vs. 64 years non-IM, p=0.0001), had diabetes longer (10 vs. 7 years, p=0.0002), were more likely to be white (92 vs. 80%, p=0.004), to be on insulin (61 vs. 37%, p=0.001), to have microvascular complications (68 vs. 45%, p=0.001), or cardiovascular complications (81 vs. 54%, p=0.001), but equal proportions were women (39 vs. 42%) or current smokers (11 vs. 11%). Equal proportions of IM and non-IM patients had a most recent HbA1c <7% (30 vs. 32%), LDL-C <130 (54 vs. 60%), blood pressure <130/85 (26 vs. 24%), an eye exam within 18 months (53 vs. 48%), but more high-risk patients had a foot exam (77 vs. 48%, p=0.001). IM patients had a greater median number of office visits (6 vs. 4, p=0.0001) and blood glucose (7 vs. 3, p=0.0001) and cholesterol (2 vs. 1, p=0.005) tests.

Conclusion: Ambulatory claims reliably identify patients with type 2 diabetes. Patients with claims for diabetic complications and a recent hospitalization comprise a reasonably-sized subset of type 2 diabetes patients having a greater burden of all diabetes complications and evidence of more intense ambulatory utilization than patients with one or none of these conditions. Relatively low absolute rates of recommended preventive services or adequate metabolic control among IM patients suggests they are likely to benefit from intensive case management to improve risk factors for worsening or additional diabetic complications or recurrent hospitalization. However, a substantial fraction of non-IM patients also had evidence of complications and poor risk factor control, indicating a more global need for improved diabetes care practices.

A RANDOMIZED CLINICAL TRIAL TO ASSESS THE OUTCOMES AND COSTS OF LEVOCABASTINE EYE DROPS VERSUS LORATADINE IN THE TREATMENT OF SEASONAL ALLERGIC RHINOCONJUNCTIVITIS. J Menzin, M Friedman, R Cavanaugh, L Boulanger, and B Lewis, Boston Health Economics, Inc., Billerica, MA; the Fallon Clinic and Focus Managed Research, Inc., Worcester, MA.

Background: Combination therapy with levocabastine eye drops and nasal spray has been shown to be as efficacious as systemic therapy. However, it is unknown whether a simpler regimen involving levocabastine eye drops alone would be as effective as the oral agent loratadine in the treatment of allergic rhinoconjunctivitis, or how in typical practice these agents would compare on broader measures of outcome, such as quality of life, satisfaction with treatment, and costs.

Methods: A randomized, open-label clinical trial was undertaken at the Fallon Clinic in Central Massachusetts during the spring and fall allergy seasons in 1997 and 1998. A total of 96 adults with self-reported ocular symptoms (with or without concomitant nasal symptoms) were randomized by their usual primary-care physicians to receive either levocabastine eye drops (n=48) or loratadine (n=48) over a period of 14 days. Quality of life was assessed using a validated questionnaire that was completed by study patients at baseline and again on days 2, 7, and 14. Patient satisfaction also was elicited via surveys on days 7 and 14.

Results: There were no statistically- or clinically-significant differences (i.e., of at least 0.5 points on the 7-point scale) in ocular symptoms, nasal symptoms, and overall disease-specific quality of life between the levocabastine and loratadine groups between baseline and follow-up (the differences in mean point changes between groups were -0.22, -0.02, and -0.04 respectively; a lower score represents improvement). Patients randomized to loratadine were more likely to be satisfied with the ease and convenience of their treatment regimen at day 7 (64% vs 40%; p<0.05), but not at day 14 (61% vs 48%; p=0.21). The overall rating of satisfaction with treatment was similar in both groups, however. The mean costs of care for allergic rhinoconjunctivitis were approximately $7 per patient lower in the levocabastine group (p=0.05).

Conclusions: Both levocabastine eye drops and loratadine are reasonable choices for monotherapy for allergic rhinoconjunctivitis, providing similar relief of symptoms and improvements in quality of life. Initial therapy with levocabastine is less expensive than loratadine, but is also less convenient in the first week of treatment.

EFFECT OF SILDENAFIL CITRATE ON DEPRESSION SCORES IN MEN WITH ERECTILE DYSFUNCTION AND COMORBID DEPRESSION. Matthew Menza, Robert Wood Johnson Medical School, Piscataway, NJ; Steven Roose, New York State Psychiatric Institute, NY, NY; Stuart Seidman, Columbia Presbyterian Hospital, NY, NY; Raymond Rosen, Robert Wood Johnson Medical School, Piscataway, NJ; Ridwan Shabsigh, Columbia Presbyterian Hospital, NY, NY; Vera Stecher, Richard Siegel, Pfizer Inc, NY, NY

Objectives: Erectile dysfunction (ED) and depression are highly prevalent conditions that are frequently comorbid; however, the causal relationship is unclear. This study assessed symptoms of depression in men with ED and untreated subthreshold major depression in a randomized controlled trial of sildenafil citrate (VIAGRA®) versus placebo.

Methods: 146 men who presented to urologists with ED and had 24-item Hamilton Depression Rating Scale (HAM-D) scores ≥12 were randomized to receive flexible-dose sildenafil (Sild; 25-100 mg; N = 70) or placebo (Pbo; N = 76) for 12 weeks in a double-blind trial. Patients were classified as responders for ED if they a) answered "yes" to two global efficacy questions that asked whether treatment improved erections and the ability to have sexual intercourse and b) had erectile function (EF) domain scores of 22-30 (range 1-30; higher scores indicate better EF) on the International Index of Erectile Function questionnaire. Symptoms of depression were assessed at baseline and after 8 and 12 weeks of treatment using the HAM-D, Beck Depression Inventory (BDI), and Clinical Global Impression (CGI) scales.

Results: Results (intention-to-treat analysis) at week 12 were:

	Mean Scores (± SEM)			Number (%) of Patients †		
	HAM-D	BDI	CGI	Total	Sild	Pbo
Baseline	16.7 (0.3)	15.6 (0.7)	—	136	66	70
ED responders	6.4 (0.8)*	6.4 (0.9)*	1.8 (0.2)*	58	48 (83%)	10 (17%)
ED nonresponders	14.2 (0.9)	13.7 (1.0)	3.7 (0.2)	78	18 (23%)	60 (77%)

*P<0.0001 vs ED nonresponders (ANCOVA); †P=0.001 for treatment effect (chi-square).

Conclusions: After 12 weeks of treatment, patients classified as ED responders had significant improvements in mean HAM-D, BDI, and CGI scores compared with patients classified as ED nonresponders. Among ED responders, 83% were treated with sildenafil and 17% were treated with placebo.

SELF CARE AND HOME BLOOD PRESSURE MONITOR USE. Rd Merrick, KE Olive, C Landy, RC Hamdy, and V Cancellaro. Department of Internal Medicine, East Tennessee State University, Johnson City, Tennessee.

Purpose: To determine how patients used the results of home blood pressure measurements. Volunteers (N= 91) were solicited from a general internal medicine practice and the general public by advertisements. Volunteers completed a written survey addressing demographic factors and issues related to their use and interpretation of home blood pressure measurements.

Methods: 73% of the volunteers indicated that they purchased their monitor to "be involved in their own health care." 55% did so "to improve" and 12% to "save money on" their health care. 86% of the volunteers recognized that an acceptable systolic blood pressure was less than 140 mmHg and that an acceptable diastolic blood pressure was less than 90 mmHg. The survey gave different options to deal with a high and low blood pressure. 92% of the volunteers indicated they would respond with at least one of the options to a high blood pressure. The volunteers responded as follows: 7% would take an extra pill, 11% would change diet, 24% would rest, 73% would recheck the blood pressure, 17% would have someone else check the blood pressure. 76% of the volunteers noted they would respond to at least one option for a low blood pressure. The volunteers responded as follows: 1% would stop medication. 5% would hold medication, 22% would call doctor, 3% would change diet, 8% would lie down, 61% would recheck the blood pressure and 15% would have someone else check the blood pressure.

Results: Imply that there is a desire from patients to be involved in their own health care. The involvement was done in an effort to partner with their physician and not to usurp the physicians control or avoid the expense of medical care.

Conclusion: Our previous findings from this group of volunteers that 34% of the blood pressure results obtained were inaccurate along with the present data indicate that a need exists to educate and monitor those using a home blood pressure monitor. Undertaken in a positive sense the physician could have a most willing ally in the battle against hypertension.

KNOWLEDGE ABOUT CERVICAL CANCER AND PREDICTORS OF PAP SMEAR USE AMONG AMERICAN SAMOAN WOMEN. SI Mishra, PH Luce-Aoelua, FA Hubbell, Center for Health Policy and Research, University of California, Irvine, California and the National Office of Samoan Affairs, Carson, California.

The site specific incidence for cervical cancer is higher among American Samoan than Anglo women. To explore possible reasons for this observation, we assessed cervical cancer-related knowledge and preventive practices among American Samoan women residing in Los Angeles, CA; Oahu, Hawaii; and the US Territory of American Samoa. We used a cross-sectional study design and systematic sampling procedures to conduct an in-person survey of 986 English or Samoan speaking self-identified Samoan women over the age of 18 years. We used the National Health Interview Survey Cancer Control Supplement and findings from focus groups to develop the survey instrument. We found that the women had many misconceptions about the risk factors, signs, and symptoms of cervical cancer, often reflecting traditional cultural beliefs about disease causality. Use of Pap smears was also quite low. Overall, only 46% of the women reported having received a Pap smear within the past 3 years (50% in Los Angeles, 65% in Hawaii, and 32% in American Samoa). Regression analysis revealed that the independent predictors of Pap smear use included residence in Hawaii (OR=1.7; CI=1.1-2.5), <40 years of age (OR=2.2; CI=1.6-3.1), >high school education (OR=2.1; CI=1.5-3.0), marriage (OR=1.9; CI=1.3-2.6), annual income ≥$30,000 (OR=1.1; CI=1.4-2.3), more acculturation (OR=1.9; CI=1.4-2.6), and health insurance (OR=1.6; CI=1.1-2.3). It is likely that the relatively low rates of Pap smear use among American Samoan women explains, in part, the higher site specific incidence for cervical cancer observed in this population. Because cervical cancer is almost entirely a preventable disease, it is important to develop culturally sensitive programs that address misconceptions about cervical cancer and that increase the regular use of Pap smears among American Samoans.

COST-EFFECTIVENESS OF ELECTIVE CESAREAN DELIVERY TO REDUCE VERTICAL TRANSMISSION OF HIV. JM Mrus and J Tsevat, Division of General Internal Medicine, Department of Internal Medicine and Institute for Health Policy and Health Services Research, University of Cincinnati Medical Center, Cincinnati, OH.

Context: Cesarean delivery has been shown to reduce vertical transmission of HIV. However, its role is unclear because of uncertainties surrounding its efficacy, safety and cost. A randomized controlled trial of mode of delivery is underway in Europe, but results probably will not be available for several years.

Objective: The purpose of this analysis was to quantify the risks, benefits, and cost-effectiveness of cesarean section performed to reduce vertical transmission of HIV in the United States.

Methods: A decision analytic model was developed comparing the strategy of elective cesarean section (ECS) with the strategy of trial of labor (TOL). In this model, transmission rate, maternal death rate, and procedure cost were varied by mode of delivery. Base case transmission rates were based on the published results of the French Perinatal Cohort and the assumption that all of the mother-child pairs received zidovudine. HIV cost estimates were derived from the national AIDS Cost and Service Utilization Survey data. Delivery costs were average variable costs taken from an urban hospital's cost accounting system. Life expectancies, utilities, and maternal death rates were estimated from literature review. Quality adjusted life expectancy was calculated as a sum for the mother and child pair. Future costs and life expectancy was discounted at a 3% rate. All costs were expressed in 1997 dollars.

Results: The strategy of ECS produced a vertical HIV transmission rate 57/1000 deliveries lower than TOL. ECS projected 39.91 quality adjusted life years (QALYs) at a cost of $3,517 per delivery while TOL resulted in 38.86 QALYs at a cost of $17,088 per delivery; therefore, ECS was the dominant strategy. With about 7000 HIV-infected mothers delivering per year, a strategy of ECS could yield 400 fewer cases of pediatric HIV and save about $95 million per year. However, ECS would increase maternal mortality by 3.4 per 100,000 deliveries or 1 additional death about every 4 years. Sensitivity analysis showed that ECS was the dominant strategy for a wide range of the variables. Threshold analysis showed that ECS is cost saving for baseline transmission rates greater than 0.2% (base case was 6.6%).

Conclusions: A strategy of ECS for delivering HIV-infected women would result in reduced costs and increased quality adjusted life expectancy overall for the mother and child pair, albeit at a slightly increased risk of death to the mother.

TEEN DATING VIOLENCE: INITIAL ATTITUDES AND IMPACT OF A SCHOOL-BASED INTERVENTION DS Morse, E deLahunta, L Bean, D Mathiason, N Ruddy, General Medicine Unit, Rochester General Hospital, Dept of Medicine, University of Rochester School of Medicine and Dentistry, Rochester, NY

Introduction: Teen dating violence (TDV) has a prevalence between 9-57% and may precede later life domestic violence in males and females.

Objective: We sought to evaluate a TDV curriculum and its effect on associated attitudes among participants.

Design: The curriculum was implemented for all study participants, who served as their own controls, using immediately pre and post measures to evaluate efficacy.

Intervention: The curriculum takes 80 minutes, is interactive, utilizes videotapes, role plays, and discussion relating to 5 core points: power and control, violence as learned behavior, early warning signs for violence, actions to take, and healthy relationships.

Setting: Intervention done in 9 Schools: Urban (4) suburban (5) and middle (4) and high (5) from 1997-1998 in Rochester, NY.

Participants: There were 577 participants, ages 11-18, girls (52.3%), high schoolers (59.7%). All students in selected grade levels received the intervention.

Main Outcome Measures: Participants completed an 8-item TDV attitude survey before and after the curriculum indicating agreement or disagreement

Results: Significant changes occurred for 5 of the items

Statement	Pre %agree	Post %agree	P value
It's a sign of true love when your boy/girlfriend wants to spend all their time with you	31.0%	22.0%	<.001
Telling your boy/girl friend to dress in a certain way is a form of control in a relationship	60.4%	69.8%	<.001
Calling your boy/girlfriend names in public is a form of emotional abuse	76.9%	83%	.001
If you have witnessed family violence as a child it is likely that your dating relationships will be like your family relationships	19.2%	38.8%	<.001
If you arrive at a club and see your boy/girlfriend dancing with someone you don't know, it's OK to feel jealous and accuse them of 'playing around' on you	29.9%	23.0%	<.001

Conclusions: The pilot curriculum demonstrated success in effecting TDV attitudes in high school students in a direction suggestive of greater awareness. Future studies should address the relationship between attitudinal and behavioral changes.

REGULAR EXERTION AND THE RISK OF COMPLICATIONS OF ACUTE MYOCARDIAL INFARCTION. KJ Mukamal and MA Mittleman, Department of Medicine, Beth Israel Deaconess Medical Center, Boston, MA.

Regular exertion prevents acute myocardial infarction (AMI) and may lower its case-fatality rate. How regular exertion modifies the severity of AMI is unknown. We studied the associations of regular exertion with infarct size (as measured by peak CK) and the risks of Q-wave infarction, congestive heart failure (CHF), and ventricular arrhythmias (VT/VF) among patients hospitalized with AMI.

Between 1989 and 1996, we performed standardized face-to-face interviews and chart reviews on 3,625 subjects with AMI enrolled in the Determinants of Myocardial Infarction Onset Study a median of four days after admission. Trained interviewers recorded detailed medical histories (including regular frequency of exertion greater than 5 MET), serial CK values (for the first 1,623 subjects), electrocardiographic interpretations, and the presence of CHF or VT/VF. We used linear and logistic regression to model continuous and binary outcomes, respectively. The table shows peak CK levels and odds ratios for Q-wave infarction, CHF, and VT/VF, according to regular frequency of exertion and adjusted for age, gender, history of previous angina or MI, history of hypertension or diabetes, obesity, current smoking, use of cardiac medications, time of day, use of thrombolytic therapy, and recent exertion.

Weekly Exertion >5 MET	<1	1-4	≥5	p for trend
Number of Subjects	2796	424	405	
Peak CK Level ±SEM	1033 ±24	1026 ±71	1002 ±76	0.71
Q-wave MI	1.0	1.1	1.0	0.92
95% CI	-	0.8,1.5	0.7,1.3	
CHF	1.0	0.5	0.7	0.003
95% CI	-	0.3,0.7	0.5,1.0	
VT/VF	1.0	0.9	1.4	0.11
95% CI	-	0.6,1.3	1.0,1.9	

In conclusion, we found that regular exertion is associated with a substantially lower risk of CHF but possibly a slightly higher risk of VT/VF among patients hospitalized with AMI. This may represent another important clinical benefit of regular physical activity.

THE IMPACT OF FAMILY HISTORY OF BREAST CANCER ON MAMMOGRAPHY: THE FRAMINGHAM OFFSPRING STUDY. IM Murabito, JC Evans, MG Larson, BE Kreger, GL Splansky, KM Freund, MA Moskowitz, PWF Wilson. NHLBI's Framingham Heart Study and Section of General Internal Medicine, Boston Medical Center, Boston.

Purpose: To examine mammography use in women according to family history (FHx) of breast cancer (BRCA).

Methods: Breast health questionnaires were mailed to 929 women with 76% response. Respondents aged 40 to 79 years included 1) 141 with a first degree relative with BRCA, 2) 211 with a mother or sister with other cancers, and 3) 331 with mother and sister(s) free of cancer. Women with a FHx of BRCA were compared with age-matched referent groups 2 and 3 above. Referents were pooled in analysis as mammography was similar.

Results: Ever use of mammography was high in all women. In women with a FHx of BRCA 98% reported mammography use compared with 95% of referent women. Recent mammography use ($\leq$ 2 years) was higher in women with a FHx of BRCA (93%) compared with referent women (83%)(p=0.002). This difference was observed in all age-groups and was greatest in younger women. In women with a FHx of BRCA 27% perceived their BRCA risk as none to very small compared with 61% of referent women. Increased self-perceived risk in FHx negative women was associated with increased mammography use (p=0.02). Recent clinical breast exam use was similar in women with (92%) and without (89%) a FHx of BRCA. Women with a FHx of BRCA were more likely to do self breast exam at least once a year (87% vs 77%, p=0.015).

Conclusions: Mammography use was very high in women with a family BRCA history. Clinicians should assess family BRCA history and educate women on their true BRCA risk to improve use in all women.

CLINICAL PREDICTORS OF HYPOTHYROIDISM IN WOMEN OVER THE AGE OF FIFTY. J. Myers, S. Mun, and A.S. Vasiliades, Department of Medicine, Mount Sinai Hospital, New York, NY.

Purpose: To determine if there is a clinical sign or symptom that is a sensitive indicator of hypothyroidism in women over fifty.

Methods: We reviewed all TSH (Thyroid Stimulating Hormone) tests sent from our Primary Care clinic over a five-month period. We examined the charts of those women over fifty with a TSH $\geq$ 4.0 (Upper limit of normal for our lab). The charts were reviewed to determine why the TSH was ordered, if noted, as well as if the patient had any other medical problems. Multiple signs and symptoms may have been charted as the indication for the TSH testing.

Results: 1720 TSH samples were sent between June 8, 1998 and November 14, 1998, 834 were sent in women 50 and over. Of the 834 samples sent in women 50 and older, 107 patients had a TSH > 4.0. Of those 107, 52 were known to be hypothyroid on presentation to our clinic and 7 charts were unavailable. The remaining 48 women, without prior history of hypothyroidism, are our sample population. Results are noted in **table 1**.

Table 1: Clinical Signs and Symptoms for which TSH was sent

Depression/Psych	41.6%	Fatigue	29.2%
None	27.1%	Dementia	22.9%
Weight Gain	14.6%	Hair changes	12.5%
All others*	<10% each		

*Arrthymias, Constipation, Palpable thyroid, Edema, Skin changes, Arthralgias

Discussion: As there is no consensus regarding screening for hypothyroidism in this high-risk population, we set out to determine if certain clinical signs or symptoms had greater power in the identification of women with the disease. Due to the small number in our sample size we did not demonstrate statistical significance for any specific sign or symptom, however we did make some important observations. Of note, the most cited clinical reason for sending a TSH in our sample population was depression or other psychiatric illness (41.6%). The second most commonly noted were the "Fatigue" and "None Cited" categories at 29.2% and 27.1%, respectively. Given the controversy with regards to TSH screening, our observations lead us to a number of conclusions. The strongest predictor in our small sample size was the "Depression/Psychosis" category. However in 27% of patients in our study, no sign or symptom was noted. These observations warrant further study with a larger sample to ascertain if psychiatric illnesses are the strongest clinical predictors for hypothyroidism in a high-risk population, or if women over the age of fifty should be routinely screened as there is no one strong clinical indicator.

PREDICTORS OF RECENT MAMMOGRAPHY USE: THE FRAMINGHAM OFFSPRING STUDY. JM Murabito, JC Evans, MG Larson, BE Kreger, GL Splansky, KM Freund, MA Moskowitz, PWF Wilson. NHLBI's Framingham Heart Study and Section of General Internal Medicine, Boston Medical Center, Boston.

Purpose: To identify predictors of recent mammography use.

Methods: 683 women participating in the Framingham Offspring Study, aged 40 to 79 years, completed a breast health questionnaire including 141 women with a first degree relative with breast cancer (BRCA). Age-adjusted analyses were performed to identify factors associated with recent mammography use (use in past 2 years). Logistic regression analysis was used to identify predictors of use.

Results: Recent mammography use was significantly higher in women with a family BRCA history (93%) than in women without (83%) (p=0.002). Recent clinical breast exam (CBE) (p=0.001), CBE ever (p=0.002), increased perceived risk of BRCA (p=0.04), current smoking (p=0.001), alcohol use (0.03), breast disorder (p=0.03), and use of routine check-ups (p=0.001) were significantly associated with mammography while self breast exam, lifetime oral contraceptive use, education, marital status, subjective health, breast surgery, and ill physician visits were not. Odds ratios and 95% confidence intervals from multivariable analyses predicting mammography use are as follows: family history of BRCA 3.23 (1.36, 7.66), CBE in past 2 years 17.36 (9.20, 32.77), and current smoking 0.39 (0.21, 0.71). No other factors were statistically significant.

Conclusions: Women at high risk for BRCA due to family history are more likely to undergo mammography. CBE represents an opportunity to enhance adherence to mammography. Women who smoke underutilize mammography and should be targeted for interventions.

DEPRESSION, SELF-CARE, AND GLYCEMIC CONTROL IN PATIENTS WITH DIABETES MELLITUS. DM Nachtigall and MA Whooley for the Ambulatory Care Quality Improvement Project. San Francisco VA Medical Center and the University of California, San Francisco.

Objective: Previous studies have suggested that depression leads to poor glycemic control in diabetic patients, but the reasons for this association have not been determined. This study examined whether depressed patients have reduced self-care, and whether lack of self-care is responsible for poor glycemic control among patients who have diabetes mellitus.

Methods: We evaluated 24,671 patients who were recruited from 7 Veterans Affairs Medical Centers for the Ambulatory Care Quality Improvement Project. All participants completed the Mental Health Inventory (MHI-5) and were considered depressed if they scored at least 17 on a 30-point scale. Those with self-reported diabetes mellitus were asked to complete an additional questionnaire regarding frequency of self-care (how often they checked their blood sugar, checked their feet, and followed a meal plan) and frequency of elevated blood sugar (>240 mg/dL) within the past 4 weeks. Results are reported as odds ratios (OR) with 95% confidence intervals (CI) based on logistic regression models.

Results: Of the 3184 participants who completed the diabetes questionnaire, 759 (24%) were depressed (MHI-5 $\geq$ 17). Compared with nondepressed patients, depressed patients were equally likely to check their blood sugar (OR 1.0, 95% CI, 0.8-1.2; p=0.96), but less likely to follow a meal plan (OR 0.7, 95% CI, 0.6-0.9; p<0.001), and somewhat less likely to check their feet on a daily basis (OR 0.9, 95% CI, 0.7-1.0; p=0.12). These results were not affected by adjusting for age, sex, ethnicity, marital status, education, income, employment, smoking, alcohol, or comorbid illnesses. Among participants who tested their blood sugar at least once per week (n=2189), those who were depressed were more likely to report having a blood sugar > 240 mg/dL within the past 4 weeks (OR 1.5, 95% CI, 1.2-1.9; p<0.001) than nondepressed patients. This association was unchanged by adjusting for not following a meal plan.

Conclusion: Depression is associated with reduced self-care, and with poorer self reported glycemic control. However, lack of self-care does not appear to explain why depression leads to poor metabolic control in patients with diabetes mellitus. Better recognition and treatment of depression may improve both self-care and glycemic control in diabetic patients.

USE OF HORMONE REPLACEMENT THERAPY : COMPARAISON BETWEEN AN ACADEMIC PRIMARY CARE CENTRE AND THE GENERAL POPULATION.

A. Rieder Nakhlé, A Morabia, JP Humair, S Antonini, and H Stalder, Division d'Epidémiologie Clinique, Médecine Communautaire, Hôpitaux Universitaires de Genève, Geneva, Switzerland.

Context : Hormone replacement therapy (HRT) is well recognised for treatment of menopausal symptoms and prevention of osteoporosis. Prevalence of use varies widely between populations and is influenced by social factors. We show how epidemiological data can be used by the clinician to analyse HRT use observed in an outpatient clinic setting

Objectives :1°Study HRT use in patients attending an academic primary care centre with a high proportion of recent immigrants. 2°Compare the study results with HRT use in the general population of the same region.

Methods : 138 perimenopausal or menopausal women aged 45-65 who consulted the outpatient clinic answered a questionnaire on HRT use (89% response rate). Data from a yearly population-based cross-sectional questionnaire survey provided prevalence of HRT use in 202 representative women of the same age and menopausal status.

Results : In the outpatient clinic, prevalence of current HRT use was 40% among Geneva residents (72% of all patients), which is almost identical to the prevalence observed in the population survey (41%). In contrast, there were only 9% of current HRT users among recent immigrants who consulted the outpatient clinic.

Conclusion : Comparison of HRT use between perimenopausal and menopausal women seen at the primary care centre and in the epidemiological study shows no difference of prevalence for the majority of women. However, use appears very insufficient among recent immigrants when compared with the general population. This population perspective enables the clinician to see how his patients compare with the standard set by the population as a whole.

TRENDS IN SCREENING, AWARENESS, AND TREATMENT OF CORONARY HEART DISEASE RISK FACTORS.

S Natarajan, MD Silverstein, PJ Nietert, JS Zoller, Center for Health Care Research and Division of General Internal Medicine, Medical University of South Carolina, Charleston, SC.

Aim: To evaluate national trends in the screening, awareness and treatment of established risk factors for coronary heart disease (CHD).

Methods: Data were analyzed from the 1984-1996 Behavioral Risk Factor Surveillance System (BRFSS), an ongoing telephone survey of the US adult, non-institutionalized civilian population. Screening (proportion reporting test or exams), awareness (self-reported prevalence), and treatment for hypertension (HTN), high cholesterol, smoking, and diabetes were estimated for years in which data were available. Time trends were examined across age, gender, and race strata.

Results: Between 1988-1996, >95% of adults reported being screened for hypertension, with a prevalence ranging from 21% to 24%; however, data from 1984-1992 indicated that approximately half were not receiving treatment. From 1987-1996, cholesterol screening increased from 43% to 65%, with greater proportions of women and whites having been screened than men and blacks, respectively. Awareness of high cholesterol increased substantially from 8% in 1987 to 30% in 1996. Cholesterol treatment increased from 7% to 9% during the years 1988-1990. Smoking prevalence decreased from 28% in 1984 to 23% in 1996, with the largest decrease among older adults and the smallest decrease among black males. However, self-reported attempts at quitting smoking decreased from 15% in 1990 to 11% in 1996. Awareness of diabetes ranged from 4% to 5% during the years 1988-1996. From 1994-1996, the proportion of diabetic adults who had eye exams ranged from 57% to 63% and the proportion with foot exams from 60% to 63%.

Conclusions: Substantial success in screening for HTN has been achieved, while more modest success in screening for high cholesterol was observed. Challenges for CHD prevention appear to be related to initiation of anti-hypertensive treatment, identification of subjects with elevated cholesterol, initiation of lipid-lowering interventions, and reduction in smoking prevalence. Due to variation in screening, awareness, and treatment of CHD risk factors, CHD prevention strategies should be targeted to specific age, gender, and race groups for maximal effectiveness.

RESPIRATORY ILLNESS HEALTH STATUS BEFORE AND DURING EMPLOYMENT AT AN ELEMENTARY SCHOOL.

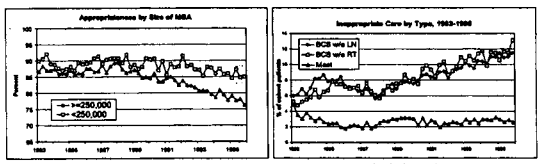
ME Nardone and DA Nardone, Ambulatory Care Program, VHA Medical Center, Portland, Oregon.

Objective: Determine if school-building environment (dust and ventilation) is contributing to respiratory illnesses of staff.
...Design: The survey was developed requesting comparison of status before and during employment with questions regarding overall health (HE), number upper respiratory illnesses per year (URI), sought attention from primary provider (PCP) or specialist (SPEC), and treatment with antibiotics (ABX), corticosteroids (CORT), or inhalers (MEDI). Forty (40) classified and certified staff members in a large suburban district elementary (k-5) school were requested to complete the survey anonymously. The authors were blinded to name, gender, and age. There was no intervention.
...Primary Outcome Measures: Thirty-two of 40 (80%) staff completed the survey. We included responses that could not be interpreted as well as all non-respondents as no-change so as not to overestimate our findings. Ten respondents worked at index school 0-2 years, 9 for 3-5 years, 8 for 6-9 years, and 5 greater than 9 years. Worsening status during versus before employment was observed in all categories: HE (16/40, 40%), URI (45%), PCP (20%), SPEC (13%), ABX (18%), CORT (8%), and MEDI (15%). Twenty employees indicated a change in health status in at least 1 of 7 categories; 5 indicated worsening in 1 category; 4 worsened in 2; 2 worsened in 3; 5 in 4 categories; 2 in 5 categories; and 2 worsened in all 7 categories.
...Conclusions: Staff members perceive their health status to be worsened since employment. Staff may suffer from "sick-building" upper respiratory illnesses, perhaps from poor ventilation and biocontaminants in carpets and draperies. This is a subjective retrospective assessment. Mid-school year is the height of infectious disease illnesses. Young children are carriers of pathogens. There is an increase in allergic symptoms during fall and spring seasons. We recommend surveying other populations in the school district and business communities, periodic evaluations and inspections of air-flow, and more frequent cleaning of carpets and draperies to decrease biocontaminants.

DECREASE IN APPROPRIATENESS OF BREAST CANCER CARE ASSOCIATED WITH INCREASED USE OF BREAST-CONSERVING SURGERY.

AB Nattinger, RG Hoffmann, RT Kneusel, MM Schapira, Division of GIM, Department of Medicine, Medical College of Wisconsin, Milwaukee, WI.

Compared to mastectomy, breast-conserving surgery (BCS) is an appropriate, but more complex, therapy for early stage breast cancer, in that axillary lymph node dissection (through a separate incision) and postoperative radiotherapy are required. To determine whether the percent of women receiving appropriate care has remained stable as BCS has been adopted more widely into practice, we studied 145,490 women included in the national Surveillance, Epidemiology, and End Results (SEER) tumor registry who were aged 30 or more at the time of diagnosis of local or regional breast cancer between 1983 and 1995, and who underwent BCS or mastectomy treatment. The minimum requirements for appropriate primary therapy were considered to be total mastectomy with lymph node dissection or BCS with lymph node dissection and radiotherapy, and the percent receiving appropriate care was calculated for each calendar quarter. The rate of appropriate care remained at about 88% from 1983 until mid-1990, from which point it fell steadily to about 78% in 1995 ($p<0.001$). The decrease in rate of appropriate care was observed in women of all age groups, in white and non-white women, and in women with both local and regional stage disease. The decrease in appropriate care was more prominent in women residing in more urban areas, compared to women residing in more rural areas ($p<0.001$, Figure). Changing demographics over time did not account for the decrease in appropriateness.



Investigation of the type of inappropriate care revealed that the percent of women undergoing an inappropriate form of mastectomy was stable at about 3% over the period of observation, but the percent undergoing inappropriate BCS therapy (ie, no radiotherapy or no lymph node dissection) rose from about 9% to almost 19% by 1995, concomitant with an increase in use of BCS rather than mastectomy (Figure). The type of inappropriate BCS therapy was about equally omission of radiation and omission of lymph node dissection. We conclude that the appropriateness of breast cancer primary therapy has decreased since 1990. The decrease is mostly attributable to BCS therapy which does not meet consensus standards for radiotherapy or lymph node dissection.

HEALTH BENEFITS OF MODERATE DRINKING MAY BE OVERSTATED. HD Nelson, JH Rizzo, EL Harris for the Study of Osteoporotic Fractures Research Group. Oregon Health Sciences University and Kaiser Permanente Center for Health Research, Portland, Oregon.

Moderate alcohol use has been associated with beneficial health outcomes in observational studies. Although this protective effect is strongest for current users, it is unclear whether it can be attributed to alcohol itself acting through biologic mechanisms, or bias leading to use by healthier individuals.

To determine the extent to which moderate alcohol use serves as a marker of health status, we recorded alcohol use and performance and health measures of a cohort of 9704 older women at baseline and again approximately 6 years later. We then compared performance and health measures from the follow-up visit of women who ingested 2 or fewer drinks/day at both points in time (continuous=3118) with those who ingested similar levels at baseline but quit during follow-up (quitters=1410). Adjusted odds ratios were determined by multiple logistic regression models that controlled for age, follow-up time, clinic, smoking status (continuous, intermittent, never), history of stroke, and baseline measures of body mass index (kg/m2) and physical activity (kcals/week). Activities of Daily Living (ADLs), use of aids in walking, and social support models also included baseline assessments of these measures. Results indicated better health (odds ratios <1.00) for continuous drinkers for all outcome measures (P<0.05).

Health Outcome*	Odds Ratio (CI)
Difficulty with more than 3 ADLs	0.49 (0.35, 0.70)
Uses aid in walking	0.61 (0.49, 0.75)
Social support scale (lowest third)	0.81 (0.70, 0.98)
Frailty index (assessed by exam)	0.71 (0.58, 0.88)
Lives in nursing home	0.16 (0.06, 0.42)
Death	0.75 (0.60, 0.92)

*All outcomes were assessed at follow-up visits approximately 6 years after the baseline visits except for death which was assessed at 10 years.

A number of studies have concluded that moderate drinking is beneficial compared to non-drinking. This analysis suggests that these conclusions may be overstated as some non-drinkers quit due to illness or declining health.

MODERATE ALCOHOL USE IS PROSPECTIVELY ASSOCIATED WITH BETTER PHYSICAL AND FUNCTIONAL MEASURES. HD Nelson, JH Rizzo, EL Harris for the Study of Osteoporotic Fractures Research Group. Oregon Health Sciences University and Kaiser Permanente Center for Health Research, Portland, Oregon.

Moderate alcohol use has been associated with better health and longevity in observational studies. Most of these results are based on cross-sectional assessments comparing current users with non-users and have not been tested prospectively.

To determine whether associations between moderate alcohol use (2 or fewer drinks/day) and better physical and functional outcomes observed at baseline are durable over time, we compared performance and health measures of 9704 older women over a 6 year period. Moderate drinkers at baseline and throughout the study (continuous, n=3118), were compared to those who drank in the past and/or intermittently during the study (intermittent, n=2884), and to those who never drank alcohol (never, n=2111) using multiple linear and logistic regression models. Models included: age, clinic, follow-up time, smoking status, history of stroke, and baseline measures of body mass index (kg/m2) and physical activity (kcals/week). Baseline assessments of physical and functional measures were included in models for those outcomes. Results indicated better performance measures for continuous drinkers for nearly all outcomes (Tables 1 and 2).

Table 1. Measure (mean)	Continuous	Intermittent	Never
Grip strength (kg)	18.24	18.02	18.03
Quadriceps strength (kg)	57.78*	56.05*	54.66
Walking speed (m/sec)	0.92*	0.89	0.89
Digit symbol test (# correct)	40.54*	39.78	39.97

Table 2. Measure (OR (CI))	Continuous	Intermittent
Tandem stand (held <10 sec)	0.84 (0.50, 0.83)*	0.82 (0.65, 1.05)
Uses arms to stand	0.69 (0.55, 0.88)*	1.00 (0.81, 1.23)
Difficulty with >=3 ADLs	0.36 (0.26, 0.49)*	0.87 (0.69, 1.11)
Cognitive test (within 3 min.)	1.51 (1.24, 1.84)*	1.26 (1.05, 1.52)*

*P<0.05 compared to never drinkers.

Continuous moderate use of alcohol was associated with better physical and functional measures than intermittent or non-use when evaluated prospectively in this large cohort of older women.

CORRELATES OF COUNSELING ON HORMONE REPLACEMENT THERAPY JM Neuner, EP McCarthy, RB Davis, RS Phillips. Division of General Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA

Background Women's use of hormone replacement therapy (HRT) is influenced by many factors, including education, income, and race. However, little is known about the influence of such factors on physician counseling about HRT.

Methods We examined factors associated with preventive counseling on HRT reported by 3464 women aged 40-60 in the "Year 2000" supplement to the 1994 National Health Interview Survey. The response rate of this section of the population-based household survey was 80%. Data were collected for all women on demographics (age, race, education, marital status, income, insurance type, and area of residence), number of doctor visits in the previous year, self-reported health status, body mass index, and history of smoking, hypertension, hysterectomy, or disability. For those women who had a usual provider of medical care, data were also collected on physician specialty (gynecology, another specialty, or primary care). We used multivariable logistic regression to identify factors independently associated with HRT counseling. All results were weighted and adjusted for the probability sampling design of the NHIS.

Results Of the 3464 women (78% white, 22% college graduates, 10% uninsured, 30% with prior hysterectomy), 43% reported HRT counseling. Women were significantly more likely to be counseled if they were older (61% for ages 55-60 vs. 22% for ages 40-44), had a hysterectomy (67% vs 33%), had more education (48% of college graduates vs. 34% of those with <12 years) or were white (47% of white women vs. 26% of black women). After adjustment for age, marital status, hysterectomy, and number of doctor visits, we found that uninsured women and those with Medicaid were less likely to report counseling (adjusted odds ratio .60, 95% confidence interval .40-.91, and .41 [.23-.73], respectively) as were black (.45 [.33-.62]) and other non-hispanic non-white women (.44 [25-.77]). College (2.99 [2.07-4.33]) and high school (1.93 [1.38-2.71]) graduates were more likely to be counseled than those without a high school degree. While smoking was positively associated with counseling (1.46 [1.16-1.84]), we found no association between counseling and hypertension or body mass index. Women in the northeast (.70 [.55-.89]) were less likely to be counseled than those in all other regions. Results of the adjusted analysis of women with a usual provider (n=2637) were similar, and women with a gynecologist were more likely to be counseled (1.81[1.23-1.65]).

Conclusion We found that socioeconomic status was associated with HRT counseling, and women were less likely to be counseled if they were less educated, were not white, were uninsured or had Medicaid. The further variation of HRT counseling by region and physician specialty suggests some variation in counseling may be due to physician practices; whether it is also related to differences in patient preferences remains unclear.

TRANSVAGINAL ULTRASOUND VS. ENDOMETRIAL BIOPSY AS THE INITIAL STEP IN THE EVALUATION OF POSTMENOPAUSAL BLEEDING: A DECISION ANALYSIS. C Nicolaidis, T Koepsell, Robert Wood Johnson Clinical Scholars Program, University of Washington, Seattle, WA.

Primary care physicians are increasingly faced with decisions regarding the evaluation of postmenopausal bleeding (PMB). Though recent evidence has supported the use of transvaginal ultrasound (TVUS) as a reliable tool in the evaluation of PMB, debate continues regarding its merits relative to those of endometrial biopsy (EMB), the current standard of care. We used decision analysis to compare the use of TVUS to EMB as the initial step in the evaluation of endometrial pathology in women presenting with PMB.

We modeled 3 hypothetical cohorts of 100,000 women presenting with PMB: a low-risk cohort (disease prevalence .01), a high-risk cohort (prevalence .6) and an aggregate cohort (prevalence .25). We defined endometrial pathology as endometrial cancer, atypical hyperplasia, or polyp; a secondary analysis considered cancer alone. We modeled the use of either TVUS or EMB as an initial test to guide the decision to refer for a definitive but costly and invasive diagnostic procedure such as hysteroscopy with biopsy or dilation and curettage. We used endometrial thickness cut-off thresholds of 3-mm, 5-mm, and 7-mm for TVUS, and assumed that endometrial biopsies yielding insufficient tissue would be followed up by an invasive procedure. Our main outcomes were numbers of women with pathology detected (true positives), with a negative invasive procedure (false positives), with pathology missed (false negatives) and with an invasive procedure averted (true negatives). We obtained estimates for the accuracy of TVUS from a recent meta-analysis and conducted a systematic review of the literature for other estimates and ranges. We considered a strategy to be dominant if true positives and negatives were maximized and false positives and negatives minimized. We performed sensitivity analyses on all estimates.

In the base-case scenario, TVUS with a cut-off of 5-mm was dominant over EMB for all 3 cohorts of women (e.g., in all comers with PMB, pathology detected: 23,000 vs. 18,900; negatuve invasive procedure 14,200 vs 20,100; pathology missed: 2,000 vs 4,000; invasive procedures averted: 60,800 vs 57,000 for TVUS vs EMB, respectively). It remained dominant throughout pre-specified ranges of prevalence, EMB specificity, predictive value of inadequate specimens, TVUS sensitivity, and TVUS specificity. TVUS was also dominant over EMB in the analysis which defined pathology only as endometrial cancer, but the optimal cut-off threshold changed to 7mm. The results were sensitive to percent of inadequate specimens on EMB and sensitivity of EMB, but even at the extremes favoring EMB, the two strategies were roughly comparable, without EMB becoming dominant over TVUS.

TVUS appears to be more accurate than EMB as a first step in the evaluation of PMB in 3 hypothetical cohorts of women of varying risk. Prospective trials directly comparing the two methods individually and in combination are needed.

BARRIERS TO GLYCEMIC CONTROL IN PATIENTS WITH DIABETES. MA Nyman, SS Bjornsen, ME Murphy, SL Small, PG Schryver, GE Panopoulos, JM Naessens, SF Dinneen and SA Smith. Mayo Clinic, Rochester, MN.

Objective: Case management (CM) has been suggested as a method to improve compliance, adherence, and unacceptable glycemic control in patients who are at the greatest risk of the complications of diabetes and are responsible for a disproportionate amount of health care expenditure. Because CM is resource intensive and expensive, health care systems and insurers have sought alternative strategies that have included patient profiling from telephone interviews and proactive follow-up based on the risk stratification from this patient reported information. To better understand the value of patient-reported information in CM, we sought to characterize differences between patients who improve glycemic control and those who do not improve.

Methods: 46 individuals in a general internal medicine practice were identified as having Glycated Hemoglobins (GH) greater than 9.7% (normal 4-6%) during the summer of 1997. From this cohort, 44 individuals had follow-up GH within a mean of 6 months of which 22 were less than 9.7% (GrpI). In order to better understand the differences between these individuals and the 22 who did not improve (GrpNI), patients from each group were given a structured interview as well as questionnaires to assess their attitudes, knowledge, skills, health status, and satisfaction as it relates to glycemic control.

Results: There were no statistical differences between GrpI and GrpNI with regards to age, educational level, gender, weight, number of years with diabetes, health care support, or number of health care visits. Baseline median glycated hemoglobin for GrpI (10.95%) and GrpNI (10.8%) were not statistically different. Despite a significant difference in follow-up median glycated hemoglobin (GrpI: 8.2% vs. GrpNI: 11.0%, p<0.001), there were no differences in self-reported utilization of home blood glucose monitoring, self-management, health status, laboratory knowledge, or laboratory understanding between the two groups. Adherence with arranged follow-up and completion of study questionnaires was significantly worse in the GrpNI. There was a trend toward less satisfaction with diabetes treatment in the GrpI.

Conclusion: Patients with improved glycemic control did not differ significantly in self-reported measures from patients who did not improve. Although self-reported profiles may be important in the global assessment of the patient, they were not sufficient in determining improvement in glycemic control in this patient population.

EFFICACY OF ANTIDEPRESSANTS FOR PHYSICAL SYMPTOMS: A CRITICAL REVIEW PG O'Malley, JL Jackson, G Tomkins, J Santoro, E Balden, K Kroenke. Department of Medicine, Walter Reed Army Medical Center (PGO,GT,JS,EB), Washington D.C., Uniformed Services University (JLJ), Bethesda, MD, and the Regenstrief Institute for Health Care (KK), Indianapolis, IN.

Purpose: While antidepressants have proven efficacious in alleviating neuropathic pain, their efficacy for physical symptoms is less certain. We systematically reviewed the efficacy of antidepressants for treating physical symptoms and symptom syndromes, and whether it was independent of depression.

Methods: Studies were identified through searching MEDLINE, EMBASE, and PSYCLIT from 1966 through 1998; and by searching FEDRIP, the Cochrane Library, and bibliographies of primary and review articles. Independent, duplicate review of 380 articles identified 98 English language randomized trials of 21 antidepressants and 6 symptom syndromes. We also made independent, duplicate assessment of the methodologic quality, population, intervention, co-morbid psychiatric illness, and outcomes of each included trial (kappa: .55 to .80).

Results: A majority of the trials (69%) showed beneficial effect with either tricyclic antidepressants (TCA), anti-serotonin antidepressants, or selective serotonin reuptake inhibitors (SSRI) in the following syndromes: headache (migraine, 35; tension, 18); fibromyalgia (18); functional gastrointestinal (GI) syndromes (13); idiopathic pain (11); tinnitus (2); and chronic fatigue (2). Trials were small (median = 50 patients), largely involved female participants (76% of all participants), and were mostly from referral clinics (87%). Most were performed after 1980 (82%), and almost half were industry-sponsored (45%). Though 74% of the trials had a median duration of symptoms >3 years, the median duration of therapy was only 9 weeks. Overall, the quality of the studies was fair (mean score of 4.3, on scale of 1-8) ranging from 4.1 in GI syndromes to 5.8 in fibromyalgia. Forty percent of the trials had a >20% dropout rate. Symptom improvement typically did not correlate with depression outcome in the few studies where psychiatric disorders were systematically assessed (4/23 or 16%). Meta-analysis was possible for 3 syndromes and showed substantial benefit for antidepressants (on the dichotomous outcome of "improvement"): headache (OR: 3.4, 95%CI 2.7-4.4) , fibromyalgia (OR: 5.2, 95%CI 3.1-8.5), and functional GI disorders (OR: 4.4, 95%CI 2.5-7.7). There was no significant publication bias. Of the following variables: industry sponsorship, design, study quality, US study, year of publication, class of agent, and sample size, only class of agent (TCA > SSRI) was associated with a greater likelihood of efficacy (p=.02).

Conclusions: Though a majority of studies found benefit associated with antidepressant therapy for physical symptoms, there is a need for better quality, randomized, placebo-controlled trials which 1) adequately control for psychiatric disorders, and 2) compare the relative efficacy of different classes of antidepressants.

IS MILD RENAL FAILURE ASSOCIATED WITH ADVERSE OUTCOMES AFTER CARDIAC VALVE SURGERY? Maureen O'Brien, Laurie Shroyer, Samantha MaWhinney, Catherine VillaNueva, Tom Moritz, Gulshan Sethi, William G. Henderson, Karl Hammermeister, Fred Grover, and Robert J. Anderson, Denver VA and the Univ. of Colo., Denver, CO.

Background: General medical assessment of operative risk traditionally focuses on the cardiopulmonary systems. The incidence of renal failure (RF) is increasing and severe RF is associated with significant physiologic abnormalities. We recently found that mild renal failure is significantly and independently associated with adverse outcome after coronary artery bypass grafting (CABG).

Objective: To determine if RF is a risk factor for adverse outcome after cardiac valve surgery.

Methods: We analyzed a large Veterans Administration database obtained from 1992 through 1996 at 14 of 43 centers performing open heart surgery. We compared outcomes after valve surgery in patients with normal renal function (defined as creatinine serum <1.5 mg/dl, mean 1.1 mg/dl, n=637) and in patients with mild RF (defined as serum creatinine 1.5 to 3.0 mg/dl, mean 1.8 mg/dl, n=183).

Results: Univariate analyses found that patients with mild RF had significantly higher 30 day mortality (16 versus 6%, p=0.001), two selected cardiac complications (18 versus 7%, p=0.002), three selected bleeding complications (16 versus 8%, p<0.001), prolonged ventilation or reintubation (29 versus 16%, p=0.001), and five selected postoperative infections (19 versus 11%, p=0.039) than patients with normal renal function. Multiple logistic regression analysis found that patients with mild RF had significantly higher 30 day mortality (p=0.001, odds ratio, OR, of 2.45, confidence interval, CI, of 1.43-4.19), incidence of postoperative bleeding (gastrointestinal bleeding, disseminated intravascular coagulation and/or thoracic bleeding necessitating re-operation, p=0.023, OR 1.81, CI 1.09-3.03), respiratory complications (need for >48 hours ventilatory support and/or reintubation, p=0.0196, OR=1.62, CI=1.08-2.44), and cardiac complications (cardiac arrest and/or CHF symptoms, p=0.002, OR=2.25, CI=1.34-3.77), than patients with normal renal function, controlling for multiple other risk factors. Postoperative length of stay was also significantly greater (p<0.001, risk ratio 1.237) in patients with mild RF.

Conclusion: These results show that mild RF is an independent risk factor for increased mortality and independently predisposes to significant postoperative bleeding, cardiac complications and the need for prolonged mechanical ventilation for patients undergoing valve surgery. A preoperative serum creatinine of 1.5 mg/dl or greater thus appears to provide a readily available identifier for adverse outcomes after not only CABG but also cardiac valve surgery.

UNREALISTIC PUBLIC EXPECTATIONS FOR AN ANNUAL PHYSICAL: HOW WIDESPREAD AND HOW PRICE SENSITIVE? SK Oboler, AV Prochazka, RJ Anderson, Denver VA and University of Colorado Health Sciences Center, Denver, CO.

Context: An annual physical examination (PE) has not been advocated by profession medical organizations for more than 20 years. Previously we reported that 69% of respondents in the Denver area felt they needed an annual PE and many also desired comprehensive lab, x-ray and cardiologic testing.

Objective: To test if these expectations are generalizable in other parts of the country and to examine the influence of charges for testing on patient's responses.

Methods: A random digit dialing telephone survey of subjects in Denver (n=205), Boston (n=186) and San Diego (n=209). Questions included desire for each test and desire if charged for the test. Tests and charges included an annual PE ($150), cholesterol ($20), urinalysis (UA) ($10), blood glucose ($20), fecal occult blood (FOB) ($20), chest x-ray ($125), mammogram ($150), pap smear ($150), and prostate specific antigen (PSA) ($50).

Results: Fifty nine percent (351/597) of respondents were female, 80% (482/600) were Caucasian, 67% (385/581) had an income >= $30,000 per year, only 24% (141/600) had high school education or less, 52% (314/600) had HMO insurance coverage, 79% (471/600) had seen a doctor in the last year and there were no significant differences between the three cities. Subjects were healthy with only 4% (26/600) reporting lung disease, 7% (43/600) heart disease, 4% (25/600) diabetes and 15% (87/600) hypertension. Most patients wanted an annual PE (63%, 380/600), but there was a significant difference between the cities (Denver 62%, Boston 71% and San Diego 58%, p=0.024). Only 52% (198/380) of those who wanted a PE still wanted it if they would be charged $150 (p= 0.001) with no significant difference between the cities (Denver 56%, Boston 49%, San Diego 51%), p =0.547. Many subjects also wanted other tests: cholesterol 65% (390/600), UA 49% (293/600), blood sugar 41% (245/600), FOB 38% (226/600), CXR 36% (215/600), mammography 71% (250/351), pap 75% (263/351), PSA 66% (161/246). When charges were included, desire for testing dropped among those who initially wanted the test: cholesterol 73% (283/390), urinalysis 84% (245/293), blood sugar 80% (197/245), FOB 80% (182/226), x-ray 37% (79/215), mammogram 53% (132/250), pap 51% (134/263) and PSA 66% (106/161).

Conclusions: Desire for an annual PE is high across the country and is sensitive to charges. Public education on the value of the annual PE and use of charges/ co-pays to influence demand for non-recommended tests should be considered.

COMMUNICATION ABOUT SAFER SEX BETWEEN PARTNERS, B. Ogur, D. Hatem, D. Stone. Department of Internal Medicine, The Cambridge Hospital, Cambridge, MA.

Purpose: The purpose of the study was to better understand the practice of safe and unsafe sex among those at risk for HIV infection, including the cognitive, affective, situational, and motivational aspects of these sexual practices.

Methods: 15 in-depth, semi-structured, open-ended interviews were conducted with patients from the investigators' clinical practices with self-report of an STD, multiple sexual partners, or unwanted pregnancy in the past 5 years, or with concerns about consequences of recent unsafe sexual activity. Interviews were audio-taped, transcribed and analyzed independently by each co-investigator. Major themes were identified by iterative consensus coding.

Results: In almost every instance, subjects placed the use of condoms in the context of their understanding of the relationship with the sexual partner. It was possible to articulate a hierarchy of relationships, with condom use having different meanings and requiring different styles of negotiation in different types of relationships. In relationships "just for sex", talking about safer sex was perceived as more interpersonally intimate than having intercourse, requiring special "rule-based", or, alternatively, more "playful" forms of communication. In more committed relationships, the notion of "trusting" the partner frequently took the place of careful risk assessment, resulting in unsafe behavior.

Conclusions: Counseling focused only on behavioral aspects of sexual risk-taking may ignore the major significance of the meaning of the interpersonal interaction in which sexual behavior occurs. Helping patients to understand their own framework of interpersonal meaning and how they construct condom use within relationships, and assisting them in anticipatory communication appropriate to the relationships may be necessary to help patients reduce their unsafe practices.

UTILIZATION OF CURANDERISMO IN A PUBLIC HEALTH CARE SYSTEM. R Padilla, V Gomez, S Biggerstaff, P Mehler. Division of General Internal Medicine, Denver Health, Denver, CO.

Background: Curanderismo, which means "the healing," is a centuries old synthesis of Mexican Indian culture and beliefs. Curanderos are the practitioners of this form of healing. Curanderos typically use prayer, massage, and herbs to treat their patients. Various small studies have estimated that 2-70% (mean 24%) of Hispanics in the United States have utilized curanderismo at some time in their lives for various problems. As Hispanics are currently the single largest and fastest growing minority group in the US, and they make up 23.3% of the population of Denver, we evaluated the rate of utilization of curanderismo among Hispanic subjects in Denver.

Methods: 405 Hispanic subjects age 18 and above compeleted an administered survey while at an outpatient care clinic. 358 subjects (88.4%) were patients or associated with patients and 47 subjects (11.6%) were clinic employees. Univariate and multivariate analyses to calculate odds ratios (OR) were performed.

Results: The mean age of the subjects was 35.71 years, 82.8% of the subjects were female, the mean level of formal education was 9.51 years and their mean amount of time living in the US was 20.1 years. 118 of the 405 subjects (29.14%, 95% confidence interval [CI], 20.94-37.33) had been to a curandero at some time in their lives. 91.3% of all the subjects knew what a curandero was. Univariate analysis of those subjects who had been to a curandero revealed the following to be statistically significant: 46.6% (p=0.001) only spoke Spanish with their physician, 22.88% ((p=0.001) had at least some college or technical training and 38.98% (p=0.003) considered themselves to be bilingual. Multivariate analysis revealed that being older (OR=1.174 [1.027-1.342]; p=0.018), having a high school education (OR=2.346 [1.00-5.507]; p=0.050), being bilingual (OR=1.790 [1.006-3.186]; p=0.0478), and of high income (OR=2.442 {1.234-4.834]; p=0.010) predicted utilization of curanderismo.

Conclusion: A vast majority of Hispanics know what a curandero is, and a significant number of Hispanics use curanderos concurrently with more conventional medical care. Providers who care for significant numbers of Hispanic patients should take this into consideration when dealing with their medical issues.

OFFICE VERSUS PHONE MANAGEMENT OF ACUTE SINUSITIS: PRELIMINARY RESULTS FROM AN OBSERVATIONAL STUDY. KE Olive, G Davis, and LM Harvill. Department of Internal Medicine & Section of Medical Education, James H. Quillen College of Medicine, East Tennessee State University, Johnson City, TN.

Purpose: To determine whether symptom resolution and patient satisfaction differ for patients with acute sinusitis treated in the medical office compared to those treated by phone.

Methods: A case definition for acute sinusitis, which could be determined by phone interviews, was developed based on published literature. Computerized phone logs and billing records from an academic internal medicine practice were reviewed to screen for patients with possible acute sinusitis. Medical record reviews and phone interviews were conducted to determine whether patients met the case definition, their treatment, their symptoms (scored as 0-10), days to symptom resolution, and satisfaction with treatment (scored as 1-10). Categorical data were analyzed using Chi square and continuous data were analyzed using Student's t.

Results: 35 patients met the definition and were treated by phone, 18 were treated in the office. There were no significant differences in the two groups regarding gender, age, or number of chronic medications taken. Elevated temperatures occurred more often in the office treatment group (p=.002). No significant differences were noted in the symptom scores at day 0 (6.9 phone vs 7.5 office) and day 10 (1.1 vs 1.9). At day 3 patients treated by phone had a significantly lower symptom score (3.6 vs 5.1, p=.04). Number of days to resolution of symptoms (9.0 vs 11.6) and patient satisfaction (9.1 vs 8.2) tended to favor treatment by phone but were not significant.

Conclusions: In this small observational study, patients treated for acute sinusitis by phone did as well as those evaluated and treated in the medical office. Phone management for patients meeting the case definition used in this study is a reasonable alternative to office treatment.

RETROSPECTIVE EVALUATION OF THE IMPACT OF A GUIDELINE FOR EVALUATION OF PATIENTS AGE 50 AND OLDER SEEN IN THE EMERGENCY DEPARTMENT WITH NON-TRAUMATIC ABDOMINAL PAIN. JM Pagel, KM Kerr, and SZ Pantilat. Department of Medicine, University of California, San Francisco, San Francisco, CA

Abdominal pain is a serious and frequent complaint among elderly patients who present to the Emergency Department (ED). A large percentage of these patients will have a condition requiring admission or surgery. Because of the significant risk of morbidity and the large number of patients seen, an efficient, uniform approach to the work-up of these patients might improve the quality of care

A group consisting of representatives from surgery, emergency medicine, radiology, internal medicine and nursing developed a guideline for the evaluation of patients age 50 and over who present to the ED with non-traumatic abdominal pain based on review of the literature. We retrospectively examined the potential impact of such a guideline on the evaluation of patients seen in our ED between 6/97 and 9/97 by comparing care received to care recommended by the guideline.

Over the three month study period, 5439 patients visited the ED of whom 1935 (35%) were age 50 or older and 143 (7%) had non-traumatic abdominal pain. We reviewed charts on 118 (83%) patients. The average age for patients was 66.8 years and 56% were women. A total of 35 patients (29%) were admitted to the following services: 21 to general surgery, 11 to medicine, 2 to liver transplant, 1 to gynecology. The guideline recommended that 100 patients receive surgical consults of whom only 34 received consults. Conversely, only 2 patients received a surgical consult not recommended by the guideline. Though the guideline did not directly address indications for abdominal CT scans it did recommend that any patient deemed sick enough to require a CT scan of the abdomen should receive a surgical consult. Of the 20 patients who received a CT scan of the abdomen, only 13 (65%) also had a surgical consult. Our guideline does address indications for a KUB that are limited to suspected bowel obstruction or free peritoneal air. By these criteria over half of the KUBs done (23/42) were not needed and nearly a quarter of patients in whom a KUB would not be recommended received one. Finally, the guideline also recommended that patients receive pain medications early in their ED visit. Only 41 (34%) patients received any pain medications in the ED.

Based on review of current practice, implementation of our guideline for the evaluation of patients age 50 and older with non-traumatic abdominal pain in the ED might increase the number of surgical consults and abdominal CT scans and dramatically decrease the number of KUBs. A prospective review of the guideline is needed to assess its impact on quality of care.

REACH OUT AND TOUCH SOMEONE: PRIMARY CARE PHYSICIAN EXPERIENCES AND COMMUNICATION WITH HOSPITALISTS. SZ Pantilat, PK Lindenauer, PP Katz and RM Wachter, University of California, San Francisco, San Francisco, CA.

Hospitalist systems impose a discontinuity that may decrease patient satisfaction and lead to a loss of important clinical and psychosocial information. Despite concerns over these potential harms little empirical data exist regarding primary care physician (PCP) experiences or communication with hospitalists.

We surveyed, by mail, all members of the California Academy of Family Physicians and PCP members of the Brown and Toland Medical Group. Respondents needed to a) be clinically active and b) have personal experience using a hospitalist for inpatient care.

Of 4300 eligible subjects we received responses from 1416 (33%), of whom 669 (56%) had ever used a hospitalist. Respondents were predominantly male family physicians with an average age of 47 years. Overall, 63% agreed that hospitalists were "a good idea." On average, PCPs reported that hospitalists cared for 14 of their patients in the last year, representing 21% of all of their hospitalized patients. Only 40% of PCPs usually or always visited their inpatients cared for by hospitalists and just 22% usually or always called. Overall, 59% of PCPs were satisfied with communication with hospitalists. When asked about their patients admitted to the care of hospitalists, only 30% of PCPs said that they are always notified of the admission and 89% agreed that they were not notified often enough. This notification is usually or always done by the hospitalist 59% of the time, by the patient 22% and by the nurse 20%. Regarding timing, 63% of PCPs said that they are usually or always contacted at admission, 52% at discharge, 29% for changes in clinical status and only 26% for major therapeutic decisions. Phone contact is most common with 66% of PCPs reporting that they are usually or always contacted by telephone compared with 20% by fax and only 5% by email. Regarding communication about discharge, PCPs reported that they are usually or always notified by a discharge summary in 62% of cases and by phone in 36%. They also reported that only half of discharge summaries arrive within one week of discharge, that 15% arrive more than 2 weeks after discharge and only 35% said that it usually or always arrives before they see the patient in follow-up. Over 83% of PCPs reported that discharge summaries are too detailed.

Most PCPs in our sample had experience with hospitalists and most thought hospitalists were a good idea. Many PCPs had no inpatient contact with their patients admitted to hospitalists, yet only half of the PCPs were satisfied with their communication with hospitalists. Discharge summaries are felt to be too detailed and arrive too late to be maximally useful. Finding ways to increase the contact between PCPs and their hospitalized patients and improve communication between hospitalists and PCPs may mitigate the potential harms of discontinuity.

THE PATIENT WITH A LIST: LA MALADIE DU PETIT PAPIER
By Clyde Partin MD and Prasad Reddy

The patient who presents their physician with a written list of complaints is usually viewed with a jaundiced eye by time-strapped doctors. In their manual BEDSIDE DIAGNSOTIC EXAMINATION DeGowin & DeGowin refer to this phenomenon as "la maladie du petit papier" - the malady of the small piece of paper. More formally they write, "Occasionally, when a patient is asked for his symptoms, he or she produces a piece of paper upon which are written a list of notes. The French label this la maladie du petit papier; it is almost a sure sign of psychoneurosis. The patient with organic disease does not require reference to written notes to give the essence of his story." While this interpretation of list-making behavior has been passed along from one generation of physicians to the next, there is a paucity of data in the medical literature that supports or refutes the notion that list-bearing patients are likely to be psychosomatic. A computer search of the world's standard medical databases using various permutations of la maladie du petit papier yielded only five references. Only one of these was a formal study, which involved sixteen patients presenting to an oral surgery clinic and concluded there was no evidence for an organic complaint in any of the subjects.

In an era when cost conscious medicine is at a peak, many HMO plans have limited or no mental health coverage and primary care doctors are delivering much of their patients' psychiatric care, it would behoove us to know if our patients with a long written list of complaints are really suffering from anxiety disorders. Perhaps such knowledge would help minimize costly diagnostic evaluations. In my study, I prospectively reviewed 108 patient lists and compared them to a control group of patients without lists. In the experimental group 76% of patients presenting a written list of symtoms were felt to have a psychiatric diagnosis. In the control group 42% of the patients were felt to have mental health disorders. Depression and anxiety were the two most common psychiatric diagnoses among both groups. There was an average of 7.73 complaints per petit papier, with an average paper size of 221 sq. cm. Females had a slightly higher average of complaints per list (8.1) than males (6.9). 60% of the lists were presented by females and 40% by males. The nature of the complaints was also categorized by organ system.

The historical origins of this phenomena are obscure. Possible early descriptions from the French medical literature will be discussed.

FAMILIAL CANCER SYNDROMES IN PATIENTS WITH ACUTE LEUKEMIA. C. Papageorgio, K. Seiter, S.J. Peterson. New York Medical College, Valhalla, NY

Background: Cancer has long been recognized to have a familial component. However, only a few pedigrees of familial leukemia obviously transmitting leukemia have been reported. This suggests that the fraction of leukemia attributable to heritable factors could be markedly under appreciated.

Purpose: The aim of this prospective study was to determine the percentage of patients with newly diagnosed acute leukemia who have a family member with malignancy and/or evidence of familial cancer syndrome.

Methods: All patients admitted to Westchester Medical Center with a diagnosis of acute leukemia between 1/1/98 and 11/30/98 were included in this study. The patients were interviewed by the investigator using a standardized questionnaire and had a complete physical examination.

Results: 1. 28/36 patients had at least one relative with cancer and 18/36 patients had at least one first degree relative with cancer. 2. 12/36 patients had a family history consistent with a possible familial cancer syndrome. 3. Three patients had relatives with retinoblastoma and one patient had a first-degree relative with sarcoma.

Conclusions: The majority (78%) of adults with newly diagnosed acute leukemia had a family member with cancer and many (33%) had evidence of a familial cancer syndrome. Genetic factors may play an important role in the etiology of acute leukemia.

POSITIVE EFFECTS OF A WORKBOOK-CENTERED ADVANCE CARE PLANNING INTERVENTION. RA Pearlman, HE Starks, KC Cain, WG Cole. VA Puget Sound Health Care System, University of Washington & Patient Decision Support, Seattle, WA.

We evaluated the effectiveness of a comprehensive advance care planning (ACP) intervention in clinical practice by measuring whether it increased ACP discussions, and completion and documentation of advance directives. In this randomized controlled trial, the intervention group received an ACP workbook (*Your Life, Your Choices*), social work counseling, and cues to primary care providers (PCPs) to discuss ACP with their patients. The control group received the VA brochure on advance directives. Twenty-two PCPs were recruited from the Puget Sound VA. For each PCP, 14 patients were randomized to the control or intervention groups. Eligibility criteria included having a PCP whom the patient had seen at least once, age $\geq$ 55 with at least one chronic condition, and no advance directive in the medical record. The intervention was structured around an existing appointment with the PCP.

Thirty-five percent of subjects that were approached for the study agreed to participate. At enrollment these patients generally endorsed the importance of ACP and were ready to engage in it. Preliminary data are available for 159 patients (75 and 84 patients were in the intervention and control arms, respectively). The intervention patients demonstrated greater ACP activities than the control patients. They self-reported having more ACP discussions with their PCPs (64% versus 43%, p=.01), instructional directives (68% versus 47%, p=.01), and appointments of durable power of attorney for health care (55% versus 43%, p=.2). The intervention patients also self-reported that the directives were in their VA medical records more often: instructional directives (44% versus 25%) and appointments of durable power of attorney (39% versus 20%, both comparisons, p<0.02). Electronic flags of advance directives in the medical records of intervention patients demonstrated three-fold improvements in documentation: 37% versus 13% for instructional directives, and 36% versus 10% for power of attorney (both p<0.001).

A multifaceted intervention centered around a newly-created ACP workbook promoted discussions about this topic with PCPs and resulted in a substantial increase in the documentation of directives in the medical records. The control patients exhibited more ACP-related activities than the general population, not surprising given that most patients who are unwilling to think about ACP will not consent to participate in such a study. The large treatment effect among our relatively receptive sample suggests that being willing to consider ACP is not enough: a multi-faceted intervention aimed at educating, motivating and facilitating is necessary to substantially increase ACP activity.

THE EFFECTS OF PROPRANOLOL TREATMENT OF DIASTOLIC HYPERTENSION ON TESTS OF COGNITIVE FUNCTION AND MEASURES OF QUALITY OF LIFE: RANDOMIZED PLACEBO CONTROL TRIAL. EJ Pérez-Stable, R Halliday, PS Gardiner, RB Baron, WW Hauck, M Acree, TJ Coates. Division of General Internal Medicine, Department of Medicine, University of California, San Francisco.

Purpose: To evaluate if beta blockers worsen cognitive function, depressive symptoms and sexual function in persons treated for diastolic hypertension.
Subjects and Methods: A randomized placebo-controlled clinical trial was conducted in a university-based ambulatory care center in 312 men and women, 22 to 59 years of age, with untreated diastolic hypertension (average 90 to 104 mm Hg). Participants received propranolol (80 to 400 mg/day) or matching placebo tablets for up to 12 months. Thirteen measures of cognitive function were assessed at baseline, 3 and 12 months. Five measured reaction time to and accuracy in interpreting predetermined visual stimuli, one measured the ability to acquire, reproduce and change a set of arbitrary stimulus-response sets, and seven measured memory and learning of verbal information. Depressive symptoms and sexual function were assessed by questionnaires at baseline and 12 months.
Results. There were no significant differences by treatment assignment on 11 of 13 cognitive function measures at either 3 or 12 months of follow-up. Compared to placebo, participants assigned to propranolol had significantly fewer correct responses (32.9 vs 33.6, p=0.02) and more errors of commision (3.9 vs 2.9, p=0.04) at 3 months and more errors of commision (3.5 vs 2.6, p=0.05) at 12 months. Depressive symptoms and sexual function and desire did not differ by treatment assignment.
Conclusions: Treatment of hypertension with propranolol has limited adverse effects on cognitive function of questionable clinical relevance, and there were no documented adverse effects on depressive symptoms or sexual function. Selection of beta blockers for treatment of hypertension should be based on other clinical factors.

IMPACT OF ALCOHOL CONSUMPTION ON QUALITY OF LIFE IN OUTPATIENT PROBLEM DRINKERS. C Perrotta, K Kraemer, S Maisto, J Conigliaro, M McNeil and M Kelley, University of Buenos Aires, Buenos Aires, Argentina, University of Pittsburgh, Pittsburgh, PA, and Syracuse University, Syracuse, NY.

Purpose: To determine whether longitudinal changes in alcohol consumption are associated with changes in health-related quality of life (HRQL) as measured by a generic instrument and an alcohol-specific instrument. Methods: We screened 13,439 adult patients (pts) for alcohol problems using the Alcohol Use Disorders Identification Test in 12 primary care clinics. Consenting pts who screened positive completed baseline (BL) and 6 month (6M) follow-up assessments, which included the RAND 36–item Health Survey (SF-36), and the 15-item version of the Drinkers Inventory of Consequences (DrInC). Alcohol consumption variables were assessed with the Time Line Follow Back (TLFB) method. Results: Of 301 enrolled problem drinkers, 211(mean age 46, 79% white, 71% male, 61% hazardous alcohol use, 39% alcohol abuse/dependence) and 164 (mean age 44, 87% white, 70% male, 60% hazardous alcohol use, 40% alcohol abuse/dependence) had complete DrInC and SF-36 data, respectively. Using repeated measures analysis of variance to compare pts who decrease, increase, or maintain alcohol use over the 6M study period, we found that a reduction in total monthly alcohol intake was associated with a significant decrease in number of alcohol-related consequences (ARC) (mean DrInC [BL,6M]: 4.2, 3.7; p=.007) but without a significant increase in total SF-36 score (mean SF-36 [BL,6M]: 70, 73; p=.35). Likewise, an increase in number of abstinent days per month was associated with fewer ARC (mean DrInC [BL,6M]: 3.8, 3.2; p=.02) and a non-significant change in total SF-36 score (mean SF-36 [BL,6M]: 71, 75; p=.74). Pts who decreased the number of monthly binge days (> 5 drinks/day) had no significant decrease in ARC (mean DrInC [BL,6M]: 4.3, 4.0; p=.35) but did have a non-significant trend toward improved SF-36 (mean SF-36 [BL,6M]: 71, 77; p=.02). Conclusions: In a primary care sample of predominantly hazardous drinkers, reduction of alcohol consumption was associated with a reduction in alcohol related consequences. The generic HRQL instrument possibly lacked sensitivity to identify such changes. Nevertheless, these findings provide additional motivation for primary care physicians to identify alcohol problems and to initiate intervention.

CULTURAL VIEWS MAY HINDER THE USE OF ADVANCE DIRECTIVES. HS Perkins, A Gonzales, CMA Geppert, JD Supik, HP Hazuda, University of Texas Health Science Center at San Antonio.

Despite the publicity about advance directives (ADs), few Americans sign them. Because cultural views may hinder the use of ADs, we asked Mexican Americans (MA), Euroamericans (EA), and African Americans (AA) their views on dying and ADs. We conducted a structured interview on a purposive sample of 26 MA, 18 EA, and 14 AA internal medicine inpatients, aged 50 to 79. Only three subjects had ADs. Four blinded reviewers content-analyzed responses and crosschecked each other's interpretations. The analysis identified 82 views pertaining to ADs.

The three cultural groups shared certain views that might hinder the use of ADs. For example, after a simple explanation of ADs, 50% of MA, 44% of EA, and 50% of AA said they did not like the idea. In addition, 73% of MA, 61% of EA, and 64% of AA had major misconceptions about ADs (e.g., ADs are testamentary wills or consents for medical care), and 35% of MA, 50% of EA, and 50% of AA believed having an AD means the patient is imminently dying. Further, 69% of MA, 67% of EA, and 100% of AA cited obstacles to their learning about, signing, or using ADs.

Yet MA and EA differed from AA on other views that might hinder the use of ADs. For example, 85% of MA and 72% of EA, but only 57% of AA, believed medicine would honor their wishes about terminal care; and 54% of MA and 67% of EA, but only 29% of AA, believed ADs would help medical professionals know and implement those wishes. Moreover, 77% of MA and 89% of EA, but only 57% of AA, imagined situations when ADs might be useful. And 58% of MA and 72% of EA, but only 36% of AA, believed ADs would prevent unwanted life support.

Thus, we hypothesize that cultural views--some shared and others differing across groups--may hinder the use of ADs. AA appear especially skeptical about the value of ADs. Widespread use of ADs and other advance care planning methods may require overcoming cultural barriers.

USE OF LIPID LOWERING AGENTS AT DISCHARGE IN MALES WITH HYPERCHOLESTEROLEMIA AND ACUTE MYOCARDIAL INFARCTION. LA Petersen, S Wright, NR Every, C Brown. Houston VAMC Center for Quality of Care and Utilization Studies, Houston, TX; Center for the Study of Practice Patterns in AMI, Brockton/West Roxbury VAMC, Boston, MA; VA Puget Sound Health Care System, Seattle, WA.

As part of a national effort to improve care for ischemic heart disease, the VA is targeting treatment of hypercholesterolemia. The purpose of this study was to determine the baseline rates of use of lipid lowering agents in a cohort of patients with acute myocardial infarction (AMI) and known hypercholesterolemia.

We collected clinical data by chart review from a national random sample of male veterans discharged with the primary diagnosis of AMI (ICD-9-CM-410) in 1994-95 from nonpsychiatric VAMCs with a length of stay >2 days. Ideal candidates for lipid lowering agents were defined as those discharged alive with any of the following: use of lipid lowering medications on admission, history of hypercholesterolemia listed in the past medical history, or a low density lipoprotein (LDL) cholesterol level $\geq$ 130.

A sample of 5503 veterans from 81 VAMCs was identified. Of these, 2377 (43.2%) have been reviewed. 214 (9.0%) were admitted on a lipid lowering agent, 635 (26.8%) had a history of hypercholesterolemia, and 325 (13.7%) had LDL cholesterol levels documented in the chart. The mean LDL level was 131.0 ($\pm$40.5). Overall, 203 (3.9%) were prescribed statins and 103 (4.5%) were prescribed other lipid lowering agents on discharge. Of 945 (39.8%) ideal candidates for therapy, 175 (19.2%) were prescribed statins and 93 (10.2%) were prescribed other lipid lowering agents on discharge. Of those admitted on these agents, or with a history of hypercholesterolemia, or with an LDL $\geq$ 130, 164 (76.6%), 217 (34.2%), and 51 (34.9%) respectively were prescribed lipid lowering agents on discharge. Hospitals providing catheterization and bypass surgery services on-site were slightly more likely than other hospital types to discharge ideal candidates on these medications (29.8% vs 24.9%;p<0.10).

We conclude that, in the acute setting, significant opportunity for improvement in secondary prevention of ischemic heart disease exists. Further studies should establish prescription rates and patient compliance with use of lipid lowering agents in the non-acute setting.

POTENTIAL APPLICABILITY OF A NONINVASIVE DIAGNOSTIC STRATEGY IN NON-Q-WAVE MYOCARDIAL INFARCTION. LA Petersen, S Wright, C Brown. Houston VAMC Center for Quality of Care and Utilization Studies, Houston, TX; Center for the Study of Practice Patterns in AMI, Brockton/West Roxbury VAMC, Boston, MA.

The goal of this study was to determine the applicability of the Veterans Affairs Non-Q-Wave Infarction Strategies In-Hospital (VANQWISH) noninvasive diagnostic testing strategy to non-trial patients.

We collected clinical data by chart review from a national random sample of 5503 male veterans discharged with the primary diagnosis of acute myocardial infarction (AMI) (ICD-9-CM-410) with a length of stay >2 days in 1994-95 from 81 nonpsychiatric VAMCs. We selected a random subsample of 3500 from within this AMI cohort. Patients who died within 48 hours of admission were excluded. As in the trial, non-Q-wave MI (NQWMI) was defined as: absence of new Q or R waves on ECG 2–7 days after admission AND elevation in cardiac enzymes. ECGs from the prescribed period could be obtained for 2643 (75.5%).

Of those with ECGs, 1238 (46.8%) underwent catheterization prior to discharge and 1743 (65.9%) met the definition for NQWMI. 796 (45.7%) of those with NQWMI underwent catheterization before discharge vs 442 (49.1%) without NQWMI ($p<0.10$). As in the VANQWISH trial, patients with terminal illness (n=190), who refused catheterization (n=107), or who developed any of the following were excluded: cardiogenic shock (n=128), cardiac arrest (n=97), recurrent infarction (n=298), persistent angina (n=299), congestive heart failure (n=601), positive stress test (n=35), or severe complications (n=24), leaving 652 (37.4%) "VANQWISH-type" patients. Of these, 338 (51.8% of all VANQWISH-type patients) underwent catheterization prior to discharge (27.3% of all catheterizations.)

In clinical practice, complications such as shock or ischemia limit the applicability of the VANQWISH noninvasive diagnostic testing strategy to approximately one-third of veterans with NQWMI. Yet, over one-quarter of all catheterizations done after AMI may be avoided by using the VANQWISH strategy. Further studies should confirm these findings and assess their applicability to non-veteran populations.

ELECTROCARDIOGRAM (ECG) LEFT VENTRICULAR HYPERTROPHY (LVH) AND BUNDLE BRANCH BLOCK IN THE TRIAGE AND OUTCOME OF EMERGENCY DEPARTMENT (ED) PATIENTS WITH SUSPECTED ACUTE CARDIAC ISCHEMIA (ACI): A MULTICENTER STUDY JH Pope, R Ruthazer, JR Beshansky, JL Griffith, HP Selker; Division of Clinical Care Research, Dept. of Medicine, New England Medical Center, Dept. of Emergency Medicine, Baystate Medical Center, Tufts University School of Medicine, Boston/ Springfield, MA.

Purpose: To determine the triage and outcome significance of ECG LVH and BBB in ED patients (pts) with ACI. **Methods**: Analysis of data from a multicenter prospective clinical trial in EDs of 6 hospitals of varying types across the United States including pts presenting with symptoms consistent with ACI. Confirmed diagnosis was determined by initial and follow-up ECGs and cardiac enzymes with a 99% follow-up rate for ACI. **Results**: Clinical and ECG data from the 5,389 pts:

ECG ST-T Abnormality:	LVH	LBBB	RBBB	Primary	Variant	None
n	156 (2.9%)	157 (2.9%)	144 (2.7%)	2,396 (44.5%)	349 (6.5%)	2,187 (40.5%)
Mean Age (yrs)	69**	70**	70**	59**	56**	53
Chief Complaint-CP (%)	61*	57**	56**	66**	68	72
-SOB (%)	22*	31**	19*	18**	15	13
1st Systolic BP (mm Hg)	152**	142	140	143	151**	141
History-High BP (%)	78**	67**	61**	58**	63**	42
-Diabetes (%)	26*	34**	32**	24**	19	16
-Angina (%)	55**	60**	53**	41**	31	28
-MI (%)	42**	47**	45**	31**	18	14
Confirmed Diagnosis-High BP(%)	3	1	0	2	3*	1
-CHF (%)	19**	28**	20**	11**	5*	3
-UAP(%)	16**	13*	11	11**	8	7
-AMI (%)	8**	13**	6*	12**	3	2
-ACI (%)	24**	26**	17*	23**	11	9
Triaged-Admit, No ACI (%)	77*	84	71	62*	49	47
With ACI (%)	100*	93	100	97*	95	90
30-day Mortality (%)	4.7*	2.6	2.8*	3.5**	0.3	0.9

* $p<0.05$, ** $p<0.001$ compared to the None group (AMI-acute myocardial infarction, BP-blood pressure, CCU-coronary care unit, CHF-congestive heart failure, MI-myocardial infarction, UAP-unstable angina pectoris) **Conclusions**: Of pts with symptoms suggestive of ACI, the 10% with ECG LVH or BBB were older and as likely to have ACI as pts with primary ST-T wave abnormalities. Of note to the clinician, compared to pts without ST-T wave abnormalities, these pts had more false positive admissions, yet more confirmed diagnoses of ACI or CHF, and had higher 30-day mortality rates possibly related to greater age and rates of CHF.

RANDOMIZED CONTROLLED TRIAL OF A PATIENT EDUCATION VIDEO TO PROMOTE COLORECTAL CANCER SCREENING IN COMMUNITY PRIMARY CARE PRACTICE. M Pignone, L Kinsinger, R Harris, UNC-Chapel Hill, Division of General Internal Medicine, Chapel Hill, NC.

Background: Screening has been shown to reduce colorectal cancer (CRC) mortality in adults over age 50, but actual screening levels are low. We performed a randomized controlled trial to test if an educational video and brochure directed to patients could improve performance of screening in primary care practices.

Methods: Adults 50-75 years of age who were scheduled to attend a physician appointment at 3 community primary care practices in Central North Carolina were contacted by phone and asked to participate in a study of preventive care. Those agreeing to participate were asked to come in 30 minutes prior to their regular appointment to be assessed for eligibility. Patients were eligible if they had no previous personal or family history of colon cancer, and if they had not received a fecal occult blood test (FOBT) within 1 year or a flexible sigmoidoscopy (flex sig), colonoscopy or barium enema within 5 years. Eligible subjects were randomized to view an 11 minute video about colon cancer screening (intervention group) or a video on automobile safety (control group). After viewing the video, intervention group subjects chose a color-coded brochure to indicate their level of interest in screening, while control subjects received a generic auto safety brochure. All subjects then proceeded to see their provider. Intent to ask for screening (measured on a 4-point Likert scale: 4= very likely to ask, 1 =very unlikely to ask) was assessed before and after the video. After seeing their provider, patients were asked if a flex sig, FOBT, barium enema, or colonoscopy were ordered. Other research assistants, masked to intervention status, performed chart audits to measure the proportion of subjects who completed a test within 3 months of the visit.

Results: 1240 patients were contacted and 651 (52%) participated; 254 participants (39%) were determined to be eligible and were randomized. Mean age was 63 years; 61% of subjects were female; 86% were White and 14% African-American. At baseline, mean intent to ask for screening was 2.23 in the intervention group and 2.20 in the control group. (p=.76) After the video, intent was greater in the intervention group (3.10) than in the control group (2.48). ($p < .0001$) FOBT or flex sig were ordered in 47% of intervention subjects and 26% of the control group. (p=.002) Chart reviews have been completed for the first 170 subjects: 37% in the intervention group have completed a screening test vs. 13% in the control group. ($p < .0001$)

Conclusions: A patient-focused intervention using an educational video and brochure significantly improved ordering and performance of colon cancer screening among eligible adult patients from community-based primary care practices.

RISK FACTOR MODIFICATION IN PATIENTS WITH AN ABNORMAL ANKLE-BRACHIAL INDEX. R Portnova, TL Carman, and BB Fernandez, Jr., Section of Vascular Medicine, Cleveland Clinic Florida, Fort Lauderdale, FL.

Purpose: To evaluate risk factor modification by primary care physicians in patients with documented peripheral arterial occlusive disease (PAOD).

Methods: Patient charts were retrospectively reviewed for all individuals in whom an abnormal ankle-brachial index (ABI) was obtained between July 1996 and August 1997. For each patient, with a documented primary care physician, data was collected with respect to common risk factors for PAOD. Cholesterol management, blood pressure control, the use of anti-platelet agents, smoking status and recommendation for smoking cessation, and participation in an exercise program and the recommendation to begin a walking/exercise program were recorded.

Results: Of 258 charts reviewed, 96 individuals had a documented primary care physician and were followed for a mean of 20.3 months (range 14-29 months) after the ABI result. Overall, 60.4% of the patients were male and 39.4% female. 96.9% of patients had moderate or severe PAOD as documented by an ABI < 0.75 at rest. The mean cholesterol level was 203, mean LDL 123. NCEP criteria had been met in 25%. Of the 96 patients, 53 (55%) were on cholesterol lowering agents and 14/53 (26.4%) met target LDL. Blood pressure control, documented as 2 of 3 recorded values < 140/90, was sufficient in 43.8 % of patients. A total of 78.1% of the patients were using an anti-hypertensive agent and 41.3% of these individuals had documented acceptable pressure control. Use of an anti-platelet agent was documented in 87.5% of patients. Only 19/96 (19.8%) patients were actively smoking and documented smoking cessation had been recommended to each. Active participation in an exercise program was documented in 50/96 (52.1%) and a documented recommendation for exercise by the primary care physician was made in 52.1% of the charts.

A subgroup analysis of 52 patients with documented atherosclerotic heart disease yielded similar results. Only 57.7% (30/52) were on lipid lowering therapy and 8/30 (26.7%) had met goal, 46.2% had documented control of blood pressure, 15.4% were still smoking, 51.9% were actively exercising and 86.5% were on an anti-platelet agent.

Conclusion: While risk factors for many patients with PAOD are treated medically, most are not meeting established goals for lipid and blood pressure management. The primary care physician must be alert to the fastidious treatment of common, modifiable risk factors such as hyperlipidemia, hypertension and smoking. In addition, the use of anti-platelet agents and a walking program in this population is strongly recommended.

ADVANCED ACTIVITIES OF DAILY LIVING IN HIGH FUNCTIONING OLDER WOMEN. WS Queale and LP Fried. Welch Center for Prevention, Epidemiology and Clinical Research, Johns Hopkins Medical Institutions, Baltimore, MD

BACKGROUND: Current instruments that measure functional ability in activities of daily living (ADLs) and instrumental ADLs do not capture the full spectrum of function in older adults. By not inquiring about more advanced physical and social activities, so-called advanced ADLs, clinicians may set an inappropriately low limit on functional expectations and rehabilitation goals. The objectives of this study were to describe the variety of physical and social activities engaged in by a cohort of high functioning older women and the frequency of participation in those activities which were considered physically and socially advanced.

METHODS: 436 women ages 70 to 80 years old from the Women's Health and Aging Study II (WHAS II) were studied. This represented the two-thirds least disabled community dwelling women in the population based previous self reported levels of function. Questions regarding self reported functional abilities and participation in physical and social activities were selected to describe the physical and social activities of the cohort.

RESULTS: Of the 436 participants, 93.4% reported no difficulty in the traditional basic ADLs of bathing, eating, using the toilet and dressing. Similarly, 81.0% reported no difficulty in the traditional instrumental ADLs of preparing meals, doing light housework or shopping. Evaluation of more advanced functional activities revealed the following: during the 2 weeks prior to answering the survey, 56.1% of the participants walked for exercise, 29.3% engaged in strenuous outdoor chores, 14.8% went dancing and 5.5% went bowling. During the 1 year prior to the study, 72.0% reported participated in gardening, 60.3% spent time at either a movie, a play or a concert, 46.3% participated in volunteer work and 14.7% worked for pay. Latent class analysis of the grouping of advanced activities and correlates between the participation in advanced ADLs and self reported difficulty in performance will also be presented.

CONCLUSIONS: Community dwelling women between 70 and 80 years of age report a high level of functional ability and frequently participate in complex physical and social activities. These advanced activities are not addressed in functional status indices which emphasize only basic and instrumental ADLs. These activities appear to require the integration of high physical and cognitive capacities and may be a more sensitive baseline from which to define functional decline and set rehabilitation goals.

FACTORS ASSOCIATED WITH DEPRESSION IN PRE-OPERATIVE PATIENTS UNDERGOING ELECTIVE JOINT REPLACEMENT. JL Ramsey, RM Lubitz, RL Robinson, VL Dacey, Department of Internal Medicine and Musculoskeletal Service Line, St. Vincent Hospitals and Health Services, Indianapolis, IN

Depressive symptoms are common among elderly patients with arthritis, due in part to declining function and increasing pain. Elective joint replacement improves mobility, decreases pain and improves quality of life, but pre-operative emotional distress negatively impacts these outcomes. Identifying modifiable factors associated with pre-operative depression could improve surgical outcomes. To identify these factors, we surveyed 588 consecutive patients undergoing elective total joint replacement surgery at two suburban Indianapolis hospitals. The survey included reliable and valid measures of sociodemographic factors, co-morbid conditions, alcohol abuse (CAGE $\geq$ 2), social support (MOS-20), general physical health and emotional function (SF-12 PCS and MCS), and lower extremity joint-specific pain and function (WOMAC). Mean age of the cohort was 67.6 years (range 27-100), 64.8% were women, and 90.3% were Caucasian. Elective knee replacement was performed on 58.3% and hip replacement on 41.7%. The incidence of depressive symptoms (MCS <42, range 0-100) was 18.2%. Logistic regression was used to estimate the probability of depressive symptoms and their covariates. Variables associated with depressive symptoms include education less than high school (OR=0.396, p<0.001), higher number of total comorbidities (OR=0.83, p<0.0001), worse lower extremity joint-specific function (OR=0.95, p<0.0001), increased general physical function (OR=0.92, p<0.0001) and daily pain medication use (OR=0.38, p<0.001). Depressive symptoms trended towards association with alcohol abuse (OR=0.43, p=0.13), but not with smoking, joint pain or social support. Along with evaluating for potential medical conditions that would preclude surgery, physicians should screen for depression in pre-operative patients with lower education levels, greater joint dysfunction and daily medication use. Whether interventions targeted to treat depressive symptoms, decrease pain medication use and curb alcohol abuse will positively impact surgical outcomes requires further study.

FACTORS UNDERMINING THE THERAPEUTIC RELATIONSHIP WHEN THE PATIENT IS A PHYSICIAN. M Qureshi, MG Hewson, DG Litaker, JH Isaacson, Department of General Internal Medicine, Cleveland Clinic Foundation, Cleveland, OH.

Background: A good doctor-patient relationship may improve patient outcomes and satisfaction. However, anecdotal evidence suggests that it may be difficult to achieve a good relationship when the patient is a physician. To identify factors that compromise the relationship, we qualitatively analyzed published narratives about physicians who became patients.

Methods: We identified articles about physician-patients from 1974 to 1997, in the English language, peer-reviewed and general periodical literature through a search of Medline using key words physician-patient, physician illness, and doctor-patient relationship. The narratives were analyzed and coded to identify factors affecting physician-patients' dissatisfaction with their therapeutic relationship.

Results: We identified 26 articles through this process and found 6 negative factors unique to the relationship between physicians and physician-patients. 1) Many physician-patients fear loss of control and intrude into their own care. 2) Some physician-patients, trusting in their own training, fail to request information about their conditions. 3) Physicians treating physician-patients are more anxious about mistakes and bad outcomes because they fear criticism from a peer. 4) Physicians may believe that they are immune to disease and perceive illness as failure. 5) Trusting a physician may be difficult for physician-patients, especially when the physician-providers do not admit the limits of their knowledge. 6) Physician-patients may fear loss of confidentiality because their colleagues have access to their medical information. In addition, we identified 4 concerns that physician-patients share with other patients, but that may be particularly disconcerting for physician-patients. 1) Physician-patients are surprised at the indignities and lack of privacy that patients endure. 2) Physician-patients feel fearful, anxious, and vulnerable, especially about pain, morbidity, and mortality. 3) Physician-patients often cope with the anxiety of illness by denying their disease. 4) Physician-patients need compassion and emotional support, which are not always provided.

Conclusion: The doctor-patient relationship may be compromised by at least 6 identifiable factors when the patient is a physician. Educating physicians to be sensitive to these factors and others common to all patients may improve outcomes and satisfaction for physician-patients. We acknowledge that published narratives may have selection bias towards negative encounters, so further rigorous investigation is warranted to fully characterize the experience of physician-patients.

DISCHARGE TO HOME AFTER ACUTE MYOCARDIAL INFARCTION: THE ROLE OF PATIENT RACE, GENDER AND SOCIOECONOMIC STATUS. SS Rathore, KP Weinfurt, AK Berger, WJ Oetgen, BJ Gersh, KA Schulman, Clinical Economics Research Unit, Georgetown University Medical Center, Washington, DC and Delmarva Foundation for Medical Care, Easton, MD.

BACKGROUND: Differences in acute myocardial infarction (AMI) discharge planning suggest non-clinical characteristics may influence a patient's discharge destination after AMI. **METHODS:** We evaluated data from the Cooperative Cardiovascular Project, a sample of Medicare patients who sought treatment for AMI in 1994 and 1995. Patients age 65 years and older with a confirmed AMI admitted directly from home and alive at discharge (n=97,286) were evaluated for factors influencing discharge to home. Medical history, in-hospital event, and functional status variables identified by bivariate analysis were used in a regression model to determine patients' clinical probability (0-1.0) for home discharge. The effect of patient race, sex and socioeconomic status (SES, based on residential ZIP code) was first evaluated in the full cohort using a multiple logistic regression model adjusting for clinical probability for home discharge. Patients were then grouped into quintiles based on clinical probability of home discharge (1 - least likely, 5 - most likely) and multiple logistic regression analyses were repeated to evaluate the influence of race, sex, and SES on home discharge within each quintile. **RESULTS:** Blacks (OR:1.88, 95% CI:1.75,2.01) and women (OR:1.03, 95% CI:1.00,1.06) were more likely to be discharged home; discharge home did not vary for low SES patients. However, there was a four-way interaction between race, sex, SES and clinical probability of home discharge. Thus, findings are presented as odds ratios (95% CI) for race/gender/SES combinations in the low, mid and high clinical probability home discharge quintiles.

Patient Race / Sex / SES	Home Discharge Quintiles (probability range)		
	1: Low (≤0.58)	3: Mid (0.68-0.76)	5: High (≥0.85)
W / M / Non	1.00 (referent)	1.00 (referent)	1.00 (referent)
W / M / Low	0.95 (NS)	0.85 (0.74,0.98)	1.10 (NS)
W / F / Non	1.19 (1.11,1.28)	0.97 (NS)	0.58 (0.52,0.64)
W / F / Low	1.32 (1.15,1.50)	0.93 (NS)	0.57 (0.46,0.71)
B / M / Non	1.59 (1.27,1.99)	1.72 (1.29,2.30)	0.81 (NS)
B / M / Low	1.88 (1.42,2.49)	1.53 (1.08,2.16)	0.97 (NS)
B / F / Non	2.72 (2.27,3.27)	1.56 (1.22,1.98)	0.87 (NS)
B / F / Low	2.79 (2.22,3.50)	1.89 (1.38,2.59)	0.78 (NS)

B=Black, W=White, M=Male, F=Female, Non=non-low SES, Low=low SES

CONCLUSIONS: Discharge to home is influenced by patient race, gender and SES. These effects vary based on patients' clinical probability of home discharge and are strongest among patients with the lowest clinical probability of home discharge.

LONG-TERM OPIOID USE FOR CHRONIC PAIN SYNDROMES IN PRIMARY CARE. MC Reid, EL Rogers, LL Engles-Horton, M Weber, PG O'Connor, VA Connecticut Healthcare System & Yale University.

Opioid medications are often used to treat chronic pain syndromes, however, the epidemiology of this practice in primary care (PC) is not well defined. We sought to: (1) define the spectrum of chronic pain syndromes among PC patients who receive opioid therapies; (2) determine their psychiatric comorbidity; and (3) describe the types of other pharmacologic and nonpharmacologic interventions received by these patients. To identify potential subjects, we reviewed all opioid prescriptions during a 1 year period from 2 sites: an urban university-based clinic and a VA PC practice. Subjects were eligible if they received ≥ 6 months of opioid therapy for a nonmalignant condition and were not on methadone maintenance. We reviewed the medical records of all subjects who met these criteria from the university clinic (n = 42), and a random sample of subjects (n = 50) from the VA practice.

Participants (n = 92) had a mean age of 55 years (26-84), and were mostly male (66%) and caucasian (80%). The mean duration of pain was 14 years (1-38), and the types of chronic pain syndromes present included: low back (31%); degenerative joint disease (22%); injury-related (16%); diabetic neuropathy (10%); spinal stenosis (8%); and other (13%). Most patients (52%) received oxycodone; 28% were on long-acting morphine, 11% received methadone; and 9% were prescribed other agents, e.g., codeine. A history of alcohol abuse or dependence was present among 39%; prior opiate or drug abuse was noted in 31%; and 46% and 14%, respectively, had histories of depressive or anxiety disorders. Most patients (83%) had been previously evaluated by ≥ 1 specialists including pain management, orthopedics, or neurology, 60% were concomitantly prescribed ≥ 1 adjuvant medications, e.g., non-steroidal or tricyclic drugs, and 47% had previously received nonpharmacologic interventions including physical therapy or behavioral modification.

Our results indicate that a broad spectrum of chronic pain syndromes are treated by opioid therapies in primary care, psychiatric comorbidity is prevalent in this population, and a significant number of co-interventions are received by these patients. Prospective studies are needed to determine the efficacy of opioid therapy for chronic pain syndromes in primary care.

ABDOMINAL ADIPOSITY AND RISK OF STROKE IN MEN. KR Rexrode, JE Manson, CH Hennekens. Division of Preventive Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

Abdominal adiposity has been associated with risk of coronary heart disease, but the relationship with stroke is less certain. We examined the relationship of waist circumference and waist-hip ratio (WHR) to risk of ischemic and total stroke among men in the Physicians' Health Study, a randomized trial of aspirin and beta-carotene among 22,071 US male physicians, aged 40 to 84 at baseline in 1982. Men reported their waist and hip measurements on the 9-year questionnaire. Among 15,789 men who were free from prior heart disease, cancer or stroke and had complete covariate information, 124 ischemic and 146 total strokes occurred during an average of 3.7 years of follow-up. Men with large waist circumference or high WHR were less likely to exercise regularly and more likely to smoke, have hypertension, elevated serum cholesterol and diabetes. After adjusting for age, smoking, physical activity, family history of myocardial infarction, alcohol intake, aspirin and multivitamin use, men in the highest quintile of WHR (> 0.99) had a relative risk (RR) of 1.02 (95% confidence interval [CI], 0.58-1.79) for ischemic and 1.08 (CI, 0.64-1.82) for total stroke, compared with men in the lowest WHR quintile (<0.90). Men in the highest waist circumference quintile (≥ 40.7 inches) had a RR of 1.18 (CI, 0.67-2.09) for ischemic and 1.25 (CI, 0.73-2.13) for total stroke, compared with men in the lowest quintile (<34.8 inches). Further adjustment for body mass index modestly attenuated the observed associations: men in the highest WHR quintile had a RR of 0.94 (CI, 0.55-1.61) for total stroke, and those in the highest waist quintile had a RR of 0.95 (CI, 0.51-1.78). No significant differences were observed when men were stratified by age, using 60 years as a cutpoint. These data suggest no significant relationship between abdominal adiposity and ischemic or total stroke in middle aged men.

DO DENTURES COMPROMISE NUTRITIONAL STATUS IN FRAIL OLDER ADULTS? CS Ritchie, RA Silliman, BE Millen, RI Garcia, D Copenhafer, C Wehler. University of Louisville Division of General Internal Medicine and Geriatrics, Louisville, KY and Boston University Schools of Medicine, Public Health, and Dental Medicine, Boston, MA.

Background. Studies of hospitalized and institutionalized older adults suggest a relationship between oral health and poor nutritional status. Decreasing numbers of teeth and edentulousness have been associated with poor dietary quality. We evaluated the oral health status of urban, homebound older adults, and determined whether denture use or denture unacceptability was associated with suboptimal nutritional status.

Methods. Detailed in-home assessments of diet, anthropometry, and oral health were completed by trained and calibrated researchers. Nutritional status was defined in two ways: whether or not the patient had had a 10 lb weight gain or loss in the previous 6 months, and their current body mass index. Lean body weight was defined by a BMI of <24 kg/m^2; excessive body weight was defined by a BMI of ≥30 kg/m^2. Oral health parameters of interest included a subjective index of chewing function, whether the patient wore dentures, whether dentures were used for eating, and denture "acceptability." Denture "acceptability" was based on denture stability and retention.

Results. 210 patients underwent baseline assessment (age 65-102 years). 73% were from a minority group. 62 % of patients were edentulous. 67% had dentures; 2/3 of those who had dentures wore their dentures to eat. Dentures were considered "acceptable" in only half of all denture wearers. Individuals who had dentures and wore their dentures to eat were more likely to complain of chewing problems than individuals who did not wear their dentures to eat (p=0.01). Those who wore their dentures to eat were more likely to be lean or of a normal body weight compared to those who did not wear their dentures to eat (p=0.04), and were more likely to complain of weight loss (p=0.01). Among patients who wore their dentures to eat, those who had "unacceptable" dentures were more likely to complain of recent weight gain (p<0.01); but they were not more likely to have a high BMI (p=.9). Chewing complaints and denture "acceptability" were not related to each other.

Conclusion. In homebound, urban older adults, a large proportion have dentures. Many who have dentures do not wear them to eat. Those who wear them to eat complain most about chewing difficulty and weight loss and are more likely to have a lean or normal body weight. These findings suggest that denture wearers have a significant chewing handicap, that may contribute to weight loss and low body weight. Among homebound older adults, denture status and use should be evaluated as part of a preventive clinical evaluation.

SCREENING ADULTS FOR LATENT *MYCOBACTERIUM TUBERCULOSIS* INFECTION; ESTIMATING THE BENEFITS OF TESTING AND TREATING INDIVIDUALS AND POPULATIONS. David N Rose. Division of General Internal Medicine & Primary Care, Long Island Jewish Medical Center, New Hyde Park, NY, and Department of Medicine, Albert Einstein College of Medicine, Bronx, NY

Background and Purpose: The benefits of *Mycobacterium tuberculosis* screening are unknown for most people because screening has not been tested in clinical trials and preventive therapy has not been tested in most risk groups for whom it is recommended. This study was performed to estimate the benefits of screening and preventive therapy for individuals and population groups.

Method: Markov model and literature review.

Patients: Persons in 10 population groups ranging from highest to lowest risk.

Intervention: Screening with the tuberculin skin test and preventive therapy for tuberculin reactors. Three preventive therapy regimens were analyzed: 6-month and 12-month isoniazid regimens and a 2-month rifampin and pyrazinamide regimen.

Outcome measures: 10-year and lifetime tuberculosis risks, extension in life expectancy as a result of taking preventive therapy, number needed to screen and to treat to prevent one case and one death over 10 years.

Results: Persons with human immunodeficiency virus (HIV) infection can expect high 10-year and lifetime tuberculosis rates; among tuberculin reactors, the number needed to treat to prevent one case is 4 to 10 and to prevent one death it is 8 to 20; among all HIV-infected persons, the number needed to screen to prevent one case is 104 to 502 and to prevent one death it is 191 to 977. Other risk groups that benefit substantially from screening are close contacts of active cases, intravenous drug abusers, and persons with end-stage renal disease, treated with dialysis or transplantation. Foreign-born persons and prisoners and prison employees have substantial benefits of screening but small or moderate benefits of preventive therapy: 30-year old tuberculin reactors have 0.2 to 0.8 month extensions in life expectancy and the number needed to screen to prevent one case is 202 to 1,660. Studies have reported a wide range of tuberculosis risks among persons with silicosis and therefore the range of benefits of screening and preventive therapy is wide. Persons with diabetes mellitus and the general population have minimal benefits from screening and preventive therapy. The three regimens result in similar benefits for all but the highest risk groups, for whom the 6-month regimen has somewhat smaller benefits than the other two regimens.

Conclusions: Close contacts of active cases, intravenous drug abusers, and persons with HIV infection or end-stage renal disease have the greatest benefit of screening and preventive therapy. The benefits of screening or preventive therapy are minimal or uncertain for persons with diabetes mellitus or silicosis and for foreign-born persons and prisoners and prison employees. Recommendations regarding these risk groups should be reconsidered.

INTERELATER RELIABILITY IN DETERMINATION OF ADVERSE DRUG EVENTS. JM Rothschild, LA Petersen, EJ Thomas, TK Gandhi, DW Bates. Brigham and Women's Hospital, Boston, MA and Veteran's Affairs Medical Center, Houston, TX.

Purpose: Injuries caused by drugs are common in hospitalized patients, and have important consequences for patients and hospitals. Routine identification of these events requires developing approaches to reliably determine whether an event is caused by medical therapy such as a drug. Therefore, we performed a study to assess the reliability of the determination of an adverse drug event (ADE) among incidents which might or might not be ADEs.

Methods: Descriptive case summaries were selected from previous hospitalized cohorts in which ADEs were identified. Patients with non-drug related incidents were either exclusions from prior ADE studies or derived from an unrelated study of non-drug events. Incidents were classified by blinded independent physician reviewers according to previously defined criteria. The study sample (399) consisted of 57% (n=227) ADE's and 43% (n=172) incidents unrelated to an ADE. The case summaries were randomly combined and had similar formats to reduce biased distinctions of the source populations. Two physicians independently judged the case summaries for the probability that an ADE was present. We used a 6-point rating scale for the likelihood of a relationship between an incident and medication use (1-little or none; 2-slight to moderate; 3-not likely, < 50/50; 4-more than likely,> 50/50; 5-strong; 6-virtually certain).

Results: The scores were compared individually and collapsed into 2 sub-groups for the estimated presence (1,2,3) or absence (4,5,6) of an ADE. Agreement between the reviewers was 90%. The intra-class level of agreement, using kappa (k) to correct for chance agreement, was .70. Among the 41 cases (10%) of disagreement were 2 subgroups difficult to classify by the summary format: 6 patients whose new symptoms could have been caused by drugs or the underlying illness and 6 patients whose complications were related to IV infusions or catheters for drug access.

Conclusions: Using a large collection of incidents in hospitalized patients, we found excellent inter-rater agreement in distinguishing ADEs. To further improve classification, more detailed guidelines for reviewers are needed. With the development of electronic medical records, the capacity for scanning large quantities of charts will be facilitated by the automated creation of case summaries or outlines from different components (admit note, discharge summary, medication administration record, procedure notes, and eventually free text). Therefore, it is important to initially validate the reliability of independent reviews of manually summarized records for determination of presence of an ADE.

RACE AND THE USE OF CORONARY ARTERY BYPASS SURGERY: INSIGHT FROM PATIENT NARRATIVES.
S Saha, M Robertson, LA Rhodes, NJ Chrisman, RA Deyo. VA Puget Sound Health Care System and University of Washington, Seattle, WA.

Racial differences in the use of coronary procedures appear to represent both overuse among whites and underuse among blacks, but remain largely unexplained. We sought to describe white and African-American patients' experience and perspectives regarding coronary heart disease (CHD) treatment in an effort to explore potential causes of racial disparities in the use of coronary artery bypass graft (CABG) surgery.

We conducted in-depth, audiotaped interviews with 15 white and 15 African-American men admitted to the Seattle VAMC for CHD. Interviews elicited patients' narratives of their experience with CHD, focusing on decisions regarding CABG. Transcribed audiotapes and field notes were reviewed and analyzed using grounded theory methods.

White and African-American patients differed in their levels of trust in physicians and in medical care, which in turn gave rise to differences in 1) perceptions of the benefits and risks of CABG and 2) reliance on physician recommendations when making medical decisions. White patients expressed high levels of trust in medical care and were often enthusiastic about CABG, describing it as providing "a permanent fix" or "a brand new heart." Many feared catastrophic consequences if they declined CABG when recommended. They downplayed risks of surgery and based decisions regarding CABG almost entirely on physician recommendations. African-American patients were less optimistic about the likely benefits of CABG, citing the potential for adverse outcomes and for being subjects of medical experimentation. They considered CABG appropriate only when there were "no other alternatives." They usually followed physician recommendations but were wary of inconsistency and uncertainty in recommendations for invasive care. They reported greater trust when physicians spoke comprehensibly and paid attention to their concerns.

Disparities in the use of CABG for white and African-American patients may be attributable in part to white patients' greater trust of physicians and medical care, more optimistic perceptions of the benefits and risks of CABG, and greater reliance on physician recommendations. Future studies should examine the effect of improving patient-physician communication, informed consent practices, and shared decision-making techniques on improving equity as well as appropriateness in the use of medical technology.

DOES THE RELATIONSHIP OF ADL FUNCTION TO 1-YEAR MORTALITY DIFFER IN HOSPITALIZED OLDER PATIENTS WITH AND WITHOUT DEMENTIA? N Sacks, KE Covinsky, K Yaffe, S Landefeld. UCSF & San Francisco VAMC, San Francisco, CA.

Dependence in Activities of Daily Living (ADL) predicts shorter survival in hospitalized older patients, even after controlling for severity of acute and chronic illness. It is unknown, however, whether this relationship exists in patients with dementia, a common cause of ADL dependence. Therefore, we studied 1583 patients age 70 years or older admitted to the general medical service of a university hospital. Capacity to perform 5 ADL was assessed on admission: bathing, dressing, transferring, using the toilet, and eating.

The mean age of the 1583 patients was 80 yrs (range, 69-110 yrs) and 67 % were women. In all 1583 patients, the 1-year mortality rate was 28% and was associated (P<0.001) with the number of dependent ADL: 18%, 27%, 27%, 30%, 34%, and 40% for patients with 0, 1, 2, 3, 4, and 5 dependent ADL, respectively. The 294 patients with a clinical diagnosis of dementia had more dependent ADL (mean, 3.8 vs. 1.9 for the 1289 patients without dementia; P<0.01), and patients with dementia were more likely (P<0.01) to be dependent in each ADL (e.g., 70% dependent in dressing vs. 30% of patients without dementia). Among patients without dementia, the 1-year mortality rate was associated (P<0.001) with the number of dependent ADL: 16%, 26%, 25%, 29%, 30%, and 39% for patients with 0, 1, 2, 3, 4, and 5 dependent ADL, respectively. Among patients with dementia, however, the 1-year mortality rate was not associated (P=0.7) with the number of dependent ADL: 29%, 33%, 46%, 39%, 44%, and 41% for patients with 0, 1, 2, 3, 4, and 5 dependent ADL, respectively. Similarly, among patients without dementia, 1-year mortality was not associated (P>0.1) with dependence in any individual ADL.

ADL dependence was associated with 1-year mortality in hospitalized elders, and patients with dementia were more dependent in ADL. Nonetheless, among patients with dementia, ADL dependence did not predict 1-year mortality. These findings may indicate that death among patients with dementia is mediated by processes that are independent of ADL function.

CHOOSING A PHYSICIAN: DOES RACE MATTER? S Saha, M Komaromy, and AB Bindman, VA Puget Sound Health Care System, Seattle, WA, and Primary Care Research Center, Department of Medicine, University of California, San Francisco.

Black and Hispanic physicians serve as primary care providers for large numbers of black and Hispanic patients. Racial and ethnic pairing of patients and physicians may be attributable to greater accessibility of minority physicians within minority communities. Pairing may also result from patients' preferring to see physicians of their own race or ethnicity, for reasons related to language, culture, or discrimination. We sought to determine the degree to which racial and ethnic matching between patients and physicians is attributable to the geographic accessibility of physicians vs. patients' choice.

We analyzed data from a national telephone survey conducted in 1994. Among 2045 white, black, and Hispanic respondents, we assessed predictors of racial pairing between patients and physicians, including patients' ratings of the convenience of their physicians' office location, and their ability to choose their physicians.

Black respondents chose black physicians more often than non-black physicians (adjusted OR 3.37, 95% CI 1.54-7.36), even after controlling for sociodemographic factors and convenience of physician's office location. Among Hispanics, primary language (Spanish) was associated with having a Hispanic physician (adjusted OR 2.16, 95% CI 1.17-3.99). Convenience of physician's office location was associated with having a racially concordant physician for whites (adjusted OR 3.04, 95% CI 1.22-7.61), but not for blacks or Hispanics.

Blacks and Hispanics may obtain care from physicians of their own race and ethnicity more because of personal preference and language than because of geographic accessibility. Efforts to increase the supply of underrepresented minority physicians and to enhance cultural and linguistic competence among health care providers will be necessary to meet the needs and demands of an increasingly diverse population of health care consumers.

THE CLINICAL AND ECONOMIC EFFECTS OF SILVER ALLOY URINARY CATHETERS TO PREVENT URINARY TRACT INFECTION. Sanjay Saint, David L. Veenstra, Sean D. Sullivan, Carol Chenoweth, A. Mark Fendrick, University of Michigan Health System, Ann Arbor, Michigan

Catheter-associated urinary tract infection (UTI) is associated with increased morbidity, mortality, and costs. A recent meta-analysis concluded that silver alloy catheters reduce the incidence of UTI by three-fold; however, providers must decide whether the efficacy of such catheters is worth the extra per unit cost of $5.30. We used decision analysis to assess the clinical and economic impact of using silver alloy urinary catheters in hospitalized patients requiring catheterization.

The decision model, performed from the healthcare payer's perspective, was based on a simulated cohort of 1000 hospitalized patients requiring urethral catheterization for three to seven days. We compared two catheterization strategies: silver alloy catheters and standard (non-coated) urinary catheters. Outcomes included the incidence of symptomatic UTI and bacteremia, and direct medical costs.

Use of silver-coated catheters led to a 45% relative decrease in the incidence of symptomatic UTI from 21.5 to 12 cases per 1000 patients and a 51% relative decrease in the incidence of bacteremia from 3.8 to 2 cases per 1000 patients compared to standard catheters. In addition to these clinical advantages, use of silver catheters resulted in an estimated cost savings of $6.27 per patient.

Routine use of silver catheters in hospitalized patients requiring catheterization for three to seven days reduces the incidence of symptomatic UTI and bacteremia, and reduces costs, and thus should be strongly considered in these patient populations. The appropriate use of silver catheters in patients requiring catheterization for less than three or more than seven days remains unclear.

META-ANALYSIS OF REHABILITATION FOR PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE. GF Salman, BW Beasley, MC Mosier, DR Calkins. The University of Kansas School of Medicine, Kansas City, KS.

The objective of this study was to conduct a meta-analysis to assess if rehabilitation improves the exercise capacity of patients with chronic obstructive pulmonary disease (COPD).

We searched the MEDLINE to identify randomized .controlled trials of rehabilitation for patients with COPD published between 1966 to 1998. We reviewed the abstracts presented in national meetings and the reference lists of published articles. We also searched the Cochrane library and contacted authors of published articles. Studies were included if they met the following criteria: patients were symptomatic with FEV1< 70% predicted; rehabilitation group received at least 4 weeks of rehabilitation (upper extremity, lower extremity or respiratory muscles); control group received no rehabilitation; outcome assessment included exercise capacity. We identified 48 studies that were assessed by two independent reviewers for inclusion criteria. Twelve studies were included in the final analysis. The effect of rehabilitation on exercise capacity (effect size) was calculated as the improvement in walking test and adjusted for the sample size and the methodological quality of each study.

The 12 trials that assessed exercise capacity have effect sizes that differ significantly from each other (heterogeneity $p = 0.006$). Sensitivity analysis showed that trials that included lower extremity rehabilitation (11 trials, 319 patients) have more homogeneous effect sizes ($p > 0.05$). In patients with severe COPD (FEV1<35% or < 0.8 L), only comprehensive rehabilitation (upper, lower and respiratory) for longer duration (more than 6 months) showed statistically significant improvement in the walking test ($p = 0.042$). In patients with mild to moderate COPD, less comprehensive rehabilitation for shorter duration showed statistically significant improvement in the walking test ($p = 0.001$).

Any rehabilitation program for patients with COPD should include lower extremity exercise. Patients with severe COPD need comprehensive rehabilitation for a longer period of time to show a significant improvement in their exercise capacity.

ASSESSING THE QUALITY OF PRIMARY CARE IN THE GENERAL MEDICINE CLINIC OF AN URBAN PUBLIC HOSPITAL. M Saleem, T Conway, TC Hu, Department of Medicine, Cook County Hospital; Ambulatory and Community Health Network, Cook County Bureau of Health Services, Chicago, IL.

The purpose of this study was to evaluate the quality of primary care perceived by inner city patient populations. A previously validated tool, the Component of Primary Care Instrument (CPCI), was used to measure the quality of primary care from the perspective of patients visiting their physicians. Descriptive analysis was performed.

The study, which was carried out in the General Medicine Clinic of an urban public hospital, involved patients' answering a 51-item self-administered questionnaire. Each question was given a 1 to 6 rating scale (1=strongly disagree, 6=strongly agree). The 51 questions were developed based on 10 components of primary care as defined by the Institute of Medicine. A convenient sample of 1,451 patients (443 males, 1,008 females) completed the questionnaire.

Components	Mean	Std Dev
1. Family context	2.38	1.52
2. Community context	2.42	1.71
3. Coordination of care	4.02	1.52
4. Advocacy	4.64	1.00
5. Accumulated knowledge	4.66	1.21
6. Interpersonal communication	4.93	1.05
7. Comprehensiveness of care	4.96	1.13
8. Preference for regular physician	5.26	1.01
9. Longitudinality with physician[1]	1.98	1.20
10.Longitudinality with practice[1]	3.57	1.91
Usual provider continuity (UPC) index[2]	0.55	0.28

[1] Longitudinality in years: < 1, 1-2, 3-5, 6-10, 11-15, 16-20, >20

[2] UPC index = number of visits to index MD / number of visits to (Index MD + Other MDs in the same clinic + MDs in other clinics)

Six of the ten components in the above table had a mean score of greater than 4, suggesting that these areas of primary care were perceived by patients as well served. The longitudinality with physician and practice were low, reflecting the unavoidable discontinuity of services provided by residents in this teaching clinic. The family and community context components also had low mean scores, indicating most primary care physicians still focus on a biomedical model for their practice.

Our study reveals deficiencies in continuity of care as well as in the family and community dynamics in patient care. Educational and structural intervention and continued monitoring need to be addressed in outpatient internal medicine training settings.

WARFARIN AND ASPIRIN USE AND THE PREDICTORS OF MAJOR BLEEDING COMPLICATIONS OF SUBJECTS ON ANTICOAGULATION FOR ATRIAL FIBRILLATION IN THE FRAMINGHAM HEART STUDY.

C Sam, D Levy, PA Wolf, RB D'Agostino, H Silbershatz, JM Massaro, EJ Benjamin. NHLBI's Framingham Heart Study and Section of General Internal Medicine, Boston Medical Center, Boston University School of Medicine, Boston, MA.

Background: In response to published randomized clinical trials of anticoagulation in atrial fibrillation (AF), there has been an increase in utilization of warfarin and aspirin. Predictors of bleeding complications in subjects with AF in a population based setting, such as the Framingham Heart Study, may be different than that reported in clinical trials.

Methods: Participants with AF, in the Framingham Heart Study cohort (1980 to 1994), were studied. The risk factors for bleeding complications in AF were examined. Predictor variables such as age, sex, congestive heart failure and myocardial infarction were analyzed by Cox's proportional hazard model.

Results: We examined 370 subjects with AF. 75 subjects (20%) were on aspirin and 39 (12%) were on warfarin at some point on follow-up. The mean age of the subjects was 80 years. 45% were men, 6% had a history of congestive heart failure and 8% had a history of myocardial infarction. Of those that bled, the mean time to first bleed on aspirin was 2.5 years, whereas those subjects on warfarin, the mean time to first bleed was 1.9 years. Using Cox's proportional hazard model, we found that female sex, myocardial infarction, aspirin and warfarin (all p-values <0.05) were predictors of bleeding. Age was not significant, but the age distribution in the sample was narrow.

Conclusion: Warfarin and aspirin were relatively infrequently used in the community, in the time period studied. Female sex, myocardial infarction, aspirin and warfarin are predictors of bleeding in subjects with AF.

CLINICAL PREDICTORS OF MENTAL DISORDERS IN A GROUP OF GULF WAR VETERANS EVALUATED THROUGH THE COMPREHENSIVE CLINICAL EVALUATION PROGRAM (CCEP) JA Santoro, MP Noonan, B McCarthy, M Roy. Department of Medicine, Walter Reed Army Medical Center, Washington, DC.

Purpose: Primary care research on civilian populations suggests that symptom count, recent stress, symptom severity and self-rated health (S4 model) are independent predictors of mental disorders. Our objective was to determine whether any clinical information collected during the course of CCEP evaluations could be used to predict mental disorders among a group of Gulf War veterans.

Methods: We retrospectively extracted data on 417 patients who underwent CCEP Phase II evaluations at the Walter Reed Gulf War Health Center between 1994 and 1996. Predictor variables were abstracted from the PRIME-MD coversheet, self-reported combat exposures and disability measures. All subjects received up to five final diagnoses decided by a multi-disciplinary panel. Univariate analysis and logistic regression were used to look for independent associations with the primary diagnosis of a mental disorder as the dichotomous outcome variable.

Results: The study group was older (median age 31 vs. 25), and had higher percentages of females (19 vs. 7%), African-Americans (34 vs. 23%), officers (17 vs. 10%) and Army (82 vs. 50%) than the overall Operation Desert Storm force, confirming selection bias. Subjects reported a mean symptom count of 9.1 (s.d. ± 3.6) on a checklist of 17 symptoms. Fully 55% endorsed "serious illness worry", and 42% reported missed work days due to illness in the previous 90 days. The prevalence of a primary mental disorder was 60%, and mental disorders were evenly distributed between mood, anxiety, somatoform and other mental disorders. Univariate predictors that decreased the risk of a primary mental disorder included being older, married, or a college graduate. Being in the Army, reporting any days lost to work, symptom count ≥10, serious illness worry, symptom severity >4.5 and "fair" or "poor" overall health increased the risk. A multivariate regression model contained 6 variables and 4 independent predictors: enlisted rank (OR .65, 95%CI .42 – 1.0), symptom count ≥10 (OR 1.9, 95%CI 1.2 – 3.1), symptom severity >4.5 (OR 1.9, 95%CI 1.2 – 3.1) and serious illness worry (OR 1.6, 95%CI .98 – 2.5). Thus, 3 of the 4 variables from the original S4 model were validated in our dataset.

Conclusions: A group of Gulf War veterans demonstrated high mean symptom counts, high self-reported disability and a high prevalence of mental disorders. Three clinical predictors of an increased risk for mental disorders were identified: symptom count, symptom severity and serious illness worry. However, our final model was only weakly predictive. Other, as yet undetermined, factors may predict mental disorders among patients presenting with war syndromes.

EXPECTATIONS AND BELIEFS REGARDING AGING AND CARE-SEEKING: HOW DO OLDER ADULTS AND PHYSICIANS COMPARE? CA Sarkisian, RD Hays, CM Mangione. UCLA School of Medicine, Dept. of Medicine, Los Angeles, CA.

Background: Little is known about the expectations and beliefs of older adults regarding aging, whether older adults' expectations and beliefs differ from those of their physicians, or how these expectations and beliefs influence care-seeking behavior. **Purpose:** To identify appropriate content area for a survey to measure expectations of aging among older adults and physicians; and to compare older adults' and physicians' beliefs regarding expectations of aging and care-seeking for age-associated conditions. **Methods:** Using a standardized, previously pilot-tested script designed to elicit beliefs regarding expectations of aging, we conducted 5 single-sex focus groups of older adults recruited from 4 diverse community settings (n=38, mean age=78), and 2 focus groups of physicians who care for older adults (n=11, mean age=37). Focus groups were audiotaped and transcribed; all comments were linked to individual participants. Qualitative content analysis using a masked consensus process identified domains of expectations regarding aging. A corresponding coding scheme was constructed, and a trained data specialist applied the code to each line of the transcripts. Interrater reliability was measured on 5% of the coded statements; there was 83% agreement between coders. Content and frequency of expectations and beliefs regarding aging and care-seeking were examined and compared between groups of older adults and physicians. **Results:** Content analysis identified 26 domains of expectations regarding aging. Of 840 unique statements coded, the most frequently addressed domains were physical function, cognitive function, social function, pain, and sexual function. Older adults and physicians both regarded decline in physical function, energy level, and appearance, but not personal autonomy, as expected parts of aging. Older adults identified 4 mental domains - anxiety, emotional well being, happiness and death - which were not addressed by the physician-groups. Older adults also differed from physicians by regarding falling as an expected part of aging, and by more frequently attributing medical conditions to aging. Whereas physicians believed that patients should inform their doctor of almost any decline or change, older adults were more mixed in their opinions regarding care-seeking: many reported not believing it important to seek care for memory loss, declines in energy level, or falls. **Conclusions:** In these focus groups, older adults differed from physicians by: 1) describing domains of aging related to mental health; 2) more frequently attributing medical conditions to aging; and 3) being less likely to believe one should seek care for age-associated changes. Further study should determine whether physicians fail to address mental health aspects of aging valued by many older persons, and whether older adults who attribute age-associated but potentially addressable medical problems to aging are at greater risk for under-treatment and avoidable functional decline.

COMPANIONS ACCOMPANYING PATIENTS TO INTERNAL MEDICINE AMBULATORY VISITS: CHARACTERISTICS AND RATIONALES. Lisa Scatena, Lisa Schilling, C. T. Lin, Gail Albertson, Lisa Cyran, Lindsay Ware and Robert J. Anderson, University of CO Health Sciences Center, Denver, CO.

Background: There is limited information on the frequency and rationales for companions accompanying patients to internal medicine ambulatory visits.

Objective: To determine the characteristics and roles of companions accompanying patients to internal medicine ambulatory visits.

Methods: Phase I: Prospective observational study of 1,285 ambulatory visits to general internists in an academic practice (AP, n=834) and to internal medicine residents in a housestaff practice (HP, n=451). Phase II: 199 patient-companion pairs independently completed post-visit questionnaires.

Results: Phase I: Companions accompanied patients to 23 and 39% of AP and HP visits respectively (p=.0005). In both AP and HP, 43% of companions accompanied the patient to the examination room. Phase II: Patient characteristics significantly associated with increased likelihood of companion accompaniment to the examination room were male sex and age greater than 65. Companions were usually female (59%) and family members (83%) including spouse/partner (47%), adult child (15%) or other family members (21%). When companions stayed in the waiting room, both patients and companions agreed that help with transportation (70% of visits), keeping the patient company (50%) and provision of emotional support (25%) were the main reasons for accompaniment. When companions accompanied the patient to the examination room, both patients and companions agreed that help with transportation (65%), keeping the patient company (50%), and provision of emotional support (50%) were important reasons for accompaniment. Companions accompanying patients to the exam room played additional roles: helping to communicate patients' concerns to the physician (50%), helping patients to remember physician recommendations (50%), expressing concerns regarding the patient (40%) and assisting patients in making decisions (35%). Patients felt that assisting with language barriers was a reason for accompaniment in 28% of HP visits vs. 3% of FP visits (P=0.0005). Exam room companions and patients felt a companion's presence aided physician understanding of the patient (60%), increased the patients' understanding of diagnosis and treatment (60%) and led to more aggressive treatment (23%) and increased testing (11%). Patients and companions rated the companion's presence in the exam room as helpful or very helpful for 93% of the visits.

Conclusion: These results demonstrate the frequent presence, significant roles and positive impact the companion has on the ambulatory medical encounter.

DIFFERENCES IN QUALITY OF LIFE OVER TIME IN MEN TREATED WITH SURGERY, RADIATION, OR EXPECTANT MANAGEMENT FOR EARLY STAGE PROSTATE CANCER. MM Schapira, WF Lawrence, DA Katz, AB Nattinger. Divisions of General Internal Medicine, Medical College of Wisconsin, Milwaukee, WI, University of Wisconsin, Madison, WI, and Georgetown University, Washington, D.C.

The purpose of this study was to describe health related quality of life (HRQoL) over time in men receiving different treatments for clinically localized prostate cancer. A prospective observational study was conducted of men newly diagnosed with prostate cancer. Subjects were recruited from 4 hospitals located in 2 cities in Wisconsin between 2/95 and 6/97, and interviewed at baseline (BL) and 3 and 12 months after initial treatment was received. Quality of life was measured with the General Health Perceptions (GHP), Physical Functioning (PF), and Mental Health (MH) scales of the Short Form-36 Health Survey (SF-36) and the University of California Prostate Cancer Quality of Life Index (UCLA Index). The UCLA Index measures urinary function and bother (UF, UB), sexual function and bother (SF, SB), and bowel function and bother (BF, BB) domains. Quality of life was compared between patients treated with radical prostatectomy (RP), radiation therapy (RT), and expectant management (EM) using analysis of covariance to control for age and comorbidity at the time of diagnosis.

Of the 123 subjects recruited to the study, 43 were treated with RP (35%), 50 with RT (41%), 29 with EM (24%), and 1 lost to follow-up with treatment unknown.

Univariate Mean HRQoL Scores at 12 Months By Treatment Group

	GHP	PF*	MH	UB	UF*	SB	SF*	BB	BF
RP	70.5	83.8	77.7	67.6	62.1	32.4	21.1	88.8	88.7
RT	59.1	58.1	75.8	82.7	89.1	62.2	24.1	76.3	78.6
EM	69.4	66.8	82.4	83.0	90.8	63.0	37.6	82.0	86.4

*p value of < 0.05

In univariate analysis, RP patients had higher PF scores than RT or EM patients, however there was no significant differences found in multivariate analysis after controlling for age and comorbidity. The UCLA Index found that UF and SF were lower in RP patients than other groups in both univariate and multivariate analysis ($p<0.05$). No significant differences in UB or SB were found. We conclude that urinary and sexual function HRQoL domains differ one year after initial therapy between RP, RT, and EM patients. However, overall HRQoL as measured by the SF-36 scales does not differ between treatment groups.

DYSPEPSIA IN THE INNER CITY: PATIENTS' BELIEFS AND EXPECTATIONS. MD Schwartz, MJ Yedidia, and M Pierre. Division of Primary Care, Department of Medicine, Gouverneur Hospital, and Wagner Graduate School of Public Service, New York University, NY.

Purpose: Most patients with dyspepsia have a normal upper gastrointestinal x-ray (UGI) and many physicians do not test low risk patients. We sought to understand patients' beliefs and concerns about their symptoms, and their expectations of the UGI to assist physicians in effectively reassuring patients in whom UGI's are not ordered.

Methods: We interviewed 216 consecutive patients just prior to their UGI at an inner city clinic. Interviews were audiotaped, transcribed, and translated into English. We independently read the transcripts, and categorized the passages by major themes.

Results: The sample was 58% female, 56% Latino, 32% Asian, and 61% uninsured. Overall, 93% felt the UGI was very important and only 31% felt the doctor could find the right treatment without a test. The most common attributions of their symptoms were a medical label (36%, mostly ulcers), diet (25%) and stress (18%). Most common worries were a specific disease (38%, ½ cancer), a specific symptom (26%), and a particular organ (12%). If the doctor had not ordered the UGI, 53% would disagree and 70% would go elsewhere for the test. Comparing the concerns of those who would go elsewhere to those who would not, the former tended more often to worry about particular symptoms, believe they needed medicine, want to know the cause of their symptoms, and use western (as opposed to alternative) medicine. If the test were normal, only 23% would be reassured. Fully 75% had a normal UGI, and this group was particularly likely to report, before the test, that they would react negatively to not having the test.

Conclusions: Most patients highly valued the UGI test and would be disappointed if it was not done or if it was normal. Reassurance of low risk patients, to be effective, should address their specific attributions, worries, and ideas about what they need to feel better.

EPIDEMIOLOGY OF BEHAVIORAL IMPROVEMENTS IN ADULTS WITH MULTIPLE ADVERSE CARDIAC RISK BEHAVIORS: THE ATHEROSCLEROSIS RISK IN COMMUNITIES (ARIC) STUDY. CN Sciamanna, DR Young, M Szklo, SB Wyatt, G Howard, FL Brancati. Johns Hopkins Medical Institutions, Baltimore, MD, The Miriam Hospital, Providence, RI, University of Mississippi, Jackson, MI, Wake Forest University School of Medicine, Winston Salem, NC.

Although the need to counsel adults with multiple adverse cardiac risk behaviors (MACRB) is widely acknowledged, little is known about their patterns of behavior change. We therefore conducted a prospective study of a cohort of adults with MACRB to measure the occurrence of behavioral improvements, and to determine whether improvements tend to cluster.

The population was the on-going ARIC study, a community-based longitudinal observational cohort study of 15,000 adults aged 45-64. We studied the 1113 participants with MACRB, defined by the presence of all the following behaviors at baseline: cigarette smoking, above the median for percent of total dietary calories from saturated fat, and below the median of the baseline Baecke Physical Activity Sports index. Of these, 108 died and 220 missed the 6-year follow-up, leaving 745 individuals for analysis. Behavioral improvements at year 6 were defined as: quit smoking, decreased saturated fat intake by 25%, increased physical activity by 25% from baseline.

The 745 adults were 43% male, 67% Caucasian, and had a mean age (SD) of 54.2 (5.8) years. At year 6, 29.4% (95%CI: 26.1-30.7) quit smoking, 30.1% (95% CI: 26.8-33.4) increased their physical activity and 22.6% (95% CI: 19.6-25.6) decreased their saturated fat intake. At year 6, 41.5% (95%CI: 38.0-45.0) improved zero, 38.1% (95% CI: 34.6-41.6) improved one, 17.3% (95%CI: 14.9-20.0) improved two and 3.1% (1.9-4.3) improved all 3 behaviors. Women were more likely then men to decrease saturated fat intake (27.0% v. 15.9%, $p<.01$), but quitting smoking (29.1% v. 29.9%) and increasing physical activity (29.5% v. 30.9%) did not differ by gender. Chi-square analyses showed that behavior changes clustered together in all gender and race groups except for Caucasian men. For example, based on the observed rates of individual behavior change, it was expected that 2.3% of Caucasian women would improve all 3 behaviors; actual rates were significantly higher 4.8% (95% CI: 3.4-6.5). After adjusting for age, gender, race, and education level, neither body mass index nor comorbidities at baseline (e.g., diabetes history) predicted behavioral change. In multivariate analysis, quitting smoking [Odds Ratio (OR): 1.8; 95% CI 1.2-2.3] and increasing physical activity level (OR=1.6; 95% CI 1.2-2.2) were associated with modifying a second CRB.

Among individuals with MACRB, positive changes in those risk behaviors are common and tend to cluster. These findings have implications for prioritizing behavioral interventions for these individuals.

THE NEED FOR PHARMACY AND LABORATORY TO TALK TO EACH OTHER: THE CASE OF K^+ GD Schiff, HC Aggarwal, S Kumar, R McNutt Cook County Hospital Dept. of Medicine Collaborative Research Unit Chicago.

Background: Although pharmacy and laboratory functions are intimately related, few laboratory computers are linked to pharmacy systems. This disconnection may lead to errors potentially preventable if lab data interacted with prescriptions. One example of such a preventable error is prescribing potassium despite a concurrent elevated level. We sought to evaluate the magnitude and patterns of this problem by evaluating potassium prescribing in relationship to data simultaneously residing in our laboratory information system
Methods: Retrospective computerized linkage of large outpatient clinic's oral potassium prescriptions with the laboratory database of all potassium levels ≥ 5.1 meq/L for a one year period. Prescriptions flagged as being for patients who had K ≥ 5.1 during that calendar year were subjected to detailed review of temporal relationships between all potassium levels and prescriptions for the study period. Problem prescriptions were classified into one of three categories (below) based on timing of prescriptions in relation to potassium level.
Results: 32,563 potassium prescriptions were dispensed for 12,825 patients. 2,859 of these prescriptions occurred in 1125 patients whose potassium level was ≥ 5.1 meq/L some time during the year. Analyzing level date in relationship to prescription date disclosed three groups of problems: Group 1--*most recent potassium* ≥ 5.1 occurring with 772 prescriptions in 558 patients; Group 2 -- potassium ≥ 5.1 on *same day* of prescription: found in 310 prescriptions for 290 patients, w/ random chart review of 20% sample of Group 2 showing no patients called to hold drug ; Group 3-- 335 prescriptions in 227 patients with potassium ≥ 5.1 in the *three months preceding* the prescription and no hypokalemia (<3.7) but had an intervening normal value. Of patients whose last K^+ was ≥ 5.1, 581 of 772 (75.3%) had their elevated values within the preceding 2 months. Varying the cut-off K+ value above which prescription was labeled problematic, showed that even with selection of K ≥6.0, >200 prescriptions written & dispensed.
Conclusions: Concurrent elevated potassium levels occurred in 4.3% of patients prescribed oral potassium supplementation. This process error, uncovered by linking laboratory and pharmacy data, could be prevented by real time linkages of these two data systems thereby facilitating improved clinical decisionmaking.

OPPORTUNITIES FOR COUNSELING SMOKERS TO QUIT. CN Sciamanna, J Flynn, DE Ford, The Miriam Hospital, Providence, RI, Johns Hopkins Medical Institutions, Baltimore, MD.

The Agency for Health Care Policy and Research (AHCPR) Smoking Cessation Guidelines recommend counseling that is relevant to the individual patient (e.g., the patients' disease status, health concerns). We carried out this study with the goal of understanding the extent to which outpatients report smoking-related symptoms and comorbidities, to estimate the potential for including such topics in routine smoking cessation counseling.

A convenience sample of outpatients volunteered to complete a computer survey in an outpatient office of an urban teaching hospital while waiting for their appointment. Patients used the program unassisted and prompted only by a sign over the computer inviting them to "answer a few questions about your health - using this computer". Smoking-related symptoms (7) and comorbidities (11) were defined as those associated with smoking or those that lead to similar conditions as smoking. Symptoms in the past year were asked and all questions were written at a 4th grade reading level. Questions included: demographics, cigarettes per day smoked, determination of stage of readiness to change (precontemplation, contemplation, preparation).

Of the 528 patients who completed the program, 25.4% were current smokers, 55% were female, 23% smoked more than 20 cigarettes per day and their mean age was 40.1 years. Most smokers were planning on quitting in the next 6 months (58%), though only 11% were planning on quitting in the next month. Smoking-related comorbidities were common [e.g., hypertension (39%), stomach ulcer or heartburn (34%), hypercholesterolemia (31%), asthma (22%), chronic obstructive pulmonary disease (19%), diabetes (15%), cerebrovascular disease (15%), coronary artery disease (8%)]. Smoking-related symptoms were even more common: sleep problems or tiredness (58%), frequent coughing and colds (51%), chest pain (49%), shortness of breath (48%), leg cramps (42%), snoring (41%), wheezing (35%). The average smoker reported 3.3 (87% reported at least one) symptoms and 2.4 (84% reported at least one) comorbidities. The mean number of comorbidities were greater among those who were less motivated to quit: precontemplation (3.4), contemplation (2.1), preparation (2.1) ($p=.004$). A trend existed toward a greater number of symptoms in those who were less motivated to quit: precontemplation (3.6), contemplation (3.1), preparation (2.9)($p=.4$).

Ample opportunity exists for physicians to tailor smoking cessation counseling to comorbidities and symptoms that are personally relevant to patients. Tailoring counseling messages to an individual's characteristics are even more appropriate for those less motivated to quit, the group that may benefit the most from consciousness-raising counseling messages.

PRACTITIONERS' ADVICE TO LOSE WEIGHT

CN Sciamanna, Tate D, Liang W, RR Wing . The Miriam Hospital, Providence, RI, Brown University, Providence, RI, University of Pittsburgh, Pittsburgh, PA.

Obesity is a significant independent risk factor for many chronic diseases, including coronary artery disease, hypertension, and adult-onset diabetes. Physicians and other health care providers have been identified as key persons of influence for lifestyle change in their patients. Providing regular weight assessment and counseling is a national health priority as per Healthy People 2000 goals and United States Preventive Services Task Force recommendations.

This study used data from the 1996 Behavioral Risk Factor Surveillance System (BRFSS) survey. Included in this analysis were adults who visited a doctor for a routine checkup in the past year (69%) and lived in states that included survey modules on hypertension and cholesterol awareness (N=11,447, 9.2% overall). Individuals reported whether or not they were advised by a "doctor, nurse, or other health professional" to lose weight in the last 12 months. Body Mass Index (BMI) was calculated from self-reported height and weight. Weight-related comorbidity was defined as self-reported diabetes (in adults older than 45), hypercholesterolemia or high blood pressure on more than one occasion.

Demographic characteristics of the 11,447 adults were: 65% female, 86% Caucasian, mean age (SD) 51.8 (17.4) years. Overall, 14.9% reported being advised to lose weight. In univariate analysis, advice to lose weight was strongly associated with BMI category: 18.5-25 (3.0%); 25-30 (12.7%); 30-35 (33.2%); 35-40 (49.8%); over 40 (68.1%) ($p<.001$). In addition, individuals with a weight-related comorbidity were also more likely to report being advised to lose weight (21.3% v. 8.5%; $P<.001$). In a multivariate model, receiving advice to lose weight was associated with higher levels of BMI ($p<.001$), the presence of a weight-related comorbidity ($p<.001$), age ($p<.001$), lower levels of education ($p<.001$), lower levels of physical activity ($p<.05$), lower levels of self-reported general health ($p<.001$), higher levels of income ($p<.001$) and being a nonsmoker ($p<.01$). Regardless of BMI and comorbidity status, however, advice to lose weight was reported less commonly than advice to quit smoking (65.9% among current smokers); among individuals with a BMI of 30-35, only 39.4% (95%CI: 36.9-41.9) of individuals with and 23.5% (95%CI: 21.3-25.7) without a comorbidity were advised to lose weight.

In conclusion, though advice to lose weight was strongly associated with BMI and the presence of comorbidities, it was reported far less commonly than advice to quit smoking and far less frequently than national recommendations.

LESBIAN EXPERIENCE OF HEALTHCARE: A FOCUS GROUP ANALYSIS. MR Seaver, LM Wright, J Tjia, S Frayne, KM Freund, Section of General Internal Medicine, Boston Medical Center, Boston, MA

Purpose: Lesbians are thought to comprise as much as 10 percent of the female population. However, they do not appear to self identify or utilize healthcare at this rate. Because little is known about their healthcare concerns and perceived barriers to care, we studied lesbians across a range of ages in an effort to understand their experience.

Methods: Using posters and newspaper advertisements, we recruited lesbians to participate in three age-stratified focus groups. We used a 27-item semi-structured protocol designed to elicit women's healthcare concerns. The protocol was developed jointly by six National Centers of Excellence in Women's Health. The sessions were audio taped, transcribed, and then analyzed by five readers. Each reader developed a list of key words and phrases reflecting themes from the transcripts. The readers reached consensus on themes that represented major healthcare issues identified by the participants.

Results: Twenty-two lesbians aged 22-63 (mean 38) years participated. Nine were from ethnic minority groups. 17 had regular healthcare providers. Four had no health insurance. All but two had seen a healthcare provider in the past year. The major healthcare issues were consistent across age groups. Three themes related to barriers to care emerged from the analysis: assumption of heterosexuality, lack of knowledge, and access to care.

Most women reported that providers' assumption of heterosexuality resulted in avoiding or delaying healthcare visits. Although many participants felt that disclosure of sexual orientation would lead to more comprehensive healthcare, most perceived a high level of discrimination in healthcare and thus did not disclose. Characteristics women sought in providers include openness, understanding, and acceptance, all of which build trust. Trust and comfort with a provider appeared to be related to willingness to disclose sexual orientation.

Participants perceived a lack of medical knowledge about issues such as disease transmission between women, appropriate screening protocols for cervical cancer, and violence and sexual abuse among lesbians as barriers to care. Access to quality, comprehensive healthcare was also a concern given the cost of insurance, and the complexities of managed care.

Conclusions: Lesbians avoided or delayed medical care because of perceived discrimination, lack of provider awareness of lesbian experience, lack of specific medical knowledge related to lesbian health risks, and cost of healthcare. These barriers represent areas for further research and education to improve healthcare for lesbians.

HEPATITIS C PREVALENCE, KNOWLEDGE, AND CONCERN AMONG INJECTION DRUG USERS AND THE IMPACT OF TESTING KH Seal, MD Ray, AH Kral, J Lorvick, BR Edlin. The Urban Health Study, and Departments of Internal Medicine and Family and Community Medicine, University of California San Francisco, San Francisco, CA.

Background: Of the 3.9 million hepatitis C (HCV)-infected persons in the United States, injection drug users (IDUs) have the highest infection rates of any risk group. IDUs account for 60% of HCV transmission. This study examines the prevalence of HCV infection among a cross-sectional sample of street-recruited IDUs and explores the impact of prior HCV testing on HCV-related knowledge and concern.

Methods: During 10/98 and 11/98, we recruited 409 IDUs from street settings in two inner-city neighborhoods in San Francisco. Participants were asked 12 questions about HCV infection and transmission, and blood samples collected. HCV antibodies were measured using a third generation HCV enzyme immunoassay. Participants returned two weeks later (90%), to receive results, counseling, and medical referrals.

Results: Of the 409 participants, the median age was 43 years; 49% were white, 40% were African-American and 25% were female. The median duration of injection drug use was 21 years; 349 (86%) had HCV antibodies. A minority (37%) had been tested previously for HCV. Participants correctly answered a mean of 67% of 12 HCV knowledge questions. Most correctly believed that HCV may lead to cirrhosis (75%) and may be spread through sharing needles (88%), but many incorrectly believed that HCV results in skin abscesses (37%) and is transmitted through "bad food" (61%). When participants were asked to rate their risk for HCV infection, the median response was "very little." Only 13% perceived their risk to be "high." Thirty-five percent stated that they were "a little" or "not" concerned about HCV infection. Participants who correctly answered at least 9 of 12 HCV knowledge questions were more likely to be concerned about HCV infection (odds ratio [OR]=1.6; 95% confidence interval [CI]= 1.0, 2.6) and to believe their risk for HCV infection to be high (OR= 2.2, 95% CI =1.5, 3.4). Of 293 IDUs who had 1 or more medical visits in the past year, most (57%) had not been tested for HCV. Having a medical visit in the past year was not significantly associated with higher HCV knowledge scores (OR=0.9, 95% CI=0.5, 1.4) nor concern about HCV infection (OR=1.3, 95% CI=0.8, 2.1). Having been tested for HCV in the past was associated with higher HCV knowledge scores (OR=3.5, 95% CI=2.2, 5.4), and greater concern about HCV infection (OR=2.0, 95% CI=1.3, 3.2).

Conclusion: In this study, the vast majority of street-recruited IDUs were HCV-positive, although most considered their risk for HCV infection to be low. Most IDUs accessing medical care in the past year had not been tested. HCV knowledge and concern were higher among IDUs who had been tested for HCV previously. HCV testing and counseling should be part of a routine medical visit for persons at high risk for HCV to identify those who may benefit from treatment, and to increase concern and knowledge of HCV infection and transmission.

PREVENTION OF STROKE IN ATRIAL FIBRILLATION: THE EVIDENCE FOR USE OF WARFARIN AND ASPIRIN

JB Segal, RL McNamara, MR Miller, N Kim, SN Goodman, NR Powe, K Robinson, EB Bass. Johns Hopkins University, Evidence-Based Practice Center; Baltimore, MD

Background: Experts believe that warfarin is underused by generalists and cardiologists for the prevention of stroke in atrial fibrillation (AF). We reviewed all of the clinical trials of warfarin and aspirin used for the prevention of thromboembolism in patients with AF, in order to synthesize the evidence on how the risk of bleeding compares to the risk of stroke with warfarin, aspirin and placebo.

Methods: The Cochrane Collaboration's Central database, Medline and Pubmed were searched until May 1998 for randomized-controlled trials of drugs used to prevent thromboembolism in adults with non-postoperative AF. 11 articles met criteria for inclusion in this review.

Results: Warfarin was more efficacious than placebo in both the primary and secondary prevention of stroke in AF, with an aggregate odds ratio (OR) of stroke of 0.30 [0.19-0.48]. For primary prevention, we estimate that warfarin prevents 30 strokes at the expense of only 6 additional major bleeds per 1000 patient-years (p-y). Aspirin was more efficacious than placebo for stroke prevention with an OR of 0.65 [0.43-0.99], without evidence of more major bleeds,OR=0.81[.37-1.77]. Assuming a baseline stroke-risk of 50 per 1000 p-y, aspirin could prevent 17 strokes, without major bleeding. Aspirin was not efficacious in secondary prevention of stroke, nor efficacious at low dosage (75 mg). In direct comparison, there was some evidence for fewer strokes among patients on warfarin than on aspirin, with an aggregate OR of 0.75 [0.48-1.18], with only weak evidence for more major bleeding,OR =1.68 [0.77-3.71]. In a group of younger patients, the absolute reduction in number of strokes with warfarin compared to aspirin was very low (5.5 per 1000 p-y). Adjusted-dose warfarin was more efficacious for stroke prevention compared to low-dose warfarin combined with aspirin, with OR of 0.35 [0.21-0.59].

Conclusion: The evidence strongly supports warfarin for primary and secondary stroke prevention in AF, yet for patients without risks for stroke, the absolute risk reduction may not warrant its use over aspirin.

WHAT IS THE EVIDENCE SUPPORTING THE DRUGS USED FOR VENTRICULAR RATE CONTROL IN ATRIAL FIBRILLATION?

JB Segal, RL McNamara, MR Miller, NR Powe, SN Goodman, N Kim, K Robinson, D Yu, EB Bass. Johns Hopkins University, Evidence-based Practice Center, Baltimore, MD

Background: General internists commonly care for patients with atrial fibrillation (AF) for whom a principal goal is control of the ventricular rate. We reviewed the literature to assess the evidence regarding efficacy of drugs used for rate control in AF.

Methods: The Cochrane Collaboration's Central database, Medline and PubMed were searched up to May 1998 for randomized-controlled trials of drugs used for heart rate control in adults with non-postoperative AF. 45 articles met the criteria for inclusion in the review.

Results: Data was abstracted on 17 different drugs. In the 5 trials of verapamil and 5 of diltiazem, heart rate was reduced significantly ($p<.05$) both at rest and with exercise compared to placebo, with equivalent or improved exercise tolerance in all 6 of 6 comparisons. In 7 of 8 trials, digoxin administered alone slowed the resting heart rate more than placebo, but in none of the 5 trials did it significantly slow the rate with exercise. The addition of a non-dihydropyridine calcium-channel blocker to digoxin reduced the resting heart rate more than digoxin alone in 7 of 8 studies, with improved control during exercise in 5 of 6 studies. In 7 of 12 comparisons of a ß-blocker to placebo, the ß-blocker was efficacious for control of resting heart rate, with evidence that the effect is drug-specific as xameterol, celiprolol and labetolol were less efficacious. 5 of 5 trials demonstrated good heart rate control with ß-blockers during exercise, although exercise tolerance was compromised in 4 of 5 trials. The trials evaluating magnesium sulfate (2), clonidine (2), propafenone (2), amiodarone (1), sotalol(1), flecainide (2), disopyramide (1), and quinidine (2) had insufficient evidence to support their use for rate control in AF.

Conclusions: Non-dihydropyridine calcium channel blockers can be strongly recommended for control of ventricular rate in AF, as they are efficacious at rest and with exercise, without a diminution in exercise tolerance.

THE EFFICACY AND SAFETY OF SILDENAFIL CITRATE FOR THE TREATMENT OF ERECTILE DYSFUNCTION IN MEN WITH COMORBID DEPRESSION.

Ridwan Shabsigh, Columbia Presbyterian Hospital, NY, NY; Matthew Menza, Robert Wood Johnson Medical School, Piscataway, NJ; Steven Roose, New York State Psychiatric Institute, NY, NY; Raymond Rosen, Robert Wood Johnson Medical School, Piscataway, NJ; Stuart Seidman, Columbia Presbyterian Hospital, NY, NY; Diane Chow, Vera Stecher, Richard Siegel, Pfizer Inc, NY, NY.

Objectives: This study assessed the efficacy and safety of sildenafil citrate (VIAGRA®) for the treatment of erectile dysfunction (ED) in men with ED and comorbid depression.

Methods: A total of 146 men with ED and depression (24-item Hamilton Depression Rating Scale score ≥12) received flexible-dose sildenafil (Sild; 25-100 mg; N = 70) or placebo (Pbo; N = 76) for 12 weeks in a randomized, double-blind clinical trial. Efficacy was assessed at weeks 8 and 12 by responses to 3 global efficacy questions (GEQ1: improved erections [yes/no]; GEQ2: improved ability to have sexual intercourse [yes/no]; GEQ3: frequency of successful attempts at sexual intercourse) and to Q3 and Q4 (ability to achieve and maintain erections) of the International Index of Erectile Function (IIEF). Scores for GEQ3, Q3, and Q4 range from 0 ("did not attempt intercourse") and 1 ("almost never/never") to 5 ("almost always/ always").

Results: Efficacy results (% yes or mean ±SEM) at week 12 were:

Parameter	Baseline	Sild [N]	Pbo [N]
GEQ1 (% yes)	—	82% [66] *	20% [75]
GEQ2 (% yes)	—	83% [63] *	19% [73]
GEQ3	—	3.9 (0.3) [66] *	2.0 (0.3) [75]
Q3	1.6	3.7 (0.3) [66] *	2.2 (0.2) [76]
Q4	1.4	3.9 (0.3) [66] *	2.0 (0.2) [76]

* $P<0.0001$ vs placebo.

The most common adverse events (AEs) were headache (20% Sild; 6% Pbo), flushing (15% Sild; 1% Pbo), and dyspepsia (15% Sild; 0% Pbo). One patient (1.4%) discontinued Sild due to AEs; no patients discontinued Pbo.

Conclusions: Treatment with sildenafil was effective and well tolerated in men with ED and comorbid depression.

HORMONAL PREDICTORS OF PROSTATE CANCER: A META-ANALYSIS

T Shaneyfelt, G Bubley, R Husein, C Mantzoros. Division of General Internal Medicine University of Alabama School of Medicine, Birmingham, AL and Division of Endocrinology, Beth Israel Deaconess Medical Center, Boston, MA.

Context: Strong circumstantial evidence links androgens to the pathogenesis of prostate cancer. Epidemiological studies, however, have not consistently demonstrated this link.

Purpose: To systematically summarize the evidence on the role of testosterone (test), dihydrotestosterone (DHT), estradiol (E2), and sex hormone binding globulin (SHBG) in the etiology of prostate cancer.

Methods: MEDLINE & CANCERLIT were searched from 1966 to 7/97 to identify human studies on the role of the above hormones in the etiology of prostate cancer. Manual searches of bibliographies and contact with authors was also done.

To be included studies had to be prospective; had to clearly describe the study population and selection criteria; clearly describe serum collection, storage & analysis techniques; and specify length of follow-up. Furthermore, prostate cancer had to be confirmed histologically. Data from each study was independently extracted by 2 reviewers. Authors of retrieved articles were contacted, if necessary, for missing data.

Odds ratios(OR) for the development of prostate cancer were calculated (comparing highest quartile of serum hormones to lowest) & then combined using the DerSimonian and Laird random effects method.

Results: 5 studies met inclusion criteria (624 cases, 1686 controls) but 2 were excluded because supplied data was not amenable to meta-analysis. The table below shows the unadjusted and adjusted ORs(95% CI) for development of prostate cancer.

Study	Unadj Test	Unadj DHT	Unadj E2	Unadj SHBG
Gann et al	1.30(0.79-2.16)	0.83(0.45-1.52)	0.75(0.46-1.24)	0.69(0.41-1.16)
Hsing et al	1.50(0.60-3.60)	1.00(0.50-2.20)	1.00(0.50-2.80)	----
Nomura et al	1.03(0.51-2.07)	0.82(0.41-1.65)	----	----
Summary OR	*1.25(0.86-1.81)*	*0.87(0.59-1.29)*	*0.81(0.52-1.24)*	*0.69(0.41-1.16)*
Study	**Adj* Test**	**Adj* DHT**	**Adj* E2**	**Adj* SHBG**
Gann et al	2.60(1.34-5.02)	0.71(0.34-1.48)	0.56(0.32-0.98)	0.46(0.24-0.89)
Hsing et al	1.57(0.44-5.64)	0.70(0.20-2.40)	1.10(0.40-2.80)	----
Summary OR	***2.34(1.30-4.20)***	*0.71(0.38-1.33)*	*0.69(0.37-1.29)*	***0.46(0.24-0.89)***

---- Not measured *Adjusted for other hormones and BMI

Conclusions: Of the hormones evaluated, only a high serum level of testosterone is associated with the development of prostate cancer. High levels of SHBG appear to be protective against the development of prostate cancer, suggesting that circulating bioavailable testosterone may be more important total testosterone.

EVALUATION OF ONE SLIDE VERSUS TWO SLIDES: ENHANCED DETECTION FOR CERVICAL SQUAMOUS CELL ABNORMALITIES

A. Laurie W. Shroyer, Jennifer E. Karel, Eric Henley, Mary E. Plomondon, Samantha MaWhinney, Chesney Thompson, and Kenneth R. Shroyer (VA Medical Center and Univ. of Colo. Health Sciences Center, Denver, CO)

Over the past decade, it has become routine practice in most laboratories to utilize one slide rather than two slides for cytologic examination of the cervical Pap smear. The relative performance of the one versus (v.) two slides approach for the detection of cellular abnormalities, however, has not been adequately evaluated. In the current study, we compared the proportion of squamous cell abnormalities in one slide v. two slide Pap smears evaluated in the Cytology Laboratory of the University of Colorado Health Sciences Center (UCHSC). The primary study null hypothesis was, therefore, that no difference in the detection rates for squamous abnormalities existed between the use of one slide in comparison to two slides. Other influential factors (pathologist and risk level of UH clinic setting) were also examined to determine their relative impact.

All UCHSC-based clinic patient cytology records for the period from January 1, 1992 to December 31, 1997 were analyzed. The population of study included 27,711 women (average age of 37.6 ± 14.5 years) with 47,982 Pap smear encounters. Of the 47,982 Pap smears, 5,395 were assessed using a single slide, 42,022 using two slides, and 565 using three or four slide preparations. For all cases, the rates for the detection of atypical squamous cell abnormalities of undetermined significance (ASCUS) was 12.84%, low grade squamous intraepithelial lesion (LSIL) was 3.44%, high grade squamous intraepithelial lesion (HSIL) was 1.69%, and squamous cell carcinoma (SCC) was 0.03%. The remaining slides (0.03%) were unsatisfactory for diagnosis.

The overall rates for the detection of squamous cell abnormalities (LSIL, HSIL, and SCC) cytologic diagnosis were 2.26% and 5.53% in one v. two or more slides respectively ($p<0.001$). The proportion of abnormalities diagnosed by the five primary UCHSC pathologists varied from 3.5% - 26.5% (total slides was 44,792) ($p < 0.001$). The proportion of one slide Pap smears which were performed in low-risk (primary care clinic), medium-risk (OB/GYN clinic), and high-risk (specialty GYN clinic) varied from 16.7%, 9.7%, to 2.7% respectively ($p < 0.001$). The corresponding proportion of cases with squamous cell abnormalities from each clinic category were: 2.7%, 4.8%, and 36.8% ($p < 0.001$). In summary, utilization of two slides may result in the detection of a higher proportion of cytologic abnormalities than a single slide approach for medium and high risk patient populations.

WOMEN'S INTERPRETATION OF BREAST CANCER RISK AND SCREENING MAMMOGRAPHY: A QUALITATIVE INTERVIEW STUDY Silverman, E; Schwartz, LM; Woloshin, S; Byram, SB; Welch, HG; Fischhoff, B. VA Outcomes Group, White River Junction, VT

Purpose: To learn how women conceptualize breast cancer, interpret their personal risk and how they believe screening mammography affects that risk.

Methods: We conducted 41 open-ended telephone interviews with women selected by quota sampling from a national database to ensure participation across a spectrum of age (27 to 84 years), household income (<=$10,000 to >$75,000 per year), and ethnicity. The structure of the interviews was based on a risk communication methodology ("mental models") which contrasts how experts and non-experts think about a particular topic to inform educational efforts. Each interview took about 1 hour.

Results: Almost all women articulated the same basic model of breast cancer: a uniformly progressive disease which begins in a "silent" curable form, and unless treated "early", invariably grows, spreads and kills. About a third spontaneously related anecdotes about young women who had died of breast cancer and expressed fears about leaving their children behind. Some women felt that any abnormality found needed to be treated, even if not "malignant." None had heard of potentially non-progressive cancers, and when informed, most felt that uncertain prognosis of such lesions reinforced the imperative for treating early disease.

Women expressed a wide range of views about their personal risk of breast cancer. While some saw breast cancer as a central threat to their health, many others cited heart disease, other cancers, violence and trauma as greater concerns. Most recognized the importance of "uncontrollable" factors for breast cancer such as age, sex, family history and genetics. However, many women gave equal or greater attention to other lifestyle factors with little or no demonstrated link to breast cancer: smoking, eating right, environmental exposures, "bad attitudes." The prominence given these factors suggests that women may feel personally responsible for their breast cancer risk.

The role of personal responsibility also extended to mammography. Almost all women believed that failure to have mammograms put one at risk for premature (and preventable) death. When asked how mammography "worked", almost all repeated the message that "early detection saves lives," suggesting that advanced cancer (and perhaps most cancer deaths) reflected a failure of early detection. The belief in the benefit of early detection was so strong that some women advocated scaring others into getting mammograms because it is "better to be safe than sorry".

Conclusions: Women view breast cancer as a uniformly progressive disease rarely curable unless caught early. The exaggerated importance many attribute to a variety of lifestyle factors in modifying personal risk, and the "danger" seen in failing to have mammograms may lead women diagnosed with breast cancer to blame themselves.

IS VIAGRA COST-EFFECTIVE? KJ Smith, MS Roberts. Mercy Hospital and the Center for Research on Health Care, University of Pittsburgh School of Medicine, Pittsburgh PA.

Coverage of sildenafil (Viagra) by health insurance plans is a contentious issue. We performed a cost-effectiveness analysis to clarify the financial aspects of this decision.

We used a Markov decision model to estimate the incremental cost-effectiveness of sildenafil compared to no drug therapy, examining costs from the perspectives of third party payers (direct costs of medication and medical treatment) and society (direct costs plus lost wages due to treatment morbidity). Costs and benefits were discounted at 3%/yr. Model assumptions were biased against sildenafil use. In the baseline analysis, 60 year old men either used the medication 6 times/month (average wholesale price $52.50/mo, success rate 69%) or were untreated. Unsuccessfully treated men discontinued the medication after a one month trial. Mortality was 0.01%/yr and morbidity was 0.1%/yr in all treated men. On a scale where 0 equals death and 1 is perfect health, the quality of life utility value for erectile dysfunction (ED) was 0.74 (based on the Quality of Well Being Scale) and, if treatment was successful, utility increased to 0.9. Twenty-two percent of untreated men had spontaneous lifetime remission of ED. ED recurred in successfully treated men at 5%/yr. Men who suffered morbid events with sildenafil had lifelong disability (utility 0.5 and loss of income) and a 10% increase in absolute mortality risk per year.

Costs per quality adjusted life year (QALY) gained for sildenafil treatment compared to no therapy were $9,280 from the third party payer perspective and $11,200 in the societal analysis. From the societal perspective, costs/QALY gained were less than $50,000 if: treatment related morbidity was less than 0.69%/yr, mortality was less than 0.54%/yr, successful treatment occurred in greater than 41%, relapse of erectile dysfunction after successful treatment was less than 12.5%/yr, or the cost of treatment was less than $282/month. Results were sensitive to variation of ED utilities, but costs/QALY were less than $50,000 if successful treatment increased utility values by 0.05 or more.

We conclude that the cost-effectiveness of sildenafil compares favorably with accepted therapies for other medical conditions in an analysis biased against its use.

PATIENT REPORTS OF ADHERENCE DO NOT AGREE WITH PHYSICIAN ASSESSMENT.

G Sinclair, J Wagner, S Weissman, A Justice; Wade Park VA Med. Ctr, Case Western Reserve Univ., Cleveland OH

Assessing adherence has become an important component of HIV care, but previous studies have shown that providers do not accurately assess adherence by traditional methods. We developed a self administered patient survey to help providers accomplish this task.

Methods: As a part of this survey, we asked 77 attendees of the Wade Park VA HIV clinic to complete two likert scale questions:

1. **During the past four days, how many days have you missed taking all of your doses?** (Choices: 0 days, 1 day, 2 days, 3 days, or 4 days)
2. **When was the last time you skipped any of your HIV medications?** (Choices: within the past week, 1-2 weeks ago, 2-4 weeks ago, 1-3 months ago, more than 3 months ago, or never skipped)

For question 1, anyone reporting a missed dose was coded as nonadherent. For question 2, anyone reporting having missed a dose within the past month was coded as nonadherent. The patients' usual providers were then asked to independently assess adherence by responding to the question:

- **How often does this patient take his HIV-antivirals as prescribed?** (Choices: all, most , some, or none of the time)

Only if the physician responded "all" or "most" was the response coded as adherent.

Results: Though the patient questions demonstrated reasonable internal agreement (agreement between questions 69%, kappa 0.428, p<0.0001) no statistically significant agreement was seen between patient and provider responses for either question. For the first question, kappa=0.11 (p=0.38). For the second question, kappa=0.13 (p=0.16). When more surveys are completed, we will correlate these responses with viral load and CD4 response to therapy.

Conclusion: As previously reported, physicians do not accurately assess patient adherence. Patient-completed surveys may be a useful adjunct to provider judgement when assessing adherence. The ability to accurately identify non-adherent patients would narrow the differential diagnosis of antiretroviral therapy failure.

INFLUENCE OF DIABETES ON CORONARY EVENT AND CASE FATALITY RATES IN AN ENGLISH POPULATION: RESULTS OF THE OXFORD MYOCARDIAL INFARCTION INCIDENCE STUDY

ID Solomon, JA Volmink, J Newton, H Calhoun, P Yudkin, HAW Neil, Division of Public Health & Primary Care, University of Oxford, Division of General Internal Medicine, Columbia-Presbyterian Medical Center

Background: Although mortality from coronary heart disease has declined substantially over the last two decades in most western European countries, there are few recent population-based studies that have used standardized diagnostic criteria to compare the coronary event and case fatality rates in adults with and without diabetes. We examined this in a one-year surveillance study conducted from November 1994 in an English population aged less than 80 years.

Methods: Suspected cases of myocardial infarction or coronary death were identified from the resident population of 568,000 in Oxfordshire using multiple overlapping retrospective and prospective methods of case ascertainment. A diagnosis of definite or possible myocardial infarction or coronary death was based on World Health Organization Monitoring of Trends and Determinants of Cardiovascular Disease (MONICA) diagnostic criteria. A clinical diagnosis of diabetes occurring before the acute event was confirmed by examination of clinical case records. The prevalence of diabetes in Oxfordshire was estimated from general practice diagnostic registers and drugs prescriptions.

Results: A total of 1151 coronary events occurred, including 176 in patients with diabetes. We excluded 24 events from the analysis because the general practice case notes could not be obtained. The annual rate for a first or recurrent coronary event per 100,000 population aged 50-59 years was 1523 for women with diabetes and 2341 for men. The corresponding rates for the age group 70-79 years were 3832 for women and 4890 for men. The age specific relative risk (RR) for diabetic versus non-diabetic women decreased from 15.7(95% Confidence Interval (CI) 9.5–25.8) for the age-group 50-59 years to 4.3(95% CI 3.1–6.0) in those aged 70 – 79. The corresponding RR for men were 5.0(95% CI 3.3–7.5) and 2.9(95% CI 2.2-3.9). The age adjusted RR for women was 5.3 and for men 3.4. The overall 28-day case-fatality in diabetics (including out of hospital deaths) was 41.7% in women and 47.6% in men aged 50-59 years, and increased to 62.9% in women and 68.1% in men aged 70-79 years. The age-adjusted 28-day case fatality risk ratio for women was 1.3(95% CI 0.9-1.8) and for men 1.5(95% CI 1.1-1.9)

Conclusions: Both coronary event and case fatality rates remain elevated in patients with diabetes even though these rates have declined over the last two or three decades among patients in the general population. This may explain the high relative risk observed in this study.

HOMELESSNESS AMONG DRUG USERS AND PERSONS WITH HIV/AIDS: A LONGITUDINAL DESCRIPTION. JY Song, M Safaeian, SA Strathdee, DD Celentano. Johns Hopkins Medical Institutions, Baltimore, MD.

Background: Most studies that have examined the prevalence of homelessness among those with HIV/AIDS or injection drug users have been cross-sectional, which is of limited usefulness given the dynamism and interaction among drug use, HIV/AIDS, and homelessness. **Objective:** To explore lifetime prevalence, incidence, patterns, and duration of homelessness among inner-city residents with a history of drug use stratified by HIV status, investigating these factors over 10 years of semi-annual visits. **Methods:** The ALIVE study is a longitudinal cohort study of HIV-1 infection among Baltimore residents who were recruited in 1988-89 and gave a history of injection drug use. We analyzed data from 2452 individuals with multiple visits through 1997. Participants were interviewed semi-annually about housing status, drug use, sexual risks and were tested for HIV. Proportions having ever experienced homelessness were compared across subgroups of HIV negative, HIV positive, and HIV seroconverting IDUs. **Results:** 1144 (46.7%) participants from the total cohort experienced homelessness during the course of the study ("ever homeless"). There were marked and significant differences in lifetime prevalence of homelessness by serostatus: 42.3% (n=620) of those individuals who remained HIV negative were ever homeless, while 50.6% (n=346) of HIV positive individuals and 58.9% (n=178) of those who seroconverted during the study were ever homeless ($p<0.001$). Of the total cohort, 14.3% (n=351) were homeless for more than 50% of the follow-up period; in addition, another 11.9% (n=291) of the cohort was homeless for 25-50% of this period. Finally, males were more likely to be homeless than females (49.6% vs. 37.8%, $p<0.001$), and those younger that 40 years were more likely to be homeless than those older than 40 ($p<0.001$). **Conclusion:** Homelessness is a significant problem among injection drug users, especially those with HIV/AIDS. Following participants over time will capture more experiences with homelessness than cross-sectional studies. Our analysis demonstrates that point or period estimates of homelessness underestimate the problem. In addition, those with HIV/AIDS or those who seroconverted were more likely to have been homeless than those who are HIV negative. Finally, a large segment of our population spent a significant proportion of the study period homeless. As it is known that homeless people access health care less than domiciled people, these observations have significant implications for the primary care of these high risk populations.

PATIENT PREFERENCES AND THE CARE OF DIABETES. NS Stuart, S Vijan, D Ronis, JT Fitzgerald, C Phillips, RA Hayward, Ann Arbor VA, Ann Arbor, MI; Div. of General Medicine, U. of Michigan, Ann Arbor, MI; U. of Minnesota, Minneapolis, MN

PURPOSE: Despite its high prevalence, cost, and morbidity, there is almost no information on how diabetes treatments are viewed by patients. This study evaluates patient attitudes about different modes of glucose lowering treatment in type 2 diabetes.

METHODS: We conducted a self-administered questionnaire of a random sample of diabetics over age 30 at a Midwestern VA medical center and university hospital. We designed and pilot tested a survey instrument, which included multiple perceived ratings of treatments, including a global rating of 1) overall dislike of treatment, 2) pain of administration, and 3) interference with normal day-to-day activities.

RESULTS: A total of 194 subjects completed the survey (response rate = 67%). Study subjects were fairly diverse, with ages ranging from 33 to 92; 30% had an income under $5,000, and 29% had an income greater than $40,000. 32% of subjects were taking insulin injections, and the average diabetes duration was 14.0 +/- 18.7 years. On a seven point scale (from 0 = do not dislike at all to 6 = dislike very much), overall ratings of dislike were modest for moderate diet (mean = 1.8) and taking pills (mean = 1.2). In contrast, home blood glucose monitoring (HBGM) once a day had substantially higher ratings of dislike (mean = 2.3), and HBGM three times per day was even more disliked (mean = 4.0). Ratings of dislike for insulin injections varied substantially based upon past experiences with using insulin. For those who had never been on insulin, even a single daily insulin injection was disliked, compared to very low ratings of dislike for those on insulin (mean = 4.6 vs. 1.3; $p < 0.001$). Although those who had never been on insulin did not draw much distinction between frequency of injections, those on insulin disliked frequent dosing much more (mean = 4.0 for three times daily insulin injection vs. 1.3 for once daily injection, $p<0.01$). Analysis of factors contributing to this difference suggest that for more frequent dosing, interference with daily activities is an important determinant of dislike in people who have taken insulin, while perceptions of how painful it would be is the dominant factor for those who have never taken insulin.

CONCLUSION: The results of this study suggest that attitudes towards diabetes treatment vary substantially, particularly based upon past treatment experiences. Most people not on insulin think that insulin injections will be very painful, a finding not supported by the reports of those on insulin. This may represent adaptation of insulin users or an overestimation of the pain of injections by non-insulin users. However, even amongst insulin users, more frequent insulin had dramatically higher dislike ratings, in large part due to interference with daily activities. These results can be used to better counsel patients when making shared treatment decisions. In addition, intensive insulin regimens such as multiple daily injections may face substantial barriers due to patient perceptions of treatments; thus, effective, yet simpler, insulin regimens such as bedtime insulin with daytime oral agents may help to optimize patient adherence and outcomes.

THE RISK OF GASTROINTESTINAL COMPLICATIONS FROM NONSTEROIDAL ANTIINFLAMMATORY DRUGS: A META-ANALYSIS. W. Straus, J. Ofman, C. MacLean, S. Morton, P. Shekelle. Southern California Evidence Based Practice Center, Santa Monica, CA, Merck & Co, West Point, PA.

Purpose: Studies of the risk of NSAIDs are limited by reliance on observational data and a focus on perforations, ulcers and bleeds (PUBs). The goal of this meta-analysis was to review the evidence from all relevant study designs in all languages, and focus on the common complication of dyspepsia as well as PUBs.

Methods: We searched MEDLINE, EMBASE, HEALTHSTAR and BIOSIS from 1966-1997 for studies of NSAIDs reporting data on GI complications. Explicit inclusion and exclusion criteria were applied to titles, abstracts, and articles. Accepted articles were screened for quality and graded using Jadad's criteria, which assigns 0-5 points based on randomization, blinding, and reporting of withdrawals. Physician reviews were done in duplicate, with disagreement resolved by consensus. Data were abstracted and clinically homogeneous data were pooled using the DerSimonian and Laird random effects model.

Results: 4849 titles were identified of which 2145 had abstracts reviewed. 1768 articles were selected of which 96% were retrieved and reviewed. We identified 54 NSAID vs placebo RCTs, 84 NSAID vs NSAID RCTs (n>50), 24 large exposure series (n>1000), 27 case control and 8 cohort studies. The quality of RCTs was good (60% Jadad score >3). The rate of dyspepsia in NSAID users increased from 5.5% to 7.5% to 10.9%, in NSAID vs placebo, NSAID vs NSAID and large exposure series, respectively. The rate of dyspepsia in the placebo group was 2.2%. Low quality studies had a pooled rate ratio for dyspepsia that was significantly larger than that for high quality studies. There was the expected gradient in increasing risk of dyspepsia with increasing dose of NSAID. The pooled odds ratio for PUBs in the case control studies and pooled relative risk in cohort studies were 2.9 and 2.2 respectively, with an absolute magnitude of 1% in the NSAID group and .44% in the unexposed group.

Conclusions: The use of NSAIDs increases the rate of dyspepsia from 2-3% to 6-10%, and increases the rate of PUBs from .5% to 1%. These data provide the best evidence-based estimates of GI complications and should aid clinicians and decision-makers when weighing the risks and benefits of NSAID use.

CERVICAL CANCER SCREENING AMONG CAMBODIAN AMERICAN IMMIGRANTS. Vicky Taylor, Carey Jackson, Yutaka Yasui, Stephen Schwartz, Alan Kuniyuki, Meredith Fischer, Shin-Ping Tu. Fred Hutchinson Cancer Research Center and University of Washington, Seattle, WA.

Objective: Southeast Asian immigrants have higher invasive cervical cancer incidence rates (35 per 100,000 compared to 8 per 100,000 among non-Latino whites) than any other racial/ethnic group in the US. However, there is little information about the cervical cancer screening behavior of Cambodian American women. We examined levels of Pap testing and factors associated with screening participation among Cambodian refugees.

Methods: A population-based, inperson survey was conducted in Seattle during late 1997 and early 1998. Respondents were classified into the four Pap testing stages of change proposed by McPhee: precontemplation/contemplation (never screened), relapse (ever screened but did not plan to be screened in the future), action (ever screened and planned to be screened in the future), and maintenance (recently screened and planned to be screened in the future). The PRECEDE model and polytomous logistic regression techniques were used to examine sociodemographic, predisposing, reinforcing, and enabling factors associated with Pap testing use.

Results: Interviews were completed by 406 women. The survey response rate was 72%, and 89% of reachable and eligible households agreed to participate. Over one-quarter (26%) of the respondents has never been screened (precontemplation/contemplation) and a further 21% of ever screened women did not plan to obtain Pap tests in the future (relapse). Fifteen percent were in the action stage and 39% were in the maintenance stage. The following factors were independently associated with cervical cancer screening stages: previous physician recommendation ($p<0.001$); younger age ($p<0.001$); beliefs about Pap testing for post-menopausal women ($p<0.001$), regular checkups ($p<0.01$), and screening for sexually inactive women ($p<0.05$); and prenatal care in the US ($p<0.05$). Women who reported problems finding medical interpreters were less likely to receive Pap tests ($p<0.05$).

Conclusion: Our findings confirm low Pap testing rates among Cambodian immigrants, and suggest targeted interventions might usefully address predisposing, reinforcing, and enabling factors. Physicians should reinforce the importance of regular cervical cancer screening for all Cambodian women, and recognize that interpreter services facilitate preventive care.

LOW BACK SURGERY OUTCOMES: A COMMUNITY STUDY. Vicky Taylor, Richard Deyo, Marcia Ciol, Mark Leek, Brad McNeney, Harold Goldberg. University of Washington and Fred Hutchinson Cancer Research Center, Seattle, WA.

Objective: Low back pain is a major cause of morbidity, disability, and lost productivity in the US. Most previous studies addressing the results of low back surgery have been conducted in academic institutions. As part of a wider information dissemination effort, The Back Pain Outcome Assessment Team conducted a community-based outcomes management project in Washington State. Data from this study were used to examine factors associated with favorable patient outcomes one year after elective surgery for mechanical back problems.

Methods: Patients aged 18 and older with the following diagnoses were eligible for the study: degenerative changes, herniated disc, instability, and spinal stenosis. Nine orthopedists and neurosurgeons from four communities enrolled a total of 281 cases. Subjects were asked to complete baseline and followup surveys. Data concerning diagnoses, clinical signs, and operative procedures were provided by the surgeons. Logistic regression techniques were used to examine sociodemographic characteristics, self-reported symptoms prior to surgery, pre-operative clinical signs, diagnoses, and operative procedures associated with two self-reported outcomes: better functioning and improved quality of life.

Results: Followup surveys were completed by 236 (84%) of the enrolled patients. Approximately two-thirds of the study participants reported much better functioning (66%) and a great quality of life improvement (65%). The following factors were negatively associated with better functioning as well as quality of life improvement: previous low back surgery, workers compensation coverage, and having an attorney prior to surgery ($p<0.05$). Patients who smoked and were not working before their operation were significantly less likely to report better functioning. Younger cases and those with a fusion procedure were more likely to report a quality of life improvement ($P<0.05$). Neither baseline symptoms nor clinical signs were independently predictive of good outcomes.

Conclusion: Our experience indicates that community-based outcomes data collection efforts are feasible and can be incorporated into usual clinical practice. The study results suggest that compensation payments, litigation, and previous operative procedures are important predictors of poor outcomes following low back surgery.

BARRIERS TO CARE OF THE DYING. SW Tolle, VP Tilden, AG Rosenfeld. Center for Ethics in Health Care, Oregon Health Sciences University, Portland, OR.

Purpose: The process of dying in acute care hospitals has been harshly criticized, yet, in parts of the country where deaths occur primarily at home or in long term care, less information exists about family experiences with barriers to care of the dying.

Methods: Family members were contacted from a systematic random sample of Oregon Death Certificates from November 1996 through December 1997 and were interviewed using a 58-item instrument 2 to 4 months following a loved one's death. Of the 816 that could be located, 475 (59%) agreed to be interviewed about their perception of barriers to carrying out the decedents' wishes about location of death and the use of life-sustaining treatments, barriers to adequate pain and symptom control, and the adequacy of professional and family support.

Results: Our sample included 161 home deaths (34%), 180 deaths in long term care (38%) and 134 deaths in acute care hospitals (28%). Informants reported that 67% of patients had a "living will". Ninety-three percent of informants felt they knew their loved one's wishes regarding life sustaining treatment and the vast majority of patients received the amount of treatment desired. Twenty-one (5%) said "too much was done" and 11 (2%) said "too little was done". Thirty-four percent reported that their loved one had experienced moderate or severe pain during their final week of life; of those who described pain as "severe", 78% described attention to comfort as "excellent" or "good." In correlation analyses, the association of pain with families' assessment of attention to comfort needs was very low ($r=.20$). In responding to an open-ended question about problems with health care in the last month of life, 15% of family respondents offered no complaint. Problems identified by 85% included communication difficulties, uncaring attitudes and behaviors, and lack of availability on the part of the health care team.

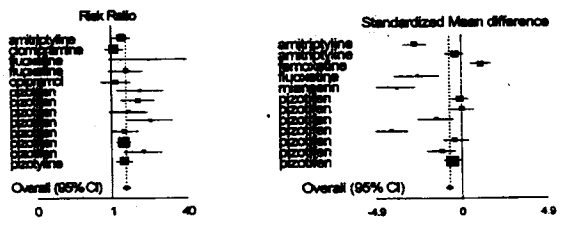
Conclusions: We found that family members reported exceptionally high rates of advance care planning and moderate success with pain and symptom management. However, families still identified major problems with health care delivery at the end of life.

EFFECT OF GENDER ON THE PREDICTIVE ACCURACY OF ST-SEGMENT DEPRESSION FOR REVERSIBLE PERFUSION DEFECTS WITH DIPYRIDAMOLE STRESS TESTING. DA Tighe, JR Cook, BA Faile, SM Zubi. Baystate Medical Center, Springfield, MA

In predominantly male cohorts, ST-segment depression (STdpr) during vasodilator stress testing is considered highly predictive of myocardial ischemia. The utility of this finding among women is poorly defined. To determine the effect of gender on the ability of $\geq$1 mm horizontal or downsloping STdpr occurring with dipyridamole (DP) infusion to predict reversible radionuclide scan perfusion defects (RPD) we studied 487 consecutive patients (pts) referred for clinically indicated DP perfusion imaging. Excluded were 31 pts with LBBB or paced rhythm. **Results:** Age, antianginal use, and digoxin use were similar in men and women. STdpr occurred in 23/198 (12%) men and 35/258 (14%) women (p=NS). RPDs occurred in 78% of men versus 45% of women with STdpr ($p<0.01$). Among men, STdpr was identified on multivariate analysis as the most powerful predictor of RPDs (Odds Ratio, OR=7.9). This variable alone correctly classified 70% of men with RPDs. No other variable improved diagnostic accuracy. STdpr was a significantly weaker predictor of RPDs in women (OR=3.6, $p<0.03$). Among women with STdpr, diabetes (OR=6.3), chest pain with DP (OR=4.8), and increasing age (OR=1.1) were independent predictors of RPDs. In a logistic regression model, these variables allowed 80% of women with STdpr to be correctly classified. **Conclusions:** (1) STdpr occurred with equal frequency in men and women during DP stress testing. (2) RPDs were much more frequent in men as compared to women with DP-induced STdpr. (3) STdpr with DP was the most potent predictor of RPDs in men. (4) Among women, STdpr with DP testing in isolation was a poor predictor of RPDs. The presence of diabetes, increasing age, and chest pain with infusion modestly increased diagnostic accuracy.

TREATMENT OF CHRONIC HEADACHE WITH ANTI-DEPRESSANTS: A META-ANALYSIS. GE Tomkins, JL Jackson, PG O'Malley, K Kroenke, E Balden, J Santoro Department of Medicine, USUHS, Bethesda, MD

Numerous studies have assessed the efficacy of anti-depressants as prophylaxes for chronic headache, each with individual quantitative and qualitative limitations.
Methods: Meta-analysis of English-language, randomized placebo-controlled trials of anti-depressants as prophylaxis for chronic headache.
Results: Of 39 placebo-controlled randomized trials, 12 had no extractable data. Continuous data were extractable from 12 studies (3 tricyclics, 2 SSRIs, 7 serotonin blockers), and dichotomous from 13 (3 tricyclics, 2 SSRIs, 8 serotonin blockers). The continuous outcome was a measure of headache severity with the difference in headache severity between placebo and treated groups in each trial calculated and standardized by dividing by each study's pooled standard deviation. The dichotomous outcome was patient-reported headache improvement. Both continuous and dichotomous data were found to be heterogenous ($\chi^2=227$, df=16, $p<0.001$, and $\chi^2=38.3$, df=18, $p=0.004$, respectively), and were combined using a random-effects model. The summary odds ratio for improvement was 3.44 (95% CI: 2.69-4.39). The standardized mean improvement for the continuous data was 1.23 standard deviations (95% CI: 0.68-1.77). There were no differences in outcomes, with either stratified or meta-regression analyses, between the three classes of agents studied (tricyclic, serotonin antagonists, SSRIs), type of headache (migraine vs tension), quality score, length of treatment or percentage of patients lost to follow-up. Results of depression assessments were mixed, with individual study methods too diverse to allow quantitative comparison.



Conclusion: Anti-depressants are efficacious in prophylaxis against chronic headache. There are too few trials to assess the independent effectiveness of SSRIs, though they appear comparable to tricyclics or serotonin blocking agents in this analysis.

A POPULATION-BASED SURVEY OF BREAST CANCER SCREENING BY CAMBODIAN-AMERICAN WOMEN S Tu, Y Yasui, A Kuniyuki, B Thompson, JC Jackson, V Taylor. University of Washington, Seattle, WA and Fred Hutchinson Cancer Research Center, Seattle, WA.

Purpose: Community surveys identify Cambodian-American women with low breast cancer screening. The objective of this study was to determine clinical breast exam (CBE) and mammography screening in a Cambodian-American population.

Methods: Population-based survey of Cambodian-American women residing in the Seattle Metropolitan area. Households were identified using Cambodian surnames from Public Housing, motor vehicle registration and telephone CD-ROM databases. Eligible women were 18 or older. Surveys were conducted by bilingual and bicultural interviewers. Questions included: sociodemographic characteristics, acculturation, PRECEDE, and breast cancer screening variables. Bivariate and stepwise logistic regression analyses were conducted for the following dependent variables: ever had CBE, regular CBEs, ever had mammogram, and regular mammograms. Mammography analyses were restricted to women 40 and older.

Results: ***CBE*** - Almost 30% of the women reported never having had a CBE. Only 26% reported regular CBEs. Logisitic regression showed age and employment status predicted ever having had CBE. Tabulated below are additional predictors of screening. Belief that cancer is curable, education status, regular check ups and marital status also predicted regular CBEs. ***Mammography*** - Approximately 30% of the women have never had a mammogram. Only 23% reported regular screening. Predictors of ever having had mammogram also included use of coin rubbing. For regular mammograms, the following additional variables predicted screening: location of birth, type of housing and having friend or relative with cancer.

Odds Ratios (95% Confidence Intervals)

Variable (referent)	Ever had CBE	Regular CBEs	Ever had mammogram	Regular mammograms
< 10 years in US (≥10 years)	0.5 (0.3,0.9)		0.2 (0.1,0.5)	
Female doctor (Male doctor)	3.1 (1.8,5.5)		2.7 (1.4,5.6)	
No doctor (Male doctor)	1.5 (0.7,3.2)		1.9 (0.7,6.3)	
Problem with transportation (No problem)		0.4 (0.2,0.7)		0.4 (0.2,0.7)

Conclusion: In this population of Cambodian-American women, almost one third had never had a CBE or mammogram, and regular screening was very low. Women who had a female doctor were more likely to have ever had screening, while problems with transportation deterred regular screening. Breast cancer screening programs for Cambodian-American women need to target women who under-utilize CBE and mammogram through interventions that address the needs of this population and are also consistent with their beliefs.

HUMAN COSTS OF SMOKING-RELATED DISEASES. F Priez, M Vannotti, C Jeanrenaud; Institute for Economic Research, University of Neuchâtel; University Medical Outpatient Clinic, Lausanne; Switzerland

Introduction : Medical prevention of smoking-related diseases requires knowledge about concerns and beliefs of the general population but also about human costs (HC). HC, as an economic variable, may be evaluated indirectly by the willingness-to-pay (WTP). **Purpose** : The aim of this Swiss study, conducted by economists and physicians, was to estimate the monetary value attributed by the general population regarding the consequences on quality of life of six smoking related-diseases: angina, non-fatal and fatal heart attack, stroke, chronic bronchitis and lung cancer. **Method** : The contingent valuation method was used to obtain the WTP for reducing by 95% the individual risk of contracting one of these diseases. A survey of 868 individuals (33% smokers) was conducted in Italian-, French- and German-speaking regions of the country. The following key information elements were provided to the respondents before they indicated their WTP : i) the risk factors, ii) the average risk in the general population by gender, iii) the consequences of the diseases in terms of quality of life. The value of risk reduction was estimated by an econometric model (McClelland, 1991) within an incidence framework. **Results** : Smokers were willing to pay 6 to 9 times more than non-smokers in order to reduce their risk. Elderly people, sedentarians and Italian- and French-speaking interviewees attributed a higher value to their risk reduction than the others. Overall, for lung cancer, the estimated WTP was US $ 3.8, thus HC amounted to US $ 380,000; HC amounted to US $ 175,000 for fatal heart attack and to US $ 28,500 for chronic bronchitis. **Conclusion** : HC are an indicator of the value attributed to quality of life. Among the variables explaining WTP, smoking status was the most significant which means that respondents referred to their own subjective risk when expressing their WTP. Lung cancer was considered as the most critical, with highest WTP. Such studies may contribute to better understand smokers' concerns and beliefs, and to improve effective strategies for smoking cessation in primary care.

POOR ADHERENCE IN STRESSFUL PERIODS OF LIFE: EXAMPLE OF HIV-INFECTED POST-PARTUM WOMEN: BJ Turner, CJ Newschaffer, D Zhang, L Cosler*, and WW Hauck. Jefferson Medical College, Philadelphia, PA., New York State (NYS) Dept. of Health, Albany, NY.

Antiretroviral therapy (ART) use in pregnancy has become a standard of care to prevent transmission but little is known about use and adherence to ART during the stressful first post-partum year. For New York State HIV-infected (HIV+) women delivering from 1/93 to 10/96, we employed Medicaid pharmacy and medical care data linked to birth certificates to identify health care delivery and demographic predictors of use and, among long-term users of ART >2 months, adherence to ART from logistic regression models. Adequate adherence was defined as prescribed drug coverage for ≥80% days from the first ART prescription(s) to the end of the last prescription(s) in the post-partum year.

Of 2648 post-partum HIV+ women only 33% were prescribed ART. Of long-term users (N=546; 21%), only 32% had adequate adherence. For women with a provider in an HIV-related specialty (e.g. infectious disease) who also had a contract with NYS to offer enhanced HIV services, the adjusted odds ratio (AOR) of ART use was 6.32 (CI=3.63, 10.98) versus women without either type of care (P<.001) but adherence did not differ (AOR=1.25; CI 0.45, 3.50). ART use for methadone-treated women was more likely than for non-drug users (AOR=1.93, CI 1.31, 2.84) but adherence did not differ (AOR=0.59; CI 0.21, 1.51). Former drug users were more likely to be adherent (AOR=2.13; CI, 1.04, 4.33) than non-drug users. Women over age 25 had over three-fold greater AOR of use (P<.001) and 50% greater AOR of adequate adherence than younger women. AOR of ART use was lower for women with three or more prior deliveries (P=.04) and for women with a history of a chronic disease such as hypertension (P=.002).

This low level of ART use and poor adherence indicate that women are not receiving adequate therapy for HIV during the difficult first post-partum year. These analyses point to methadone treatment for injection drug users and care for all HIV+ women from a provider with HIV expertise and HIV-focused services as ways to increase use of ART. Adherence appeared to be influenced more by the woman's own characteristics such as older age and having been able to stop illicit drug use.

TEN-YEAR FOLLOW-UP OF A RANDOMIZED, CONTROLLED TRIAL OF OUTPATIENT GERIATRIC EVALUATION IN A LARGE PUBLIC HOSPITAL. B Vicioso, P Loftis, A Naik, M Sizemore, CD Rubin, University of Texas Southwestern Medical Center, Dallas, TX.

To study the long-term effect of outpatient geriatric evaluation and management, we conducted a 10-year follow-up of a 200 patient randomized controlled trial of geriatric assessment performed at a large public hospital. Experimental patients received care by an interdisciplinary geriatric team; controls did not. One-year data were published earlier. We report initial analysis of a 10 year follow-up of these survivors.

At 10 years, 23 patients survived, 15 in the experimental group, 8 in the control. Of 23 subjects, we were unable to locate 2, 1 in each group. Six experimental subjects are still followed by the geriatrics team. Average age was 85. Five experimental subjects had < 2 IADL dependencies compared to 3 who had < 2 IADL dependencies in the controls. Four out of 6 geriatric team subjects, 3 out of 9 non-managed experimental subjects and 2 out of 8 controls could self-bathe.

At 10 years, patients who had received geriatric assessment were more likely to survive than those who didn't. Functionally, the outcomes of this frail cohort are consistent with those observed at one year. The trend toward greater independence in the experimental group continues and is more pronounced in the geriatrics-managed group. Analysis of similar cohorts may further elucidate the long-term effects of interdisciplinary geriatric assessment.

CHLAMYDIA AND GONORRHEA SCREENING IN AN URBAN CLINIC POPULATION. KA vom Eigen, EL Hyde, BE Gould, Division of General Medicine, University of CT School of Medicine, Farmington CT, St. Francis/UConn Primary Care Center, Hartford CT

To measure the prevalence of Chlamydia (Ch) and Gonorrhea (GC) and determine appropriate testing criteria, we screened patients attending a multi-disciplinary primary care clinic (Pediatrics, Ob/Gyn, General and Specialty Medicine, Podiatry, General Surgery) serving a primarily minority, low-income population in Hartford CT. Patients aged 13 to 30 were asked to complete a questionnaire (symptoms, risk behaviors, demographics) and provide a urine specimen for Ch and GC Ligase Chain Reaction testing.

During four months in 1998, 453 patients (66% of eligible patients contacted) were enrolled. 34 failed to provide a urine specimen, leaving a final sample of 322 females (F) and 97 males (M), including 139 adolescents (age 13-19) (105 F, 34 M) and 104 pregnant F.

Overall prevalence of Ch or GC was 11.0%, and was similar by gender (F 10.9%, M 11.3%), and age group (adolescent 12.2%, adult 10.4%). 11.8% of pregnant F were infected. Infections were most prevalent among adolescent F (13.3%), and adult M (12.7%).

Among patients who reported symptoms (discharge, pain, dysuria, spotting or genital lesions in the past month) prevalence was 15.0% in M, and 12.5% in F. 72.7% of M cases and 54.3% of F cases occurred without reported symptoms. Among adolescents who reported previous sexual intercourse, prevalence was 14.4% (F 17.9%, M 11.1%). Among adults who reported one or more risky behaviors (new or multiple partners in last 3 months, inconsistent use of barrier contraception) prevalence was 10.6% (F 10.5%; M 11.3%).

Limiting screening to patients meeting CDC guidelines (sexually experienced adolescents, F 20-24 with one risk factor, older F with two risk factors, pregnant F at risk), and to M with symptoms, would have identified 33/35 F infections (94.3%), but only 4/11 M infections (36.4%). Screening adult M with a risk factor would have detected 4 more cases (72.7%). Males were under-represented in the sample, despite a participation rate of 74%, reflecting lower utilization of health services.

In high prevalence populations, expansion of screening efforts to adult M, especially those at high risk, and to non-clinical venues where M could have better access, may be warranted.

A COMPARISON OF RISK FACTORS FOR HIP FRACTURE IN BLACK AND WHITE WOMEN. C-Y Wang, C Rubin, K Sakhaee, M Sizemore, Department of Internal Medicine, The University of Texas Southwestern Medical Center, Dallas, TX.

Purpose: The purpose of this study was to compare the risk profiles of black and white women who have had a hip fracture.

Methods: This study is a retrospective chart review of black and white women ≥50 years old (YO) who were admitted, over a five-year period, to a county hospital with a diagnosis of "hip fracture". Only women with non-traumatic fractures were included. The presence of diseases affecting bone metabolism (secondary osteoporosis) was noted. Risk factors for osteoporosis (for example, body mass index (BMI) and medications affecting bone integrity) and for falls (seizure disorder, history of stroke or other neurological disease, use of tricyclic antidepressants, hypnotics or alcohol) were also noted.

Results: 33 charts of black women and 43 of white women were identified for study. Mean age was 76 years (yrs.) for black women and 71 yrs. for white women. Although there were no statistically significant differences between the risk profiles of the two groups, trends were apparent. 39.4% of black women versus (vs.) 20.9% of white women had diseases causing secondary osteoporosis. 60.6% of black women vs. 58.1% of white women had osteoporosis risk factors. Certain risk factors had a higher prevalence (>10%): chronic renal failure (CRF) 18.2% (black) vs. 4.7% (white), current tobacco use 24.1% vs. 30.2%, and current alcohol use 9.1% vs. 25.6%. Of black women, 45.8% had a BMI<21 vs. 20.7% of white women.

Fall risk factors were present in 54.5% of black women vs. 62.8% of white women. Prevalence was similar in black vs. white women for: stroke 18.2% vs. 16.3% and other neurological disease 30.3% vs. 27.9%. Higher prevalence for white women was seen in current use of: tricyclic antidepressants 20.9% vs. 9.1%; hypnotics 16.3% vs. 9.1%; and alcohol. Of all the women, 31.2 % had one risk factor for falls, 19.5% had two, 6.5% had three and 1.3% had four.

Conclusion: In these women ≥50 YO with non-traumatic hip fractures, black women had a higher prevalence vs. white women of CRF, low BMI and secondary osteoporosis. Risk factors for falls are as prevalent as conditions predisposing to osteoporosis in both black and white women with hip fracture.

COLON CANCER SCREENING IN THE AMBULATORY SETTING. JME Walsh, SF Posner, EJ Perez-Stable. Division of General Internal Medicine, Department of Medicine, University of California, San Francisco.

Purpose: Despite evidence of decreased mortality, recommendations for colon cancer screening have not been widely implemented by physicians. In order to develop interventions to promote colon cancer screening, we evaluated patient and clinician factors associated with use of flexible sigmoidoscopy (SIG) and fecal occult blood test (FOBT).

Methods: We reviewed 6,043 computerized medical records of patients aged 50-74 who had been seen at least once in primary care practices between July 1, 1995 and June 30, 1997. Outcomes were FOBT in the past two yr. and SIG in the past ten years.

Results: The average age of patients was 61 yr. and 60% were women. FOBT had been performed in the previous two yr. in 44.4% of patients and SIG in the previous 10 yr. in 25.5%. 52.6% of patients had undergone some type of colon cancer screening during the study period. Patient factors predictive of FOBT use during the study period included age (31.9% of those aged 50-54 vs 52.6% of those aged 70-74; p<0.001), date of last visit (47.8% of those seen in the past 6 months vs 32.2% of those seen more than one year previously; p<0.001), number of visits in the study period (59.5% of those seen >10 times vs 28.4% of those seen 1-3 times during the study period; p<0.001), insurance type (48.6% public vs 43.8% private vs 30.7% if uninsured; p<0.01), and having managed care insurance (47.4% vs 43.4% of those without managed care; p<0.006). Patient factors predictive of SIG were similar with the addition of patient gender; males were more likely to receive SIG than were females (28.4% vs 23.6%; p<0.01). Clinician factors predictive of FOBT screening included male gender (46.5% vs 43.2%; p<0.006) and being a physician (faculty, 46.2%; residents, 45.7% vs 38.6% for nurse practitioners; p<0.001). Clinician predictors of SIG were similar with the addition of family practitioners being more likely than internists to perform SIG (31.7% vs 25.2%; p<0.001).

Conclusions: Rates of colon cancer screening remain low, especially in patients who are younger, patients who have been seen less frequently, who are uninsured or who do not have managed care insurance. Male providers screen more frequently than do females, which is contrary to prior research in breast and cervical cancer screening. Future research should focus on increasing screening in all age eligible patients with an emphasis on underscreened groups.

THE EFFECT OF DEFERRED CARE FOR NONEMERGENT EMERGENCY DEPARTMENT USERS: A RANDOMIZED CONTROLLED TRIAL. Washington DL, Stevens CD, Shekelle PG, Brook RH. VA Greater Los Angeles Healthcare System, UCLA, Los Angeles, CA.

Purpose: In response to emergency department (ED) overcrowding and pressures for cost control, there is an increasing tendency to defer the care of patients requesting ED care for nonemergency conditions to a later date or an alternate setting. However, few validated systematic methods exist for this purpose. We studied the effect of deferring care on health status and access to care for users of a public hospital ED.

Methods: 156 ambulatory patients, age 18 and older, presenting to a public hospital ED in Los Angeles County, CA, and meeting standardized guidelines for deferral of care, were randomized to receive either next day care in the primary care diagnostic center or customary same day care in either the ED or primary care diagnostic center at the study site. We measured changes at 1 week in patients' self-reported health status with serial applications of a 14-item health status measure derived from the Medical Outcomes Study Short Form, and we measured use of health services during the 1 week follow-up period.

Results: By the end of the follow-up period, greater than 94% of patients in each group was evaluated at least once by a physician. Patients assigned to next day care did not differ from usual care patients in either health status or health services use at 1 week follow-up. Respective unadjusted values (95% C.I. for difference) for the next day and usual care groups are as follows: health status 30.1 versus 29.5 (-2.9, 4.2) on health status scale with range of 14 to 58, where higher scores indicate worse health; health perceived as same or better, 90% versus 92% (-7.7, 11.6%); suffered moderate amount or more of bodily pain from waiting for evaluation, 16% versus 17% (-11.8, 12.8%); number of days of prior 7 spent in bed due to health, 1.7 versus 1.2 (-0.4, 1.3); proportion seeking additional health care services, 4.4% versus 4.2% (-7.0, 6.5%). No patient in either group was hospitalized or died. Univariate comparative findings were confirmed through multivariable analysis when baseline health status scores were used as covariates.

Conclusions: Health status outcomes and service use did not differ between ED patients receiving same day and deferred care for common ambulatory symptoms when explicit deferred care guidelines were applied and a guaranteed appointment for evaluation was offered. This approach may allow facilities to manage their acute care resources more efficiently by safely diverting a portion of walk-in patients from the ED to primary care settings. The safety and reliability of achieving this goal with the implicit triage methods currently used at most facilities is unknown.

OBESITY: AN UNRECOGNIZED BARRIER TO PREVENTIVE CARE. CC Wee, EP McCarthy, RB Davis, RS Phillips. Division of General Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA.

Obesity-related conditions account for 300,000 deaths annually, largely due to cardiovascular and cancer deaths. Although obese individuals are discriminated against in society, the impact of obesity as an independent barrier to preventive care has not been explored. Reduced rates of preventive screening could contribute to higher mortality rates observed in obese individuals.

Methods: Basic health and demographic information were collected for the Year 2000 supplement of the 1994 National Health Interview Survey, a U.S. population-based household survey(n=19,738). The mean age of respondents was 46 years(yrs), 24% were nonwhite, 44% had some college education, 33% were overweight(body mass index/BMI 25-<30) and 18% were obese(BMI≥30). We used multivariable models to examine the effect of obesity on Pap smears performed within the prior 3 yrs in women age 18-75 yrs (n=8394), mammography use within the prior 2 yrs in women age 50-75 (n=3503), and stool testing at the last general exam in respondents age 50-75 who had a general exam within the last 3 yrs (n=1899). Final models were adjusted for known barriers to care (age, race, education, marital status, income, insurance, gender) and other potential confounders (illness burden, access/visit frequency, region, physician specialty). Results were adjusted for the sampling design using SUDAAN.

Results: Compared to normal weight respondents(BMI 19-<25), obese respondents had lower rates of Pap smears (78% vs 84%), mammography (43% vs 48%), and stool testing (34% vs 37%). After adjustment, obesity was an independent barrier to Pap smear and mammography use. Obese respondents were also less likely to receive stool testing but these results did not reach statistical significance for any weight category.

Adjusted Odds Ratios for Preventive Screening by BMI category

	BMI 19-<25	BMI 25-<30	BMI 30-<35	BMI 35-<40	BMI 40+
Pap Smear	1.00	0.72	0.60	0.66	0.74
(n=7327)		(0.58,0.88)	(0.47,0.76)	(0.44,0.99)	(0.47,1.19)
Mammography	1.00	0.83	0.83	0.87	0.94
(n=3106)		(0.68,1.00)	(0.64,1.08)	(0.50,1.76)	(0.50,1.76)
Stool Test	1.00	0.88	0.72	0.63	0.84
(n=1738)		(0.69,1.11)	(0.50,1.02)	(0.35,1.15)	(0.30,2.37)

Conclusion: Individuals who are overweight or obese were less likely to receive important preventive care even after accounting for differences in access to health care, sociodemographic factors and illness burden. The potential impact of this barrier to care may be substantial given the growing prevalence of obesity and its strong association with preventable deaths. Understanding the nature of the newly recognized barrier posed by obesity is essential in targeting preventive efforts.

PRODUCTIVITY IMPLICATIONS OF A SHORT FORM-12 SCORE MG Weiner, M Seshamani, A Cohen, AL Hillman, Division of General Internal Medicine, Hospital of the University of Pennsylvania, Philadelphia, PA

The Short Form-12 (SF-12) is a 12-question Health Related Quality of Life survey whose scores are designed to quantify a patient's level of functional status on physical and emotional scales. In general, higher scores are more desirable and reflect better states of well being. However, given the subjective nature of the questions, it is difficult to ascribe an objective value to a given score. To examine this issue, we designed a study to correlate SF-12 scores with objective measures of disability, particularly those with economic impact. **Methods:** We augmented the standard SF-12 survey with questions adapted from the National Health Interview Survey (NHIS) that quantify the degree of loss of productivity related to an illness. Three of these additional questions address primary productivity loss defined as the number of days in the prior four weeks lost from school or work, the number of days spent in bed and the number of reduced activity days. The fourth question asks about secondary productivity loss in terms of others staying home to help the patient, instead of going to work. We provided this survey on paper to all patients arriving for a physician visit to a General Medicine Practice between June 9 and August 4, 1998. Participation was optional, though patients were asked to complete the survey prior to their doctor visit. **Results** : In the 8 week study period, we collected 959 surveys from unique patients who completed the SF-12 component. This population was 60.7% female, 56% Caucasian, 27.0% African-American, 1.6% Asian and 15.4% not identified. The mean age was 47.7±15.32. Consistent with national norms, this population had a mean Physical Component Score (PCS) of 47.8±10.6, and a mean Mental Component Score (MCS) of 49.4±10.3. Univariate correlation between PCS and MCS with each of the productivity reductions was computed with Pearson's R test. Multivariate analysis with PCS, MCS, age and gender as independent variables and the lost productivity days as the dependent variables were calculated using linear regression. The following table displays the variance in lost productivity explained by each of the variables:

	Days Missed	Bed Days	Reduced Activity	Home help
MCS (univariate)	0.025*	0.056*	0.010*	0.029*
PCS (univariate)	0.182*	0.155*	0.365*	0.189*
Multivariate	0.208*	0.207*	0.451*	0.211*

*p<0.001

Discussion : The results of this study suggest that SF-12 scores are not strongly predictive of the number of days patients withdraw completely from usual activities, stay home in bed, or cause a secondary loss of productivity. There is a modest relationship between a composite of PCS, MCS, age and gender on the number of days where usual activities were reduced. Although the SF-12 reliably measures functional status, it is not a sufficient predictor of the productivity implications of an illness.

PATTERNS OF PHYSICIAN COUNSELING ABOUT EXERCISE IN THE UNITED STATES. CC Wee, EP McCarthy, RS Phillips, Div. of General Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA.

The rise in the prevalence of obesity over the last decade has been attributed to an increase in sedentary lifestyle. Women, minorities and members of lower socioeconomic status (SES) are at highest risk for obesity. Exercise counseling, which has been shown to be efficacious, has not been well described nationally.

Methods: Health and sociodemographic data were obtained from 17,317 respondents to the Year 2000 supplement of the 1995 National Health Interview Survey, a population-based household survey (mean age 44 years, 52% female, 24% nonwhite, 43% college educated, 20% with body mass index(BMI)≥30, 7% with cardiac disease, and 5% with diabetes). Respondents who saw a physician for a routine check-up in the last year were asked if they were counseled to start or continue exercising. We used multivariable analyses(using SUDAAN to account for the complex sampling design) to determine the correlates of exercise counseling and to adjust for confounding.

Results: Of 9711 respondents who saw a physician in the prior year, 34% reported being counseled to exercise. College educated respondents had higher counseling rates(38 vs. 29%) as did members of higher income groups. Older respondents(age≥40 yrs), and respondents with cardiac disease and diabetes also had higher rates(37 vs. 27%, 45 vs. 32%, and 51 vs. 32%). After adjustment for insurance, marital status, health care utilization, difficulty walking, and desire to lose weight, there were no significant differences by respondent gender, race or physician specialty. Prior cardiac disease, adjusted odds ratio(AOR) 1.8 (95%CI 1.5, 2.1), and diabetes, 1.9(1.5, 2.4) were important correlates of counseling as were obesity, age, and SES (see table).

Age	AOR	BMI	AOR	Education	AOR	Income	AOR
<30	Reference	19-<25	Reference	College	Reference	≥$50 K	Reference
40-<50	1.7	25-<30	1.2	graduate		$30-<50 K	0.7
	(1.3,2.2)		(1.0,1.3)	Some	0.8		(0.6,0.9)
50-<60	1.6	30-<35	1.5	college	(0.6,0.9)	$20-<30 K	0.8
	(1.3,1.9)		(1.2,1.7)	High	0.7		(0.7,1.0)
60-<70	1.5	35-<40	1.7	School	(0.6,0.8)	$15-<20 K	0.8
	(1.1,1.9)		(1.3,2.3)	<High	0.6		(0.7,1.0)
≥70	1.4	≥40	2.8	School	(0.4,0.7)	<$15 K	0.8
	(1.1,1.9)		(1.9,4.1)				(0.6,1.1)

Conclusion: The overall rate of physician counseling about exercise is suboptimal nationally. Moreover, physicians appear to counsel as a form of secondary prevention as evidenced by higher rates in respondents who were already obese, who were older or who had comorbid conditions. Lower counseling rates for respondents who were younger and in lower SES groups represent important missed opportunities.

DEPRESSIVE SYMPTOMS AND SUBSEQUENT RISK FACTORS FOR CORONARY HEART DISEASE: THE CARDIA STUDY. MA Whooley, CI Kiefe, MA Chesney, JH Markovitz, SB Hulley. San Francisco VA Medical Center; University of California, San Francisco; University of Alabama at Birmingham.

Objective: Previous studies have found that depressive symptoms are associated with an increased risk of coronary heart disease (CHD), but the reasons for this association have not been determined. We evaluated whether depressive symptoms predict subsequent obesity, smoking or low physical activity among participants enrolled in the Coronary Artery Risk Development in Young Adults (CARDIA) study.

Methods: A total of 5115 adults ages 18-30 years were recruited in 1985-86 from four cities in the U.S., approximately balanced at each site for gender, race (white and African American), and educational level. For these analyses, we included 2239 participants from the year 5 exam (1990-91) who were free of obesity (body mass index ≥ 30 kg/m^2), current smoking, and low physical activity (lowest decile on Physical Activity History). At the year 10 exam (1995-96), we measured the incidence of obesity, smoking, and low physical activity in participants who had been depressed at year 5 (defined as a score of at least 16 on the Center for Epidemiologic Studies Depression Scale (CES-D)) compared with those who had not been depressed. Results are reported as odds ratios (OR) with 95% confidence intervals (CI) based on logistic regression models, adjusted for age, marital status, education, employment, income, family history of myocardial infarction, and alcohol use at year 5.

Results: Of the 1939 participants who completed the year 10 exam, 385 (20%) had been depressed (CES-D ≥16) at year 5. The incidence of one or more of the 3 CHD risk factors (obesity, smoking, or low physical activity) varied from 15% in those who had fewer than 4 depressive symptoms at year 5 (lowest quintile) to 26% in those who had 16 or more depressive symptoms (highest quintile) (p for trend < 0.001). We observed an association between depression and CHD risk factors among white men, white women, and African American men, but not among African American (AA) women:

Risk of incident CHD risk factors in depressed compared with nondepressed participants.

	Any Risk Factor OR (95% CI)	Obesity OR (95% CI)	Smoking OR (95% CI)	Low Physical Activity OR (95% CI)
White Men	2.1 (1.1 – 3.7)*	1.7 (0.8 – 3.6)	2.8 (1.0 – 7.9)†	2.6 (0.9 – 7.6)†
White Women	1.7 (1.0 – 2.9)*	2.0 (1.0 – 4.1)*	1.2 (0.4 – 3.6)	1.9 (0.9 – 4.1)†
AA Men	1.6 (0.9 – 2.9)†	1.8 (0.9 – 3.6)†	1.5 (0.6 – 4.0)	2.1 (0.7 – 5.9)
AA Women	1.1 (0.6 – 1.7)	1.4 (0.8 – 2.5)	0.5 (0.1 – 2.5)	1.1 (0.6 – 2.2)

*P≤0.05; †P≤0.1

Conclusion: Depressive symptoms are associated with an increased incidence of CHD risk factors, especially among white men and women. The development of obesity, smoking, and low physical activity may be partly responsible for the increased risk of CHD associated with depression.

DEPRESSIVE SYMPTOMS AND SUBSEQUENT LOSS OF INCOME: THE CARDIA STUDY. MA Whooley, CI Kiefe, MA Chesney, JH Markovitz, SB Hulley. San Francisco VA Medical Center; University of California, San Francisco; University of Alabama at Birmingham.

Objective: Depressive symptoms lead to an increased risk of coronary heart disease (CHD), but the reasons for this association are unclear. Because low socio-economic status has also been associated with an increased risk of CHD, we evaluated whether depressive symptoms predict subsequent unemployment or loss of income among young adults enrolled in the Coronary Artery Risk Development in Young Adults (CARDIA) study.

Methods: A total of 5115 adults ages 18-30 years were recruited in 1985-86 from four cities in the U.S., approximately balanced at each site for gender, race (white and African American), and educational level. For these analyses, we included 2334 participants from the year 5 exam (1990-91) who were employed, either part- or full-time, and who reported annual earnings of $25,000 or more. At the year 10 exam (1995-96), we evaluated employment and income status in participants who had been depressed at year 5 (defined as a score of at least 16 on the Center for Epidemiologic Studies Depression Scale (CES-D)) compared with those who had not been depressed. Results are reported as odds ratios (OR) with 95% confidence intervals (CI) based on logistic regression models, adjusted for age, marital status, education, smoking, and alcohol use.

Results: Of the 2002 participants who completed the year 10 exam, 386 (19%) had been depressed (CES-D ≥16) at year 5. The proportion of participants who reported an annual income under $25,000 at year 10 varied from 6% in those who had fewer than 4 depressive symptoms at year 5 (lowest quintile) to 17% in those who had 16 or more depressive symptoms (highest quintile) (p for trend < 0.001). Participants who were depressed at year 5 were more likely to report an annual income <$25,000 at year 10 compared with those who were not depressed (OR 2.2, 95% CI, 1.5 – 3.2; p<0.001). This association between depression and loss of income was observed in all race and gender groups.

Risk of subsequent income loss in depressed compared with nondepressed participants.

	OR (95% CI)	*P*
White Men	2.4 (1.0 – 5.5)	0.05
White Women	2.2 (1.0 – 4.6)	0.05
African American Men	3.1 (1.5 – 6.6)	0.003
African American Women	1.8 (1.0 – 3.3)	0.05

We did not find an association between depression and unemployment in any of these groups.

Conclusion: Depressive symptoms predict subsequent loss of income among working young adults. This decline in socio-economic status is an important outcome in itself, and may contribute to the increased risk of CHD associated with depression.

A SYSTEMATIC REVIEW OF TESTS TO DIAGNOSE VAGINAL TRICHOMONIASIS W Wiese, SR Patel, S Patel, C Ohl, C Estrada, East Carolina University, School of Medicine, General Internal Medicine, Greenville, NC.

Purpose: To obtain reliable estimates of the sensitivity and specificity of diagnostic tests to detect vaginal trichomoniasis.

Data Sources: Articles indexed in MEDLINE (1976-1998) regarding diagnostic tests on trichomoniasis and their listed references were retrieved (540 articles). The search terms were trichomonas (and related keywords), sensitivity, specificity, diagnosis, diagnostic tests routine, diagnosis-differential, diagnostic errors, multiphasic screening, likelihood functions, false positive or negative reactions, and receiver operating curve.

Study Selection: Thirty-two studies (8059 patients) that used trichomonas culture as a gold standard.

Data Extraction: Studies were defined as Level I (4,332 patients) if they fulfilled at least two of three criteria: 1) consecutive patients were evaluated prospectively, 2) decision to culture was not influenced by preliminary test results, and 3) there was independent and blind comparison to culture. Studies were classified as Level II or III if any one or none of the criteria were fulfilled, respectively. Studies which report wet smear and Papanicolaou smears are summarized elsewhere.

Data Synthesis: The sensitivity of polymerase chain reaction (PCR) for Level I studies (52 patients) was 100% and 89-100% among level II studies (465 patients). The specificity among level I and II studies for PCR was 95-100%. The sensitivity for immunobased techniques (ELISA, DFA,IFA) among level I (881 patients), II (500 patients) , and III studies (574 patients) was 77-92% , 81-95% , and 75-92%, respectively. The specificity for immunobased techniques was 98-100% for level I and II studies, and 60-97% in level III studies. Staining techniques (Acridine Orange ,Pappenheim) had a sensitivity range of 66-100% among level I and II studies and a specificity range of 99-100%.

Conclusions: Numerous tests are available to diagnose vaginal trichomoniasis. The PCR techniques appear to be the most promising . However, there is still a paucity of level I studies available.

A META-ANALYSIS OF THE WET MOUNT AND PAPANICOLAOU (PAP) SMEAR FOR THE DIAGNOSIS OF VAGINAL TRICHOMONIASIS. W Wiese, SR Patel, S Patel, C Ohl, C Estrada, East Carolina University, School of Medicine, General Internal Medicine, Greenville, NC.

Purpose: To obtain reliable estimates of the sensitivity and specificity of the wet mount and Papanicolaou (PAP) smear techniques to diagnose vaginal trichomoniasis.

Data Sources: Articles indexed in MEDLINE (1976-1998) regarding diagnostic tests on trichomoniasis and their listed references were retrieved (540 articles). The search terms were trichomonas (and related keywords), sensitivity, specificity, diagnosis, diagnostic tests routine, diagnosis-differential, diagnostic errors, multiphasic screening, likelihood functions, false positive or negative reactions, and receiver operating curve.

Study Selection: Thirty studies (9,501 patients) that used trichomonas culture as a gold standard.

Data Extraction: Studies were defined as Level I (4,792 patients) if they fulfilled at least two of three criteria: 1) consecutive patients were evaluated prospectively, 2) decision to culture not influenced by test results, and 3) independent and blind comparison to culture. Studies were classified as Level II or III if any one or none of the criteria were fulfilled, respectively.

Data Synthesis: The pooled sensitivity of the wet mount for Level I, II, and III studies were 58% (95% CI; 51 to 66%), 72% (95% CI; 62 to 81%), and 82% (95% CI; 67 to 97%), respectively. The overall specificity of the wet mount was 100%. The pooled sensitivity and specificity of the PAP smear for Level I studies were 57% (95% CI; 51 to 63%) and 97% (95% CI; 93 to 100%), respectively.

Conclusions: A positive wet mount is diagnostic for trichomoniasis, whereas a negative test does not exclude it. A positive PAP smear for trichomonas in settings of high prevalence (>20%) requires treatment, while culture should be used to confirm the diagnosis in low to intermediate prevalence populations (<10%).

ANTIBIOTIC THERAPY FOR ACUTE MAXILLARY SINUSITIS: A SYSTEMATIC REVIEW. JW Williams Jr, C Aguilar, M Makela, J Cornell, DR Holleman, D Chiquette, DL Simel. South Texas Veterans Health Care System, San Antonio TX.

Purpose: For adults seeking care in ambulatory practices, sinusitis is the most common diagnosis treated with antibiotics. We examined whether antibiotics are indicated for acute sinusitis, and if so, which antibiotic classes are most effective.

Search Strategy and Selection Criteria: Relevant studies were identified from searches of Medline and Embase, contacts with pharmaceutical companies and bibliographies of included studies. Randomized trials comparing antibiotic to control or antibiotics from different classes were eligible. Additional criteria were diagnostic confirmation by radiograph or sinus aspiration, outcomes that included clinical cure or improvement and a sample size of ≥ 30 adults with acute sinusitis. Of 1784 potentially relevant studies, two or more reviewers identified 32 studies meeting selection criteria.

Data Collection and Analysis: Data were abstracted independently by 2 persons and synthesized descriptively. Some data were analyzed quantitatively using a random effects model. Primary outcomes were a) clinical cure and b) clinical cure or improvement. Secondary outcomes were radiographic improvement, relapse rates, and dropouts due to adverse effects.

Results: Thirty-two trials, involving 7,330 subjects evaluated antibiotic treatment for acute maxillary sinusitis. Major comparisons were antibiotic vs. control (n= 5); newer, non-penicillin antibiotic vs. penicillin class (n= 10); and amoxicillin-clavulanate vs. other extended spectrum antibiotics (n= 10). Most trials were conducted in otolaryngology settings. Only 5 trials described adequate allocation and concealment procedures; 10 were double-blind. Compared to control, antibiotics improved clinical cures [relative risk (RR) 1.58, 95% CI 1.04 to 2.41], cure or improvement (RR 1.22, 95% CI 1.07 to 1.38) and radiographic outcomes. Clinical outcomes showed significant heterogeneity. Comparisons between classes of antibiotics showed no significant differences: newer non-penicillins vs. penicillins (RR for cure 1.07; 95% CI 0.99 to 1.17); newer non-penicillins vs. amoxicillin-clavulanate (RR for cure 1.01, 95% CI 0.97 to 1.04). Dropouts due to adverse effects were significantly lower only for cephalosporin antibiotics compared to amoxicillin-clavulanate (RR 0.29, 95% CI 0.16 to 0.54). Relapse rates within one month of successful therapy were 5%. Sensitivity analysis did not show reduced efficacy of amoxicillin over time.

Conclusions: For acute maxillary sinusitis confirmed radiographically or by aspiration, antibiotics improve clinical and radiographic outcomes. Penicillin class antibiotics are preferred because of their similar efficacy and lower cost compared to newer, extended spectrum antibiotics. Clinicians should weigh the moderate benefits of antibiotic treatment against the potential for adverse effects.

EFFECTIVENESS OF PAROXETINE AND PROBLEM-SOLVING TREATMENT FOR ELDERS WITH MINOR DEPRESSION OR DYSTHYMIA. JW Williams Jr, JE Barrett, TE Oxman, E Frank, W Katon, M Sullivan, A Sengupta, J Cornell. South Texas Veterans Health Care System, Dartmouth Medical School, Univ. of Pittsburgh, and Univ. of Washington.

Purpose: In primary care settings, minor depression and dysthymia are highly prevalent illnesses that are associated with high personal and societal costs. Because effective treatments for elders are uncertain, we evaluated two primary care based treatments.

Design: An 11 week multicenter randomized trial comparing placebo plus clinical management, paroxetine and problem solving treatment (PST-PC), a brief behaviorally based psychotherapy designed specifically for primary care.

Setting and Participants: Primary care patients aged ≥ 60 were recruited from academic and non-academic practices in four geographically diverse cities. Eligibility requirements were dysthymia or minor depression (3-4 DSM-IV symptoms of which one must be depressed mood or anhedonia lasting ≥ 4 weeks) and a Hamilton Depression Rating Scale (HDRS) ≥ 10. Patients were excluded for terminal illness, active substance abuse, psychosis, parasuicidality and mini-mental status score < 24.

Data Collection and Analysis: Depressive symptoms were measured at multiple time-points by the Hopkins Symptom Checklist (HSCL) and the interviewer-administered HDRS. The SF-36 physical (SFPC) and mental components (SFMC) measured functional status. Using an intent-to-treat approach, outcomes were analyzed with random regression models.

Results: 415 patients met eligibility criteria and were randomized to placebo (n=140), paroxetine (n=137), or PST-PC (n=138). Patients characteristics were distributed equally between treatment groups – mean age 71 y.o. (range 60 – 93), female (59%), Non-Hispanic White (78%), and ≥ high school education (79%). Diagnoses were dysthymia (n=211) or minor depression (n=204); median baseline HDRS 13 (interquartile range 12 to 15), and mean HSCL 1.47 ± .73. 310 participants (75%) completed all 6 treatment visits and outcomes measures. In all three treatment groups, patients showed improvement. Patients assigned to paroxetine showed significantly more improvement than placebo on the HDRS (11 week difference = 2.2, $p<0.05$), the HSCL (11 week difference = 0.26, $p<0.05$), the SFMC (11 week difference = 4.5, $p<0.05$), but not the SFPC. Overall, patients assigned to PST-PC did not show significantly more improvement than placebo but effects varied significantly across sites with PST-PC showing strong positive effects at one site.

Conclusions: In a large primary care based multicenter trial, paroxetine showed moderate benefit for depressive symptoms and mental health function in elders with minor depression or dysthymia.

PATIENT, VISIT, AND PHYSICIAN CORRELATES OF INTERPERSONAL CARE IN HIV DISEASE. IB Wilson, SH Kaplan. New England Medical Center, Boston, MA.

Though better interpersonal care has been associated with better health outcomes in other chronic conditions, interpersonal care and the relationships of patient (PT), visit, and physician (MD) and characteristics to interpersonal care have not been studied in HIV disease.

We examined these relationships in PTs participating in a Boston-area study of HIV related nutritional problems and their primary HIV MDs. PT and visit data (n=264) came from survey responses and blood tests done at the baseline study visits from 2/95-5/96. MDs (n=131) were surveyed by mail and 89 (68%) returned surveys. Dependent variables were 2 measures of interpersonal care developed and validated from items on the patient survey: a 5-item general communication measure (α=0.93), and a 4-item HIV-specific measure (α=0.92), including communication about alcohol, drug use, and sexual behaviors. Principal components analysis of interpersonal care variables confirmed hypothesized item groupings. PT and visit characteristics tested for associations with each dependent variable included age, sex, race, income, education, insurance, risk factor, CDC stage, CD4 count, physical function, duration of PT-MD relationship, and visit length. Analyses of MD characteristics used the 143 PTs and 69 MDs who had paired data. MD characteristics tested for associations with each dependent variable included age, sex, race, sexual preference, specialty training, interviewing training, HIV care experience, and practice type. Variables significant in bivariate analyses were entered into stepwise multiple linear regression models.

Mean PT age was 39, 24% were women, 31% were nonwhite, and 53% reported same-sex contact as their primary HIV risk factor. Average visit length was 31 minutes. Mean MD age was 39 years, 33% were female, 40% were specialty trained, and 25% were gay/lesbian/bisexual. In analyses of PT and visit characteristics, longer PT-reported visit length ($p<.0001$), longer duration of the PT-MD relationship ($p=.02$), female gender ($p=.04$), and a gender*visit length interaction term ($p=.02$) were significantly associated with better general communication. For this interaction, visit length was more strongly associated with better communication for men than for women. Of patient and visit characteristics, only longer visit length ($p<.0001$) was significantly associated with HIV-specific communication. No physician characteristics were significantly associated with general communication. However, both female physician gender ($p=.002$) and gay/lesbian/bisexual sexual preference ($p=.003$) were significantly related to better HIV-specific communication.

Male and heterosexual MDs should make stronger efforts to effectively discuss alcohol use, drug use, and sexual behaviors related to HIV care. Shorter visit length was independently associated with both worse general and worse HIV-specific communication. Our findings underscore the potential risks to interpersonal care of visits that are too short.

HIV PATIENTS' EXPERIENCES WITH HOSPITAL CARE: RESULTS FROM THE HIV COSTS AND SERVICES UTILIZATION SURVEY (HCSUS). IB Wilson, L Ding, RD Hays, MF Shapiro, SA Bozzette, PD Cleary for the HCSUS Consortium. New England Medical Center and Harvard Medical School, Boston, MA; UCLA School of Medicine, Los Angeles, CA; UCSD School of Medicine and the VA Hospital, San Diego, CA; RAND, Santa Monica, CA.

Few national data are available on the hospital experiences of HIV infected patients. The goal of this study was to compare HIV patients' hospital experiences in the HCSUS with those of inpatients with other conditions and to determine patient characteristics that were related to their reports about, and evaluations of, hospital care.

The HCSUS is a study of a national probability sample of persons with HIV receiving care at sites other than emergency rooms, prisons, or the military in the continental United States. These analyses are based on data from patients who reported one or more hospitalizations in 6 months prior to the baseline face-to-face interview during 1996-1997. The 3 measures of patients' experiences used were: (1) a 10-item problem score scale from the Picker Hospital Survey, (2) a single-item satisfaction measure, and (3) a single-item asking whether patients would recommend the hospital to others with HIV. HCSUS patients were compared with medical inpatients from the Picker Institute database (n=27,895). Patient characteristics assessed in bivariate analyses included age, gender, education, race, income, employment, insurance, sexual preference, history of injection drug use, HIV stage and risk group, CD4 count, admission type, physical functioning (9-item scale), pain, and mental health (MHI-5). Variables significant in bivariate tests were included in multivariable linear regression models. All data were weighted to reflect the population represented by the HCSUS sample.

There were 2864 patients in the baseline HCSUS sample, representing 231,000 patients nationally. Of these, 687 were hospitalized in 183 different hospitals. The mean age of hospitalized patients represented by the sample was 38 years, 74% were male, 55% were non-white, and 47% were gay or bisexual. Nine percent had no insurance, 39% Medicaid, 28% Medicare, and 22% private insurance. Most (64%) had CDC stage C disease. Compared with non-HIV infected inpatients, HCSUS patients had higher problem scores (24 vs. 20, $p=0.0004$), lower overall satisfaction ratings (65 vs. 71, $p<0.0001$), and were less likely to recommend the hospital to others. (75 vs. 79, $p=0.004$). In models adjusted for age, mental health, physical functioning, pain, and admission type, uninsured patients had higher problem scores than patients with Medicaid (13 point difference, $p=0.0007$). Blacks had lower overall satisfaction ratings than whites (11 point difference, $p=0.0008$).

Though differences were not large, patients with HIV report more problems and less satisfaction with their hospital care than patients with other conditions. Groups that should be targeted for quality improvement efforts include uninsured patients, and blacks.

AN OBSERVATIONAL STUDY OF THE EFFECTIVENESS OF INFERIOR VENA CAVA (IVC) FILTERS AMONG PATIENTS WITH VENOUS THROMBOEMBOLISM (TE). RH White, H Zhou, J Kim, PS Romano, Division of General Medicine, UC Davis; Sacramento, California.

There are few population-based data regarding the effectiveness of IVC filters in patients with TE. *Purpose:* Our objective was to determine the incidences of readmission for deep-vein thrombosis (DVT) or pulmonary embolism (PE) after placement of a IVC filter in patients presenting with TE, and compare these with the incidences in a cohort of TE patients not given an IVC filter. *Methods:* We used the California Patient Discharge Data set, which allows linkage of serial hospital discharge records. The IVC cohort consisted of all patients admitted between Jan 1, 1991 and Dec 31, 1995 for TE who received an IVC filter. The no-filter cohort included all patients admitted for a first time with TE during the same study period. Outcomes were readmission with a principal diagnosis of DVT or PE within 1 year. A risk-adjusted Cox model was used to control for age, sex, race, prior TE, presenting diagnosis of DVT versus PE, trauma/fracture ≤ 3 months, surgery ≤ 3 months, major bleeding ≤ 3 months, and comorbidity, (malignancy ≤ 6 months, stroke, etc).

Results: During the study period 4,065 patients with TE had an IVC filter placed, compared to 69,943 patients not given a filter. The unadjusted cumulative incidence of readmission within 1 year for DVT was 7.9% in the filter group and 6.0% in the no-filter cohort ($p < 0.001$); and for PE it was 3.4% in the filter group and 2.4% in the no-filter group ($p < 0.001$). The Cox model for readmission for DVT revealed no significant difference between the filter and no-filter groups among patients who initially presented with DVT (RH = 1.1, CI = 0.9 – 1.3), but among patients who initially presented with PE, the filter group had a significantly higher relative hazard of developing DVT (RH = 2.2; CI = 1.8 – 2.7). The Cox model for readmission for PE revealed no significant difference between the groups (RH = 0.9, CI = 0.6-1.4) regardless of the initial presentation. *Conclusions:* This observational study, which could not adjust for use of anticoagulation therapy, found little difference in outcomes between TE patients treated with a filter and TE patients not given a filter, except for a higher relative risk of readmission for DVT among patients given a filter who initially present with a PE. The data suggest that a clinical trial is needed to establish the efficacy of IVC filters.

MALNUTRITION ASSOCIATED COMPLICATIONS IN NURSING HOME RESIDENTS: A PROSPECTIVE STUDY OF PREDICTORS OF COMPLICATIONS OF MALNUTRITION IN RESIDENTS OF LONG TERM CARE FACILITIES.
JT Whitfill, MG Weiner, R Berlin, J Williams, B Kinosian. Division of General Internal Medicine, University of Pennsylvania Health System, Philadelphia, PA.

Purpose: To prospectively evaluate the ability of weight loss, low serum albumin and presence of a feeding tube to predict infection, development of a pressure ulcer and discharge to a hospital or death.

Methods: We monitored the nutritional quality improvement program to improve nutritional status for residents at 6 nursing homes. A total of 1534 residents were followed over 12 months with an average of 1216 residents per quarter. In that time, weights were recorded monthly, serum albumins were measured in residents who lost weight or were considered to be at nutritional risk as defined by a standardized screen, and protein supplementation was prescribed for residents who were at risk. Data were recorded at each site by the facilities' nursing staff and a single independent team consisting of a geriatrician, clinical nurse practitioner and a registered dietitian visited sites to independently verify the clinical status of selected patients. Predictors were 3 month weight loss > 5%, a serum albumin less than 3.0 gm/dl, and a feeding tube. Endpoints to define malnutrition-associated complications (MAC) were infection (INF), discharge to a hospital or death (DC), and development of a pressure ulcer (PU). The endpoints of INF and DC were divided into results from a winter and spring quarter to examine seasonal variation.

Results: Odds ratios and 95% confidence intervals of developing MACs based on risk factors from previous quarter.

	PU	DC	DC-Winter	DC-Spring	INF	INF Winter	INF Spring
Weight loss	1.6 (1.0-2.4)	1.8 (1.4-2.4)	1.6 (1.1-2.4)	2.0 (1.4-2.9)	1.3 (1.0-1.75)	1.2 (0.8-1.8)	1.5 (1.0-2.1)
Low albumin	1.1 (0.5-2.2)	1.7 (1.1-2.7)	1.3 (0.7-2.5)	2.1 (1.1-4.0)	0.2 (0.1-0.4)	0.6 (0.3-1.2)	0.125 (0.1-0.2)
Feeding tube	1.7 (1.1-2.7)	1.6 (1.2-2.2)	1.4 (0.9-2.1)	1.9 (1.2-3.1)	1.3 (1.0-1.8)	1 (0.7-1.5)	1.8 (1.2-2.7)

Conclusion: Simple clinical criteria of greater than 5% weight loss over 3 months and the presence of a feeding tube can identify those residents of nursing homes who are at increased risk for developing MACs in the subsequent 3 months. Selectively measured albumin was not helpful in discriminating risk. These Minimum Data Set available criteria can help quality monitors target their efforts to reduce MACs.

RISK-ADJUSTED SURVIVAL OUTCOMES IN A PRIMARY CARE CLINIC FOR PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS, 1991-1997.
B Wong, E Barber, WC Mathews, University of California at San Diego School of Medicine, San Diego, CA.

Objective: Longitudinal analysis of survival among patients receiving primary care for human immunodeficiency virus(HIV) infection, focusing on the prognostic effects of antiretrovirals and demographics over the period when combination therapies and protease inhibitors(PI) gained widespread use.

Methods: Retrospective analysis of 1,991 HIV patients in a university clinic, seen between July 1991 and Nov 1997. Overall and CD4-adjusted mortality for different predictors were first estimated using person-time rate analysis and Mantel-Haenszel method. A Cox regression model, controlling for severity of illness by adjusting for baseline CD4 and hospitalization prior to first visit, was then used to calculate the relative hazards(RH) of mortality associated with time-dependent antiretroviral regimen, demographics, HIV risk, and year of entry into care at the clinic.

Results: Sample of 1,991 patients, 12% female, 31% nonwhite, median CD4=132. Crude mortality rates decreased with later year of entry. While patients entering in '91-'93 had a death rate of 27.5 deaths/100 person years(dpy)(95%CI 25.2, 30.0), patients entering in '94-'95 and '96-'97 had death rates of 15.9dpy(95%CI 13.7, 18.6) and 5.9dpy(95%CI 4.2, 8.6) respectively. CD4-adjusted mortality rate ratios(RR) comparing patients on PI to those on non-PI combinations was RR=0.51(p<.001), PI vs. non-PI monotherapy was RR=0.25(p<.001). The multivariate Cox model showed significant survival benefit in patients on PI (RH= 0.29, 95%CI 0.19, 0.44), non-PI combinations(RH=0.29, 95%CI 0.23, 0.36), and non-PI monotherapy(RH=0.48, 95%CI 0.41, 0.57) compared to patients on no antiretrovirals. Later year of entry, in '94-'95 and '96-'97, continued to be associated with improved survival compared to entry in '91-'93(RH=0.68, 95%CI 0.55, 0.84 and RH=0.59, 95%CI 0.38, 0.93 respectively) in the Cox model. Race, gender, and HIV risk group did not affect survival, but hospitalization prior to first visit predicted poorer outcome(RH=1.31, 95%CI 1.13, 1.52), as did older age(age 40-49 vs. <30, RH=1.29, 95%CI 1.04, 1.61; age 50 and over vs. <30, RH=1.39, 95%CI 1.02, 1.90). Similar mortality was seen in patients on MediCal, MediCare, and private insurance, but survival was poorer if patient was a self-payor(RH=2.07, 95%CI 1.66, 2.59).

Conclusions: Survival in patients receiving primary care for HIV showed significant improvement over the '91-'97 period. Potent antiretroviral regimens were most predictive of improved outcomes, but later period of entry predicted improved survival independent of antiretroviral effect. Sex, race, and risk group did not affect survival, but age above 40 was associated with higher mortality. Access to care remained an issue, with patients without insurance having poorer outcomes.

ALTERNATIVE/COMPLEMENTARY MEDICINE: NOT THE EXCLUSIVE DOMAIN OF THE YUPPIE POPULATION.
Peter Wolsko, Lindsay Ware, Jean Kutner, C. T. Lin, Gail Albertson, Lisa Cyran, Lisa Schilling and Robert J. Anderson, University of Colorado Health Sciences Center, Denver, CO.

Background: There is considerable widespread interest in use of alternative/complementary medicine (ACM). National telephone surveys indicate that use of ACM is highest in young-to-middle-aged individuals that are well-educated and have significant income. Therefore, not surprisingly, little attention has been paid to interest in and use of ACM in an underserved low income population.

Objective: To test the hypothesis that there is significant interest in and use of ACM in a low income, underserved population.

Methods: A self-administered survey instrument asking about previous use and current interest in seeing a practitioner with expertise in five selected areas of ACM (acupuncture, chiropracty, herbal medicine, meditation/relaxation and massage) was developed. This instrument was given to patients attending a University-affiliated clinic known to serve a low income (LI) population. As a control group, the same instrument was concurrently administered to patients attending a University-affiliated clinic known to serve an either insured or high income (HI) population.

Results: A total of 266 surveys were obtained of which 141 were from the HI and 125 from the LI clinics. The two clinics were comparable with regard to gender and age but differed significantly ($p<0.05$) with regard to race (LI 40%, HI 17% nonwhite), income (LI 74%, HI 19%, <15K/year), self-rated health (LI 57%, HI 23% poor or fair), and education (LI 35%, HI 84% college or beyond). The two populations did not differ with regard to lifetime use of acupuncture (14-18%), chiropracty (36-41%), herbal medicine (19-23%), meditation (18-23%) or massage therapy (35-38%). The LI population had a small but statistically significant greater definite desire to have chiropracty (54 vs. 39%), and an equivalent desire to have acupuncture (47 vs. 36%), herbal medicine (62 vs. 52%), meditation (56 vs. 37%) and massage therapy (60 vs. 60%) than the HI population. Nineteen percent of the LI population would be agreeable to paying out-of-pocket for the above noted ACM modalities while 29% noted they may be willing to pay out-of-pocket. Of the HI population, 19 and 49% indicated they would be agreeable or might be agreeable respectively to paying out-of-pocket.

Conclusion: Our results indicate that a population of LI individuals that has less education, is more often of nonwhite race and has lower self-rated health status, has equivalent use and interest in ACM medicine than a HI population. Contemporary interest in and use of ACM appears to be a more generalized phenomena than previously recognized.

THE IMPACT OF COST SHARING ON SEEKING MEDICAL CARE AND ON HEALTH STATUS.
MD Wong, RD Hays, RA Andersen, CD Sherbourne, MF Shapiro UCLA, Los Angeles, California and RAND, Santa Monica, California.

Background: Though cost sharing sharply reduces the use of medical care, its impact on health status has previously been shown to be small. However, the effect of cost sharing has not been examined among a chronically ill population. We hypothesize that its impact on health status may be greater among those who are more likely to suffer adverse health consequences. **Methods:** We used data from the Medical Outcomes Study (MOS), a prospective, longitudinal, cohort study of 2546 individuals who sought health care in 3 major cities and had at least one of the following conditions: diabetes mellitus, ischemic heart disease, congestive heart failure, hypertension, or depression. We analyzed the responses of 1394 subjects (55%) who answered the self-administered written questionnaires at the 12-month (baseline), 18-month (Time 1), and 24-month (Time 2) follow-up. **Results:** At baseline, 50% of the cohort had some amount of cost sharing for outpatient visits (copay vs. no copay). Subjects in the no copay group were older (58 vs. 55 years, p=0.001), had a lower household income ($21,600 vs. $23,300 in 1986 dollars, p=0.001), were more likely to be a minority (25% vs. 13%, p=0.001), were more likely to have a prepaid health plan (38% vs. 15%, p=0.001), were less likely to have completed high school (79% vs. 84%, p=0.02) and were less likely to be employed (39% vs. 47%, p=0.003). The two groups were similar in the proportion who were female (62% vs. 58%) and married (65% vs. 64%), and they had similar baseline comorbidity scores, physical and mental health status, and satisfaction with health care. At Time 1, subjects were asked if they had experienced and sought medical care for any of the listed 5 minor symptoms or 8 serious symptoms in the preceding 4 weeks. Similar proportions of the copay and no copay groups experienced 1 or more minor symptoms (65% vs. 62%, p=0.3) and 1 or more serious symptoms (31% vs. 32%, p=0.5). Among individuals with 1 or more minor symptoms, the copay group had a lower rate of seeking care than the no copay group (24% vs. 34%, p=0.001). Of those with 1 or more serious symptoms, a similar proportion of the two groups sought care for their symptoms (29% vs. 31%, p=0.6). After controlling for the patient's age, gender, ethnicity, marital and employment status, education level, income, insurance, comorbidity score, health status, the number of symptoms experienced and satisfaction, we found that the copay group, compared with the no copay group, had a lower rate of seeking care for minor symptoms (OR=0.72, 95%CI: 0.49 to 1.04, p=0.08) and a similar rate of seeking care for serious symptoms (OR=1.1, 95%CI: 0.64 to 1.88, p=0.7). The copay and no copay groups had similar SF-36 physical health summary scores at Time 1 (41.5±9.4 vs. 40.9±8.7, p=0.5) and Time 2 (43.2±10.3 vs. 41.8±9.6, p=0.6), adjusted for health status and other patient characteristics at baseline. **Conclusion:** In an older, chronically ill population, cost sharing reduces the use of medical care for minor symptoms but not for serious symptoms and was not associated with worse health status.

PATIENT SATISFACTION WITH MEDICAL CARE PROVIDED BY RESIDENTS IN COMMUNITY BASED TEACHING SITES. Samantha Wood, Donald Maxwell, and Glenda Wickstrom. Summa Health System, Akron, Ohio.

Background: Community Based Teaching (CBT) is gaining popularity within internal medicine residency training programs as a way for residents to broaden ambulatory care experiences. It is important for programs to measure the quality of the CBT educational experience as well as the quality of medical care rendered to patients. Patient satisfaction surveys may provide valuable information about the resident's physician-patient skills as well as information about the overall CBT experience.

Purpose: To assess patient satisfaction with the quality of medical care provided by internal medicine residents in CBT sites.

Methods: Patients seen within the previous 6 months were identified through lists provided by 8 community practices for 10 residents completing their first or second year at the CBT site. Four attempts were made to reach each patient for a telephone interview. Using questions adapted from the American Society of Internal Medicine's *Very Important Patient Survey*, patients were asked to rate 11 items for quality of medical care provided by the resident at their last visit. Patients were asked questions about seeing a resident for their medical care, their perceptions of the practice, and their overall satisfaction with the resident and attending physician. Demographic and health status data were collected. Five-point rating scales were used to estimate quality for all items except for the global rating where a ten-point scale was used. Analysis included descriptive statistics, t-tests for comparison of means, and correlation analysis for associations between patient characteristics and satisfaction.

Results: A total of 227 telephone interviews were completed out of 368 possible patients for a response rate of 62%. Interviews lasted about 10 minutes. Patients reported high levels of satisfaction with the quality of medical care provided by CBT residents. The mean overall visit satisfaction for residents was 4.09±.9 (on a scale of 1=poor to 5=excellent). The majority of the patients would recommend the quality of resident care (83%), as well as the primary care practice (96%), and would be willing to see a resident again (76%). On a scale of 0 (worst doctor) to 10 (best doctor), patients rated both attending physicians (mean=9.3±1.3) and residents (mean=8.3±1.6) highly as physicians, but consistently gave attending physicians significantly higher ratings ($p<0.001$). Higher patient education, increased number of resident visits, and increased length of patient time with the practice were associated with higher levels of satisfaction. Specifically, patients were more likely to give residents higher ratings as the number of times seen by the resident increased ($r=.25; p<.001$).

Conclusions: Overall, patients were very satisfied with medical care provided by CBT residents, suggesting high quality of care. Improving continuity of care by residents in community-based sites could enhance the quality of the physician-patient relationship. Our data support continuing the effort to establish CBT as an important part of the curriculum for internal medicine residents.

ZILEUTON, A 5-LIPOXYGENASE INHIBITOR, INCREASES PLATELET THROMBOXANE A2 PRODUCTION IN PATIENTS WITH ASTHMA. X Wu, AB Leong, and A Dev, Department of Medicine, New York Methodist Hospital, Brooklyn, NY.

Arachidonic acid (AA) is metabolized to leukotrienes (Lt) via the lipoxygenase pathway, and thromboxanes (Tx) and prostagladins via the cyclooxygenase pathway. Lts play important roles in the pathophysiology of asthma. Currently two classes of Lt antagonists are available for the treatment of asthma: 5-lipoxygenase inhibitors such as Zileuton and cysteinyl Lt receptor antagonists. Since lipoxygenase inhibition increases the availability of AA for the cyclooxygenase pathway, we speculated that lipoxygenase inhibitors may enhance Tx production and therefore also enhance platelet aggregation. This study was designed to answer this question. Zileuton in standard therapeutic doses (600 mg po qid) was given to 10 asthmatic patients. Blood samples were collected at the beginning of the study and at 2 weeks after treatment. Platelet rich plasma (PRP) was obtained from each blood sample and adjusted to an approximate 250,000 platelet/ µl concentration. Platelet aggregation was measured in a 4-channel aggregometer, and a second aliquot of PRP was used to determine platelet Tx B2 (a stable metabolite of Tx A2) by an enzyme immunoassay system . Treatment with Zzileuton for 2 weeks did not significantly alter blood platelet counts. However, Tx B2 levels increased significantly (267 ± 54 µg/L at time 0 vs 389 ± 62 µg/L after 2 weeks treatment, $p<0.05$). Spontaneous platelet aggregation also increased (4.2 ± 2.4 % at time 0 vs 6.8 ± 2.8 % after 2 weeks treatment), although this increase is not statistically significant. Conclusion: Zileuton significantly increased platelet Tx A2 levels in 10 asthmatic patients. This suggests that Zileuton may enhance thrombotic risk. Further studies are therefore justified to assess the long term safety of lipoxygenase inhibition.

PATIENT COACHING TO IMPROVE PAIN CONTROL IN CANCER OUTPATIENTS. JA Wright, RL Kravitz, FJ Meyers. University of California, Davis, Sacramento, California.

Purpose: An estimated 42% of patients with cancer suffer from poorly controlled pain, partially due to patient-related barriers to pain control. The objective of this patient-centered study was to evaluate the effect of a patient coaching intervention on pain outcomes and pain-related knowledge among outpatients with cancer-related pain.

Methods: English speaking patients (18-75 years old) with at least moderate pain over the past 2 weeks were randomly assigned to either an intervention group (n=34) or a control group (n=33). Intervention patients received a 20-minute coaching session to redress personal misconceptions about pain treatment and to encourage dialog about pain control with their oncologist. The control group received standardized instruction on controlling cancer pain. Data on pain-related knowledge (6 items), average pain (1 item), pain frequency (1 item) and functional impairment due to pain (6 items) were collected at enrollment and 2-week follow-up, using 0-100 scales (higher score = better knowledge or worse pain).

Results: At baseline, the two groups were similar clinically and demographically. There were no baseline differences in pain-related knowledge (mean 66% correct vs. 67%, p= 0.37), average pain (mean scale score 53 vs. 52, p= 0.63), pain frequency (mean scale score 93 vs. 92, p= 0.81), or functional impairment due to pain (mean scale score 64 vs. 62, p= 0.68). Both groups achieved similar gains in pain-related knowledge (+7 percentage points in the intervention group, +6 among controls). Compared to controls, intervention group patients experienced greater improvement in average pain (-11 vs. -2, p-value for difference in change scores, 0.039); in pain frequency (-17 vs. -7, p=.16) and in functional impairment due to pain (-10 vs. -6, p=.27). Controlling for the number of chronic conditions and educational level in multivariate regression analysis produced similar results.

Conclusions: In this randomized controlled trial, a one-time 20 minute patient-coaching intervention significantly improved average pain for cancer outpatients. Further, there were statistical trends towards diminished pain frequency and pain-related impairment. These effects were not explained by differential gains in knowledge. Brief patient-centered interventions such as this may be a valuable tool for improving pain control in cancer outpatients.

REFERRAL OF ALCOHOLIC PATIENTS FROM A GENERAL HOSPITAL: ANALYSIS OF PREDICTIVE VARIABLES OF SUCCESS. S.Rochat; V.Wietlisbach; B.Burnand; B.Yersin. Alcohol Unit, Department of medicine, University Hospital & Institute of Social and Preventive Medicine, Lausanne, Switzerland.

Identification and evaluation of alcohol-dependent patients in general hospitals and their referral to appropriate treatment facilities are important goals. However, this process is unstandardized and its rate of success largely unknown. We performed a prospective cohort study of patients identified in the wards of our hospital and referred to our Multidisciplinary Alcohol Evaluation Unit in order to study their 6-month follow-up. The rate of success (« under treatment » or « abstinent » at 6 months) and its predictive variables were analysed.

During one year, 165 patients were referred to our Unit among whom 68 were included in a 6-month follow-up study. The 59 % exclusion rate (97 patients) was related to refusal to participate (n=68), immediate attrition (n=17) and inability to obtain an informed consent (n=12). The 6-month rate of success (« intention to treat ») was 35 % for the primary end-point (« under treatment ») and 28 % for the secondary end-point (« abstinence »).

Univariate analysis of prediction of success («under treatment») demonstrated that being young (< 45 years) and living alone were significantly associated with failure, whereas being motivated to treatment (Recovery Attitude and Treatment Evaluator [RAATE-A] score < 18), having an unspecific social support and being referred to therapy through a complete multidisciplinary process were significantly associated with success. In a model of stepwise logistic regression taking into account scores of the Addiction Severity Index (ASI), the RAATE-A questionnaire and the MOS-SF-36 quality of life questionnaire, probability of success was significantly associated with scores of the RAATE-A (OR 0.79/95%CI 0.68-0.92) and of the ASI-alcohol use (OR 0.96/95%CI 0.92-1.00), only.

In conclusion, referral of alcoholic patients from a general hospital to appropriate therapy is a difficult task with a limited rate of success. It is also a difficult process to study because of a high rate of refusal and attrition. Nevertheless, this study was able to identify some variables significantly associated with success of referral, emphasizing the need for better strategies, such as motivational strategies, to improve the referral process.

DELAY IN TRANSFER TO THE INTENSIVE CARE UNIT: IMPACT ON MORTALITY, MORBIDITY AND COSTS. Michael P. Young VA Outcomes Group, White River Junction, VT and Dartmouth Medical School, Hanover, NH.

Purpose: Delayed transfer to the Intensive Care Unit (ICU) following physiologic deterioration may influence patients' outcome but few data are available. We evaluated the impact on morbidity, mortality and costs of delays to ICU transfer after hospitalized patients met preset physiologic threshold values.

Methods: We identified a cohort of the 91 in patients at a community hospital who were emergently transferred to the ICU over a 16-month period. We reviewed the medical record to determine the time prior to transfer that each patient met any of 11 explicit physiologic criteria indicating severe deterioration (e.g. respiratory rate>35/minute, systolic blood pressure <85mmHg) and calculated a concurrent APACHE II score. We then measured the delay between the time this criterion was first met and ICU transfer. Patients were divided into two groups: those transferred to the ICU ≥ 4 hours after meeting a criterion (Slow Entry) and those transferred < 4 hours after meeting a criterion (Rapid Entry). The outcomes were: APACHE II measured during the first 24 hours in the ICU, length of stay (LOS), in-hospital mortality, discharge status and costs.

Results: Slow Entry (n=35) and Rapid Entry (n=56) patients were similar in age (64 vs 61 years; p=0.41) gender, days in hospital prior to ICU transfer, pre-hospital functional status, disease classification status (e.g. primary respiratory failure 48% vs 53%; p=0.64) and the type of physiologic criteria met. At the time patients first met criteria Slow and Rapid Entry patients had similar APACHE II scores (16.2 vs 18.7; p=0.09). After transfer to the ICU, however, Slow Entry patients had significantly higher APACHE II scores (21.7 vs 16.2; p=0.002) suggesting that marked physiologic deterioration occurred during the interval between meeting criteria and ICU transfer. Slow Entry patients were also more likely to die in-hospital (41% vs 11%; RR 2.6; CI_{95} 1.6-8.3), have increased ICU LOS (7 vs 4 days; p=0.01) and hospital LOS (18 vs 10 days; p=0.01). Slow Entry patients consequently accrued higher hospital costs ($40,818 vs $22,037; p=0.01). The significant differences in mortality and morbidity persisted after adjustment for baseline characteristics.

Conclusions: Delayed transfer to the ICU of physiologically defined high-risk hospitalized patients was associated with significant increases in mortality, morbidity and costs.

STRATEGIES TO IMPROVE VACCINATION COVERAGE AMONG ELDERLY PATIENTS. M Zorzoli, B Favrat, V D'acremont, A Pécoud , B Genton, Medical Oupatient Clinic, University of Lausanne, Switzerland.

Background: Influenza immunization rate continues to be low. Among other reasons, no contact physician-patient during the vaccination period appears to affect the rate of immunization.

Objective: To assess the effectiveness of a single reminder letter when no consultation was scheduled during the vaccination period on vaccination coverage among elderly patients.

Methods: We conducted a study comparing immunization rates between 1997 and 199[illegible] when the intervention took place. 229 patients aged over 64 were identified as regular patients in an academic primary care center in 1998. Of the 229 patients, 195 were regular patients in 1997 and 1998. Training workshops for physicians, combined with patients' information by leaflets were the standard procedure to sensitize the target population in 1997 and 1998. During the last trimester of 1998, patients who did not have an appointment during the vaccination period were sent a single reminder letter. Patients could receive their injection in the immunization clinic with or without prior medical consultation. Data to evaluate vaccination coverage were collected from medical records reviews and from the register of the immunization clinic.

Results: Out of the 195 patients, the vaccination coverage was 39.4% (77/195) in 1997 compared to 47.7% in 1998 after the mailing , resulting in a total increase of 21 %. In 1998, of 195 patients, 73 had no appointment during the vaccination period. Out of the latter, 15 (21 %) presented for vaccination after the reminder letter.

Conclusions: Intervention to increase influenza vaccination coverage should not only focus on patients attending medical consultation, but also on those who have no scheduled medical appointments during the vaccination period. Computer-generated mailed reminders could be used for this purpose.

CLINICAL COURSE OF OLDER AMERICANS WITH HIV-INFECTION. DS Zingmond, NS Wenger, MF Shapiro, S Crystal, U Sambamoorthi, G Joyce, AA Leibowitz, J Fleishman, and SA Bozzette, for the HCSUS Consortium. University of California, Los Angeles, CA; Rutgers University, New Brunswick, NJ; RAND Health, Santa Monica, CA; Agency for Health Care Policy and Research, Rockville, MD; University of California, La Jolla, CA; and Veterans Affairs San Diego Healthcare System, San Diego, CA.

Patients over the age of 50 represent 11% of HIV-infected patients nationwide. Previous studies suggest that older patients are diagnosed later and have worse prognoses. Such studies have been small and retrospective. We evaluated the process of diagnosis and clinical aspects of HIV and prospectively evaluated disease progression in older adults from a nationally representative sample of HIV-infected patients under care in the United States.

We compared patients 50 years and older to those under 50 enrolled in the HIV Cost and Services Utilization Study (HCSUS). Analyses were based on a baseline interview conducted mostly in 1996 and the second follow-up survey, performed mainly in late 1997. Sample means, standard errors, and statistical tests were adjusted using sampling weights from the baseline survey and linearization methods to account for study design.

Of 2864 patients completing the baseline survey, 286 were ≥50 years of age representing 26,438 individuals (11%) in the base population sampled. In analyses controlling for demographic factors and time since diagnosis, older subjects were more likely to be diagnosed in a setting of acute illness (odds ratio [OR] 1.65, 95% confidence interval [CI]: 1.15, 2.36). Yet, older subjects were more likely to have a usual source of medical care at the time of HIV diagnosis (OR 1.56, 95% CI: 1.13, 2.17) and less likely to change providers after diagnosis (OR 0.50, 95% CI: 0.32, 0.78). First CD_4 count after diagnosis was not significantly different (older 381 v. younger 443, p=0.24).

At study entry, older and younger patients had similar stage of disease and prevalence of AIDS-defining diagnoses. However, older patients reported fewer constitutional symptoms (OR 0.66, 95% CI: 0.47, 0.93). Adjusting for baseline CD_4 counts and use of highly active antiretroviral therapy, follow-up data did not reveal significant differences in lowest (177 v. 186, p=0.64) or most recent CD_4 count (355 v. 381, p=0.77) between the older and younger cohorts, respectively. Adjusting for baseline demographics, survival to second follow-up was not statistically different for older individuals (OR 0.88, 95% CI: 0.49, 1.58).

Although older adults are more likely to be under medical care, their HIV-diagnoses are more often in the setting of acute illness. Clinicians should recognize that older HIV patients report fewer symptoms than younger patients despite having similar HIV-related illnesses. As therapies become more effective, efforts to achieve earlier diagnosis have greater importance. In contrast to results of earlier studies, once under care for HIV, older patients have a clinical course similar to that of younger patients.

PROVIDER/ORGANIZATION-CENTERED RESEARCH

THE MEDICAL SHORT STAY UNIT AT A LARGE CANADIAN TEACHING HOSPITAL: EFFICIENCY AND QUALITY OF CARE. HA Abenhaim, SR Kahn, J Raffoul, MR Becker. Division of Internal Medicine, and Center for Clinical Epidemiology and Community Studies, Sir Mortimer B. Davis Jewish General Hospital, McGill University, Montreal, Canada

Background: The Medical Short Stay Unit (MSSU) at the Sir Mortimer B. Davis Jewish General Hospital, McGill University, Montreal, Canada is a 9 bed unit within a 637 bed teaching hospital that is unique to the McGill University adult hospital system. Emergency room patients who are identified as having straightforward, short-lived medical conditions are admitted to the MSSU where they are managed directly by a hospital-based Internist. Patients with more complex conditions requiring detailed investigation and longer duration of treatment are admitted to one of two 36-bed Clinical Teaching Units (CTUs) where they are managed by a team of ward residents supervised by an attending physician. When instituted, it was postulated that the MSSU would promote efficient use of hospital beds while delivering a high quality of patient care. Until now, this postulate has not been formally assessed.

Objectives: To determine if the MSSU delivers a high quality of patient care and results in favorable patient outcomes while promoting efficient use of hospital beds.

Methods: We conducted a retrospective study using the hospital's administrative database. We measured efficiency of care and quality of care in 865 patients admitted to the MSSU compared to 1661 patients admitted to the two CTUs during the 1995-96 fiscal year. The parameters used to measure efficiency of care included length of stay and number of subspecialty consultations. The parameters used to measure quality of care included number of complications, death, and readmission within 30 days.

Results: The 3 most frequent MSSU admitting diagnoses were pneumonia, chronic obstructive pulmonary disease, and congestive heart failure. The demographic characteristics of MSSU patients were similar to those of patients admitted to the CTUs (mean age (years) 65.2 ± 20.3 vs 65.3 ± 18.3, and % male 48.7 vs. 45.9). Patients admitted to the MSSU had shorter mean length of stay (2.8 ± 3.8 days vs 13.7 ± 17.0 days), higher patients/bed ratio (96 vs 23), fewer complications (5% vs 31%, p < 0.0001), higher rate of discharge home (81% vs 61%, p < 0.0001), lower in-hospital mortality (1% vs 13%, p < 0.0001), and lower % readmission within 30 days (9.6% vs 13.9%, p = 0.0018) compared to patients admitted to the CTUs.

Conclusion: Physicans were able to identify appropriate patients for admission to the MSSU. The MSSU delivered a high quality of care and resulted in favorable patient outcomes. Furthermore, the high turnover of beds and shorter length of stay of MSSU compared to CTU patients were associated with a decreased risk of in-hospital complications. These differences were not confounded by age or sex.

MONITORING AND SAFETY OF "STATIN" DRUGS FOR PATIENTS WITH HYPERCHOLESTEROLEMIA. SA Abookire, J Fiskio, DW Bates. Brigham and Women's Hospital and Harvard Medical School, Boston, MA.

In patients with high cholesterol, "statin" drugs have been shown to reduce mortality from coronary heart disease and overall mortality. Guidelines for monitoring liver function tests have been streamlined except when coexisting medications raise the potential for adverse effects. Using data from an electronic medical record, this study examined the use of cholesterol lowering drugs in a large outpatient population to evaluate their use, range and variation of monitoring, impact of monitoring, for adverse effects, and frequency of important drug interactions.

Among 29,543 patients who visited their primary care physicians during 1996, 1575 patients were taking statins. Liver function monitoring over a one year period varied widely (mean 3, range 1 - 57). Among approximately 5000 liver function tests performed, 37 patients had values greater than three times normal, 2 patients in the cohort remained off statins as a result of abnormal liver values, and none had clinical manifestations of hepatitis. The frequency of monitoring did not correlate with level of test abnormality. We estimated annual charge savings of $18,500 if recommended liver monitoring were followed. Eleven patients had other documented problems which may be considered adverse reactions to the statin drugs, but none required discontinuation of the drug. Ninety-eight patients (6%) were noted to be on other medications with important drug-drug interactions; however, these patients were not monitored more frequently.

Despite guidelines, monitoring for safety of statin lipid lowering medications varied widely, and intensity was not higher for patients at highest risk. These data suggest that physicians have trouble following safety recommendations and could benefit from decision support.

USE OF "STATIN" LIPID LOWERING DRUGS COMPARED TO GUIDELINES. SA Abookire, J Fiskio, DW Bates. Brigham and Women's Hospital and Harvard Medical School, Boston, MA.

In patients with high cholesterol, "statin" drugs have been shown to reduce overall mortality in patients with established coronary heart disease, and to reduce the incidence of myocardial infarction and mortality from coronary events in primary prevention. To evaluate the use of these drugs in relationship to established guidelines, all outpatient data from an electronic medical record were queried for statin use during 1996. Among patients taking statins, records were further studied to determine lipid profiles and indications. Patients were identified as secondary prevention if their problem lists indicated CAD, MI, CABG, angina, or PTCA. Patients on statins for primary prevention were evaluated for risk factors and lipid values prior to initiation of drug therapy. Indication for statin use was compared to NCEP guidelines.

Among 29,543 outpatients who visited their primary care physician during 1996, 1575 patients were taking statins, among whom 495 (31%) had established coronary heart disease and 69% were treated for primary prevention. Among 31% of primary prevention patients, only 31% satisfied NCEP guideline criteria for pharmacological intervention. Among patients not meeting NCEP guidelines, 69% had fewer than 2 risk factors and a mean cholesterol of 247 mg/dl, while 31% had greater than 2 risk factors and a mean cholesterol of 237 mg/dl. Based on average wholesale price with weighted averages of specific statin drugs, an estimated $1,025,178 in annual charge savings might be realized if statin use in primary prevention were restricted to NCEP guidelines.

Compared to established guidelines, use of statin lipid lowering medications was often inappropriate. Decision support may help physicians optimize use of these medications from the population perspective.

THE EFFECT OF PELVIC EXAMINATIONS AND COUNSELING ON VISIT LENGTH IN PRIMARY CARE. PD Allen, DU Himmelstein, S Woolhandler, D H Bor, Department of Medicine, The Cambridge Hospital / Harvard Medical School, Cambridge, MA.

Purpose: Physicians face pressure to increase their "productivity", often measured as the number of patients seen per session. Productivity measures that do not take into account patient-related factors may penalize patients needing more time-consuming care and their physicians. We examined the effect of performing a pelvic examination and of preventive medicine counseling on duration of ambulatory primary care visits.

Methods: We analyzed data from the 1995 National Ambulatory Medical Care Survey which collected information on a nationally representative sample of outpatient visits. For visits to physicians in Internal Medicine and General and Family Practice, we analyzed the duration both of all office visits and of the subset "General Medicine" visits (i.e. visits that were not for a particular medical problem). We used multivariate modeling to examine the impact of performance of a pelvic examination, age, sex and counseling on visit duration.

Results: The mean duration of primary care office visits (n=8163) was 17.9 minutes (95% CI 17.7- 18.1). Among primary care medical visits by women for any reason (n=5028), visits with a pelvic examination (n=393) were 48% longer than visits without a pelvic examination (n= 4635); 25.4 minutes (95% CI 24.2- 26.6) *vs.* 17.1 minutes (95% CI 16.8-17.4; $p < .0001$). For "General Medicine" visits (n= 675), the duration for males and females differed little (23.9 minutes; 95% CI 22.3-25.5 *vs.* 23.4 minutes; 95% CI 22.0-24.8; $p > 0.7$). Among "General Medicine" visits by women (n=417), those that included a pelvic examination (n=127) were 36% longer than those without pelvic examinations (n=290) (28.8 minutes; 95% CI 26.6-31.0 *vs.* 21.1 minutes; 95% CI 19.4-22.8; $p < .0001$). "General Medicine" visits with counseling on at least one health-related topic (n=273) were 13% longer than those without (n=402) (25.2 minutes; 95% CI 23.5 - 26.9 *vs.* 22.4 minutes; 95% CI 21.1 - 23.7; $p < .01$).

For "General Medicine" visits, a linear regression model suggests that male sex increased visit length by 2 minutes, counseling by 1.5 minutes per health topic covered, and pelvic examination by 7 minutes.

Conclusions: We confirm what many primary care physicians have long suspected; that the pelvic examination and counseling lengthen the duration of visit. Productivity measures that fail to recognize the extra time required for such activities discourage physicians from offering them and may penalize patients, particularly women, and their physicians.

MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION AT TEACHING VERSUS NON-TEACHING HOSPITALS: A MIXED BAG. J. Allison, C. Kiefe, N. Weissman, R. Centor, R. Farmer, S. Baker. Dept of Medicine. University of Alabama at Birmingham.

Background: Teaching hospitals often suffer from publicity stigmatizing them as providing inadequate return for their excessive costs. This argument could be countered by demonstrating a higher level of care, but few studies have directly compared quality of care in teaching versus non-teaching hospitals. Therefore, we sought to compare the quality of medical treatment for patients with Acute Myocardial Infarction (AMI) using an existing national data set.

Methods: Centrally trained abstractors established the Cooperative Cardiovascular Project data set by retrospective medical record review of a proportional sample of Medicare admissions from 6,684 hospitals with a principal discharge diagnosis of AMI (3/4/94 -6/30/95). The Health Care Finance Administration designation defined teaching status. We ascertained use of acute reperfusion, β-blockers, aspirin, and angiotensin converting enzyme inhibitors (ACE-I) among patients who were clinically indicated. Using multivariable analysis, we adjusted for patient demographics, severity of illness, comorbidity and hospital location.

Results: In this data set, there were 79,181 teaching and 116,534 non-teaching hospital patients. The mean age of all patients was 74.8 years. Teaching hospital patients were more likely to be urban (96%, 68.7%, $p<0.01$) and cared for more male (59.7%, 52.7%, $p<0.01$) and African American patients (8.70%, 5.43%, $p,0.01$). Patients at teaching hospitals were more likely to smoke (14.3%, 10.4%, $p,0.01$) and be hypertensive (40.0%, 37.5%, $p<0.01$) but less likely to have a low level of acute illness (Killip Class I: 50.6%, 52.2%, $p<0.01$). The table below compares the appropriate utilization of each therapy. (N is the number of patients clinically indicated for each therapy.)

		Unadjusted Utilization Rate (%)		Adjusted Odds Ratio (OR)*	
Therapy	N	Teaching	Non-teaching	OR	95% CI
ACE-I	19,239	61.2	58.1	1.33	1.25-1.42
β–blockers	42,165	54.3	47.2	1.35	1.29-1.41
Aspirin	100,083	90.3	83.3	1.51	1.45-1.57
Reperfusion	26538	55.2	58.1	0.77	0.73-0.82

*receipt of therapy at teaching versus non-teaching hospitals.

Conclusions: In general, teaching hospitals performed better, except for the critical therapy of acute reperfusion. Rates for both hospital types show ample room for improvement in all therapies, least so for aspirin administration. . These differences persisted even when considering only patients clinically indicated for therapy and after adjusting for important covariates in this national data set.

PRIMARY CARE PHYSICIAN SATISFACTION WITH AN OPTIONAL USE HOSPITALIST SYSTEM. P. Aronowitz, S. Dick, F. Cobarrubias, M. Anderson, Inpatient Manager Service and Research Institute, California Pacific Medical Center, San Francisco, CA.

Purpose: In spite of recent debate over the advantages and disadvantages of optional and mandatory hospitalist systems, little is known about physician satisfaction with either model. We examined primary care physician (PCP) satisfaction with services provided by one optional-use inpatient management program (IMP).

Methods: During January, 1998, 199 PCP's who have the option of using the IMP for their medical or surgical inpatients were surveyed. These PCPs admit patients to a community hospital where San Francisco's largest Independent Practice Association assigns approximately 83% (150,000) of its managed care patients. Percentages are based on responses to each question.

Results: Of 199 surveys distributed, 83% (165) were returned. Most (88%) of the respondents were either board certified in Internal Medicine alone (53%, n=85) or other medical sub-specialties (35%, n=56). Nine percent (n=15) of respondents were board certified in Family Practice. Eighty percent (n=162) identified themselves as IMP users and answered questions regarding the IMP and their satisfaction with it. Fifty-seven percent (n=75) reported 'Extreme Satisfaction' with the program, 35% (n=46) reported being 'satisfied,' 6% (n=8) reported being 'generally' satisfied, and only 2%(n=3) reported being 'occasionally' or 'not' satisfied. Regarding patient satisfaction, 27% (n=36) and 35% (n=46) of the PCPs reported they believed their patients were 'extremely' or 'very' satisfied, respectively and another 31% (n=40) said their patients were satisfied. Seven percent (n=9) reported their patients had mixed reactions to being cared for by a hospitalist. None reported patients with strong negative reactions. With respect to PCP feelings about quality of care provided by the IMP, 48% (n=64) reported it as 'outstanding,' 45% (n=59) as 'very good, and 6% (n=8) as 'good,' with only 1% (n=1) reporting 'fair' quality of care.

Conclusions: High levels of PCP satisfaction can be achieved in optional use hospitalist systems. Whether this satisfaction with hospitalist services leads to greater PCP job satisfaction or if these findings hold for mandatory use hospitalist systems merits further investigation.

PHYSICIAN ATTITUDES TOWARDS THE CARE OF HOSPITALIZED PATIENTS AND THE HOSPITALIST MODEL OF INPATIENT CARE. AD Auerbach, RS Phillips, RB Davis. Univ of Calif, San Francisco, San Francisco CA and Beth Israel Deaconess Med Ctr, Harvard Medical School, Boston MA.

The hospitalist model of inpatient (HM) care has been proposed to provide inpatient care efficiently while relieving outpatient physicians of inpatient responsibilities. Little data exists to describe physician attitudes toward potential conflicting time demands, or the hospitalist model of inpatient care.

Using a mailed questionnaire, we surveyed 382 internal medicine board-certified physicians affiliated with a large tertiary care hospital and who had had at least 1 admission in the 5 months preceding the survey. Descriptive statistics were first used to characterize MD's and their responses. Using factor analysis, we selected survey items which reflected MD attitudes towards HM (Cronbach's alpha = 0.87); these items were then used to create a summary scale of MD attitude towards HM. Multivariable linear regression models were then used to determine MD characteristics associated with MD attitudes towards HM.

Of MD's surveyed, 241 (70%) responded. The median age of respondents was 43 years; 73% were male, 44% were primary care MDs, and a majority (75%) spent more than 20 hours/week caring for outpts. When asked about inpt care practices, 45% of MD's stated they cared for <1 hospitalized patient/week, 84% provided care to all their inpts, and 81% needed to travel <15 minutes to their inpt site. Survey responses describing MD attitudes towards potential time conflicts reveal that 42% agreed that 'caring for hospitalized pts makes caring for outpts more difficult,' but 68.4% stated that the care of inpts was 'best directed by their long-term MD.' Responses regarding MD attitudes towards HM show that only 36% felt that 'HM was a good idea,' 35% felt HM would reduce costs, 61% felt HM would decrease pt satisfaction with care, and 54% felt HM would adversely affect their relationships with pts. Only 13% stated that they would use a hospitalist service for all their hospitalized pts. In multivariable models MDs were more likely to have a favorable opinion of HM as measured by summary scale if they traveled >15 minutes to their inpt site ($p<0.05$). More experienced MDs ($p<0.05$) and MDs who spent more time per week caring for outpts ($p<0.05$) were more likely to have a negative attitude towards HM. Other MD characteristics such as specialty, or identification as primary care provider were not significantly associated with sentiments toward HM.

These results suggest that MD sentiment towards HM is shaped by the MD's level of clinical experience, amount of outpt clinical activity, and by travel time to the hospital. MD acceptance of HM services will require better knowledge of its effect upon pt satisfaction with care, and its effect on the longitudinal patient-doctor relationship.

SEVERITY OF ILLNESS OF PATIENTS ADMITTED WITH COMMUNITY-ACQUIRED PNEUMONIA: VARIATION AMONG 38 U.S. ACADEMIC HOSPITALS. SJ Atlas, Y Chang, LH Borowsky, DE Singer, Massachusetts General Hospital, Harvard Medical School, Boston, MA.

Inter-hospital comparisons of processes and outcomes of care rarely incorporate disease-specific severity measures. We examined whether the severity of community-acquired pneumonia (CAP) varied for patients (pts) admitted to one of 38 U.S. academic hospitals participating in the University HealthSystem Consortium pneumonia benchmarking project. Adults with a discharge diagnosis of pneumonia and exclusions for non-CAP pneumonia were eligible. Retrospective hospital records were reviewed for up to 40 consecutive eligible pts discharged between December 1, 1997 and February 28, 1998. The severity of CAP at admission was measured using the Pneumonia Severity Index (PSI). The PSI is a validated index of risk of death by 30 days that uses age, sex, selected comorbid conditions, vital signs, and lab values. Very low risk status (<1% risk of death) was defined as pts falling into PSI classes I or II. The percent of pts who were very low risk at the time of admission was compared among institutions in univariate and multivariate models.

Hospital records were reviewed for 1457 eligible pts admitted to 38 hospitals (mean 38.3 pts per hospital, range 24-40). The percent of pts admitted with very low risk CAP varied significantly among the hospitals (mean 29.4%, median 31.9%, range 7.5-52.5%, $p<0.001$). Age and gender accounted for most of the variation in risk status among the hospitals ($R^2=0.81$). For example, the mean age of pts admitted with CAP ranged from 49.2 to 76.3 years. In multivariate models, hospital remained an independent correlate of patients admitted with very low risk CAP ($p=0.04$). Other correlates included African-American race (OR1.3, 95% CI:1.2-1.4; $p<0.001$), and being admitted directly from the physician's office (OR 1.3, 95% CI:1.1-1.4; $p=0.02$).

In conclusion, significant differences exist among U.S. academic hospitals in the percent of pts admitted with very low risk CAP. Efforts to compare length of stay and outcomes of care for CAP across institutions need to account for such differences in severity at admission.

PRIMARY CARE PHYSICIANS' CONTROL OF THE PROCESS OF CARE: TO BEEP OR NOT TO BEEP?

FA Augustovski, PD Tesolin, C Dreyer, NE Gimpel, FA Rubinstein. Division of Family and Preventive Medicine. Hospital Italiano de Buenos Aires. Argentina.

Background: Access to primary care physicians (PCP) is an essential component of high quality of care. The availability of telephone consultations with the PCP improves patient access and should influence their utilization of health services. *Purpose*: To evaluate if patients who make telephone consultation have different patterns of resource utilization and longitudinality of care in a managed care setting.

Methods: The study was done in an academic HMO in Argentina. PCP's have a defined panel of patients who can reach them for telephone consultations through a beeper. We included a sample of callers to each PCP during two one-week intervals randomly distributed along the 6-month study period. We selected three controls (non-callers) for each caller. Variables considered for the analysis included sociodemographics (age, sex, and date of affiliation to the HMO) and clinical information based on ambulatory diagnostic clusters.

Multivariable analysis was used to estimate the effect of being a caller on the number of visits to the PCP, specialists, walk- in clinic and ER over a one-year period.

We evaluated two measures of longitudinality: a) *Non-Urgent care control* was calculated as the proportion of all scheduled visits seen by the PCPs and b) *Urgent care control* as the proportion of all urgent care visits (including ER and walk-in clinic) that were handled by PCPs.

Results: We included 568 callers during the study period and 1862 non-callers from the panel of 31 PCPs. Callers were more likely to be female (74% vs. 57%) and older (48 yrs vs 43 yrs). They also had more chronic diseases (28.5% vs. 15.9%), and psychosocial problems (11.8% vs. 5.8%). Adjusting for demographic and clinical variables, callers made significantly more office visits to the PCP (4.30 vs. 1.98, $p<0,001$), to specialists (5.68 vs. 3.13, $p<0,001$), and more urgent care visits to the ER and the walk-in clinic (2.42 vs. 1.27, $p<0,001$) during one year of follow-up. When we included the patient caller status, the power of the models to explain non-urgent and urgent visits increased by 7 to 10% (R^2 difference 0,31 to 0,4). Callers had better longitudinality measures with PCPs than non-callers: non-urgent care control was 54% in callers vs. 35% in non-callers ($p<0.001$), and urgent care control was 48% in callers vs. 21% in non-callers ($p<0.001$).

Conclusions: As we expected, patients who called their PCP showed greater utilization of medical services, even after adjusting for demographic and clinical variables. Interestingly, callers also showed better measures of longitudinality, especially related to urgent care. This suggests that telephone contact with the PCP extends the doctor patient relationship and achieves a greater involvement of the PCP in the process of care.

SOCIOECONOMIC POSITION AS A PREDICTOR OF AMBULATORY HEALTH CARE UTILIZATION. SK Aulakh, M Clark, AW Moulton, S Zierler, Departments of Community Health and Medicine, Brown University School of Medicine and Rhode Island Hospital, Providence, RI.

Background: The relation between low socioeconomic position (SEP) and worse health status is well established. Populations with low SEP have greater utilization of emergency department and hospital resources. However little is known about patterns of outpatient health care use among the poor. **Objectives:** 1) To quantify the relation between SEP and self rated physical health status and 2) To quantify the relation between SEP and outpatient health care use among an ambulatory, adult population with access to care. **Methods:** The Medical Expenditure Panel Survey-Household component (MEPS-HC) is a nationally representative sample of the US civilian non-institutionalized population. Using MEPS-HC data from 1996, we conducted a secondary analysis of 4274 men and 5682 women 18-64 years of age with access to care, defined as 1) coverage by private or public insurance and 2) report a regular source of care. Analyses were stratified by age, gender and race/ethnicity. "Use" was defined as number of visits to ambulatory providers (physicians, nurses, nurse practitioners and physician assistants) during 1996. High utilizers were defined as having 6 or more visits. Low SEP was defined as either less than a high school education or being unemployed. **Results:** Lower SEP was associated with poor physical health status. Amongst individuals with less than a high school education 33% reported their health to be fair or poor while only 9% with at least a high school education reported fair or poor health. 33% of unemployed men and 25% of unemployed women reported fair or poor health while only 7% of employed men and women rated their health to be fair or poor. Lower SEP was also related to increased frequency of office visits. Twenty-six percent of men and 37% of women were high utilizers (>=6 visits). Men with less than high school education were 1.7 times more likely to have >=6 visits than those with at least a high school education (40 vs. 23%, ($p<0.001$)). Women were 1.2 times as likely to have >=6 visits if they had less than a high school education when compared to women with at least a high school education (43 vs. 35%, ($p<0.001$)). Unemployed men were about 2.8 times more likely to have >= 6 visits than employed men (48 vs. 17%, ($p<0.001$)). Unemployed women were 1.5 times more likely to have >=6 visits than employed women (46 vs. 30%, ($p<0.001$)). These trends were consistent across age and race/ethnicity strata. **Conclusion:** Among individuals with access to care those with lower SEP are more likely to be high utilizers of ambulatory care. In the era of capitated contracts, risk adjustment for providers and institutions serving the poor may be required. Traditional, diagnosis based risk adjustment measures alone are inadequate for predicting utilization. Given the ease of obtaining SEP information, SEP may be a useful adjunctive tool in predicting ambulatory health care utilization on a population basis.

BREAST CANCER SCREENING PRACTICES BEFORE AND AFTER INITIATING MEDICAID MANAGED CARE IN TENNESSEE. JE Bailey, JY Wan, DL Van Brunt, WH Lafferty, GW Somes. Departments of Medicine and Preventive Medicine, UT Memphis, Memphis, TN.

Many authors have suggested that managed care increases emphasis on health screening and prevention, but little data are available documenting its impact on preventive services utilization by Medicaid enrollees. This retrospective cohort study sought to determine the impact of managed care on screening rates for breast cancer using mammography in Tennessee, where a statewide experimental managed care program (TennCare) delivers services to Medicaid enrollees through 12 capitated managed care organizations (MCOs). A single cohort of female enrollees in the state's largest academic Medicaid MCO was assessed longitudinally before and after the initiation of TennCare. Cohort members were required to meet the following inclusion criteria: 1) age 50-65 throughout the study period (1992 - 1996), 2) continuous enrollment in the academic MCO for at least 320 days in either year of TennCare (1995 and 1996), and in the Medicaid program in either year before TennCare (1992 and 1993), and 3) no Medicare or other third party insurance. A total of 355 enrollees formed our final study cohort. Mammography utilization was assessed for each enrollee for each year in which they participated using administrative claims data. For the 355 cohort participants, average age at baseline (1992) was 59, 82.8% were black, 6.2% white, 0.9% other and for 10.3% race was unknown, 16.9% were eligible on the basis of AFDC or otherwise because of dependent children, 83.1% were eligible on the basis of disability. Overall, for the period 1992-1993, 18.0% of cohort members had a documented mammogram, and for 1995-1996, 34.4% of cohort members had a documented mammogram. These percentages were significantly different ($p \leq .001$) by McNemar's test. Of the cohort members who met continuous eligibility criteria for 1992, 8.8% had a documented mammogram, and similarly for 1993, 13.8% had a documented mammogram. For 1995, 19.3% of the cohort members who met continuous eligibility criteria for that year had a documented mammogram, and for 1996, 25.4% had a documented mammogram. This study demonstrates increases in documented mammograms in administrative claims databases following the initiation of Medicaid managed care. These increases in documented mammograms might in part reflect increased screening for breast cancer as a result of historical trends or increased emphasis under managed care. However, they might alternatively suggest increased coding for this preventive service or improved administrative databases under managed care. Further study is needed to validate claims database accuracy under Medicaid prior to routine use of claims data for assessing quality of preventive service delivery.

SATISFACTION WITH CONTINUITY OF CARE AMONG HMO PHYSICIANS

KH Bachman, DK Freeborn, Kaiser Permanente Northwest and Center for Health Research, Portland OR.

Purpose: To ascertain the level of satisfaction with continuity of care (COC) among HMO physicians, to understand its determinants, and to explore its effect on HMO physicians' attitudes and perceptions of their work environment.

Methods: Data came from a mail survey of physicians practicing at two large group model HMOs: KP Northwest and KP Ohio. This analysis is limited to 282 physicians reporting primary care specialties of IM, FP, pediatrics, and Ob-Gyn.

Results: 67% of 282 respondents were satisfied with COC, 18% neutral, and 15% were dissatisfied or very dissatisfied with COC. Physician gender, age, specialty, HMO location, working less than full time, and tenure with the HMO were unrelated to satisfaction with COC. Physicians who were satisfied with COC were more likely to perceive quality of care as excellent/very good (74 vs 45%; p=.001); more likely to choose KP again (51 vs 26%; p=.001), less likely to report a great deal of stress from inadequate time with patients (16 vs 32%; p=.003), less likely to report a great deal of stress from the threat of malpractice (11 vs 23%; p=.001) and less likely to report professional burnout (13 vs 34%; p=.001). Finally, physicians who were satisfied with COC were not more likely to report a great deal of stress from demanding patients (34 vs 39%; p=.43).

Conclusions: The majority of HMO primary care physicians report being satisfied with COC. Satisfaction with COC appears to have positive influence on physicians' overall work satisfaction and their perceptions of quality of care. Satisfaction with COC may also have a protective effect against some sources of stress and burnout.

NONCLINICAL CORRELATES OF CORONARY REVASCULARIZATION USE. JM Barnhart, KT Kingsley, PA Rose, EJ Pierre, M Karim. Department of Epidemiology and Social Medicine, Albert Einstein College of Medicine and Ferkauf Graduate School of Psychology, Bronx, New York.

Purpose. We sought to identify if nonclinical factors, such as an unhealthy lifestyle, weak family or financial support may preclude cardiac patients from receiving clinically indicated revascularization (PTCA/CABG).

Methods. In December (1998), we mailed 1200 surveys to physicians who were members of national academic medical organizations and met eligibility criteria. Information was collected on physicians' demographics and decision-making for cardiac patients. A 4-point scale (1=probably no; 4=definitely yes) was used for the 14 nonclinical factors asked. Principal component and factor analyses were done to ascertain which variable sets might impact physicians' decisions for PTCA/CABG use. To assess the concordance of the component factors identified, mean scores of each factor were compared to assess which scores were probably (=3) or definitely (=4) associated with PTCA/CABG use.

Results. The mean age for the first 100 respondents was 47 years (S.D=6.66), 77% were men, 69% were Caucasians, 16% were African American, and 7% were Hispanic. Their primary clinical specialties included family medicine (40%), cardiology (27%), internal medicine (18%), and thoracic surgery (12%). Variables identified by factor analyses revealed that perceived patient willingness to undergo the procedure affected PTCA/CABG use, such as family/patient wanted a second opinion, opted for medication first, or refused the procedure. Factors associated with patients' willingness had higher mean scores (2.8=probably affects use). Second components were labeled psycho-social ills and financial, such as noncompliance with medical advice, being unlikely to quit smoking, and inability to pay, respectively. Race was not associated with PTCA/CABG use.

Conclusion. Physician-perceived unwillingness to undergo PTCA/CABG might preclude some patients from receiving the clinically indicated procedure. Further evaluation of psycho-social and economic factors may be key in determining why racial differences exist in PTCA/CABG use.

MEDICATION USE AMONG NURSES WITH PHYSICIAN-DIAGNOSED CHRONIC OBSTRUCTIVE PULMONARY DISEASE. R. Graham Barr, Carlos A. Camargo Jr., Samuel C. Somers, Ronda A. Rockett, and Frank E. Speizer. General Medicine Division and Dept of Emergency Medicine, Massachusetts General Hospital; Channing Laboratory, Dept of Medicine, Brigham & Women's Hospital; Harvard Medical School, Boston, MA.

Morbidity and mortality from chronic obstructive pulmonary disease (COPD) are rising. This trend is unique among the top 5 causes of death, yet COPD treatment patterns are understudied.

The Nurses Health Study, a prospective cohort study of 121,701 female registered nurses, surveyed participants biannually for physician-diagnosed COPD from 1986 to 1996. In 1998, all living respondents with possible COPD (n=7,228) were sent a supplemental questionnaire. Prevalent COPD was defined as a physician-diagnosis of COPD, emphysema, or chronic bronchitis, with the latter requiring productive cough for 3+ months in 2+ consecutive years. To date, 74% have responded to the questionnaire (n=5,335).

After excluding women who denied these diagnoses (n=320), did not fulfill all symptomatic criteria (n=2,321), or had comorbid respiratory disease (n=331), 2,163 women met the case definition. Of these, 1,001 (46%) reported an asthmatic component. Women were stratified into three severity groups based on COPD-related healthcare utilization over the past year: no urgent outpatient visits (n=1,501, 69%); emergency department or urgent office visits only (n=466, 22%); or hospitalization (n=196, 9%). Use of American Thoracic Society (ATS) recommended medications during the past year increased with disease severity for β-agonist inhalers (49%, 79%, 88%, respectively; $p<0.001$), ipratropium (19%, 31%, 64%; $p<0.001$), theophylline (15%, 26%, 42%; $p<0.001$), inhaled steroids (31%, 62%, 74%; $p<0.001$), and systemic steroids (13%, 41%, 70%; $p<0.001$). Home O2 was used by 44% of women who were hospitalized in the past year. Women with an asthmatic component had twice as many urgent visits and hospitalizations ($p<0.001$), and were more likely to take every class of medication ($p<0.001$) except home O2 ($p=0.59$).

Among these health professionals, medication use increased with disease severity, as recommended by ATS guidelines. Nonetheless, overall medication use was low, particularly for established agents like ipratropium.

FIREARM OWNERSHIP AS A PREDICTOR OF INJURY PREVENTION PRACTICE: ARE PHYSICIANS WHO OWN GUNS MORE OR LESS LIKELY TO COUNSEL PATIENTS? EC Becher and CK Cassel, Departments of Pediatrics and Geriatrics, Mount Sinai School of Medicine, New York, NY.

Background: Firearms in the home are associated with increased risks of homicide, suicide, and accidental injury. Medical organizations recommend that physicians counsel patients about the hazards of firearm ownership and about safer storage methods. Studies show that most doctors do not discuss firearm safety with patients.

Objective: To better define reasons why firearm injury prevention counseling occurs infrequently, we addressed two questions: 1) What is the relationship between physicians' personal gun ownership choices and attitudes and practices regarding firearm injury prevention counseling?; and 2) What additional factors are associated with physicians' firearm injury prevention practices?

Methods: We conducted a telephone survey of a weighted random sample of 915 members of the American College of Physicians and the American College of Surgeons. We created multivariable logistic regression models using physicians' firearm injury prevention practices as our primary dependent variable and physicians' demographic attributes and statements of attitude as independent variables.

Results: We constructed a gun-score to reflect physicians' personal involvement with firearms. Seventy percent of the survey population received a gun-score of 0 (did not own a gun and were not members of a gun club). Twenty-five percent of the survey population received a gun-score of one (owned a gun or were members of a gun club, but not both). Five percent of the survey population received a gun-score of two (owned a gun and were members of a gun club). Regardless of gun-score, physicians were equally likely to agree that in general, "Safety counseling is appropriate provider behavior." (OR 1.02, 95% CI .66-1.60). (Odds ratios apply to each one-unit increase in gun-score.) Physicians with higher gun-scores were less likely to agree that "Doctors should be involved in firearm injury prevention." (OR .40, 95% CI .30-.53). Controlling for age, gender, specialty, race, region, size of city, and a 4-item scale indicating propensity to provide injury prevention counseling (cronbach's alpha .61), physicians with higher gun-scores were more likely to report including "firearm ownership and storage as part of patient safety counseling." (OR 1.98, 95% CI 1.34-2.93). Other predictors of increased firearm injury prevention counseling were: higher scores on the 4-item counseling scale (OR 2.41, 95%CI 2.00-2.90); membership in a gun control organization (OR 2.97, 95% CI 1.19-7.43); and prior domestic violence prevention training (OR 1.57, 95%CI 1.01-2.44).

Conclusions: Physicians who own guns are less likely than physicians who do not to report believing that doctors should participate in firearm injury prevention, but they are more likely to report providing firearm safety counseling for their patients.

PROCESS MEASURES PREDICT CLINICAL OUTCOMES IN PATIENTS WITH COMMUNITY ACQUIRED PNEUMONIA: A MULTI-CENTER STUDY. DS Battleman and MA Callahan, Department of Medicine, New York Presbyterian Hospital-Cornell, New York, N.Y.

INTRODUCTION: Community Acquired Pneumonia (CAP) remains one of the most common reasons for hospital admission across the nation. As part of a quality improvement effort across our hospital network, we examined clinical and process variables related to hospital length of stay and mortality for patients with CAP.

METHODS: One hundred (100) CAP cases from each of six network institutions were randomly selected. Each hospital record was reviewed by a physician using a computer-based data instrument. Standard demographic and clinical variables were abstracted. Three (3) process variables were also measured: (1) "site of initial antibiotic treatment," (2) "door-to-needle time" and (3) "antibiotic selection profile." Data was analyzed using SPSS statistical software.

RESULTS: 600 patients from six institutions across the network were analyzed in this study. Seventy-nine (79) patients, 13% of the sample, were excluded from analysis based on established exclusionary criteria. The population was primarily an older population (mean age = 67.9 years); 61% had significant comorbidities. We assessed independent predictors of hospital length of stay (LOS) and mortality using univariate and multivariate analysis. Clinical variables which were independent predictors of LOS included age, comorbid illness, presence of COPD and initial respiratory rate ($P<.01$). Two process variables, "Door-To-Needle Time" and "Initial Antibiotic Site," were also independent predictors of LOS ($P<.001$). None of the demographic variables, including "Gender", "Payor Status" and "Ethnicity," correlated with clinical outcomes. A multivariate linear regression model was constructed using statistically significant clinical and process variables. The model was predictive of LOS outcomes ($P<.001$). "Door-to-Needle Time" remained a statistically significant variable in this multivariate model ($P<.01$).

An "Antibiotic Selection Score", a process variable measuring the appropriateness of antibiotic selection, was developed based upon a modification of American Thoracic Society guidelines for the treatment of community acquired pneumonia. Composite risk-stratified institutional scores were calculated. Scores ranged from 0.34 to 0.68 (mean score = 0.56). The "Antibiotic Selection Score" correlated with overall in-hospital mortality ($P=.016$).

CONCLUSIONS: We identified two process variables that correlate with important clinical outcomes. Unlike clinical or demographic variables, process variables are readily amenable to quality improvement. Quality initiatives to improve these process measures may lead to improved health care outcomes for patients with CAP.

IMPLEMENTATION OF A CLINICAL PRACTICE GUIDELINE: TREATMENT OF DEEP VEIN THROMBOSIS WITH LOW MOLECULAR WEIGHT HEPARIN. EM Benjamin, PK Lindenauer, JL Fitzgerald, Clinical Practices Evaluation and Management, Baystate Medical Center, Department of Medicine, Tufts University School of Medicine, Springfield, MA.

Purpose: A growing body of literature supports the use of low molecular weight heparin (LMWH) in the treatment of patients with deep vein thrombosis (DVT). However, evidence that these findings can be easily translated into routine clinical practice is limited. We sought to determine whether a clinical practice guideline (CPG) and a case management system for patients with DVT could facilitate a change in clinical practice at an academic community hospital.

Methods: A multi-disciplinary team reviewed the literature and current care of patients with DVT at our institution. A CPG was written which included inclusion and exclusion criteria, and a computerized order set was created for on-line order entry. The CPG was mailed to members of the medical staff. Concurrent case management was used for case finding and to promote use of the CPG among physicians. We studied all patients presenting to our hospital with DVT for the 12 months following implementation of the CPG. For comparison, we reviewed care for the 12 months pre and post CPG implementation.

Results: 110 patients with DVT confirmed by ultrasound were admitted in the study period. 56% met criteria for the CPG, and of these, 88% received LMWH. Table 1 compares the outcomes of patients treated before and after the implementation of the CPG. Table 2 compares the outcomes of patients treated with or without LMWH after implementation of CPG.

Table 1.	Pre-CPG (12 mos)	Post-CPG (12 mos)
n	132	110
Inpatient cost ($)	2383	1739
LOS mean (days)	5.39	3.41
LMWH Rx (%)	1	50
Mortality (%)	1.5	0.9

Table 2.	Non CPG	CPG
n	55	55
Avg. cost/case ($)	2410	1069
LOS mean (days)	4.95	1.87
LOS median (days)	5.85	3.17
Mortality (%)	2	0
Recurrent VTED (%)	2	4

Conclusions:. The use of a CPG with concurrent case management was effective at changing practice patterns for patients with symptomatic DVT. These changes resulted in significant reductions in cost and LOS without altering quality.

HERBAL MEDICINE IN THE UNITED STATES: LACK OF EVIDENCE FOR EFFICACY AND IMPLICATIONS FOR FUTURE RESEARCH.
Stephen Bent, Bradly Jacobs. Division of General Internal Medicine, University of California, San Francisco, Osher Center for Integrative Medicine, San Francisco, California.

The purpose of this study was to determine the quantity and quality of information available to health care providers in the United States about the efficacy of herbal remedies. We performed a MEDLINE search (1966 – March 1998) for English-language, randomized controlled trials and systematic reviews for each of the ten most commonly used herbal remedies in this country. Foreign language articles were excluded since it was felt that the majority of health care providers in this country do not read articles not published in English. All studies identified by the search were included in the study. Two reviewers independently rated the quality of each of the randomized controlled trials using an established scale. We prospectively hypothesized that in order for a physician to form an opinion about the efficacy of an herbal product, he or she must be able to locate 2 or more randomized controlled trials of at least average quality, with the same outcome measure, and with a result in the same direction or one systematic review of the efficacy of the herbal product. These criteria were applied to the studies identified for each of the herbs. The number of randomized controlled trials identified for the herbal remedies ranged from 0-22, and the average overall quality score was 3.2 (0-5 scale). There was adequate evidence to form an opinion about efficacy for only 3 of the 10 most commonly used herbs (garlic, ginkgo biloba, and ginseng). Despite the widespread use of herbal products in this country, there is limited evidence about the efficacy of these agents available to health care providers. We believe that systematic reviews of the most commonly used herbs should be performed and published in sources readily available to physicians. This process may help improve the communication between patients and providers about the use of herbal products and other alternative therapies.

AMBULATORY CARE SENSITIVE CONDITIONS: READY FOR PRIME TIME?
AS Bierman, C Steiner, B Friedman, J Jee, CM Fillmore, C Clancy
Agency for Health Care Policy and Research, Rockville, MD

Objective: Hospital admission rates for ambulatory care sensitive (ACS) conditions serve as a marker for impaired access to and suboptimal quality of primary care and are higher for vulnerable populations. We assessed the utility of ACS hospital admission rates in developing a national objective for Healthy People 2010, aimed at improving access to quality primary care, by examining variation by income, health insurance status, race/ethnicity and geography in these rates for selected ACS conditions.

Methods: We sought conditions meeting 4 criteria: 1) commonly encountered, 2) evidence for underuse of effective interventions to prevent hospitalization, 3) evidence for disparities, 4) amenable to clinical, public health, and community based interventions. Three conditions were selected: asthma for children age $\leq$ 18, uncontrolled diabetes for the non-elderly population age 19-64, and vaccine preventable pneumonia for the elderly age $\geq$ 65. Overall ACS admission rates and rates stratified by median income of zipcode of residence and by insurance status were determined using data from the 1995 National Inpatient Sample (NIS) of the Healthcare Cost and Utilization Project (HCUP-3). All states do not report race/ethnicity, therefore complete discharge data from 5 states were used to assess geographic and racial/ethnic differences in ACS rates.

Results: Overall US ACS admission rates per 10,000 persons were 24 for pediatric asthma, 7 for diabetes, and 11 for preventable pneumonia. Residents of zipcodes with mean annual household incomes > $35,000 had ACS rates for all conditions markedly lower than residents of lower income zipcodes. For example, rates for asthma were 9 in zipcodes with incomes >$35,000 and 42 in zipcodes with incomes <$35,000. Individuals with private insurance had admission rates of 16 for asthma and 4 for diabetes , 33% and 43% less than the overall population respectively. State level variation in ACS rates was noted for all conditions. The admission rate for preventable pneumonia is 4 times greater in MO than FL (14.5 vs 3.6). Rates for asthma were more than twice as high in NY than in CA (51 vs 21). African-Americans had admission rates for pediatric asthma and diabetes 2-6 times higher than those for whites in all 5 states, with geographic variation in the magnitude of the differences. Latinos had much higher rates than whites for asthma in NY (49 vs. 20), with smaller differences found in CA (19 vs. 16) and FL (23 vs. 17).

Conclusions: Substantial variation in ACS rates was found for all conditions studied by income, insurance status, race/ethnicity and geography. The magnitude of this variation suggests that selected ACS conditions may serve as benchmarks (despite potential confounders e.g., disease prevalence) for national, state, and community level interventions directed at reducing health disparities by using a continuous quality improvement rather than rate-setting approach to improving health outcomes.

THE QUALITY OF HOSPITAL TUMOR REGISTRY DATA.
NA Bickell, AH Aufses, P Formisano, MR Chassin. Departments of Health Policy, Medicine & Surgery, Mount Sinai School of Medicine, NY, NY.

Hospital tumor registries (TR) provide data that inform health services research and cancer control policies. However, as many cancer treatments move from inpatient to outpatient settings, the reliability of hospital-based tumor registry data is unknown. We determined the reliability of TR data by comparing it with data from a Breast Cancer Quality Improvement (QI) project for which data were gathered from numerous outpatient sources.

For the QI project, we collected data about tumor stage, surgery and adjuvant radiation and systemic therapies (RT & ST, respectively) from 3 participating hospitals. The median number of sources to complete a patient's data was 2 (range:1-4) at Hospital I; 2 (1-5) at Hospital II; and 3 (1-5) at Hospital III. All are teaching hospitals in the NY metropolitan area with tumor registries staffed by Certified Tumor Registrars. Hospitals I & II have tumor registries certified by the American College of Surgeons. All 146 patients at Hospital I, 148 patients at Hospital II and all 71 of 154 patients at Hospital III who had surgery prior to 1996 had data in the TR.

Tumor stage and type of surgery had similar rates reported in the QI project and TR. Kappa values for agreement ranged between .81 and .94 for tumor stage and .88-.97 for surgery type. Rates of RT among breast conserving surgery patients as tabulated in the QI study were 83%, 82% and 73% at each of the hospitals; corresponding TR rates were 41%, 66% and 27%. Kappa values for RT were .19, .59, and .16 respectively. Rates of ST from the QI study at each of the hospitals were 81%, 69% and 84%; corresponding TR rates were 29%, 29% and 7%. The associated kappa values were .15, .24 and .03. Reported rates of adjuvant therapies frequently delivered in the outpatient setting were up to ten times higher in the QI study as compared with hospital tumor registry data.

Tumor registry data may not provide a reliable measure of cancer treatments received in the outpatient setting. Caution should be used before TR data is used for research or policy-making decisions.

MEDICAID MANAGED CARE'S AFFECT ON ACCESS TO PRIMARY CARE.
AB Bindman, K Grumbach, D Osmond, K Vranizan. San Francisco General Hospital, San Francisco, CA

States have embraced the use of managed care for their Medicaid beneficiaries as a strategy to expand their patients' access to care. Between January 1996 and July 1998 California increased the percentage of its Medicaid beneficiaries in managed care from 21 to 47 by implementing mandatory managed care on a county by county basis. We performed a longitudinal survey of primary care physicians in California to see if this expansion affected their involvement with Medicaid patients. In 1996 before California's expansion of Medicaid managed care, we asked a probability sample of 947 primary care physicians (general internists, family practitioners, pediatricians, and obstetrician-gynecologists) on a mailed questionnaire to report the percentage of Medicaid patients in their practice and their willingness to accept new Medicaid patients. In 1998, after the expanded implementation of Medicaid managed care, we resurveyed by mail the same physicians and obtained 713 (75%) completed questionnaires. Before and after the expansion of Medicaid managed care, a similar percentage of primary care physicians had any Medicaid patients in their practice (62 vs 61, p=0.4). There was no change over time in the overall percentage of primary care physicians accepting new Medicaid patients in their practice (55 vs 54, p=0.3) or in the median percent of Medicaid patients in the practice (2 vs 4, p=0.9). 74 primary care physicians who had Medicaid patients in their practice in 1996 no longer did in 1998 and 64 primary care physicians who had no Medicaid patients in their practice in 1996 did in 1998. Physician characteristics including age, sex, race/ethnicity, specialty, and board certification were not associated with changes in who was caring for Medicaid patients. There was also no association at the county level between the change in the penetration of Medicaid managed care and the change in the percentage of primary care physicians who had any Medicaid patients in their practice. The nation's largest Medicaid managed care program did not result in an improvement in access to primary care physicians for Medicaid beneficiaries.

PRIMARY INTENSIVE CARE: RESULTS OF A CLINIC DESIGNED TO CARE FOR HIGH UTILIZING AND DIFFICULT PATIENTS. KE Brown, JM Levine, PG O'Connor, DA Fiellin, WH Sledge. Yale University School of Medicine, Yale New Haven Hospital, New Haven, CT.

The purpose of this pilot study was to determine whether comprehensive medical and psychosocial assessment followed by intensive outpatient management are feasible and cost effective for patients who show high levels of healthcare utilization or are judged by their providers to be "difficult".

We designed a Primary Intensive Care team consisting of an internist, psychiatrist, nurse practitioner, pharmacist, and social worker. Twenty-six patients were identified as eligible for inclusion. Patients were excluded if they failed to appear for evaluation (n=5) or if the current primary provider did not consent (n=4), leaving 17 patients for entry into the program. Of these, 12 had shown previous high levels of healthcare utilization (defined as greater than $1000 per month of cost) and 5 were referred because of the perception of "difficulty". The intervention included 1) comprehensive assessment and management by the team 2) frequent scheduled visits, 3) separate 24 hour beeper access for patients. Outcome measures were hospitalizations, ED visits, and total hospital costs on a per month basis. Hospital outpatient costs were included in total hospital costs. Data from the intervention period were compared to a time-matched pre-intervention period.

The mean age of the patients was 41 years (25-70), 59% were female, 84% were white, and all had Medicaid or Medicare. All patients had at least one chronic medical illness; 15 had one or more psychiatric diagnoses. Mean follow-up was 9.4 months (5-12). At baseline, patients had a mean of 0.3 (0-1.2) hospitalizations/month, 0.6 (0-4.2) ED visits/month and monthly hospital cost of $1904 ($310-4379). With the intervention, mean hospitalizations/month were 0.1 (0-0.6), mean ED visits/month 0.5 (0-3.2), and mean hospital cost/month $1537 ($113-6829), p=NS for all comparisons. The team did note substantial clinical improvement in 8 of the 17 patients. For patients whose healthcare utilization was at least $1000 per month (mean $2533/month, $1426-4379) in the baseline period and for whom there were at least 6 months of follow-up (n=10), there was a reduction in hospitalizations/month from a mean of 0.4 (0.1-1.2) days per month to 0.1 (0-0.4) during the intervention, p=03. There was a trend toward reduced total hospital costs per month in this group (mean $1583, $194-4555), p=.09.

We conclude that comprehensive medical and psychosocial assessment for primary care patients followed by intensive interdisciplinary management can result in clinical improvement as well as decreased hospital admissions and costs, particularly for patients with antecedent high levels of healthcare utilization.

PATTERN OF PSA USE OVER THREE YEARS IN AN HMO SERVING AFRICAN-AMERICAN MEN. RC Burack, J George and BD Bialor, Karmanos Cancer Institute and Department of Medicine, Wayne State University, Detroit, MI.

Given the increased risk of prostate cancer among African-American men and increasing awareness of the potential benefit and limitations of PSA testing we examined the patterns of PSA testing in a population of African-American men enrolled in an HMO during the period 1995-97. Using administrative data we identified year-specific cohorts of men 40 years of age or older who had visited the HMO (1995 n=1458; 1996 n=1568; 1997 n=1498). Over 75% of these men are Medicaid-eligible, 12-14% had prostate-related symptoms, 2% had a previous history of prostate cancer and 6-7% visited a urologist during the study year. Age-specific rates (%) of PSA testing during each year follow in the table below. PSA use increases with age through age 75 (p-value<.001), and still remains over 50% among men 80+ years of age. PSA use increases for all age groups from 1995 to 1996 and continues to increase in 1997 for men under the age of 50 or over 70. In each year men with benign prostate symptoms were more likely to be tested than were men without such symptoms (an absolute increase of 14 to 20%). PSA testing was also more likely among men with more frequent primary care visits, a higher number of chronic illness diagnoses, and among those visiting a urologist. Between 6 and 8% of the PSA results exceeded 4ng/mL.

	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
1995	21	30	39	47	52	64	62	44	53
1996	33	37	56	62	68	60	67	53	63
1997	41	49	55	59	66	65	73	75	52

Given their higher risk of prostate cancer, the potential value of the early detection of prostate cancer could be substantial among African-American men but the extent of benefit, if any, remains uncertain. Nevertheless, use of PSA testing in the study HMO is common and its use is increasing. Furthermore, use of PSA testing does not appear to specifically target the men most likely to benefit. For example, given consideration of life expectancy, men over the age of 75 to 80 are unlikely to benefit from testing but over half of these men had a PSA test. Similarly, false positive PSA results are more likely among men with benign prostate symptoms yet testing is more common among such men. If PSA testing is eventually proven to be beneficial additional efforts will be required to appropriately target its use toward those men most likely to benefit. It is also important to assure that men offered testing understand the potential benefits and limitations of these well intentioned efforts.

DOES MEDIA COVERAGE OF MEDICAL RESEARCH INFLUENCE PRESCRIBING? M Brunt, MD Murray, J Kesterson, WM Tierney. Regenstrief Institute for Health Care, Indiana University, Purdue University, Roudebush VA Medical Center, Indianapolis, IN

At a scientific meeting in March 1995, Psaty et al. presented epidemiologic research on possible increased mortality among patients taking calcium antagonists (CCBs) for hypertension. His results reinforced adherence to Joint National Committee Guidelines. Media coverage was immediate, intense, typically simplistic, easily misinterpreted, but nonetheless persuasive. Peer-reviewed publication occurred 6 months later but received minimal media attention. We used a national pharmaceutical benefit claims database to study antihypertensive (AH) drug use before and after the initial media exposure in March, 1994 and when the article was published in *JAMA* in August, 1994. Specifically, we anticipated a drop in CCB use and an increase in β-blocker and diuretic use.

The pharmaceutical database contained prescriptions for more than 15 million patients in all 50 states who exclusively used a single national pharmaceutical benefits company to obtain their drugs. There were no formulary restrictions. We extracted weekly drug claims over a 2-year period from March 1994 through March 1996. Reasons for prescribing were not available. We examined use of CCBs, β-blockers, diuretics, angiotensin converting enzyme (ACE) inhibitors, nitrates, and miscellaneous AH, comparing their prevalences among all patients receiving any cardiovascular (CV) drugs.

The database contained approximately 20,000 claims per week for CV drugs. For all drugs, week to week variability was large. CCBs represented 19.6±0.9% (SD) of all AH drug claims over entire 2-year period and were the most prevalent among the AHs we studied. Comparing prescriptions before and after the publicity surrounding the March 1995 meeting, there was a minimal change in CCB claims (e.g., 20% of all CV drugs were CCBs in the week before the March 1995 presentation compared with 19.3% in the first week afterwards). No change was seen within the first month after the article appeared in *JAMA*. The magnitude of the change was marginally sensitive to the number of weeks used as a grouping interval. At the time of the meeting, short acting CCBs represented only 14% of CCB claims and gradually dropped to 12% by March 1996. The largest change occurred with miscellaneous AHs, followed by ACE inhibitors. Diuretic and β-blocker increases were small. Nitrate claims rose acutely from 7.3% before the meeting's publicity to 7.8% afterwards, but fell thereafter. With the exception of the miscellaneous AH group, all trends appeared to begin before the March 1995 meeting.

The embargo of study results before journal publication is justified by the worry that physicians will make changes in therapy based on incomplete information in the media. However, we found only trivial changes in use of CCBs and other AH drugs coincident with the intense media attention surrounding Psaty's presentation, although the extreme variability in prescription fill rates could hide small, clinically insignificant effects.

IMPROVING THE QUALITY OF CARE FOR PATIENTS TREATED WITH ACUTE MYOCARDIAL INFARCTION ACROSS A HOSPITAL NETWORK MA Callahan, D Alfalla, H Rader, G Heinreich, A Klein New York Presbyterian Healthcare System, New York, NY

Background Despite widespread dissemination of relevant clinical studies and treatment guidelines, many patients do not receive appropriate treatment when hospitalized for a myocardial infarction. As part of a quality initiative across an academic hospital network, we sought to measure and improve the use of effective interventions for patients suffering a myocardial infarction (MI).

Methods Data from randomly selected patients from each of the five network hospitals (100 cases per site) was extracted for the baseline year (1996). The results were delivered to the medical staff members at the participating hospitals accompanied by academic detailing regarding current treatment recommendations (the intervention phase). Following the intervention phase, 70 cases were reviewed for patients treated at each hospital during 1997. Three additional hospitals served as controls. Control hospitals were retrospectively sampled to look for changes between 1996 and 1997 but did not participate in the intervention program.

Results 371 patients were included in the final baseline year analysis. Patients were excluded if they were transfers from other hospitals, were admitted for terminal care, or did not meet the study definitions for an MI. Baseline (1996) use of aspirin in the hospital averaged 71% (range 61% to 81%), beta-blockers 67% (range 36% to 88%), calcium blockers 17% (range 7% to 25%), ACE-inhibitors 31% (range 21% to 61%). Similar rates of use of these medications at discharge were observed during the baseline year. After the intevention phase, use of these medications improved at the study hospitals, with aspirin increasing from 71% to 95%, beta blocker use from 67% to 90%, ACE-inhibitor use from 31% to 55%, and calcium blocker use decreasing from 17% to 7% of cases ($p < .01$ for all change except for calcium blocker use). These changes were present for inpatient and discharge use of the medications. The control hospitals showed no statistically significant changes in the use of these medications during the study period.

Conclusions A program of peer-based profiling combined with academic detailing was effective in improving the use of medications that have been shown to reduce morbidity and mortality associated with myocardial infarction. By targeting processes of care that are associated with outcomes of interest, the quality of care can be improved for hospitalized patients. We project that these changes in quality would lead to overall reductions in mortality from MI.

EFFECTS OF SUPPLEMENTAL COVERAGE ON USE OF PREVENTIVE SERVICES AMONG ELDER MEDICARE BENEFICIARIES. O Carrasquillo, A Diez-Roux. Division of General Medicine, Columbia-Presbyterian Medical Center, NY, NY.

Background: While most Medicare beneficiaries have supplemental coverage through a private plan from a former employer or self-purchased, others receive supplemental coverage from Medicaid or do not have any additional coverage. We examined preventive services among Medicare beneficiaries with these three types of coverage.

Methods: We analyzed data from the 1996 Medical Expenditure Panel Survey. Approximately 10,000 nationally representative households were sampled including 2,418 Medicare beneficiaries age >64. We dichotomized self report of preventive services a-priori as follows: a physical exam and blood pressure check in the past two years, flu vaccination in the past year, a cholesterol check within five years, and dental checkups every year; among women, a mammogram and breast exam within the past two years and ever having a PAP smear; among men, a prostate exam within the past two years. Logistic regression (SAS and SUDAAN) was used to adjust for baseline differences in age, gender, educational level, functional limitations, self-perceived health, source of care, and health care provider visits. **Results**: Of the 31.7 million elder Medicare recipients in 1996, 62% had private coverage, 9% had Medicaid and 28% did not have additional coverage. Those with no additional coverage were more likely to be female, older, had lower educational attainment, greater functional limitations, lower self perceived health, and fewer outpatient visits vs. those with private coverage (P<.05). Medicaid recipients had the lowest educational level, greatest percentage with functional limitations, and lowest self-perceived health (p<.05, vs. private coverage). Medicaid recipients and those with no additional coverage were less likely to have preventive measures. In multivariate analyses, recipients with no additional coverage were more likely not to have 5 of the 8 preventive measures examined; Medicaid recipients were also less likely to have preventive services.

* p<.05	Type of suppl. coverage			Adjust. O.R. of not having prev. svc. (95%CI)	
% Reporting	Private	Medicaid	None	Medicaid vs Private	None vs Private
Physical exam/ 2 yrs	80%	73%*	77%	1.74 (1.11-2.72)*	1.14 (0.86-1.51)
B.P. check in 2 yrs	97%	93%	94%*	2.34 (1.25-4.39)*	1.81 (1.08-3.02)*
Flu shot in past yr	71%	55%*	63%*	1.43 (0.94-2.17)	1.36 (1.07-1.74)*
Chol. in past 5 yrs	73%	70%	66%*	1.16 (0.71-1.88)	1.35 (1.02-1.79)*
Breast exam /2yrs	81%	69%*	76%	1.56 (0.90-2.72)	1.08 (0.76-1.54)
Mammogram /2 yrs	67%	56%*	58%*	1.24 (0.74-2.06)	1.24 (0.92-1.68)
Ever had a PAP smear	95%	91%	87%*	1.67 (0.71-3.95)	2.26 (1.42-3.60)*
Prostate exam /2 yrs	82%	43%*	75%	4.70 (2.41-9.19)*	1.24 (0.81-0.91)
Dental chk every yr.	56%	24%*	44%*	2.45 (1.48-4.07)*	1.38 (1.07-1.77)*

Conclusions:Even though Medicare covers preventive services (except dental), recipients with private insurance are more likely to report receiving these. Socio-demographic, health, and access to care variations do not fully explain these differences.

A DEMONSTRATION OF MANAGED CARE FOR THE MEDICAID DISABLED: [HOW] DID IT AFFECT UTILIZATION AND COSTS? RDCebul, I Solti, NH Gordon, ME Singer, SMC Payne, and KA Gharrity. Center for Health Care Research & Policy, Case Western Reserve University, and the Ohio Bureau of Medicaid Policy, Cleveland and Columbus, OH.

Background and Goals: Challenges to the evaluation of voluntary programs of managed care (MC) for the Medicaid disabled include documented enrollment bias and unsatisfactory risk-adjustment methods to predict the trajectory of future utilization and costs. This report examines *changes* in utilization and costs, both overall and by service category, associated with MC among disabled Medicaid patients participating in a voluntary demonstration program in 3 Ohio counties.

Design, Subjects, and Data Sources: This is a pre-post cohort comparison of disabled Medicaid MC patients, between 7/95 and 12/97, who: 1) were enrolled for at least 6 months; 2) had at least 6 months pre-enrollment data available; and 3) had satisfactory post-enrollment encounter-level data available from state Medicaid. *Pre*-enrollment utilization, service categories, and costs used fee-for-service Medicaid claims; category-specific average costs from the pre-enrollment period were applied to utilization data to estimate *post*-enrollment costs.

Main Measurements: 1. *Time trends* for overall costs and for category-specific utilization for both the pre-and post-enrollment periods, up to two years; 2. *Differences* in one year pre- and post-enrollment utilization and costs, per patient month (PM). *Utilization categories* included inpatient care, outpatient hospital visits, MD care, drugs, durable medical equipment , and home health care (HHC).

Results: MCOs in 2 of 3 counties provided satisfactory encounter data. Of 1179 enrollees, 592 met our inclusion criteria (above). Pre-enrollment, utilization and costs were significantly increasing in 4 of 6 categories, and flat in 2. Post-enrollment, decreasing costs were observed for 2 categories, 2 were flat, and 2 increased, but from a lower "baseline". Except for MD visits and HHC, there was lower utilization (p<0.001) in all categories after enrollment. Inpatient and total costs declined by $196/PM and $267/PM, respectively (both p values=0.0001).

Discussion: While we are not yet satisfied that post-enrollment data were complete in all utilization categories, we believe that our evaluation methods warrant use in other MC settings with enrollment bias and imperfect risk-adjustment tools. If the dramatic changes observed here are "real", measuring changes in quality of care and patient satisfaction will assume greater importance.

AMBULATORY MASTECTOMY: INFLUENCE OF STATE AND MANAGED CARE PAYER. C Case, C Steiner, M Johantgen; Georgetown University, Agency for Health Care Policy and Research, University of Maryland; Rockville, MD

Purpose: Public concern over the influence of managed care on the use of ambulatory mastectomy sparked numerous legislative efforts to mandate a minimum length of inpatient stay after a mastectomy. This study provides longitudinal rates of ambulatory mastectomy across five states, and analyzes the independent relationship between managed care and the use of ambulatory mastectomy, while controlling for patient and provider characteristics.

Methods: Data are from the Healthcare Cost and Utilization Project at AHCPR which collects all discharges from hospitals and ambulatory surgery centers. Five states (CO, CT, MD, NJ and NY) and 8 years (1989-1996) are represented. The sample includes all women undergoing inpatient and ambulatory total mastectomy (TMAS). Age-adjusted rates per 100,000 women are calculated. The independent influence of state and HMO payer on the likelihood of receiving an ambulatory TMAS is determined using multivariate logistic models, adjusting for clinical (age <50, comorbidity, metastases, simple mastectomy) and hospital characteristics (teaching, ownership, urban).

Results: The absolute rate of ambulatory TMAS (2-14/100,000 women) remains lower than inpatient TMAS (51-62/100,000) in all five states. However, three of five states (CO, CT, MD) have demonstrated a substantial increase in the percent of TMAS performed in the ambulatory setting, from 1-2% 1989-1993, up to 8% (CT), 12% (MD) and 22% (CO) in 1996. Women with metastasis, comorbidity or a more extensive mastectomy are 50-80% less likely to receive an ambulatory TMAS. Adjusting for clinical and hospital characteristics, women were 2.5 times more likely to receive an ambulatory TMAS in CT {95% CI 1.9-3.5}, 4 times more likely in MD {3.5-5.7}, and 8 times more likely in CO {6.3-10.6}, as compared to NJ. In addition, women with Medicare, Medicaid or private commercial insurance were 20-50% less likely to receive an ambulatory TMAS as compared to women with an HMO payer (0.8{0.7-0.9}, 0.5{0.3-0.9}, 0.7{0.6-0.8} respectively).

Conclusion: Ambulatory mastectomy is increasingly common. Clinical characteristics remain important and independent determinants for whether a woman receives an ambulatory mastectomy. However, the state in which a woman receives her care and whether she has an HMO payer are equally strong and independent determinants of whether a woman receives an ambulatory or inpatient mastectomy.

ENROLLMENT BIAS IN A VOLUNTARY MANAGED CARE PROGRAM FOR THE MEDICAID DISABLED. RD Cebul, ME Singer, SMC Payne, and KA Gharrity. Center for Health Care Research & Policy, and the Division of General Medicine, Case Western Reserve University at MetroHealth Medical Center, and the Ohio Bureau of Medicaid Policy, Cleveland and Columbus, OH.

Objective: To examine baseline differences between enrollees and eligible non-enrollees in the first year of a voluntary Medicaid managed care program for the disabled, implemented in three Ohio counties (identified as A, B, and C) in 1995.

Methods: Medicaid eligibility and claims files were used to compare demographics, chronic medical conditions, important utilization categories, and Medicaid costs between enrollees and eligible non-enrollees, overall, and within and across counties, during the year prior to the program's inception. In county A, we also examined the association of enrollment with patient proximity to, and prior experience with, the host institution, after controlling for clinical conditions and demographic traits.

Results: From 7/1/95 to 6/30/96, only 1.2% of eligibles (447 of 36,120) enrolled. Enrollees differed significantly from eligible non-enrollees in virtually all major comparisons. Overall, enrollees were more likely than eligible non-enrollees to utilize most categories of service and had 21% higher annualized Medicaid reimbursements in the year prior to enrollment ($7,322 vs. $6,048; p=.003). In addition, differences in demographics, chronic conditions, utilization, and costs varied across counties. As examples, enrollees' pre-enrollment year's costs ranged from 72% higher (County B) to 10% lower (County C) than eligible non-enrollees in the same counties; and, while patients with HIV/AIDS were more likely to enroll in County A (OR=3.69, CI=2.20-6.20), there were no HIV/AIDS enrollees in the other two counties. In County A, pre-existing relationship with the host institution (multivariate OR=6.64, CI=5.00-8.91) and close proximity to the host institution (multivariate OR=2.48, CI=1.39-4.41) were strongly associated with enrollment.

Conclusions: This report is the first to describe in detail the enrollment in a voluntary program of managed care for the Medicaid-disabled, finding low and biased enrollment overall, and enrollment that was variably biased across counties. In the absence of perfect methods for risk adjustment, or evidence from randomized trials, evaluation of such programs (e.g.; effect on access/utilization, cost, and quality) is problematic. Likewise, without aggressive marketing to increase the representativeness of enrollees, even the fairest risk-sharing approaches may fail to attract the voluntary participation of providers and managed care organizations.

COLORECTAL CANCER SCREENING WITH FECAL OCCULT BLOOD TESTING IN THE ELDERLY. JT Chang, WF Lawrence, JS Mandelblatt. Divisions of General Internal Medicine and Cancer Prevention and Control, Georgetown University Medical Center, Washington, DC.

Purpose: Colorectal cancer (CRC) is a disease that primarily affects older adults and is the second leading cause of cancer-related death in the United States. The natural history of CRC and its high prevalence make it an excellent candidate for screening. However, competing causes of mortality in older adults may diminish beneficial screening outcomes. While screening at age 65 has been shown to be cost-effective, the impact of screening in older adults has not been explored. We evaluate the costs and benefits of screening older adults for CRC with fecal occult blood testing (FOBT).

Methods: A simulation model was created to determine the incremental cost-effectiveness of annual fecal occult blood testing for colorectal cancer screening compared to no screening. A five state Markov model was used to simulate the detection and treatment of adenomatous polyps and colorectal cancer and the subsequent progression to death. The incremental cost per life year was determined for older adults at various ages. A cost-effectiveness ratio of $60,000 per life-year or less was considered cost-effective. Costs, probabilities, and the sensitivity and specificity of FOBT and colonoscopy were estimated from the literature. Incidence, mortality, and survival data for colorectal cancer were obtained from the Surveillance, Epidemiology, and End Results (SEER) program of the National Cancer Institute. Population mortality data were obtained from the National Center for Health Statistics.

Results: The incremental cost per year of life saved for colorectal cancer screening with annual FOBT starting at the age of 50 was calculated to be $23,472. The incremental cost per year of life saved for CRC screening at the age of 65 was estimated to be $27,528, at the age of 75 was estimated to be $55,235, and at the age of 80 was estimated to be $151,491. At the age of 85, not screening was associated with improved life expectancy and lower costs compared to screening.

Conclusions: For older adults with average risk of mortality, colorectal cancer screening with annual fecal occult blood testing appears to be cost-effective through age 75. As one approaches the age of 85, screening does not improve life expectancy. The impact of competing mortality from comorbid illness appears to be an important determinant of both the outcomes and the cost-effectiveness of colorectal cancer screening, and should be considered in physician-patient decision making about screening. Future work will explore the impact of different combinations of age and comorbid illnesses on the cost-effectiveness of CRC screening.

BARRIERS TO IMPROVING DIABETES CARE IN 40 COMMUNITY HEALTH CENTERS. MH Chin, S Cook, L Jin, J Koppert, J Harrison, F Thiel, SB Auerbach, A Harrand, CT Schaefer, HT Takashima, N Egbert, S Chiu, W McNabb. University of Chicago, IL; MidWest Clinicians' Network, Okemos, MI; HRSA, New York, NY.

Purpose: Little work has examined the challenges of improving diabetes (DM) care in poor clinics serving vulnerable patients (PTS). We aimed to determine barriers to improving DM care in 40 community health centers (CHCs) in 6 Midwestern states.

Methods: We surveyed the 390 physicians (MDs), nurses, dieticians, health educators, and administrators caring for adult DM PTS at 40 federally funded CHCs. Our response rate is 61% after the 2nd of 3 waves. Using 5-point Likert scale questions, the survey assessed barriers to care along 5 domains: provider (PROV) opinions of the importance of processes of DM care, PROV perceptions of PTS' valuation of these processes, PROV responsibilities, PROV abilities, PROV barriers, and PT barriers. Organizational characteristics of the CHCs were obtained through a separate survey to the DM project leader at each CHC and chart review of a sample of up to 80 DM PTS at each CHC.

Results: 64% of the CHCs were rural and 42% had a hospital affiliation. The mean number ± SD of PTS cared for by each CHC was 3258 ± 2431, of whom 208 ± 174 had DM. On average at each CHC, 65% of the PTS were female, 80% > 45 years old, 71% Caucasian, 25% Medicaid, 19% sliding scale payment, and 36% used insulin.

PROV thought that regular glucose monitoring, Hgb A1c measurement, dilated eye exams, foot exams, diet monitoring, and exercise were all important (mean for each > 4.4, 1=not at all important, 5=extremely important), but thought that PTS valued these processes less (mean range for processes = 2.7-3.4, P<.01). PROV generally accepted responsibility for performing these processes, but MDs and nurses had low to moderate confidence in doing dilated eye exams (mean 1.8), and helping PTS change diet (mean 3.4) and exercise (mean 3.6). In contrast, dieticians were more confident (P<.01) in their ability to help PTS change their diet (mean 4.7) and exercise (mean 4.4). PROV neither agreed nor disagreed that PTS could not afford home glucose monitoring, Hgb A1c testing, dilated eye exams, diets, and exercise (mean range 2.4-3.3, 1=strongly disagree, 5=strongly agree). PROV disagreed that PTS' access to a lab (mean 1.6), ophthalmologist (mean 2.3), and nutritionist (mean 2.0) were significant problems. PROV tended to either disagree, or neither agree nor disagree that various PROV barriers were significant (mean): teaching glucose monitoring too time consuming (2.5), language/cultural barriers (2.9), forget to order A1c/eye exam/examine feet (2.7), not enough time to examine feet (2.2) or arrange eye appointment (2.3).

Conclusions: PROV thought that access to care, cost of care, and sufficient appointment time were mild to moderate barriers to quality DM care in CHCs. Most striking was PROV's perception that PTS do not value key processes of DM care highly. MDs and nurses generally lacked high confidence in helping PT behavioral change.

AN INTRANET DATABASE TO ASSIST IN DEVELOPING A HOSPITALIST SYSTEM C Childs, JR Harrison, J Previll, CA Estrada, East Carolina University School of Medicine, Greenville, N.C.

Background: Given the growing number of hospitalist systems, physicians need quick, accurate, real-time information in order to improve quality of patient care. Within these systems, databases can be used to achieve these goals as well as track health care outcomes and utilization of resources.

Objectives: To develop a web-based computerized database to track health outcomes and usage of health care resources, and to promote better continuity of care for patients in a hospitalist setting.

Methods: We designed a web-based program to track patients, their primary as well as co-morbid diagnoses, length of hospital stay, bed usage, medications used, discharge dispositions, and mortality. The system keeps track of inpatient, consult, and nursing home teams. Confidentiality of data was achieved by using a firewall to prevent external access to the system as well as an encryption system to deny access to unauthorized users. Any computer terminal in our hospital containing a web browser can access the database. House staff are responsible for maintaining the database. The system assists house staff and hospitalists by providing quick and easy check out of patients for cross coverage situations, keeping track of their procedures performed, and maintaining an up to date list of patients and their locations in the hospital. The system has a search engine that allows data retrieval and analysis.

Results: The database was implemented in the fall of 1998. During three months 653 patients were enrolled, 84% of these patients were admitted to general medicine teams and 16% were on consult or subspecialty teams. Approximately 80% of the medicine house staff have used the database to date. Of the house staff, interns have used the database the most often. Interns feel the program helps them with their checkout rounds by providing "to do" lists, accurate patient locations, and problem lists thus improving continuity of care. The average length of stay for the general medicine teams was 6.5 days. House staff perceived that 19.2%, of the days spent in the hospital, or 1.2 days per admission, were inappropriate (patients remained in the hospital for non-medical reasons).

Conclusion: An intranet based computerized database provides real time access to information for hospitalists and is easy to use. We determined that 19.2% of hospital days were inappropriate and are allocating resources to decrease this. Future directions include development of automatic letters to improve communication between hospitalists and outpatient doctors and linkages with other databases.

NURSING WORKLOAD DURING HOSPITAL STAY. P Chopard, MP Kossovsky, TV Perneger, FP Sarasin, and JM Gaspoz. Department of internal medicine and Medical Director's office, Geneva University Hospitals, Geneva, Switzerland.

Objective: To identify factors explaining variation in nursing workload.

Methods: The nursing workload of 11760 consecutive days among 998 patients was analyzed using a standardized measurement instrument (Med Care, 78;16:465-75). **Results:** One day of care represented on average 3.66 hours of nursing care (95% CI: 3.63-3.69). Patients' age and sex, the Christmas-New Year holiday and weekends were not related to nursing workload. The following factors were significantly (all p<0.05) associated with workload (lack of independance of days in the same patient were taken into account):

		univariate analysis	multivariate regression
Constant			2h46
Appropriate admission:	no	2h47	0
	yes	3h47	+45'
Discharge:	home	3h10	0
	other facility	4h05	+53'
	dead	5h24	+1h58'
Length of stay:	1-7 days	3h25	0
	8-14 days	3h20	-5'
	15-21 days	3h43	0
	> 21 days	4h07	+17'
Days since admission:	1-2	4h06	0
	3-5	3h37	-23'
	6-9	3h24	-31'
	>9	3h37	-29'
Days before discharge:	1-2	3h12	0
	3-5	3h19	+10'
	6-9	3h25	+19'
	>9	4h07	+29'
Appropriate day:	yes	3h57	0
	no	2h30	-42'

Conclusions: This study indicates that nursing workload depends more on the processes of admission or discharge, or even on the effecient management of the hospital stay, than on patients' characteristics (e.g. age, sex). This suggests that improvement of these processes (e.g. reduction in inappropriate days) may increase the average nursing workload per patient/day.

THE IMPACT OF SCHEDULED APPOINTMENTS FOR NON-URGENT PATIENTS ON PATIENT FLOW IN AN EMERGENCY DEPARTMENT. **JS Cohen and J Porrazzo-Carroll, Providence VA Medical Center, Brown University, Providence, RI (JSC) and Minneapolis VA Medical Center (JPC).**

Purpose: To measure the impact of an intervention to improve patient flow in a Department of Veterans Affairs Hospital Emergency Department (ED).

Methods: Both pre and post-intervention patients walking into the ED were triaged as emergent, urgent or non-urgent; emergent patients were seen immediately. Pre-intervention urgent and non-urgent patients were placed in the same queue and seen as soon as possible with limited priority given to the urgent patients. Post-intervention urgent patients continued to be seen as soon as possible, but non-urgent patients required an appointment. A subset of ED physicians staffed a newly created weekday clinic for non-urgent patients. Such patients were either scheduled into this new clinic or into a more appropriate clinic outside the ED. Non-urgent patients were not assured of a same day appointment. Patients both pre and post-intervention were encouraged to utilize an existing telephone care service, through which they could access the appropriate venue of care. The appointment system intervention was implemented October 1, 1996. Variables reflecting patient flow were measured for the months January to March prior to the intervention, and January to March 1997, three months after beginning the program. Variables measured included number of patients seen; standard deviation and variance in patient volume; waiting time to be seen; and the number of patients leaving without being seen as a result of a long wait. Data on emergent patients and any patients seen on weekends, holidays, evenings or nights were analyzed separately.

Results: The mean number of patients seen and triaged as non-emergent was 56.7 pre-appointment system and 57.5 with the appointment system. Standard deviation decreased from 11.4 pre-system to 8.4 post-system; the variance changed from 129.9 to 69.7 which was statistically significant (p-value 0.016). Waiting time for non-emergent patients placed in queue decreased from 90.3 minutes pre-appointment system to 65.4 minutes with the appointment system, a decrease of 28% (p-value 0.000). The mean number of patients who left without being seen per day pre-appointment system was 2.2, and with the appointment system was 0.2, a reduction of 91% (p-value less than 0.000). Clinician staffing was not significantly changed from pre to post-intervention. There was no increase in the number of patients seen on the evenings or on weekends after implementing the appointment system.

Conclusion: A triage system that refers non-urgent patients to specific appointments can result in substantial improvements in patient flow.

VALIDITY AND RELIABILITY OF USING THE COMPONENT OF PRIMARY CARE INSTRUMENT IN URBAN PUBLIC HOSPITAL. T Conway, TC Hu, M Saleem. Department of Medicine, Cook County Hospital; Ambulatory and Community Health Network, Cook County Bureau of Health Services, Chicago, IL.

A valid, reliable, and comprehensive tool to measure the quality of primary care perceived by the population served is necessary to monitor and enhance clinical performance. To assess the psychometric property of a previously validated tool, the Component of Primary Care Instrument (CPCI), for urban public hospital patients, we conducted a cross-sectional study using a convenient sample. From 07/13/98 to 08/31/98, all consecutive patients who attended the General Medicine Clinic of the study hospital were recruited. 1,451 patients completed the study questionnaire during the seven-week study period. Cronbach's α and Pearson's rs were calculated.

Domain	CC1	AK	IC	PRP	CC2	A	FC	CC3
Comprehensiveness of care (CC1)	**(0.84)**							
Accumulated knowledge (AK)	0.71	**(0.91)**						
Interpersonal communication (IC)	0.59	0.69	**(0.78)**					
Preference for regular physician (PRP)	0.67	0.65	0.66	**(0.76)**				
Coordination of care (CC2)	0.44	0.53	0.45	0.48	**(0.85)**			
Advocacy (A)	0.62	0.71	0.70	0.66	0.60	**(0.84)**		
Family context (FC)	0.28	0.36	0.18	0.21	0.38	0.43	**(0.81)**	
Community context (CC3)	0.23	0.29	0.12	0.14	0.34	0.34	0.72	**(0.86)**

The numbers on the diagonal are Cronbach's α for internal-consistency of reliabilities of the corespondent domains. An acceptable level of Cronbach's α is 0.70 or above. Cronbach's α also provides information for the convergence of the multi-item domains. The numbers on the off-diagonal area are the Pearson's rs that demonstrate the strength of the correlation between two domains. Our data show that all the Cronbach's α are greater than their correspondent Pearson's rs, indicating that both convergent and discriminant validity criteria are met; therefore, the validity and reliability of the CPCI is ensured for urban public hospital patients.

Encouraging patients to use primary care service is central to contemporary strategies for improving healthcare delivery. Providing high quality primary care for inner city populations and redirecting their healthcare seeking behaviors toward primary care is an important challenge. Our study demonstrates that the CPCI is a valid and reliable monitoring tool to assess the quality and acceptability of primary care for health care organizations where urban minorities are served.

THE EFFECT OF PHYSICIANS' PERSONAL RELATIONSHIPS AND CHARACTERISTICS ON NON-VERBAL COMMUNICATION BETWEEN PHYSICIAN AND PATIENT. D. Coniglio, N.J. Farber, and B. Aboff. Christiana Care Health System, Wilmington, DE.

Objective: To determine physicians' attitudes regarding specific examples of non-verbal communication, and to identify whether the physicians' personal relationships and characteristics effect the opinions and practice of these behaviors.

Methods: A survey was mailed to all members of the Delaware Medical Society. A response rate of 30% was achieved. Areas of communication included hand holding, hugging, placing an arm around the shoulder and sharing personal experiences. Three aspects of each behavior were assessed: Indirectly, using hypothetical scenarios and directly by asking the acceptability of a behavior and the quantity of the behavior performed by the physician over one year. Data were compared with the physicians' responses to personal questions including level of comfort with primary relationships, personal experience with serious illness, and demographic information. Comparisons were made using chi square and regression analysis.

Results: The characteristics associated with increased acceptability of the behaviors in the vignettes and increased demonstration of the behaviors were emotional ($p<.05$) and physical closeness ($p<.05$) to parents, and gender ($p<.05$). Emotional ($p<.05$) and physical ($p<.05$) closeness with a significant other was associated with increased acceptability of the behaviors. The majority of physicians' found sitting on the bed, hugging, hand holding, placing an arm around the shoulder, and sharing emotions and personal experiences to be acceptable physician-patient behaviors. Whereas, displaying anger at the patient or at the medical community in front of the patient was found to be unacceptable.

Conclusion: Physicians' physical and emotional closeness with patients is influenced by their relationship with parents and significant others. Physicians' should explore family of origin issues to establish optimal non-verbal communication with patients.

PHYSICIAN AND PRACTICE CHARACTERISTICS ASSOCIATED WITH STD PREVENTION SERVICES. RL Cook, HC Wiesenfeld, MA Ashton, T Zamborsky, MJ Krohn, S Scholle. Center for Research on Health Care and Department of Obstetrics, Gynecology and Reproductive Sciences, The University of Pittsburgh, Pittsburgh PA.

STD risk counseling and chlamydia screening are recommended preventive services for sexually active young women; chlamydia screening was recently chosen as a new HEDIS measure. The study objective was to determine physician and practice characteristics associated with these STD prevention practices among primary care physicians.

Method: In 1997-1998, written surveys were mailed to a random sample of 1600 Pennsylvania physicians, stratified by specialty and gender. Survey items assessed provider and practice characteristics, STD-related attitudes and beliefs, STD-risk assessment, and four clinical scenarios.

Results: Surveys were received from 52% of eligible physicians. Of these, 31% would screen an asymptomatic, sexually active 19-year-old woman for chlamydia during a routine gynecologic exam. Physicians were significantly ($P<0.05$) more likely to screen for chlamydia if they were pediatricians or internists, female, African-American, or believed that chlamydia is common in their population. Practice characteristics significantly associated with chlamydia screening included practice type (group/clinic vs. solo), metropolitan setting, $\geq$ 80% HMO clients, $\geq$20% African-American clients, and higher numbers of STD patients. In multivariate analysis, chlamydia screening remained significantly associated with female provider gender (OR 1.7; 95% CI 1.1 – 2.8), clinic practice type (OR 5.7; 95% CI 2.6 – 12.8), metropolitan location (OR 1.9; 95% CI 1.1 – 3.1), and $\geq$20% African-American patients (OR 2.0; 95% CI 1.2 – 3.6). The proportion of providers assessing specific STD-related risks among young persons most or all of the time was 88% for sexual activity, 84% for condom use, 42% for sexual orientation, 47% for number of sexual partners, and 73% for prior history of STD. Only 32% of physicians did a complete STD-risk assessment (all five STD-risk items) most or all of the time. Factors associated with conducting a complete STD-risk assessment were female provider gender, practice with $\geq$20% African-American patients, and practice that frequently encounters STD-related problems.

Conclusion: A majority of physicians do not provide recommended STD prevention services. Perceived prevalence of STDs in the practice population may influence physician behavior. Interventions to improve STD prevention physician behaviors are urgently needed.

PROBLEM DRINKING AND ADHERENCE TO HIV THERAPY. RL Cook, S Hunt, C Woodward, J Conigliaro, S Sereika, and J Erlen. Center for Research on Health Care and Center for Chronic Diseases, The University of Pittsburgh, Pittsburgh PA and Borneman Internal Medicine, Reading PA.

Objective: To determine the extent to which problem drinking is associated with self-reported nonadherence to medical therapy among persons with HIV.

Method: The study design was cross-sectional survey. Participants were persons attending one of two outpatient HIV clinics: an academic clinic in an urban setting n=176, 80%), and a community practice. Patients in the 2 practices completed the anonymous written survey over three months (1997-1998). Problem drinking was defined as either heavy drinking (≥ 12 [women] or ≥16 [men] drinks per week), hazardous drinking (score of ≥8 on the AUDIT) or binge drinking (drinks at least 5 [women] or 6 [men] drinks in one sitting). Two definitions for medicine nonadherence were used: 1) missed dose (missing at least 1 dose of medication in previous 24 hours), and 2) inconsistent timing of prescribed administration (taking fewer than "nearly all" of their medications on time as scheduled during the previous week).

Results: Of 232 surveys collected, 219 (93%) contained sufficient information to conduct data analysis. A majority of the respondents from the academic practice (n=176) were male (76%), white (69%) and identified homosexual intercourse as a HIV risk factor (58%), while the participants from the community practice were disproportionately women (36%), with Hispanic heritage (44%) reporting heterosexual intercourse (59%) and IV drug use (34%) as HIV risk factors. Among all surveyed, 14% reported missing a dose of medication in the previous 24 hours, while 29% reported inconsistent timing of medications. Problem drinking was found in 31% of the sample, with most reporting a history of binge drinking (30%). Problem drinking was significantly associated with inconsistent timing of taking medication during the past week (OR 2.3; 95% CI 1.2 – 4.4), and marginally associated with a missed dose in the past 24 hours (OR 2.1; 95% CI 0.9 – 5.0). Significant crude associations for nonadherence in the past 24 hours were also observed for marijuana use, age < 40, black race/ethnicity, and having been treated for depression. When controlling for the effects of gender, ethnicity, regimen complexity, clinic setting, and other drug use, the relationships between problem drinking and nonadherence persisted, although only marginally for both missing a dose in the past 24 hours (OR 2.0, p=0.05) and inconsistent timing in the previous week (OR 2.6, p=0.09).

Conclusion: Persons with problem drinking appear to be at increased risk for nonadherence with therapy, although a majority of problem drinkers were adherent and the cross-sectional nature of the study does not allow for cause-effect conclusions. Nevertheless, a better understanding of the factors associated with nonadherence among problem drinkers will be useful to refine interventions to improve medical adherence with HIV therapy.

A COMPARISON OF SCREENING FLEXIBLE SIGMOIDOSCOPY RATES BETWEEN FEE-FOR-SERVICE MEDICARE AND MANAGED CARE PATIENTS: IS THE DIFFERENCE AGE OR SOMETHING ELSE?

S. Cykert, R.Harris, and L. Kinsinger from the Division of General Internal Medicine and Clinical Epidemiology of the University of North Carolina School of Medicine, Chapel Hill, NC. and the Internal Medicine Program of the Moses Cone Health System, Greensboro, NC.

Advanced age is often cited as a barrier to the performance of recommended screening proceedures. Of procedures done for cancer prevention, flexible sigmoidoscopy (flx sig) for colorectal cancer has probably received the least attention. In this study, we measured baseline rates of screening flx sig in representative primary care practices in four North Carolina cities as part of the project, Making Prevention Work. This project was designed to quantitate the delivery of a variety of preventive services in private practices and utilize the resources and goals of these practices to optimize patterns of care. Practices were chosen in descending order from largest to smallest until the target number of practices was reached. The charts of 1225 patients aged 50 to 75 yrs. who received primary care from participating practices were randomly selected and reviewed. Screening flx sigs done between Jan. 1, 1993 and Dec. 31, 1995 were counted. The rate of screening flx sig for eligible managed care patients was 20% compared to 14% in these same practices for Medicare patients (p = .03). A logistic regression analysis was performed using patients age, race, and insurance status, as well as physician age and group size as predictor variables. Rate of stool hemoccult performance was also analyzed as a predictor. Older physicians used screening flx sig slightly less often than younger clinicians (odds ratio .96, 95% CI .93, .98) and physicians in larger groups screened slightly more often than those in smaller groups (OR 1.10, 95% CI 1.05, 1.15). Medicaid patients received the least screening (OR .45) but were small in number and did not reach statistical significance (95% CI .19, 1.10). Patient age and hemoccult rates within a practice did not predict flx sig rates. Patients' economic status, size of payments or co-payments by patient, and degree of MD reimbursement per insurance plan were not accounted for in this model. Given the weakness of the predictors defined above, it's possible that these economic issues drive the screening decision.

PROMOTING CLINICAL PREVENTIVE ACTIVITIES: BARRIERS AMONG PHYSICIANS. J Cornuz, D DiCarlantonio, A Clerc Berod, A Pécoud, F Paccaud. Institute of Social and Preventive Medicine, Outpatient clinic, Medical School, University of Lausanne, Switzerland

Background: Some physicians are still reluctant to put prevention into clinical practice arguing that patients themselves do not expect preventive activities such as counseling and health promotion. We surveyed Swiss physicians to assess their perception of patient's expectations regarding preventives activities and to determine physician characteristics correlating with this reluctance.

Methods: Built through a focus group process and then pre-tested, our questionnaire gathered physician sociodemographic data (age, gender, years and type of practice), self-reported lifestyle characteristics (smoking, alcohol consumption, physical activity), and assessed physicians' attitudes toward integrating clinical preventive activities into practice. This questionnaire was mailed to 686 general practitioners (GPs) of three states of Switzerland, of whom 496 (72%) responded. Responders and non-responders did not differ by age or gender. A multivariate analysis was performed.

Results: One hundred and forty seven GPs (30%) reported that their patients either did not agree that clinical prevention was a distinct and valuable clinical activity apart from the so-called curative activities or did not expect such an activity. Male gender (Odds Ratio [OR] 2.9, 95% Confidence Interval [CI] 1.1-3.9), age above 50 (OR 2.3, 95% CI 1.3-3.8), being a smoker (OR 2.1, 95% CI 1.3-3.5) and reported drinking more than one drink a day (OR 2.9, 95% CI 1.6-3.9) were the factors associated with this perception. The other characteristics (years and type of practice, regular exercise) and physicians' perceptions of the barriers for integrating prevention into clinical practice, such as lack of training, time, reimbursement and guidelines for preventive medicine, were not associated with this reluctance to implement preventive services.

Conclusion: The perception among some physicians that patients do not expect health promotion activities is correlated to male gender, older age and unhealthy personal lifestyle. Strategies to improve health promotion activities offered to patients should include promoting healthy lifestyles and education among male physicians.

DO PRIMARY CARE PHYSICIANS' ATTITUDES TOWARD MANAGED CARE CORRELATE WITH TEST ORDERING PRACTICES?

S. Cykert, R.Harris, and L. Kinsinger from the Division of General Internal Medicine and Clinical Epidemiology of the University of North Carolina School of Medicine, Chapel Hill, NC. and the Internal Medicine Program of the Moses Cone Health System, Greensboro, NC.

The assessment of physicians' attitudes toward access to care within a managed care plan could serve as a rapid measure of plan performance if these attitudes correlated with actual practice. In this report, we examined whether physicians' beliefs regarding capitated care correlated with the performance of important tests on their patients. Flexible sigmoidoscopy (flx sig) was used as a representative screening test while performance of hemoglobin A-1-C (Hgb a1c) in diabetics was used as a representative disease management test. One hundred family practitioners and general internists (PCP's) practicing in central North Carolina were interviewed concerning their attitudes toward managed care and prevention and charts of 1225 of their patients aged 50 to 75 yrs. were reviewed. Included in the chart review was whether flexible sigmoidoscopy was performed in the 3 yrs between Jan. 1, 1993 and Dec.31, 1995 and whether Hgb a1c was performed in 1995. In bivariate analysis comparing physicians who felt access was preserved in capitated care, the rate of flx sig was higher then for those PCP's who felt otherwise (19.4% vs. 12.1%, p = .04). This association was not observed in the performance of Hgb a1c (70.8% vs. 65.9%, p = 0.6). Logistic regression analysis was performed on flx sig rates for which the predictor variables included physicians' attitude, age, and group size as well as patient age, race, and insurance coverage. Whether hemoccult screening occurred in the previous 12 months was also included in the model. Increased PCP age mildly predicted flx sig rates (odds ratio .96, 95% CI .93, .98) and larger group size predicted slightly higher rates (OR 1.1, 95% CI 1.05, 1.15). Physicians' opinion of access was not a significant predictor in the regression model. We conclude that physicians' attitude toward their patients' access to care in capitated plans does not reflect actual test performance for screening or disease management tests.

RETRIEVAL BIAS: NOW YOU SEE IT, NOW YOU DON'T. C Daniels, K Bybee, and VM Montori. Mayo Graduate School of Medicine, Rochester, MN.

Purpose: Retrieval bias is the predilection for positive over negative studies when retrieving them from medical literature databases for the purpose of obtaining the best available evidence. The purpose of this study is to demonstrate the existence of retrieval bias in a population of physicians searching for the best available evidence to answer a clinical question.

Methods: Using the Evidence-based Medicine Conference's article bank, a compilation of resident presentations of the best evidence available to answer a clinical question, two independent evaluators selected the articles that answered questions about therapy. These articles were classified as being positive studies - those that rejected the null hypothesis- or negative studies - those that did not reject the null hypothesis. A reasonable MEDLINE search was performed using the Haynes high sensitivity filter for therapy articles. The evidence found was again classified as positive or negative and compared with that retrieved for the conference. In the subset of articles where negative studies were found when positive studies were presented, a comparison of the journal impact factor between the two articles was analyzed.

Results: One -hundred articles were presented from December 1997 to December of 1998. Of these, 44 answered therapy questions. Of the 44 articles reviewed, 37 (84%) were positive and 7 were negative. The repeat search showed that for the 7 negative studies, zero positive studies were found. When the search was repeated for the 37 positive studies, 4 negative studies were found (11%). In each of these 4 cases the resident physician elected to present the positive study and ignore the study with a negative result. The average journal impact factor when residents presented the positive study ignoring the negative study was; positive 21.9 vs. Negative2.9.

Conclusions: We believe retrieval bias as defined above, independent of or due to a subtle form of publication bias through journal impact factors may play a role in the retrieval of studies from medical databases to be presented or discussed as being the best available evidence. We are currently conducting an experimental prospective study to determine the presence and magnitude of this form of bias in the practice of Evidence-based Medicine.

ANXIETY AND DEPRESSION AMONG RESIDENTS' PATIENTS: DIFFICULT DIAGNOSES. DG Didden, JT Philbrick, JB Schorling, Division of General Medicine, University of Virginia, Charlottesville, VA

PURPOSE: Mental illnesses are very common among patients in primary care settings. We sought to determine the prevalence of depressive and anxiety disorders as well as the rates of their diagnosis and treatment among patients in a resident teaching clinic.

METHODS: The PRIME-MD was used to screen for mental health disorders among 135 continuity patients at a University-based internal medicine residents' clinic. The 10 item Difficult Doctor Patient Relationship Questionnaire (DDPRQ-10) was also administered. This is rated on a 10-60 scale, with 60 being most difficult. Rates of diagnosis and treatment of these illnesses were measured by chart review.

RESULTS: We found the following prevalences of these illnesses:

Diagnosis (n = 135)	(%)	DDPRQ-10 (mean)
No anxiety or depression	62.2	21.7
Major depression	25.9	26.0*
Dysthymia	15.6	27.8*
Depression-partial remission	8.9	23.2
Panic disorder	7.4	31.1*
Generalized anxiety disorder	13.3	28.0*

*p<0.05 compared to patients with no anxiety or depression

Overall, 38% of the patients met criteria for at least one disorder, and 21% met criteria for ≥ 2 diagnoses. After review of the respondents' charts, we found the following rates of diagnosis and drug treatment:

Diagnosis (n=135)	Chart Diagnosis (%)	Drug therapy (%)
Any depressive disorder	34.1	40.9
Major Depression	50.0	48.6
Any anxiety disorder	19.4	54.5
Generalized anxiety disorder	16.7	50.0
Panic disorder	37.5	70.0

CONCLUSION: The prevalence of anxiety and depression is very high in this patient population, and residents perceive patients with these illnesses as significantly more difficult. Half or less of the patients with anxiety or depressive disorders had a documented clinical diagnosis, and only about half were receiving drug treatment. These rates of diagnosis are similar to the original Prime-MD study among faculty physicians. These diagnoses are difficult to make among these "difficult" patients, and better training in their recognition and treatment is clearly needed.

THE EFFECT OF CONFIDENCE ON THE ACCURACY OF PROGNOSTIC ESTIMATES FOR CANCER PATIENTS BY GENERALISTS AND ONCOLOGISTS. NV Dawson, C Thomas, JH Rose, E O'Toole, AF Connors, HJ Cohen, MB Hamel, NA Desbiens, N Wenger. Case Western Reserve University, Cleveland, OH; University of Virginia, Charlottesville, VA; Duke University, Durham, NC; Harvard University, Boston, MA; University of Tennessee, Chattanooga, TN; University of California - Los Angeles, CA.

Introduction: Physicians' perceptions of prognosis for survival are important in discussing and planning patient care. When accuracy varies directly with confidence in prognostic estimates, assessing levels of confidence can provide valuable insight into the trustworthiness of prognostic estimates.

Methods: Using data from a five-site prospective cohort study of seriously ill hospitalized adults (SUPPORT), we compared 72 generalists' (Gen) and 47 oncologists' (Onc) prognostic estimates of 2 month survival for 1023 cancer patients (non-small cell lung or metastatic colon cancer). Physicians' confidence in each 2 month survival estimate was measured on a 0 (no confidence) to 10 (complete confidence that this estimate is correct) scale. Propensity score methods were used to adjust for differences in baseline characteristics of 363 Gen and 658 Onc patients. Analysis of variance was used to determine the independent influence of specialty on the accuracy (Brier scores: range = 0 to 1.0, smaller is more accurate) of prognostic estimates while adjusting for propensity to see an Onc, prognostic estimate, and confidence in the estimates.

Results: Gen and Onc demographic and training characteristics were similar. Mean survival at 2 months for Gen and Onc patients was similar (.58 and .61, respectively; p=.382). Onc were significantly more confident in their estimates than Gen (mean certainty = 7.9 vs 7.1, respectively, p=.0001), however, they were not more accurate (mean Brier score for Onc and Gen = .19 vs .17, respectively; p=.173). Increasing levels of confidence were independently associated with higher levels of accuracy for Gen and for Onc (p=.018).

Conclusions: For Gen and Onc, increasing levels of confidence in their prognostic estimates were associated with more accurate estimates. Onc were more confident but not more accurate than Gen. Knowing the level of confidence of Gen and Onc estimates of prognosis may help in determining the trustworthiness of their estimates. It may be appropriate to consider confidence in prognostic estimates when physicians deliberate about clinical decisions that are influenced by prognostic estimates.

EXCESSIVE PACKAGING OF PHARMACEUTICAL SAMPLES. Martin T. Donohoe and Harmony A. Matthews, Oregon Health Sciences University, Portland, OR.

Purpose: Pharmaceutical samples, provided to clinics by industry sales representatives, are useful to clinicians, who utilize them for patients unable to afford medicines and as starter packs for patients initiating trials of new therapies. However, these samples are usually contained in large, elaborate, colorful packages. Paper packaging, less than half of which is recycled, constitutes up to 40% of the 200 million tons of garbage Americans produce each year, and represents the fastest growing segment of garbage production. Excessive use of paper products contributes to deforestation and other adverse effects on the environment. We sought to determine the relative amounts of packaging and pills in pharmaceutical samples in a university general medicine clinic.

Methods: We measured the mass and the total pill and paper packaging volume of one of each brand of drug samples stored in three 8x3x3-foot cabinets. All pills were packaged in either foil blister packs or plastic bottles, which were contained in paper product boxes (henceforth called paper packaging).

Results: Ninety-two packages contained 665 pills (7.2 ± 6.2 pills per package, mean ± SD). Paper packaging constituted 74% of overall package weight.

	Paper Packaging	Pills	Paper Packaging Pills
Total Mass, g	1350	260	5.2
Total Volume, cm^3	16754	220	76.2

Drug samples contained 84% by weight and 99% by volume paper packaging, excluding package inserts.

Conclusions: Pharmaceutical samples contain a very high ratio of packaging to pills. Large packages may contribute to increased brand recognition and prescribing, but also take up excessive space in overcrowded clinics and constitute a wasteful use of paper products derived from trees, a precious natural resource. Broad-based health care provider encouragement of, and pressure on, the pharmaceutical industry to cut down on this excessive packaging might be successful, much as public pressure forced the recording industry to eliminate excessive packaging of compact discs in the early 1990s.

FINDING TREASURE IN THE SAFETY-NET. OUTCOMES FOR MEDICAID AND OTHER PATIENTS HOSPITALIZED IN CLEVELAND, 1992-1995. D Einstadter and RD Cebul. Center for Health Care Research & Policy, and the Division of General Medicine, CWRU at MetroHealth Med. Ctr., Cleveland, OH.

Background: To remain viable, "safety-net" hospitals increasingly must defend their patients' outcomes and typically higher costs. Few studies have compared outcomes for poor patients at safety-net and other hospital types. We examined length of stay (LOS) and mortality for Medicaid patients hospitalized in Greater Cleveland with other patients classified by insurance status, and across hospitals grouped according to Medicaid patient volume.
Setting and Study Sample: We examined all non-Medicare patients with one of 6 important medical conditions (acute myocardial infarction, congestive heart failure, chronic obstructive pulmonary disease, stroke, GI hemorrhage, or pneumonia) hospitalized at one of 32 hospitals in Greater Cleveland during 1992-95. Patients were classified by insurance as Medicaid (MD), Commercial (CM), Uninsured (UI), or Other (OT). We used the proportion of MD patients treated as a proxy for safety-net provider, and hospitals were classified as High, Average, or Low MD providers (responsible for >1.5 x average, average, or <0.5 x the overall average proportion of Medicaid discharges, respectively).
Main Measures: The main outcome measures were LOS and in-hospital mortality. Patient sociodemographic characteristics and severity of illness were obtained from the Cleveland Health Quality Choice Project database. Outcomes were adjusted for case-mix and severity using previously validated models.
Principal Findings: Of 48,306 discharges, 9,362 were MD, 31,359 CM, 4,167 UI, and 3,418 OT. Case-mix adjusted LOS was 5.9, 5.3, 5.0, and 5.4 days for MD, CM, UI, and OT, respectively. Across all hospitals, case-mix and severity-adjusted LOS for MD was 3% longer than CM or OT and 12% longer than UI patients ($p<0.001$). MD patients were more likely than any group to be discharged with Home Health Agency support ($p<0.001$). After adjustment for discharge destination, LOS for MD was 2% shorter than for CM or OT patients ($p=0.01$). There were 8 High (safety-net), 11 Average, and 13 Low MD provider hospitals. MD patients at safety-net hospitals had the lowest LOS, on average 13% less than that at Average and Low MD provider hospitals ($p<0.001$). Case-mix adjusted mortality did not differ across insurance or MD provider groups.
Conclusions: In Greater Cleveland, adult Medicaid patients were cared for more efficiently at safety-net hospitals during 1992-95, with shorter LOS compared to similar patients discharged from other providers, along with comparable mortality rates. These findings have important policy implications, as managed care distributes Medicaid patients to other hospitals, and as the number of patients without health insurance increases.

COLORECTAL CANCER SCREENING IN A POPULATION-BASED SAMPLE: MEASURING ADHERENCE TO GUIDELINES by Stephen B. Erban, Roger Luckmann, Jane G. Zapka, and Elaine M. Puleo, University of Massachusetts Medical School, Worcester, MA.

Colorectal cancer (CRC) is the second leading cause of cancer death in the U.S. Several professional organizations have put forth guidelines for CRC screening. In 1997, the American Gastroenterologic Association (AGA) published an extensive guideline which provides several options for screening tests and combinations of tests. In addition, the National Committee on Quality Assurance (NCQA) is developing measures of "compliance" with CRC screening standards for the Health Employer Data Information Set (HEDIS). The complexity of defining "current screening" is a major issue in assessing performance of health plans and individual physicians. The purpose of this study is to document screening prevalence according to guidelines and to profile the tests (screening and diagnostic) which patients have had.

A telephone random-digit dial survey was conducted in Spring/Summer of 1998, of 1175 Massachusetts adults 50 years of age and over, to assess experiences with and perceptions of colorectal cancer screening.

Approximately 48% of respondents were technically "currently screened," having had one or more tests for screening and/or diagnostic reasons. Another 6% could be current, but dates of tests are unknown. 18% had had at least one test, but were not current. 10% reported having only a fecal occult blood test (FOBT) done in the MD office; there is debate about the adequacy of this test for screening. 19% reported never having any tests. Of the 48% who were defined as "current", 27% had only a home FOBT in the past year; 23% had a home FOBT (past year) plus a sigmoidoscopy (FS) in the past 5 years; 28% had only FS (past 5 years). 10% had FOBT and colonoscopy; 9% had FOBT and barium enema; and 2% had colonoscopy only. The remainder had some other combination. Age was significantly associated with adherence (50-64: 44%; 65-79: 54%; 80+:40%) Insurance type was related for those without insurance (less screening), and for elders in managed care plans (more screening).

These results demonstrate the variability in different measures of adherence to guidelines. If the measure of adherence is home FOBT in the past year, the rate of adherence would be 33% rather than 48%; if FS is used, the compliance rate would be 24%; if FOBT and/or FS is acceptable, the rate would be 46%. This last approach may provide a simple, reasonably accurate measure of CRC screening prevalence. However, many clinicians and patients feel home FOBT alone is insufficient screening. Because adherence rates include many individuals who have had tests for diagnosis, they may not accurately reflect physician or patient commitment to screening. For example, of the people who had FS, 42% were reportedly done for diagnostic reasons. More work is needed to develop measures of compliance with CRC screening.

PHONE REQUESTS FOR MEDICATION REFILL IN A TEACHING PRACTICE. TA Elasy, A Spickard, J Pichert, W Swiggart, G Dixon. Vanderbilt University School of Medicine – Center for Professional Health, Nashville, TN.

We sought to determine medication type and patient characteristics for phone medication refill requests at a University Hospital general internal medicine teaching clinic. We hypothesized that controlled substances would constitute a substantial proportion of the telephone refill requests.

All telephone calls for medication refills were consecutively recorded over a two-week period. Two receptionists, who receive all calls for medication refills, were given a standardized data collection sheet for documentation. We recorded the patients' medical record number, medication request, age, gender, race and physician response to the request. The patients are seen primarily by a resident physician with supervision by an attending physician. The attending physician, however, is responsible for responding to all phone medication refill requests. Approximately 90% of the patients have either Medicaid or Medicare.

All 97 consecutive calls for medication refills were evaluated. The average age of the patient for whom a refill was requested was 51, 68% were female and 69% white. Fifteen percent (15/97) of all refill requests were for controlled substances. This constituted the second largest category of refill requests, exceeding diabetes medications, antidepressants and pulmonary medications. All but one (14/15) of the controlled substance requests were for an opioid analgesic. Only one opioid request was for a schedule II medication. Cardiovascular medications constituted the largest category of medication refill requests at 28% (27/97). There was no difference in age or race within categories of medication refill requests. Although males constituted an unexpectedly larger proportion (53%) of the controlled substance refill requests given their prevalence (32%) in this population, the difference did not achieve statistical significance ($p = 0.07$). No patients who requested opioid analgesics had a diagnosis of malignancy. Attending physicians refilled 82% of all requests without further questions but filled only 46% (7/15) of controlled substances ($p < 0.001$).

Controlled substances are the second largest group of medications requested by phone for refill at a University Hospital teaching clinic. Males solicited more refills for controlled substances than expected though the difference was not statistically significant as we lacked power. Attending physicians were more critical of controlled substance refill requests than other medications.

QUALITY, PRODUCTIVITY, AND PATIENT SATISFACTION: COMPARISON OF PART-TIME AND FULL-TIME PRIMARY CARE PHYSICIANS. DG Fairchild, S Gharib, HR Burstin, L Amowitz, M Portnow, J Horsky, DW Bates. Division of General Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA.

Managed care organizations and health plans believe that part-time (PT) primary care physicians (PCPs) are less effective and less efficient than full-time (FT) PCPs. To our knowledge, however, there are few data supporting this. As many academic generalists practice part-time, this issue is of considerable practical importance. To test this hypothesis we compared FT and PT PCPs regarding quality of care (mean % of patients meeting pap, mammogram and cholesterol HEDIS goals), productivity (work units/bookable clinical hr), and patient satisfaction (% of patients rating the PCP excellent or very good) using 1998 data. All PCPs were associated with one large urban teaching hospital network.

Of 64 PCPs, 33 (52%) were part-time (≤20 clinical hrs/week), 31 (48%) were male, and 24 (38%) practiced off-campus in a community setting. The mean number of years in practice was 13.5. PT PCPs were more productive (91 units/bookable hr) than FT PCPs (57 units/bookable hr) ($p=.0001$), and had higher performance on HEDIS standards (80% of patients meeting HEDIS goals) than FT PCPs (75% of patients meeting HEDIS goals) ($p=.007$). Patient satisfaction was similar for PT (94% excellent/very good rating) and FT (92% excellent/very good rating) PCPs ($p=.3$). In regression analyses, part-time status remained a significant predictor of higher productivity and better HEDIS performance after adjusting for gender, years in practice and off-campus location.

Refuting the commonly held belief that PT PCPs are less efficient and less effective providers than their FT colleagues, these data suggest that PT PCPs provide clinical productivity, patient satisfaction, and quality of care equaling or exceeding that of FT PCPs. These findings support the inclusion of part-time PCPs in managed care networks.

PHYSICIANS' ATTITUDES TOWARD INVOLVEMENT IN CAPITAL PUNISHMENT. NJ Farber, PA Ubel, EB Davis, J Weiner, J Jordan, EG Boyer, Christiana Care Health System, U of Pennsylvania, St. Joseph's University & Drexel University, Wilmington, DE & Philadelphia, PA.

There has been discussion in the literature about whether physicians should be involved in the process of lethal injection for the purpose of capital punishment. The American Medical Association has proscribed physician involvement, and specified 8 actions that physicians should specifically refuse to take in cases of capital punishment. We surveyed AMA members to determine their attitudes regarding colleague involvement.

A survey instrument was developed and pretested which asked how acceptable it was for a colleague to engage in the 8 AMA proscribed actions and 4 allowed actions involving lethal injection. Questions assessing attitudes toward capital punishment and assisted suicide, along with demographic questions were included. The impact of attitudinal and demographic variables on the number of proscribed actions deemed acceptable by respondents were analyzed via ANOVA and multiple logistic regression analyses.

Of the 945 surveys which were received by subjects, 482 (51%) returned completed questionnaires. Eighty percent of respondents indicated that at least one of the proscribed actions was acceptable, and 53% indicated that 5 or more of the actions were acceptable, with 34% approving of all 8 AMA proscribed actions. The percent of respondents approving of proscribed actions varied from a low of 43% for actually injecting the lethal drugs, to a high of 74% for determining when death occurred. All four non-proscribed actions were deemed acceptable by almost 3/4 or more of the respondents. Favoring the death penalty ($p < 0.001$), and acceptance of assisted suicide ($p < 0.001$) were associated with an increased number of proscribed actions which were deemed acceptable by respondents.

Despite AMA policy, and much of the opinions published in the literature, a majority of physicians approved of most proscribed actions involving capital punishment. The lack of stigmatization by colleagues may allow physicians to engage in such practices. Organizations should assess the attitudes of their members prior to policy making, and should ensure adequate dispersal of such policies to physicians.

FRIEND OR FOE: WHAT PRIMARY CARE PHYSICIANS THINK OF HOSPITALISTS A. Fernandez, L. Goitein, K. Grumbach, K. Vranizan, D. Keane, D. Osmond, AB. Bindman. San Francisco General Hospital, U.C.S.F, San Francisco, CA.

Introduction: The increased use of hospitalist physicians to provide care for in-patients raises concerns about the effect of hospitalists on patient care and primary care physician (PCP) practices. We studied PCPs in California to determine their experience with hospitalists and their perceptions of these physicians.

Methods: We surveyed by mail a probability sample of 740 PCPs. Subjects were given a definition of hospitalists and asked about their availability and whether PCPs were required to transfer the care of in-patients to them. Using a five point Likert scale, PCPs who have experience with hospitalists rated the degree of change that hospitalists have on several aspects of patient care: quality of care for patients in the hospital, overall quality of care, patient satisfaction, amount of care patients need from the PCP after hospital discharge, and quality of patient-PCP relationship. Subjects were also asked to assess the impact of hospitalists on professional income, workload, and practice satisfaction. In our analysis we combine greatly increased (or decreased) with somewhat increased (or decreased).

Results: 524 (71%) physicians responded to the survey: 34% internists, 37% family physicians, 29% pediatricians. 340 (65%) had hospitalist physicians available to them, of those, 30% reported being required to use hospitalists for all admissions.

	Increased %	No change %	Decreased %
Quality of care hospitalized patients	45	43	12
Overall quality of care	41	44	15
Patient satisfaction	23	41	36
Amount of care after discharge	30	63	7
Quality of patient relationship	6	66	28
PCP income	5	69	26
PCP workload	13	33	53
PCP practice satisfaction	50	33	17

Among the specialties, internists report the least favorable impact of hospitalists, for example, 50% of internists report that hospitalists decrease patient satisfaction compared to 35% of family physicians and 20% of pediatricians ($p=0.001$).

Conclusion: PCPs in California report mainly favorable or neutral impact of hospitalists on their practices. Most PCPs believe that hospitalists have a favorable or neutral effect on the quality of patient care. However, more than a quarter of PCPs believe that hospitalists adversely affect their relationship with their patients and their patient's satisfaction; this should also be studied from the perspective of the patient.

PHYSICIANS' EXPERIENCES WITH PATIENTS WHO TRANSGRESS BOUNDARIES. NJ Farber, DH Novack, J Silverstein, EB Davis, J Weiner, EG Boyer, Christiana Care Health System, Allegheny University, St. Joseph's University & Drexel University, Wilmington, DE & Philadelphia, PA.

Boundary violations have been discussed in the literature, but most studies report on physician transgressions of boundaries, or sexual transgressions by patients. We studied the incidence of all types of boundary transgressions by patients, and physicians' responses to those transgressions.

A survey asked physicians for the number of patient transgressions of boundaries which had occurred in the previous year. Physicians picked the most important transgression, and then were asked about their response to the transgression and its affect on the patient-physician relationship. Attitudinal questions addressed the likelihood of discharging patients who transgressed boundaries. The impact of demographic variables on the incidence of transgressions was analyzed using analysis of variance.

Three hundred thirty (37.5%) randomly selected SGIM members responded to the survey. Almost 3/4 of respondents had patients who used their first name, while 43% had encountered verbal abuse, 39% had patients who asked personal questions, 31% had patients who were overly affectionate, and 27% encountered patients who attempted to socialize. All other transgressions including physical abuse and attempts at sexual contact were uncommon. Only gender affected the incidence of transgressions; female physicians encountered more personal questions ($p = 0.001$), inappropriate affection ($p < 0.005$), and sexually explicit language ($p < 0.05$) than male physicians. Respondents dealt with transgressions by discussion with the patient or colleagues, or by ignoring the incident, but such transgressions generally had a negative on the relationship. Most physicians would discharge patients who engaged in physical abuse or attempts at sexual contact, but were more tolerant of verbal abuse and overly affectionate patients.

Boundary transgressions by patients is common, but usually involves more minor infractions. Female physicians are more likely to encounter certain types of transgressions. The incidence and outcomes of such transgressions are important in assisting physicians to deal effectively with this issue.

OBESITY AT INTERNAL MEDICINE ASSOCIATES: PHYSICIAN RECOGNITION AND MANANGEMENT Daniel Fischberg, Alysa Krain, Edward Anselm, Laurie Edelman, Mount Sinai School of Medicine, New York

Purpose: Through a systematic review of patient charts of medical housestaff, we set out to determine the prevalence of obesity in the Internal Medicine Associates patient population, the presence of co-morbid conditions, and the housestaff's sensitivity to obesity as a medical diagnosis. Obesity is defined as a body mass index (BMI) > 30kg/m^2 or BMI > 27kg/m^2 with two or more co-morbid conditions.

Methods: The authors surveyed one thousand (N=1000) consecutive, routine, new and follow-up housestaff visits over a two week period. The focus of the review was to determine if the height and weight were measured by the primary care physician, and previous physician, or nursing staff. Additionally, demographic data and co-morbid conditions were recorded. Finally, the current physician's notes were reviewed for the calculation of the BMI, presence of obesity on the problem list, and a treatment plan for the management of obesity.

Results: Of the one thousand charts reviewed, 583/1000 met inclusion criteria. Among these patients, 75% were female and 85% were black or Hispanic. Seventy two percent of the eligible charts had a documented weight. The primary care physician weighed 30% (159/583) of the eligible charts. Sixty percent (95/159) of the patients for whom a BMI could be calculated were overweight or obese (BMI>27kg/m^2). In no patient chart had a BMI been calculated. Of the subgroup for which a BMI could be calculated (n=159), the prevalence of co-morbid conditions was assessed in the obese and non-obese populations. The prevalence of hypertension, diabetes mellitus, hypercholesterolemia, osteoarthritis, and breast, colon, or gynecologic carcinoma increased with a BMI greater than 25kg/m^2. Obesity was not diagnosed nor was a treatment plan formed for any of the obese patients with a BMI of less than 30kg/m^2. Among the obese patients with a BMI of greater than 30kg/m^2, documentation of obesity in the problem list or current progress note with the formulation of a treatment plan increased with increasing BMI.

Conclusions: Internal Medicine Associates' patient population is at high risk for obesity and the development of associated medical complications. Despite this fact, physician recognition and treatment of overweight and obesity (BMI>27kg/m^2) is limited. Obesity was recognized almost exclusively among those with a BMI>30kg/m^2 despite the presence of co-morbid conditions in many patients with a BMI>27kg/m^2. Obesity was associated with an increased prevalence of hypertension, diabetes mellitus, hyperlipidemia, osteoarthritis, breast, colon and gynecologic cancers, but not ischemic heart disease or biliary tract disease. Further educational interventions are warranted to improve resident physician sensitivity to the diagnosis and treatment of obesity.

IMPLEMENTING PREVENTION AND CHRONIC DISEASE GUIDELINES - PROGRESS AND LESSONS LEARNED. **TL Fox, C Ware, N Benton, KA Fuglee, C Mackley, E Braibish, and DA Nardone. VHA Medical Center, Portland, Oregon.**

Purpose: To improve performance in meeting standards for clinical guidelines.

Background: Enrolled primary care patients and total facility visits increased from 6000 and 278,000 in 1995 to 18,000 and 310,000 in 1998 respectively. The number of primary care provider (PCP) FTEE increased from 19.7 to 33. PCPs practice at three geographically separate sites. In 1995 17.5 nursing and administrative FTEE were added to support primary care, the group practices, and telephone care. Since July 1997 we attempted to administer health surveys at each visit and conducted nurse Health Promotion classes. We established two patient-education centers, an aerochamber education program, and Health Promotion Interest Group. In 1998 we were authorized to hire 15.5 additional nurses, conducted two multidisciplinary retreats, and spent $57,000 on contract data-entry clerks.

Results: Based on External Peer Review Program data we failed to meet performance criteria in any category for FY 1997. In 1998 there has been improvement in 16 of 20 categories and greater than 20% improvement in 11 of 20. For 5 of 20 we achieved a fully successful rating. In 8 categories, for which there are no comparative FY 1997 data, we achieved an exceptional rating in 4 of 8 and were fully successful in 2 others.

Conclusions: Implementing guidelines in a large institution is complex. We achieved modest improvement with increased staffing, more efficient systems, and better communication. Retreats enhanced acceptance of guidelines, facilitated team growth, and spawned innovative strategies. It is not feasible to address the entire spectrum of interventions during the standard 20-minute PCP visit. Technology is needed for scanning encounter forms especially for historical data. We hope to select 4 additional Health Promotion nurses to assist with implementation including large group patient sessions, pre-visit telephone contacts, surveys, and provider education.

DIABETES COST AND CONTROL: DIFFERENCES BETWEEN FACULTY, HOUSESTAFF, AND NURSE PRACTITIONERS SL Fultz, CB Good, ME Kelley and MJ Fine, Section of General Internal Medicine, Veterans Affairs Medical Center, University of Pittsburgh Medical Center, Pittsburgh, PA

Background: Although diabetes mellitus (DM) is a common and costly condition, preliminary data suggest that variation in treatment patterns exists among clinicians leading to differences in pharmacy costs as well as glycemic control.
Purpose: To compare patterns of treatment, glycemic control and drug treatment costs for patients with DM among 3 groups of providers: staff attendings (AT), internal medicine house officers (HO), and staff nurse practitioners (NP).
Methods: All patients who received DM medications or supplies from Jan 1, 1997 through Dec 31, 1997 at the Pittsburgh VA Medical Center were identified from computerized pharmacy records. Patients followed in the internal medicine clinic that had more than 50% of all DM prescriptions written by one clinician (identified as AT, HO or NP) were eligible. Sociodemographic data were collected for all study patients (including age, sex, race, and marital status). Pharmacy data was identified for each patient including use of drugs which might worsen glycemic control (niacin, corticosteroids, diuretics) and all DM medications and supplies. Average monthly patient treatment costs were calculated using current VA drug acquisition costs. The last glycosylated hemoglobin (HGBA1C) was identified for each patient during the study year.
Results: Sixty AT providers treated 734 patients, 115 HO providers treated 533 patients and 21 NP providers treated 578 patients. Significant results are shown in table below. AT used sulfonylureas and metformin more often and more frequently used ≥ 2 medication classes; yet, patients treated by AT had lower average treatment costs and lower HGBA1C levels. Controlling for sociodemographic data as well as use of confounding medications using analysis of covariance did not change the results.

Treatments/Outcomes	AT	HO	NP	P-value
Sulfonylurea Use	63.1%	55.5%	55.1%	0.004
Metformin Use	23.0%	19.3%	15.6%	0.003
Insulin Use	37.7%	44.3%	44.0%	0.024
Use of ≥ 2 medication classes	26.9%	22.2%	17.5%	<0.0005
Average Monthly Cost	$5.54	$6.53	$6.52	0.013
Last HGBA1C ≤ 8	50.6%	44.9%	43.8%	0.079

Conclusions: Examination of the pattern of treatment for AT compared to HS and NP showed that AT patients had lower costs with a trend towards better glycemic control. This variation suggests an opportunity to increase quality of care while minimizing costs and may have implications for the use of clinical guidelines and the training of housestaff and other providers in the treatment of DM.

THE USE OF OPIOIDS IN THE MANAGEMENT OF BACK PAIN. SS Fu, K Epstein, EJ Yuen, Division of Internal Medicine, Jefferson Medical College, Philadephia, PA.

Background: Back pain is a leading cause of missed work days and disability, as well as a common complaint seen in the ambulatory care setting. A common perception exists that opioids are over-prescribed for acute pain, although many pain management experts feel that they are under-utilized. We explored prescribing patterns in the management of back pain, particularly for opioids, and explored differences by physician specialty.

Methods: Utilizing data from the 1996 National Ambulatory Medical Care Survey (NAMCS), we analyzed patient visits for back pain, as defined by ICD-9 codes. We examined the patterns of prescription of pain medication and differences between physician specialty.

Results: Using the NAMCS, there were an estimated 35 million patient visits in the US related to back pain, which represents 4.8 percent of total patient visits in 1996. These patients were seen by various medical specialties. Of those specialties designated in the NAMCS data, the top four in terms of back pain management were GP/FP (31.9% of the back pain patients), Internists (17.2%), Orthopedists (13.8%), and Neurologists (5%). 48% of these patients received a pain medication from their physicians. Physicians prescribed NSAIDs the most frequently (55% of prescriptions for pain), followed by Opioids (34%), Aspirin/ Acetominophen (6%), and Tramadol (5%). Among the top four specialties, Internists were the most likely to prescribe a pain medication (59% of pt. visits), followed by GP/FP (55%), Orthopedists (43%), and Neurologists (32%). Primary care physicians (GP/FP and Internists) were found to have a higher likelihood of opioid prescription (29%) compared to the specialists (20% for Orthopedics and 26% for Neurology). When opioids were prescribed, all physicians had a preference for either oxycodone, codeine, propoxyphene, or hydrocodone, which comprised 92% of all opioids prescribed.

Conclusions: Opioids play a significant role in the management of back pain. Primary care physicians are more likely to prescribe an opioid than are Orthopedists and Neurologists. Opioid products containing either oxycodone, codeine, propoxyphene or hydrocodone account for the vast majority of opioids used in the management of back pain.

CREATING A QUALITY REPORT CARD FOR AMBULATORY CLINIC SITES. TK Gandhi, EF Cook, HR Burstin, AL Puopolo, JS Haas, TA Brennan. Division of General Medicine, Brigham and Women's Hospital, Boston, MA.

Report cards based on various performance measures have become increasingly common for rating hospitals and healthcare plans. However, little has been done to create report cards at the ambulatory clinic level, nor has there been much comparison of the potential components of report cards: patient reports of care, HEDIS-style outcome measures, and chart-based reviews of compliance with clinical guidelines.

We attempted to create a report card for ambulatory clinics using data from the Ambulatory Medicine Quality Improvement Project (AMQIP), a quality improvement effort across 11 ambulatory clinic sites in the Boston-area from May 1996 to June 1997. Data was collected from each site on compliance with HEDIS-like measures of preventive care, patient satisfaction, physician satisfaction, and compliance with disease-specific guidelines using chart reviews, patient surveys, and physician surveys. Sub-scores for HEDIS compliance, patient satisfaction, and physician satisfaction were created for each site. An overall site score was created from the mean. Disease-specific guideline compliance scores for diabetes and asthma were also created for each site.

There was significant variation between sites for all of the sub-scores created ($p<.05$). HEDIS compliance and physician satisfaction sub-scores were significantly correlated with overall site score ($p<.05$); however, patient satisfaction and performance on asthma and diabetes disease-specific guidelines were not. When comparing clinic rankings based on HEDIS compliance sub-scores to rankings based on overall site scores, 3 of 11 clinics had rankings that differed by more than 2 positions. When comparing clinic rankings based on patient satisfaction sub-scores to rankings based on overall site scores, 4 of 11 clinics had rankings that differed by more than 2 positions.

In addition, we created sub-scores by limiting the measures used to those found on chart review alone and administrative database alone. The chart review sub-score for each site was significantly associated with overall score (correlation coefficient 0.7, $p<.05$), but the administrative database sub-score was not (correlation coefficient 0.5, N.S.).

In summary, patient satisfaction and performance on disease-specific guidelines sub-scores were not significantly correlated with overall quality scores and may need to be reported separately. Also, clinic rankings varied substantially depending on which scores were used to create them. In addition, using administrative data alone may not be a good substitute for more complete data collection efforts. Therefore, report cards that emphasize one domain of quality or use limited data collection methods may not provide accurate information on the overall quality of an ambulatory care clinic.

THE IMPACT OF PHYSICIAN PROFILING ON PHYSICIAN ATTITUDE TOWARDS QUALITY PERFORMANCE MEASUREMENT. TK Gandhi, E Schneider, HR Burstin, EF Cook, AL Puopolo, TA Brennan. Division of General Medicine, Brigham and Women's Hospital, Boston, MA.

Physician profiling is becoming increasingly common in health care organizations for performance measurement and quality improvement purposes. However little is known about the impact of these profiles on physician attitudes and behavior. We examined the relationship between physician profiling and physician attitude towards quality performance measurement.

We analyzed data from a mailed survey conducted during 1998 of 1116 primary care providers (PCPs), endocrinologists, and pulmonologists in the New England area. Of the 384 respondents, 54% received non-financial performance profiles, 59% received financial performance profiles, and 40% received both. Physicians who were PCPs, practiced in private practices/HMOs, had a larger % of clinical time per week, and had a larger % of managed care patients were more likely to receive profiles ($p<.05$).

Physicians were asked to rate how important various performance measures are for assessing a clinic's quality. There was large variation in the ratings of these measures (access to care, patient satisfaction, physician satisfaction, prevention and disease-specific guideline adherence, and HEDIS performance). For example, 77% of physicians rated access to care as very or extremely important, while only 35% considered HEDIS performance as very or extremely important. Physicians who received non-financial performance profiles rated access to care, patient satisfaction, physician satisfaction, and HEDIS performance as less important than physicians who did not ($p<.05$). However, physicians who received financial profiles did not provide significantly different ratings compared to those who did not.

In summary, physicians who receive non-financial profiles are less likely to consider quality performance measures as important for assessing a clinic's quality. As these measures are used increasingly for quality improvement initiatives, lack of physician confidence in the importance of these measures may be a significant barrier. Further research to improve existing performance measures, develop new measures, and improve physician acceptance of these measures will be critical for effective quality improvement.

REFERRAL FOR KIDNEY TRANSPLANT EVALUATION IN FOR-PROFIT AND NOT-FOR-PROFIT DIALYSIS CENTERS. PP Garg, K Frick, M Diener-West and NR Powe, Johns Hopkins University, Baltimore, MD

Attempts to distinguish quality-of-care within for-profit (FP) and not-for-profit (NFP) healthcare organizations have demonstrated mixed results. We studied the effects of dialysis facility ownership characteristics on providers' decisions to refer appropriate patients with end-stage renal disease (ESRD) for kidney transplant evaluation during a period in which capitation led to increasing financial pressure to under-refer.

In a national prospective cohort study, we followed three incident groups (1986-7, 1990, and 1993) of 20-50 year-old patients with ESRD, who lacked clinical contraindications to transplantation, to first placement on the renal transplant waiting list maintained by the United Network of Organ Sharing. Using Cox proportional hazard models, we examined the independent effect of treatment in a freestanding FP or NFP dialysis facility on access to the waiting list while adjusting for patient sociodemographic factors (e.g. gender, education, income, employment status) and system factors (e.g. facility occupancy, marketplace competition, distance to the nearest transplant center). Analyses were repeated using all patients ages 20-65 years with further adjustment for comorbid medical conditions identified from medical record review to verify the robustness of our findings.

Of 703 healthy and young, patients with new-onset ESRD, 414 (59%) were wait-listed by May 1996. 318 (45%) were treated in freestanding FP facilities, 91 (13%) were in freestanding NFP facilities, and 294 (42%) were treated in hospital-based or governmental facilities. At baseline, patients treated in NFP facilities were younger and more likely to be black, have lower income and be single than those in FP centers. For all patients, access to the waiting list improved from 1986-7 to 1993 (adjusted RH, 1.54 [95% CI, 1.15-2.07]), after adjustment for sociodemographic and system factors. While there was no difference in rates of wait-listing in FP and NFP centers for patients in the 1986-7 incident group (adjusted RH for FP vs NFP, 1.11 [95% CI, 0.67-1.84]), there was a growing disparity between these groups over time. Between 1986-7 and 1993, the adjusted RH for placement on the waiting list increased over 3-fold from 1.0 to 3.71 (95% CI, 1.75-7.89) for patients in NFP facilities (p-value for trend, <0.0001), and by less than 30% (adjusted RH, 1.26 [95% CI, 0.86-1.85]) for those in FP facilities (p-value for trend, 0.178). Findings were unchanged when we analyzed the full cohort of patients ages 20-65 years.

Freestanding NFP dialysis facilities increasingly referred appropriate patients for renal transplant evaluation despite financial disincentives, in contrast to FP centers. These results suggest that NFP providers may be more willing than FP providers to forego capitation revenue in order to deliver higher quality-of-care.

THE OUTPATIENT REFERRAL PROCESS: A FAILURE TO COMMUNICATE. TK Gandhi, DF Sittig, M Franklin, A Sussman, DG Fairchild, DW Bates. Clinical Systems Research and Development, Partners Healthcare System and Division of General Medicine, Brigham and Women's Hospital, Boston, MA.

The outpatient referral process is a critical component of ambulatory care. Previous studies have shown significant dissatisfaction with the process among both primary care providers (PCPs) and specialists (SSPs). We sought to characterize communication problems with the referral system at one institution and identify ways it might be improved.

We performed a real time e-mail survey of PCPs and SSPs (in cardiology, gastroenterology, or orthopedics) about specific referrals. One day after a patient's referral visit, the SSP was e-mailed with specific questions about that referral. At 2 and 4 weeks after the visit, the PCP was also e-mailed with specific questions about that referral. The survey was conducted from May-July 1998. Of 200 referrals studied, we received feedback from PCPs in 112 (56%) and SSPs in 105 (53%).

SSPs did not receive information from the PCP prior to the referral in 68% of referrals and 38% of these said this information would have been helpful. For all the referrals, SSPs reported that they did not know the problem to be addressed in 8% and the question to be answered in 11% of cases. In addition, they did not receive all the patient information they needed in 29% of cases. SSPs were more likely to report any of these communication problems if they had not received prior communication from the PCP ($p<.05$). There was no correlation between specialty type and receipt of letters, but SSPs in cardiology and gastroenterology were more likely to send letters than orthopedics SSPs ($p<.05$). Two weeks after the referral visit, 40% of PCPs had not received information back from the SSP, and 25% had not received information back at four weeks. Patient age, gender, race, severity of diagnosis, and managed care status did not affect whether PCPs or SSPs sent letters.

These data suggest that communication between PCPs and SSPs is suboptimal in both directions, and that important information is often omitted. Interventions such as computerized referral letter generation could facilitate physician communication and thereby improve the quality of patient care.

STATISTICAL POWER AND REPORTING OF SAMPLE SIZE CALCULATIONS IN RANDOMIZED CONTROLLED TRIALS. BJ Geiman, M Donohoe, Department of Medicine, Oregon Health Sciences University, Portland, OR.

Purpose: Statistical power and sample size calculations are important in planning and interpreting "negative" studies. Insufficient statistical power may lead one to erroneously conclude that a given intervention is ineffective when, in fact, the study may have had insufficient power to detect a clinically meaningful result (type II error). The purpose of this study is to evaluate statistical power and reporting of sample size calculations in randomized controlled trials (RCTs).

Methods: We evaluated all 174 RCTs published in *JAMA*, *Lancet* and the *New England Journal of Medicine* in 1995. Negative studies with two-group parallel design and a dichotomous or continuous primary outcome were evaluated for the presence of sample size calculations. The ability of a study to detect, with 80% power, a 25% or 50% relative difference between groups was calculated. Results were compared with a review by Moher et al[1] of RCTs published between 1975 and 1990.

Results: Fifty-five "negative" studies were identified, 34 with two-group parallel design and a dichotomous or continuous primary outcome.

Table: Statistical Power of RCTs and Results of Sample Size Calculations

	RCTs with power to detect		RCTs (%) reporting a
Year	25% difference	50% difference	sample size calculation
1975	2/16 (12%)	4/16 (25%)	0/22 (0%)
1980	2/15 (13%)	7/15 (47%)	7/22 (32%)
1985	1/15 (7%)	4/15 (27%)	10/21 (48%)
1990	6/24 (25%)	10/24 (42%)	16/37 (43%)
1995	10/34 (29%)	19/34 (56%)	36/55 (65%)

Conclusions: The frequency of sample size calculation reporting has increased in recently published trials. Still, about one-third did not report such calculations. The ability of studies to detect potential clinically significant differences between treatment and control groups has improved only modestly. A priori power calculations and utilizing larger sample sizes through multi-institutional studies could reduce the frequency of type II errors and result in more effective utilization of limited research funds.

[1] Moher D, Dulberg CS, Wells GA. Statistical power, sample size, and their reporting in randomized controlled trials. JAMA. 1994;272:122-124.

ASSESSING THE VA NATIONAL FORMULARY BY PHYSICIAN SURVEY
P Glassman, C Good, M Kelly, M Bradley, J Ogden, K Kizer. Department of Veterans Affairs, Los Angeles, Pittsburgh and Washington DC and RAND, Santa Monica.

PURPOSE: The VA National Formulary (VANF) was implemented in June 1997. We surveyed physicians approximately 1 year later to help assess the VANF's effects on patient care, access to drugs, physician workload and VA's ability to train resident staff.

METHODS: Questions, scored on a 5-point Likert scale, addressed general issues about the VANF and specific issues of choosing selected drugs within 6 drug classes. Respondents also provided demographic information. The sample population (n = 4640), based on the circulation files of *The Veterans Health Journal*, included all listed general internists (n = 2824) and convenience samples of neurologists (n = 238) psychiatrists (n=997), general surgeons (n = 429), neurologists (n = 238) and urologists (n = 152). Non-responding physicians received a second survey approximately 1 month after the first. A total of 104 physicians were declared ineligible, leaving a final sample of 4536. Comparisons across physician groups were by Chi-square analysis.

RESULTS: Overall response rate was 45% (2041/4536). Physicians were all attendings, average age 49 years, with 11 years of VA service and averaging 5 half-days per week in outpatient clinics; 73% were full-time employees; 20% practiced in other health systems with drug formularies and 13% were on VA P&T Committees. Most physicians (63%) felt that they could prescribe needed drugs; 66% agreed that patients could obtain non-formulary drugs, when necessary. About one-third (32%) of physicians disagreed that access to prescription pharmaceuticals had increased over the past year. Although 29% stated the VANF impinged on providing quality care to their own patients, fewer physicians (24%) felt that it impinged on providing quality care to other VA patients. Thirty-eight percent (38%) of physicians felt that the VANF was more restrictive than private sector formularies but only 16% felt that the VANF diminished the ability to train residents for managed care. Most physicians (60%) did not agree that the VANF added substantially to their workload. Regarding questions on drug class selections, the overall perception was that these had nominal effects on patient care. For example, choosing lovastatin and simvastatin as formulary drugs was felt to have a positive effect by 29% of physicians, no effect by 46% and a negative effect by 8%. We also noted significant differences among physicians on many issues. For example, VA physicians who worked in other health care systems with formularies were less likely to agree that the National Formulary added substantially to workload (28% vs. 38%, $P < .001$). Physicians who were familiar with the formulary had more positive views of the VANF than those who were unfamiliar (data not shown)

CONCLUSIONS: Most participating VA physicians did not perceive that the VANF negatively affected quality of patient care, access to pharmaceuticals, physician workload or resident training. Selecting specific agents in 6 drug classes was viewed as having a nominal effect on patient care.

SCREENING AND MANAGEMENT OF HYPERLIPIDEMIA IN PATIENTS WITH NEW ONSET ANGINA WITHIN A LARGE HEALTH MAINTENANCE ORGANIZATION. THE ANGINA STUDY.
AS Go,[1,2] K Phillips,[1] JV Selby[1]. [1]Div. of Research, Kaiser Permanente, Oakland, CA; [2]Dept. of Epidemiology and Biostatistics, Univ. of California, San Francisco

BACKGROUND: Screening and treatment of hyperlipidemia in patients with coronary heart disease are highly effective in reducing cardiovascular morbidity and mortality, but few studies have evaluated adherence to these recommendations and success achieved in patients with new onset angina.

METHODS: We assessed the rates of screening and treatment of hyperlipidemia, as well as achieving target LDL goals, in a cohort of patients with new onset angina within a large HMO. In the ANGiography IN Angina (ANGINA) Study, we used automated databases to identify patients with new onset angina between 7/95-12/96, defined as having inpatient or outpatient angina diagnoses, ≥2 nitroglycerin prescriptions in 1 year, or coronary angiography for suspected symptomatic heart disease. Patients with prior known angina, nitroglycerin use, myocardial infarction, congestive heart failure, coronary angiography, or revascularization were excluded. Patients screened and/or treated for hyperlipidemia within 12 months prior to angina diagnosis were also excluded. 1993 National Cholesterol Education Program recommendations were used to assess 3 modified quality measures: (1) LDL cholesterol measurement within 6 months after angina diagnosis, (2) initiation of lipid-lowering therapy within 3 months for an LDL>130 mg/dl, and (3) achieving an LDL<100 mg/dl within 12 months after starting lipid-lowering therapy in patients with an LDL>130 mg/dl.

RESULTS: Among 7,776 patients with new onset angina and no prior screening or treatment for hyperlipidemia during the previous year, only 16% had a documented LDL measurement within 6 months after the angina diagnosis. Among the 797 screened patients who had an LDL>130 mg/dl, only 26% of these patients received a lipid-lowering drug within 3 months after lipid measurement, with HMG-CoA reductase inhibitors ("statins") being the most frequently prescribed medication. Finally, in the 210 patients with an initial LDL>130 mg/dl who received lipid-lowering therapy, only 30% had a documented LDL<100 mg/dl within 12 months after starting treatment.

CONCLUSION: Within this large HMO-based sample of patients with new onset angina, we found relatively low rates of screening and treatment of hyperlipidemia. Even among treated hyperlipidemic patients, less than one third achieved target LDL goals within 1 year after initiating therapy. Patients with new onset angina serve as an excellent opportunity to decrease morbidity and mortality through more aggressive identification and treatment of hyperlipidemia.

IMPLICATIONS OF DIFFERENT STROKE RISK CRITERIA ON ANTICOAGULATION DECISION IN ATRIAL FIBRILLATION. THE ATRIA STUDY.
AS Go[1,2], EM Hylek[3], LE Henault[3], K Phillips[1], JV Selby[1], DE Singer[3]. [1]Div. of Research, Kaiser Permanente, Oakland, CA; [2]Dept. of Epidemiology and Biostatistics, Univ. of California, San Francisco; [3]General Medicine Division, Massachusetts General Hospital, Boston, MA.

BACKGROUND: Accurately identifying patients with non-valvular atrial fibrillation (NVAF) who should or should not take warfarin for stroke prevention is critical. We assessed the potential impact of various stroke risk classification schemes on this decision in a large community-based sample of NVAF patients.

METHODS: In the AnTicoagulation and Risk Factors In Atrial Fibrillation (ATRIA) Study, we used automated clinical and electrocardiographic databases to assemble outpatients with confirmed NVAF between July 1, 1996—December 31, 1997. We then compared the proportion of patients classified as "low stroke risk—aspirin acceptable" based on published criteria from the Atrial Fibrillation Investigators (AFI), American College of Chest Physicians (ACCP), and Stroke Prevention in Atrial Fibrillation Investigators (SPAF) (Table).

RESULTS: Among 13,725 NVAF patients, AFI criteria classified 14.9% as "low stroke risk," compared with 35.5% for ACCP and 46.0% for SPAF (Table) (Kappa range: 0.34-0.79). This two-to-threefold increase in the proportion of "low stroke risk" NVAF patients by ACCP and SPAF criteria was primarily due to inclusion of many elderly subjects (men and women 65-75 yr and/or men >75 yr) who had no additional clinical stroke risk factors.

Table. Proportion of "Low Stroke Risk" NVAF Patients by AFI, ACCP, SPAF Criteria (N=13,725)

	Criteria	"Low Stroke Risk" n (%)
AFI	No age>65 yr, prior stroke, hypertension, heart failure, or diabetes	2049 (14.9%)
ACCP	No age>75 yr, prior stroke, hypertension, or heart failure	4877 (35.5%)
SPAF	No women>75 yr, prior stroke, systolic hypertension, or recent heart failure	6308 (46.0%)

CONCLUSION: Our analysis reveals that the age threshold for assigning stroke risk has a dramatic impact on the decision whether to recommend warfarin in a community-based sample of patients with NVAF. Studies of large populations with many stroke events are needed to determine precisely which NVAF subgroups are truly at sufficiently low risk to forgo warfarin therapy.

REDUCING ANTIBIOTIC USE IN AMBULATORY PRACTICE: Impact of a Multidimensional Intervention on the Treatment of Uncomplicated Acute Bronchitis in Adults.
R Gonzales, JF Steiner, A Lum, PH Barrett, Jr, University of Colorado Health Sciences Center, Denver, CO, and Kaiser Permanente of Colorado.

Background: The emergence and spread of antibiotic-resistant *Streptococcus pneumoniae* has been perpetuated by the overuse of antibiotics for acute respiratory infections.

Objective: To decrease antibiotic prescribing for adults with uncomplicated acute bronchitis.

Methods: We conducted a controlled trial of a multidimensional intervention at primary care practices belonging to a group-model health maintenance organization in the Denver metropolitan area. The full intervention site received household and office-based patient educational materials, as well as clinician education that included practice profiling and detailing. The limited intervention site received only office-based educational materials. Eligible clinicians included physicians, physician assistants, nurse practitioners and registered nurses. A multivariate mixed-effects model was used to adjust for clustering of providers by study site.

Results: Antibiotic prescription rates for uncomplicated acute bronchitis were similar at all sites during the baseline period (11/96-2/97). During the study period (11/97-2/98), there was a substantial decline in antibiotic prescription rates at the full intervention site (from 73% to 47%; p=0.003), but not at the control and limited intervention sites (78% to 76%, and 82% to 77%, respectively). There were no concomitant increases (compared to control) in non-antibiotic prescriptions (inhaled bronchodilators, cough suppressants or analgesics), nor in return office visits (within 30 days of incident visit) for bronchitis or pneumonia at the full intervention site.

Conclusions: This study demonstrates that antibiotic treatment of adults diagnosed with uncomplicated acute bronchitis can be safely reduced using a combination of patient and clinician education.

THE FAILURE OF POINT OF SERVICE HEALTH PLANS TO BRIDGE THE GAP BETWEEN FEE FOR SERVICE AND HEALTH MAINTENANCE ORGANIZATIONS. [1]S Greenfield, [1]SH Kaplan, [1]IB Wilson, [1]N Terrin, [2]M Connor, [1]New England Medical Center, Boston, MA and [2]The MEDSTAT Group, Ann Arbor, MI.

In past surveys, patients have been more satisfied with Fee-For-Service (FFS) than with Health Maintenance Organizations (HMOs). Point Of Service (POS) plans have been designed to offer more choice at small costs to the patient in the expectation that satisfaction would approach that of FFS. Whether this major structural change has achieved its goals by satisfying patients and maintaining health has never been studied.

We therefore compared POS to both HMO and FFS across 11 aspects of satisfaction: access, availability, administrative hassles, choice of physicians, interpersonal style of the physicians, participatory decision making of physicians, restriction of services, customer service, time pressures, trust and a behavioral intention summary measure.

We surveyed 30,876 patients in 20 cities with POS (n=8299), HMO (n=14,488), FFS (n=8089). Patients names were obtained from their employers. Mean patient age was 48. We adjusted each of the 11 satisfaction measures for: concern with finances (co-payments, deductibles and premiums); severity of illness (using the Total Illness Burden Index); patient passivity; patient satisfaction with life circumstances; socioeconomic status and tenure with plan. We also measured physical function, role function, and disability days.

In unadjusted analyses, POS had ratings at the same level or lower than HMO for all 11 measures, and both POS and HMO were somewhat lower than FFS. After controlling for the above mentioned variables, of which financial concerns had the largest impact, differences became large (8-12 points, all over 30% of a standard deviation) for all 11 measures. Patients were much more satisfied with FFS than either HMO or POS. Physical function, role function and disability days were equivalent across all systems.

Overall, patients continue to be much more satisfied with FFS, even in 1998. POS does not appear to optimize cost and choice for consumers. Plans must be clearly differentiated in the patients' minds so that they can choose the optimal balance between plan features and cost, since at least for this age group, health appears to be similar.

THE QUALITY OF QUALITY IMPROVEMENT INITIATIVES.

AR Gupta*, LG Sandy^, SA Schroeder^. *Yale School of Medicine, New Haven, CT. ^The Robert Wood Johnson Foundation. Princeton, NJ.

Purpose: To assess the effectiveness of quality improvement initiatives.

Methods: MEDLINE searches for the period from January 1990 to June 1998 inclusive combining MeSH headings with relevant text words (eg "improvement," "strategies") were conducted as well as interviews with administrators and researchers in organizations that are engaged in improving quality across the country.

Results: Quality improvement initiatives were divided into two categories: external activities and internal strategies. Based on accountability and market forces, externally oriented activities require purchasers and consumers to value and reward quality health care. Review of the literature reveals that most purchasers base their decisions on the cost of health care, with little attention to quality. A handful of purchasers use incentives such as setting lower employee contributions for higher quality HMOs or setting aside a percentage of the premium to reward the best performing plans. The effectiveness of this financial method in improving quality is not known. Most consumers do not use quality comparisons in their choice of plans, physicians, or hospitals; they rely instead on recommendations from family members and friends. Consumers also define quality in terms of access, choice, and satisfaction, almost always focussed at the provider-level. However, it is unclear whether consumers will use this physician-specific information in their choice of providers. On the other hand, internal strategies (continuous quality improvement [CQI], rapid cycling, academic detailing) are aimed at changing the actions of health care providers, administrators, and support staff. There are a number of studies limited to single institutions that demonstrate one-time improvements using strategies that are based on trial-and-error and administrative experience. Sustainablity of these "improvements" has yet to be documented. A randomized control trial comparing various improvement strategies in different clinical settings revealed no differences in implementation of national guidelines. Moreover, studies reveal that organizations utilize personnel with limited understanding and experience to conduct quality improvement initiatives. Finally, as purchasers and consumers demand increased access and choice in health care, managed care organizations will be forced to drop exclusive provider networks and instead contract with physicians belonging to multiple plans. This will focus quality improvement efforts from the plan to the provider, creating new challenges for physicians as organizations (NCQA, AMA) attempt to accredit medical groups and individual practitioners.

Conclusions: Little is known about the quality of quality improvement initiatives. Better evaluation of the effectiveness and cost-benefit of external and internal strategies could provide a more solid foundation for policies to improve health care quality.

THE DECISION TO BEGIN HIGHLY ACTIVE ANTI-RETROVIRAL THERAPY IN PATIENTS WITH LOW VIRAL LOADS: A COST-EFFECTIVENESS ANALYSIS.

PW Groeneveld, PM Salzmann, and H Lampiris. San Francisco VA Medical Center, Department of Medicine, UC San Francisco, San Francisco, CA.

When to start Highly Active Anti-Retroviral Therapy (HAART) in the course of HIV infection is controversial, particularly for HIV infected patients with CD4 counts > 500/mm^3 and viral loads < 5,000/mm^3. We constructed a Markov Decision Analysis Model to compare the marginal cost-effectiveness of treating such patients with HAART immediately versus a strategy of delaying therapy until either a patient's viral load exceeds 5,000 copies/ mm^3 or CD4 count falls below 500 cells/mm^3.

Taking a societal perspective for cost accounting, we obtained cost data from studies on the costs of care for HIV-infected individuals as well as pharmaceutical and outpatient costs for HIV care at the University of California, San Francisco. Utility values for Health-Related Quality of Life were derived from previous studies of HIV patients. Progression of HIV infection to AIDS and death was projected from the Multicenter AIDS Cohort Study data. The long-term effectiveness of HAART therapy was extrapolated from recently released trial data. We estimated the likelihood of developing a mutant, resistant virus using published studies on the acquisition of resistant HIV in cohorts on multi-drug therapy.

Our reference case placed the annual risk of progression to AIDS at 5% without therapy; this rate was assumed to decrease to 1% on therapy. The rate of acquisition of multi-drug-resistant HIV on HAART was estimated at 1% per year in the reference case analysis. The reference case cost of asymptomatic HIV care without HAART was $1500 per year, which increased to $7500 per year once HAART commenced.

We found a marginal cost-effectiveness ratio of $12,600 per Quality-Adjusted Life Year saved for the early institution of HAART therapy in HIV infection. Sensitivity analyses indicated the most critical factors in the model were: 1) Outpatient pharmaceutical and clinic costs, 2) the rate of acquisition of resistance, 3) retardation of progression to AIDS (i.e. potency of drug therapy), and 4) the health utility discount rate.

We conclude that early treatment of HIV with HAART compares well with other medical therapies that are considered cost-effective. However, this cost-effectiveness is achieved only by combining sufficient therapeutic performance with the maintenance of outpatient costs below $12,500/year.

QUALITY OF CARE FOR WOMEN WITH COMMON BREAST PROBLEMS MANAGED BY GENERAL INTERNISTS.

IS Haas, EF Cook, AL Puopolo, HR Burstin, TA Brennan. Divisions of General Medicine, Brigham & Women's Hospital, Boston & San Francisco General Hospital, UC San Francisco, San Francisco.

The management of women with common breast problems poses several unique challenges. This is reflected by the observation that failure to diagnose breast cancer is the leading malpractice allegation in the US. The goal of this study was to examine factors associated with variation in the quality of care for women with two common breast problems: an abnormal mammogram or a clinical breast complaint.

We surveyed women undergoing mammography for screening or a clinical breast complaint at one of 10 general medicine practices in the Boston area (n = 579), and reviewed medical records. We focused on 3 outcomes: Whether a woman received an evaluation that was in compliance with a local consensus guideline, the number of days until the appropriate resolution of the breast problem (if any), and a woman's overall satisfaction with the quality of her breast care.

Overall, 68% of women were enrolled because of an abnormal screening exam and 32% because of a clinical breast complaint. 69% of women received care consistent with the algorithm. After adjustment for age, race, family history, type of breast problem, mammogram result, worry about breast cancer, and site of care, women younger than 50 (odds ratio 0.63; 95% confidence interval 0.46 – 0.94) and those with a clinical breast complaint (compared with an abnormal mammogram: OR 0.57; 95% CI 0.38 – 0.86) were less likely to receive care in compliance with the guideline and had a longer time to resolution of their problem. Women with a managed care plan were more likely to receive care in compliance with the guideline (OR 1.72; 95% CI 1.12 – 2.64), and had a more timely resolution. There were no differences in satisfaction by age or type of problem, but women who participated in a managed care plan were less likely to rate their care as excellent (42% vs. 51%, $p < 0.05$).

Our work suggests that a substantial proportion of women with a breast problem managed by generalists do not receive care consistent with a clinical guideline, particularly younger women with a clinical breast complaint and a benign mammogram result. There was no association between guideline compliance and satisfaction. These findings provide some insight into the growing liability of generalists for the care of women with breast problems.

THE ANTIBIOTIC CONVERSION DECISION IN PATIENTS HOSPITALIZED WITH PNEUMONIA: DO GENERALISTS AND SPECIALISTS THINK ALIKE?
E Halm, B Mittman, M Walsh, G Switzer, C Chang , M Fine, Mt. Sinai Medical Center, NY, NY, Univ. of Pittsburgh Medical Center, Pittsburgh, PA, RAND, Santa Monica, CA

We sought to determine the factors influencing the decision to convert from IV to oral (PO) antibiotics in patients (Pt) hospitalized with community-acquired pneumonia (CAP) As part of a guideline trial, we developed a pre-intervention written survey to assess baseline attitudes about CAP management. Physicians (MDs) rated the importance of 14 clinical factors on the antibiotic (ABX) conversion decision on a 3 point scale (not, somewhat, and very important). They also reported vital sign threshold values at which they would consider a typical Pt stable to be switched from IV to PO ABX. We surveyed 641 internal medicine (IM) attendings who treat CAP in 7 hospitals in Pittsburgh, PA hospitals (1 university, 3 community teaching and 3 community non-teaching).

We received 352 completed surveys (55% response rate): 86/128 at Univ. of Pittsburgh Medical Center (UPMC) Montefiore, 49/84 at Jefferson, 19/34 at UPMC Braddock, 55/99 at UPMC Passavant, 78/147 at UPMC Shadyside, 45/102 at St. Francis, and 20/47 at UPMC McKeesport. Overall, 79% of MDs were generalists (general IM, family, general practice) and 21% IM subspecialists (pulmonary/infectious diseases). Specialists cared for more CAP inpatients/yr (32 v. 18; p<.0001) and did more inpatient care (27 v. 12 hrs/wk; p<.0001) then generalists. Among all MDs, absence of metastatic infection was the most influential factor in streamlining ABX with MDs rating as very important "no suppurative infection" (93%) and "no positive blood cultures" (63%). Other factors rated as very important were: ability to take POs (79%), respiratory rate (RR) baseline (64%), temperature (Temp) normal (62%), 0_2 sat baseline (55%) and mental status baseline (50%). Less important factors included: general appearance (46%), heart rate [HR] (42%), etiology (39%), comorbidities (38%), and blood pressure [BP] (27%). Only 17% of MDs felt the WBC should be normal and 8% the CXR resolved. Mean threshold values at which MDs would first consider switching ABX from IV to PO were: Temp ≤ 100°F, RR ≤ 22, HR ≤ 100, 0_2 sat ≥ 90% and systolic BP ≥ 100. Opinion was split about Pts being "afebrile for 24 hours before conversion to PO ABX" (48% agreed, 5% no opinion, 37% disagreed). Only 18% of MDs felt "Pts should receive a standard duration of IV ABX." Generalists and specialists rated the same factors important to the ABX conversion decision except that more specialists emphasized CXR resolution (14% v. 7%; p=.04) and more generalists stressed BP (29% v. 17%; p=.05) and mental status (53% v. 41%; p=.07). We found no significant differences between the 2 groups in vital sign thresholds for judging clinical stability or attitudes about Pts being afebrile for 24 hours before being switched to POs or needing a standard duration of IV ABX.

Guidelines and pathways to decrease delays in streamlining ABX should take into account the importance of stable vital signs and metastatic infection. Generalists and specialists had very similar heuristics for making the ABX conversion decision.

THE GENERAL INTERNIST IN SURGICAL SUBSPECIALTY DEPARTMENTS: AN INNOVATIVE OPTION FOR SPECIALTY CARE AND PRIMARY CARE EDUCATION.
C Henry and K Lee, Department of General Internal Medicine, The Cleveland Clinic Foundation, Cleveland, OH.

As managed care increases its market share and decreases reimbursement, medical institutions must respond to pressures to control costs. At the same time, academic medical centers seek to develop methods to teach trainees about "non-traditional" ambulatory topics previously not well covered in internal medicine residencies. We describe an innovative program to involve primary care internists in providing medical care within surgical subspecialty departments.

The Cleveland Clinic Foundation is a large, multi-specialty, academic group practice. In the past, the institution has involved primary care physicians in specialty care, in the departments of Gynecology, Urology, and General Surgery (Breast Center). Anecdotally, this service has been well received by patients and has proved professionally satisfying. The presence of the generalist in subspecialty areas provides opportunities for delivering selected specialty services with greater integration with the patient's primary care physician, less secondary referrals and fragmentation of care, and unique opportunities to educate trainees in common outpatient surgical problems that could be handled by generalists.

In 1998, two additional general internists began spending half of their clinical time in two surgical subspecialty areas, the Breast Center and the Department of Otolaryngology. This presentation will describe the training process, development and scope of these practices, obstacles to success, advantages and disadvantages, educational opportunities, and financial issues encountered.

WHERE WILL WE DIE?: A NATIONAL STUDY OF NURSING HOME DEATH;
LC Hanson*, M Henderson, E Rodgman, University of North Carolina, Chapel Hill, NC.

Purpose: We analyzed a nationally representative sample of decedents to describe temporal trends in location of death, and the characteristics of persons who die in nursing homes compared to other sites.

Methods: We conducted a secondary analysis of the 1986 and 1993 National Mortality Follow-back Surveys, based on a 1% sample of adult US death certificates linked to interviews with surviving next-of-kin. Deaths from trauma and perinatal causes were excluded, leaving study samples of n=13,676 (1993) and n=16,678 (1986).

Results: From 1986 to 1993 the probability of dying in a nursing home increased (18.7% to 20.0%, p<.05). Sixty-six percent of persons who consider the nursing home their usual residence died there in 1993, and the probability of death in the nursing home increased with length of stay. Nursing home decedents were disproportionately aged, white, unmarried, and in poverty. Their personal health care costs for the last year of life more often exceeded $10,000 (19% vs 5%, p<.05). Thirty-nine percent of nursing home decedents were totally dependent in ADLs, and 43% had cognitive impairment some or all of the last year of life. Living will use was high in nursing home deaths (44%) but pain medication use was low compared to other sites.

Conclusion: Nursing homes are a more common site of death, and unique social and functional characteristics of nursing home decedents influence their terminal care needs.

HOUSESTAFF CONTINUITY DECREASES LENGTH OF STAY.
JE Herbers, GL Barbour, Medical Service, Veterans Affairs Medical Center, Washington DC.

BACKGROUND: Limited past research has suggested that post-call transfer of patient care responsibility between house officers contributes to increased length of stay (LOS). Increased residency training in the outpatient setting necessitated a reconfiguration of inpatient coverage, offering an opportunity for a controlled evaluation of two approaches to the assignment of patients admitted after-hours. OBJECTIVE: To determine whether post-call transfer of patient care adversely affects overall LOS. DESIGN: Prospective controlled trial comparing two methods for assigning patients to intern-resident teams. SETTING: The four medical primary care wards of the Washington VA Medical Center, a tertiary teaching hospital of the George Washington and Georgetown University internal medicine residency programs. Residents are assigned to one of four firm wards. PATIENTS/ PARTICIPANTS: After exclusion of patients boarding as overflow, all 399 admissions (352 patients) during the nine-week study period were analyzed. INTERVENTIONS: Residents were assigned to one of the four wards, uniformly distributed between the two residency programs. On two of the wards all patients admitted by a resident remained with that resident for the duration of hospitalization unless the resident rotated off-service (continuity group). On the other two wards patients remained with their admitting resident only if both resident and patient were in the same primary care group; otherwise patients were "handed-off" to one of the other group's residents for the duration of hospitalization (hand-off group). MEASUREMENTS AND MAIN RESULTS: 76 patients (79 admissions, mean age 64) were admitted by residents who subsequently handed-over responsibility for their care. 276 patients (320 admissions, mean age 65) were admitted by residents who continued with them. Median LOS was five days in the hand-off group and three days in the continuity group ($p < 0.01$). CONCLUSION: Transfer of care to a different resident post-call adversely affects LOS. Approaches to nighttime, weekend, and holiday coverage that entail loss of provider continuity need to be evaluated for possible negative consequences.

CONFIRMATION OF UNSTABLE ANGINA CASES SELECTED BY ICD-9 CODES: IMPACT OF DEMOGRAPHIC AND PATIENT CHARACTERISTICS.
G Heudebert, J Allison, S Baker, R Centor, F Sun, H Hood, C Kiefe. Dept. of Medicine. University of Alabama- Birmingham.

Background: Detailed clinical information obtained from medical record abstraction is commonly done for administrative, billing, and research purposes. This form of chart abstraction is resource-intensive and often hampered by the inability to accurately identify the appropriate medical records for abstraction via ICD-9 codes. We report the influence of patient demographics and hospital characteristics on the yield of ICD-9 codes for patients with unstable angina (UA).

Methods: Centrally trained abstractors reviewed medical records of Medicare patients hospitalized at 14 institutions in Alabama for calendar years '95 and'97. Potential cases of UA were identified by a stratified sampling scheme of ICD-9 codes obtained from claims data. The scheme included coded admission and principal as well as secondary discharge diagnoses.ICD-9 codes were selected to represent UA as well as "neighboring" diagnoses such as subendocardial MI and coronary atherosclerosis. An AHCPR / UA guideline-based algorithm confirmed the diagnosis of UA. This algorithm contained information on the character of chest pain (pain, location, radiation), modifiers of chest pain (exercise, evocation), and detailed electrocardiographic information. Proportions of confirmed UA cases were compared by risk category of UA, sex, race, and hospital characteristics such as size, location and presence of a cath lab.

Results: A total of 3128 charts were identified as candidates for a possible diagnosis of UA. Of these charts, a final diagnosis of UA was confirmed in 1727 (56.4%, range for all hospitals 22% to 96%). Yield did not change between '95 and '97 (57.2% vs. 55.2%).

Hospital Characteristics (% yield)			Patient Characteristics (% yield)		
Location*	Rural	88	Risk*	High	93
	Urban	52		Low	4
Cath Lab*	No	88	Sex*	Female	63
	Yes	52		Male	49
Size*	Small	81	Race	Black	53
	Medium	72		White	56
	High	37			

*: statistically significant differences.

The gender difference persisted after stratifying by race.

Conclusions: There is wide inter-hospital variability in the coding of UA by location, size, and cath lab availability. There is also a higher coding yield among women, which is independent of race. This gender difference may be beneficial to women only if appropriate management is offered to these individuals.

RELIABILITY OF PEER REVIEW IS NOT IMPROVED BY CASE DISCUSSION.
TP Hofer, S Bernstein, S DeMonner, RA Hayward, VA HSR&D Field Program and Division of General Medicine, Univ. of Michigan, Ann Arbor, MI.

OBJECTIVES: Peer review is used to make final judgments about quality of care in almost all quality assurance activities. In many cases disagreements are resolved by a second peer review and discussion between the two reviewers. We assessed the impact of discussion between two reviewers on the reliability of peer review.

METHODS: A group of 12 board certified physicians reviewed a total of 379 charts of patients who developed severe laboratory abnormalities while in the hospital (hypokalemia, hyperkalemia, elevated creatinine and digoxinemia) using structured implicit review instruments assessing the quality of care relating to each particular laboratory abnormality. At the end of each review there was a single summary question asking the reviewer to assess the overall quality of care as it related to the management of the laboratory abnormality on a 6 point scale. The scale was collapsed to three categories (substandard to poor quality, borderline and average to superior quality).

The physician reviewers worked in pairs and independently rated each chart. At the end of the session they were unblinded as to which charts were part of the reliability sutdy. They then discussed any differences of opinion and re-rated the chart. If the discussion pointed out omitted information or changed either reviewers' opinion they were told that they should modify their original rating. They were instructed not to change their rating if it arose from honest disagreement unresolved by discussion.

We compared weighted kappas for agreement on overall quality before and after discussion for each pair. We then calculated kappas for agreement of the pair averages across separate pairs of reviewers before and after discussion to see if pair discussion increased the reliability of pair average ratings.

RESULTS: 13% of all ratings were substandard or poor care, 37% were borderline and 50% were good to superior care. The pair agreements on quality had an average kappa of .34. After discussion the pair agreement increased to .56. However the agreement of the average rating between the 6 pairs of reviewers was .28 before discussion and .23 after discussion.

CONCLUSIONS: Having two physicians discuss a chart that they are reviewing to point out overlooked information or allow for reconsideration of opinions improves the agreement between those two physicians but does not improve the overall reliability of their ratings.

DOES INVESTOR OWNERSHIP COMPROMISE HEALTH PLAN QUALITY?
DU Himmelstein, S Woolhandler, I Hellander, SM Wolfe. Department of Medicine, Cambridge Hospital/Harvard Medical School, Cambridge, MA; Public Citizen Health Research Group, Washington, DC; and Physicians for a National Health Program, Chicago, IL.

Background Between 1985 and 1997, the proportion of HMO members enrolled in investor-owned plans rose from 26% to 62% and the proportion in group and staff model plans declined sharply. Yet most research on quality of care in HMOs has examined not-for-profit group or staff model plans.

Methods We compared quality of care, patient satisfaction and financial indicators for investor-owned and not-for-profit HMOs using 1996 data collected by the National Committee for Quality Assurance. Quality and financial indicators were available for 329 plans representing 54% of total U.S. HMO enrollment. Patient satisfaction surveys were available for 200 plans.

Results Investor-owned plans had lower scores for all quality indicators and for 22 of the 23 satisfaction measures. The only two measures of the quality of care for chronic medical illnesses showed the largest differences; among patients discharged from the hospital after a myocardial infarction, 59.2% of eligible patients in investor-owned HMOs received a beta blocker vs. 70.6% in not-for-profit plans ($p < .001$); only 35.1% of diabetics in investor-owned plans had received an annual eye exam, vs. 47.9% in not-for-profit plans ($p < .0001$). Investor-owned plans had substantially lower rates of outpatient follow-up after psychiatric hospitalization; immunizations for 2 year olds and for adolescents; mammography; Pap smears; and advising smokers to quit. In investor-owned plans, 53.9% of enrollees were completely or very satisfied with their plan vs. 61.8% in not-for-profits ($p < .0001$).

Quality indicators were consistently higher for staff and group model HMOs and for plans in New England. Satisfaction measures were not consistently correlated with model type. In multivariate analyses controlling for model type, the method each HMO used to collect data and geographic region, investor ownership remained a consistent predictor of lower quality and worse satisfaction.

Total costs were the same at investor-owned and not-for-profit plans, but overhead and profits consumed a larger share in the investor-owned sector; 19.4% vs. 13.1% of premiums.

Conclusions The investor-owned HMOs favored by the market provide lower quality care and worse patient satisfaction than not-for-profit plans. Our findings are particularly disturbing since previous research has shown that even not-for-profit HMOs produce worse outcomes for the sick poor and elderly than does fee-for-service care.

THE DIRECT-TO-CONSUMER MARKETING OF PRESCRIPTION DRUGS AND HEALTH SERVICES UTILIZATION.
Matthew F. Hollon, Division of General Internal Medicine, Department of Medicine, University of Washington, Seattle, Washington.

Purpose: Over the last decade the pharmaceutical industry has devoted increasing resources to direct-to-consumer (DTC) marketing of prescription drugs. Despite concern that this may affect health service utilization, the impact of DTC marketing has undergone limited independent evaluation. This study takes the first step in evaluating the impact of DTC marketing by looking for an association between patient exposure to ads for prescription drugs used to treat osteoporosis and subsequent bone density measurement.

Methods: The study uses a case-control design. A questionnaire assesses exposure to advertisements in women presenting for bone density measurement by asking them if they are familiar with any of a list of prescription drugs (including two osteoporosis drugs advertised directly to consumers) and if so how they first became familiar with the drugs (e.g. from an advertisement, from a doctor, etc.). Controls, women who have not undergone bone density measurement and matched on health care provider and age, complete the same questionnaire. The questionnaire also asks about other variables including risk factors for osteoporosis. Logistic regression provides an estimate of the adjusted odds ratio of receiving bone density measurement after exposure to advertisements for prescription drugs used to treat osteoporosis.

Results: With respect to the osteoporosis drugs, 27.1% of women were familiar with raloxifene and, of these women, 52.6% based their familiarity on advertising, while 28.6% of women were familiar with alendronate and, of these women, 25.0% based their familiarity on advertising.

The adjusted odds of receiving bone density testing, controlling for menopausal status, total number of osteoporosis risk factors, level of education, household income, marital status, health status, health worry, and other health tests, if a women was familiar with either of the two osteoporosis drugs was 6.31 (95% CI, 0.69, 57.6, p = 0.10). The adjusted odds of receiving bone density if a women was familiar with either of the two osteoporosis drugs based on advertising was 3.17 (95% CI, 0.17, 58.8, p = 0.44).

Statistically significant predictors of receiving bone density measurement in the model included a subject's number of risk factors for osteoporosis and level of education entered as a continuous variable. The odds ratio for receiving bone density testing for each additional risk factor was 2.36 (95% CI 1.15, 4.81) and for each step up in level of education was 6.68 (95% CI 1.96, 22.72).

Conclusions: This study demonstrates that independent evaluation of the impact of DTC marketing of prescription drugs using available observational evidence is possible. The results', which suggest a possible association between exposure to advertisements for drugs used to treat osteoporosis and subsequent bone density measurement, failure to reach statistical significance may be due to limited statistical power. This preliminary study supports further independent research into the impact of DTC marketing of prescription drugs on health services utilization.

TO TEST OR NOT TO TEST? A SURVEY OF PERIOPERATIVE MANAGEMENT STYLES. L Inouye, M Mackrell Gaglione, JL Jackson, R Hawkins, Portsmouth Naval Medical Center, Portsmouth VA

Practice guidelines are often not widely, rapidly or uniformly implemented after publication. Moreover, guidelines from different organizations often vary substantially. There are two recent guidelines for perioperative evaluation with significantly different recommendations. The American College of Cardiology-American Heart Association (ACC/AHA) suggests greater preoperative testing than does the American College of Physician-American Society of Internal Medicine (ACP-ASIM) guidelines. Additionally, while the ACP-ASIM guidelines recommend perioperative beta-blockade for patients with cardiac risk factors, the ACC/AHA guidelines do not emphasize this. Our purpose was to determine the perioperative practices among physicians routinely performing these evaluations in the face of conflicting guidelines.

Methods Survey of residents, staff and fellows in Medicine, Cardiology and Anesthesia at two tertiary medical centers. Participants were given several clinical scenarios designed to highlight differences between guideline recommendations and asked to make pre- and perioperative evaluation and management decisions.

Results 95% of the 98 participants reported familiarity with at least one guideline, with 58% reporting understanding of both. 33% reported following ACC/AHA guidelines, 35% ACP-ASIM and 10% both. However, in the clinical scenarios, only 33% of ACC/AHA and 35% of ACP-ASIM "followers" consistently adhered to published guidelines. 52% of respondents recommended perioperative beta-blockers in patients with risk factors and another 25% used them in patients with non-invasive tests consistent with ischemia. Cardiology staff and fellows reported following ACC guidelines more often than general internal medicine staff and fellows, but neither were more consistent in guideline adherence. 41% recommended more frequent postoperative ECG evaluation in patients with abnormal non-invasive preoperative evaluation.

Conclusion While the majority of participants reported familiarity with one or both guidelines, nearly 2/3 were inconsistent in the application of either guideline in our clinical scenarios. Despite a lack of evidence supporting more frequent ECG monitoring, nearly half increased the frequency of postoperative ECG assessment in patients with preoperative testing suggesting ischemia. Implementation of perioperative management guidelines is complicated by conflicting recommendations.

EVALUATING SMOKING CESSATION EFFORTS FOR PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE. DG Jolicoeur, GF Salman, SD Holcomb, M Salmeron, EF Ellerbeck, and JS Ahluwalia, Departments of Preventive Medicine, Internal Medicine and Family Medicine, University of Kansas School of Medicine, Kansas City, KS.

The purpose of this study was to examine the processes and structure of care in a university-based primary-care clinic, for patients with chronic obstructive pulmonary disease (COPD) who smoke.

Telephone interviews were conducted with 31 patients diagnosed with COPD. Subjects were asked to recall if, at their last visit, their physician inquired about smoking, advised them to quit and offered help with cessation. Chart reviews on these patients were conducted to determine documentation of smoking status, advice to quit and assistance with cessation. Using the Agency for Health Care Policy and Research (AHCPR) guidelines on smoking cessation, 11 questions relating to office systems were identified and used to evaluate this clinic. These questions addressed staff/physician training and tasking, charting systems, patient aids, feedback and monitoring.

Of the 31 patients interviewed, 18 (58%) stated that they were current smokers. Of the 18 current smokers, 14 (77%) reported being asked about smoking, 12 (67%) recalled being advised to quit, and 6 (33%) recalled being given assistance with how to quit. Chart reviews of these 18 smokers revealed 11 (61%) were documented as current smokers and 8 (44%) had been advised to quit. During the review of office systems three of the eleven issues examined were currently being addressed in some manner: charts contained problem lists with an area specifically designated for documentation of tobacco use; patient education materials were available at the nurses station; and an on-site smoking cessation program was available. The following were found to be insufficiently addressed: formal training of staff/physicians, assignment of tasks, recording smoking status at each visit, recording readiness to change, recording assistance with cessation, referral lists, a program for patient follow-up and a system for measurement and feedback.

Identification and counseling of smokers is inadequate in some primary care settings. A systematic review of resources in these settings can identify areas to target for quality improvement activities.

INCREASING EFFICIENCY IN PRIMARY CARE CLINICS: THE ORIENTATION CLINIC. S Jain, CL Chou, Division of General Internal Medicine, VA Medical Center, University of California, San Francisco, CA.

BACKGROUND: Primary care clinics often report high rates of failed appointments for new patients, resulting in wasted resources, longer wait times for initial appointments, and reduced clinic efficiency.

OBJECTIVE: We sought to assess the effect of an orientation clinic for new patients on their subsequent no-show rates to primary care providers.

METHODS: Previously, patients referred for primary care at the VA Medical Center in San Francisco were scheduled directly to see a new provider. Starting in May 1998, these patients were scheduled for a nurse-run orientation clinic, during which the purpose and operation of the clinic were discussed in a group setting. Initial health maintenance information and screening were also provided. Patients who attended the orientation clinic were subsequently scheduled for an appointment with a primary care provider.

RESULTS: Before the start of the orientation clinic, the no-show rate for new patients to see their primary care provider was 45% (166/368; 95% confidence interval 40-50%). After the orientation clinic was initiated, the no-show rate for that clinic was 42% (210/499; 95% confidence interval 37-47%). Of those patients who attended the orientation clinic, 25% (71/289; 95% confidence interval 20-30%) failed to attend an initial visit with a primary care provider, for a cumulative no-show rate of 56%. Patients who attended the orientation clinic had a significantly lower no-show rate to a new provider than before the intervention ($p<0.0001$); however, after the institution of the orientation clinic, the total number of patients who missed an initial clinic visit with a provider increased from 45% to 56% ($p=0.001$).

CONCLUSIONS: The use of an orientation clinic is a novel, effective way to increase clinic efficiency by minimizing failed appointments to new primary care providers. However, fewer patients scheduled for the orientation clinic ultimately attended an appointment with a primary care provider.

THE USE OF UNANNOUNCED STANDARDIZED PATIENTS IN QUALITY-OF-CARE RESEARCH. TV Jones and SH Bunner, Section of General Internal Medicine, The Milton S. Hershey Medical Center, Department of Medicine, Penn State College of Medicine, Hershey, PA.

Purpose: To determine the accuracy, reliability, and validity of unannounced standardized patients (SPs) in studies on quality-of-care provided by health professionals, and to compare the strengths and limitations of SPs with other methodological approaches.

Methods: A literature search of studies published from 1966 through March 1998 was performed, using MEDLINE, CINAHL, ERIC, AND PsychLIT, manually searched bibliographies of articles identified, and consulted experts. Only those studies that utilized unannounced SPs to measure clinical behavior or decision-making of health professionals in actual practice settings were included; studies in which clinicians were made aware of the identity of SPs and studies of trainees were excluded. Studies were reviewed for the rigor of their methods, and determinations of accuracy of SPs' role portrayals and recording of behaviors, and reliability and validity.

Results: Thirty-seven articles were identified which described 30 studies in which unannounced SPs were utilized. Although measured infrequently, results from 5 studies showed SPs could accurately portray case scenarios, with simple agreement ranging from 93-96% and kappa values from 0.82-0.93. SPs were similarly accurate in recording of behaviors, with simple agreement ranging from 77-100% and kappa values from 0.85-0.91. Kappa values for intra-SP and inter-SP reliability ranged from 0.70-1.0 and 0.78-1.0, respectively. As evidence of face validity, rates for detection or suspicion of persons as SPs were low, ranging from 0-26%.

Conclusions: Despite limitations, properly designed studies using unannounced SPs offer a potentially powerful means for assessing clinical behavior and decision-making of health professionals, and ultimately a critical determinant of quality-of-care. However, more studies are required to further refine and strengthen the standardized patient methodology.

USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE BY OLDER ARTHRITIS PATIENTS. PJ Kaboli, BN Doebbeling, KG Saag, GE Rosenthal. Univ. of Iowa and Iowa City VAMC, Iowa City, IA; Univ. of Alabama, Birmingham, AL.

Objective: Arthritis is prevalent in older patients and a common reason for seeking medical care. However, few studies have examined the use of complementary and alternative medicine (CAM) in older patients with arthritis.

Methods: We conducted a population-based telephone survey of patients 65 years or older in 10 urban and 12 rural counties in Iowa. 480 patients with self-reported arthritis were identified. The survey obtained demographics, arthritis symptoms, co-morbidities, access to care, and use of traditional and CAM providers and treatments.

Results: The mean age of the study sample was 75 yrs (range 65-95); 75% were women, 96% were white, and 53% lived in a rural area. 330 (69%) reported ever seeing a traditional provider for arthritis (45% in the past year). 141 patients (29%) reported ever seeing a CAM provider for arthritis (17% in the past year). The 141 patients reported visits to chiropractors (n=126), acupuncturists/massage therapists (n=16), or other CAM providers (homeopaths, faith healers, hypnotists, or iridologists; n=21). Patients who saw a chiropractor were more likely to see another CAM provider than patients who did not see a chiropractor (17 vs. 4% p=.001). Factors predictive of seeing a CAM provider included poorer self-assessed health (fair/poor= 37%; good=29%; very good/excellent=24%; p=.02) and higher numbers of arthritis symptoms (0 symptoms, 16%; 1-3, 28%, ≥4, 35%; p=.02). Patients who reported seeing a general or family practitioner for arthritis care were also more likely to see a CAM provider than other patients (33 vs. 24% p=.03), as were patients who reported seeing a podiatrist (47 vs. 28% p=.007) or a physical or occupational therapist (39 vs. 27%; p=.02). However, patients who saw internists, rheumatologists, or surgeons were not more likely (P>.2) to see a CAM provider. Other demographic and clinical factors including age, sex, marital status, education, comorbidity, insurance, employment status, rural residence, prior joint surgery, or use of arthritis medications were not associated (P>.1) with seeing a CAM provider. In a logistic regression model, arthritic symptoms and use of a podiatrist were independently (P<.05) related to seeing a CAM provider. Further analyses found that the proportion of patients using alternative therapies for arthritis (74% ever and 64% in past year) was substantially higher than the proportion seeing CAM providers. Alternative therapies reported by patients included: prayer (n=203), topical creams (n=179), exercise (n=170), relaxation or biofeedback (n=47), diet or enzyme therapy (n=28), jewelry (n=24), meditation or imagery (n=22), herbs (n=20), spa (n=20), mail-order products (n=10), and energy healing (n=3).

Conclusions: A substantial proportion of older patients with arthritis reported seeing a CAM provider, while a majority used CAM treatments. Patients with poorer self-assessed health, greater symptom burden, and who saw general or family practitioners for arthritis care were more likely to see a CAM provider, although other demographic and clinical factors did not differentiate the use of a CAM provider.

ARE INTERNISTS EQUIPPED TO CARE FOR PREGNANT WOMEN WITH MEDICAL PROBLEMS? R. Khurana, R. Powrie, K. Rosene-Montella. Division of Obstetric and Consultative Medicine, Department of Medicine, Women & Infants' Hospital, Brown University School of Medicine, Providence, Rhode Island.

PURPOSE: To determine how commonly, how well, and with what degree of comfort internists provide care to pregnant women.

METHODS: A self-administered survey was mailed to 250 randomly selected board certified internists in Connecticut. The survey consisted of questions regarding the management of several simple clinical scenarios in pregnant patients and included questions about the level of comfort the internist felt in managing the problem. A control survey with identical case scenarios in non-pregnant patients was sent to a further 250 Connecticut internists. All surveyed internists were also asked the number of pregnant patients they see in a year.

RESULTS: Eighty surveys were returned. Of the respondents, 41% see more than 10 pregnant patients yearly and 19% see more than 20 pregnant patients yearly. Respondents reported feeling less comfortable with the pregnant cases than with the non-pregnant controls. For investigation of a classic case of pulmonary embolus, only 41% of the internists correctly ordered a ventilation perfusion (V/Q) scan for the pregnant patient compared to 73% who ordered it for the non-pregnant woman. For a pregnant woman with a migraine, 26% of the internists chose sumatriptan or a non-steroidal anti-inflammatory drug, both of which have known adverse fetal effects. Fifty-one percent of the surveyed internists chose to wait three weeks to review glycemic control of a type 2 diabetic in the first trimester despite the known association of hyperglycemia with teratogenesis. Thirty-one percent of the internists chose ciprofloxacin (a potential teratogen) and 21% chose penicillin to treat gram negative pyelonephritis in pregnancy.

CONCLUSIONS: The internists we studied see a significant number of pregnant patients and frequently mismanaged the medical problems in the case scenarios presented to them. Our findings suggest that there is a need for internists to be better equipped to care for medical illness in pregnancy.

TRAINING INTERNAL MEDICINE RESIDENTS TO PROVIDE PRIMARY CARE FOR HIV-INFECTED PATIENTS: RESULTS OF A RANDOMIZED CONTROLLED TRIAL. SA Keitz, TL Box, JA Bartlett, E Z Oddone, Duke University Medical Center, Durham VA Medical Center, Durham, North Carolina.

Objectives: Residency training in the principles of primary care for HIV-infected patients is under-emphasized. Therefore, we trained internal medicine residents to provide primary care for HIV-infected individuals in their outpatient general medicine clinic (GMC) and compared this to care provided in the infectious diseases clinic (IDC).

Methods: We conducted a single site trial in which 214 consecutive HIV-infected patients presenting for primary care were randomized to GMC (n=109 patients) or IDC (n=105 patients). We measured hospitalization rates, lengths of stay, health-related quality of life, preventive and screening measures including tuberculosis (TB) screening, prophylaxis for pneumocystis carinii pneumonia (PCP), pneumococcal vaccination and discussions regarding advance directives for a period of one year following randomization. The training module consisted of the implementation of evidence-based clinical practice guidelines, a 10 session didactic series for study residents and quarterly case-based conferences jointly run by generalist and specialist faculty.

Results: Patients randomized to GMC and IDC were similar with respect to age, intravenous drug use and gender. GMC patients were more likely to be African-American (85% vs 71%; p=0.03) and had lower CD4 counts than IDC patients (262±269 vs 329.2±275.3; p=0.05). The educational intervention was effective in facilitating screening and prevention in the GMC. Rates for the appropriate administration of PCP prophylaxis, TB screening and pneumovax were high and similar in both groups. Documentation of advance directives for each group was similar as well.

The patients randomized to GMC and IDC made a similar number of visits to their respective clinics during the follow up period (4.3±3.8 vs. 4.4±4.6). However, GMC patients made a greater number of visits to the ER than did IDC patients (1.5± 3 vs. 0.6 ± 1.4; p=0.016). In total, 67 patients were admitted to the hospital during the study period representing 32% of GMC patients vs 21% of IDC patients (p=0.066). Annual admission rate for GMC patients was higher than for IDC patients (0.75±1.7 vs. 0.3±0.7; p=0.01) and average length of stay was higher for GMC patients (7.8±6.3 vs 5.7±3.8 days; p=0.038). In analyses which adjust for potential imbalances in baseline variables, these differences remain.

Conclusions: Despite targeted education, differences in utilization favored patients randomized to IDC. The delivery of primary care is necessary but not sufficient to lead to changes in health care utilization. Other factors such as MD experience or clinic structure may account for these differences.

VARIABILITY IN THE CARE FOR PATIENTS WITH UNSTABLE ANGINA: ARE SECULAR TRENDS PREDICTED BY HOSPITAL CHARACTERISTICS? CI Kiefe, JJ Allison, RM Centor, G Heudebert, E Berner, E Funkhouser, NW Weissman. Department of Medicine, University of Alabama at Birmingham, Birmingham, AL.

Background: Evidence-based guidelines for the management of Unstable Angina (UA) were published in 1994, but no statewide effort to disseminate these took place in Alabama. Because considerable resources are being invested in such large-scale efforts nationwide, we ascertained whether adherence to guidelines improved from 1995 to 1997, and whether certain hospital characteristics might predict such improvement, even without large-scale improvement efforts.

Methods: For this observational study, we designed a stratified random sampling scheme based on ICD-9 codes to identify from Medicare claims data potential cases of UA and "neighboring diagnoses". For each of 14 hospitals in Alabama, this scheme retrospectively identified a total of 1972 records for '95 and 1156 for '97. Centrally trained abstractors reviewed the complete medical records. We used guideline-based criteria for diagnosis of UA and for patients to receive, if indicated, heparin and beta-blockers during hospitalization, and aspirin (ASA) within 24 hours of admission.

Results: The number of confirmed UA records per hospital varied between 38 and 223 (mean 126, SD 56). Performance varied significantly across hospitals for each medication and year (all chi-square p<0.005 except beta-blockers in '97, p=0.06; coefficients of variation ranged from 33 to 58%). Mean (weighted by number of patients in each hospital with indication), lowest and highest performance across the 14 hospitals, and weighted mean performances stratified by hospital size were:

	Beta-blockers		Heparin		ASA 1st 24 hrs	
	1995	1997	1995	1997	1995	1997
All Hosp (N=14), %	32	40	40	38	56	56
Lowest - Highest, %	14-30	7-58	0-61	14-61	15-78	18-79
Large Hosp (N=7), % *	33	45	38	40	59	65
Small Hosp (N=7), % *	30	34	41	36	49	43

**Large Hosp: hospitals with 200+ beds; Small Hosp: hospitals with < 200 beds.*

Similarly, the single teaching hospital, and the 10 hospitals with coronary angiography facilities performed better in 1995 and had improved more by 1997.

Conclusions: There is considerable inter-hospital variability and room for improvement in the management of UA. In the absence of statewide guideline implementation projects, care showed modest improvement over a two-year period, but this improvement was marked only in hospital categories which already performed better at baseline. The evaluation of large-scale improvement efforts needs to account for secular trends. Such efforts may be most effective when targeting certain hospital categories with poorer baseline performance, since these may exhibit the least "spontaneous" improvement.

HOSPITALISM AND INTERNISTS' JOB SATISFACTION: DIFFERENT STROKES FOR DIFFERENT CLOAKS.

TR Konrad, S Saint, M Linzer and SGIM Career Satisfaction Study Group

Purpose: To examine how the pattern of inpatient vs. outpatient care provided by community based general internists is associated with their satisfaction with various aspects of their work.

Methods: Cross-sectional observational design of a nationally representative sample of 416 general internists in full-time community practices from the Physician Worklife Survey. Internists were categorized by pattern of inpatient care: (1) *exlusively ambulatory* (no inpatient care); (2) *mostly ambulatory* (spending less than a quarter of their time in hospital care; (3) *mixed* (between 1/4 and 1/2 time working in the hospital; and (4) *hospitalists* (over half of time in the hospital). We expected a curvilinear (U-shaped) relationship between time spent in the hospital and level of satisfactions with certain facets of work: administrative burden, clinical autonomy, personal time.

Results: Hospital care is an important but not dominant portion of most internists' practice. Only one in six internists was exclusively ambulatory; one in twenty was a "hospitalist." Significant differences in satisfaction across the 4 groups were found for 5 of the 10 job facets. Internists who hospitalize, but whose inpatient practice is less than half their time, experienced more gratification from their relationship with the community than their ambulatorian or hospitalist colleagues. They were less satisfied with the amount of control over their free time, administrative responsibilities, and autonomy than were those who practiced exclusively out of a hospital or mostly in a hospital. Satisfaction with the adequacy of clinical resources was positively and monotonically related to time spent in the hospital. Most relationships persisted after controlling for confounders.

Conclusions: A division of labor is emerging between ambulatory and inpatient general internists. Neither group is more or less satisfied overall, but sources of job satisfaction do vary. Internists working exclusively in outpatient or predominantly in inpatient settings, may have simpler administrative environments, but more challenges to continuity of care. More research is needed on the evolution and structure of this division of labor and effects on care.

COST OF GENETIC COUNSELING AND TESTING FOR BRCA1 AND BRCA2 BREAST CANCER SUSCEPTIBILITY MUTATIONS.

WF Lawrence, BN Peshkin, W Liang, C Lerman, C Isaacs, J Mandelblatt. General Internal Medicine, Cancer Prevention and Control, and Cancer Genetics, Georgetown University, Washington, DC.

Purpose: Counseling and predictive testing for the recently isolated BRCA1 and BRCA2 breast cancer susceptibility genes is currently performed in research settings by trained genetic counselors. As testing becomes more readily available, counseling and testing may extend to primary care. However, the costs of counseling and testing have not been explored in any setting. We examine the societal costs of providing counseling and testing in different settings to women at high risk for BRCA1/2 mutations.

Methods: In a research program, counselors prospectively monitored the time necessary to provide counseling and results disclosure. A time-motion study was used to determine the ratio of amount of time spent on phone calls, preparation, and documentation to the time spent counseling. Costs of the counselors' time and general internists' time were estimated using national rates. Study participants were surveyed to determine their travel time and need for dependent care during counseling. Participant time costs were calculated using the median wage for women aged 45-54 years (which includes the mean age of the study cohort of 47.3 years, s.d. 12.2). Ancillary personnel time was estimated by counselors. Non-personnel costs included the costs of office space. The test cost was calculated using the charge for full BRCA1/2 gene sequencing (Myriad Genetics, Inc.) multiplied by a cost-to-charge ratio of 71%.

Results: Costs listed in the Table are divided into cost of genetic counseling (GC) and the cost of testing and disclosure of results (TD). Counselors spent an average of 4.0 hours in GC (including calls and documentation) and 1.6 hours in TD. GC without testing costs $205. If TD is added to GC, then the total costs are $2050. If primary care internists spent 25% of the time spent by counselors to provide GC and TD, total costs would decrease by $28.

Cost	GC	TD
Counselor time	$112	$44
Participant costs	$78	$72
Testing		$1714
Clerical, Phlebotomy, etc.	$15	$15
Total	$205	$1845

Conclusions: While the cost of testing and counseling exceeded $2000, the counseling portion of the cost comprised only 16% of the total. Physician counseling, even if more brief than counseling by genetic counselors, does not appreciably change costs. If testing becomes more common, costs would be expected to decrease due to economies of scale. The cost-effectiveness of counseling and testing for BRCA1/2 genes in different settings is an important area for future research.

DOES SUBOPTIMAL IN HOSPITAL MANAGEMENT OF PATIENTS WITH CONGESTIVE HEART FAILURE PREDICT EARLY UNPLANNED READMISSION ?

MP Kossovsky, FP Sarasin, TV Perneger, F Bolla, P Chopard, and JM Gaspoz. Department of internal medicine, Groupe de recherche et d'analyse en systèmes et soins hospitaliers (GRASSH) and Medical Director's Office, Geneva University Hospitals, Geneva, Switzerland.

Purpose: To examine if suboptimal care of patients admitted for congestive heart failure (CHF) is linked with early unplanned readmission.

Methods: Design: case-control study. Population: patients hospitalized with a principal diagnosis of CHF, discharged alive. Source of information: chart review. Cases: patients with an unplanned readmission within 31 days of discharge. Controls: random sample of patients with a similar diagnosis but no readmission. Predictors: explicit criteria of quality of processes of care (Ashton et al., Med. Care 1994;32:755-70), grouped into 3 scores: admission work-up; evaluation and treatment during the stay; readiness for discharge.

Results: 91 cases and 351 controls were included in the study. Explicit criteria of quality of processes of care regarding admission work-up or evaluation and treatment during the stay had no relationship with early unplanned readmission, while the score of readiness for discharge did: odds of readmission increased by 14% (Odds ratio = 1.14; 95% CI: 1.01 - 1.29; p=0.04) with each 10% decrease in the proportion of criteria met. This relationship predicted readmission only weakly (area under ROC curve=0.57). Furthermore, in a multiple logistic regression model, previous diagnosis of CHF predicted early unplanned readmission three times better than the score of readiness for discharge (Wald statistics: 11.9 vs. 4.4).

Conclusions: Explicit criteria of readiness for discharge were weakly related with early unplanned readmission, while the quality of admission work-up or evaluation and treatment during the stay were not. Patients' individual characteristics are important predictors of early unplanned readmission, as might be other variables that were not examined in this study, such as out-of-hospital treatments. Therefore, early unplanned readmission should not be used as a quality of care indicator for patients admitted for CHF if clinically significant variables cannot be controlled for.

CORRELATES OF THE QUALITY OF AMBULATORY ASTHMA CARE.

JW Levenson, RS Phillips, HR Burstin, AL Puopolo, JS Haas, TA Brennan. Divisions of General Medicine, Beth Israel Deaconess Medical Center and Brigham and Women's Hospital, Boston, MA and San Francisco General Hospital, San Francisco, CA.

Background: Guidelines for the provision of high-quality ambulatory asthma care have been widely circulated, but few studies have tried to identify factors associated with guideline adherence. Of particular concern is whether patient race or socio-economic status (SES) are associated with quality of asthma care, given worse asthma outcomes among non-white patients. We determined demographic, clinical and provider characteristics associated with quality of asthma care at 11 primary care practice sites.

Methods: We performed a cross-sectional chart review and patient survey of 483 patients with asthma (median age 46 y.; 71% female, 30% non-white). We calculated an Asthma Care Quality Score (ACQS) for each patient, based on the percent of 7 quality standards met, derived either from chart review or, when available, patient survey data. Quality standards included whether the patient was given a written treatment plan, prescribed a steroid inhaler, instructed in use of inhalers, given a peak flow meter for home use, given influenza vaccine in the past year, given pneumococcal vaccine in the past 5 years, or whether an environmental history was taken. Using multivariable linear regression, we assessed the association between ACQS and age, sex, race, education, income, asthma severity (based on a dyspnea symptom score [DSS], or number of recent urgent asthma visits), self-rated health and whether asthma care was performed by a provider other than the patient's primary care physician (PCP). The analysis was then repeated on the subset of subjects with a DSS consistent with at least moderate asthma.

Results: For the 483 subjects, mean ACQS was 48%; adherence to the 7 quality guidelines ranged from 21% for pneumococcal vaccine administration within the past 5 years to 97% for having been instructed in the use of inhalers. In bivariate models, increasing asthma severity, poorer self-rated health status and asthma care from provider other than the PCP were each associated with increasing ACQS. In multivariable models controlling for age and sex, the variables representing severity and non-PCP asthma care remained independently ($p < 0.05$) associated with higher ACQS; SES, race, age and sex were not associated with ACQS in bivariate or multivariate analysis. Mean ACQS was slightly higher (57%) in the analysis restricted to those with higher DSS, but the associations with ACQS were essentially unchanged.

Conclusions: Neither SES nor race was associated with quality of asthma care in this population. Receiving care from a provider other than one's PCP was associated with higher quality care. Patients with more severe asthma also had more quality of care standards met, possibly indicating appropriate targeting of care interventions. Nonetheless, even patients with more severe symptoms had a mean of 57% of quality standards met, demonstrating substantial opportunities to improve asthma care.

IS ACCESS TO CARE AT TEACHING HOSPITALS FALLING AMONG UNDERSERVED POPULATIONS? RJ Levin, Association of American Medical Colleges (AAMC), Washington, DC. E Moy, AAMC. PF Griner, AAMC.

Objective: To determine whether economic pressures on teaching hospitals and their faculty are affecting access to care for patients who are uninsured or underinsured.

Background: Academic medical centers (AMCs) provide a disproportionate amount of care to the underserved. Concerns have been raised that increasingly competitive markets could result in reduced access to care at teaching hospitals for patients who are uninsured or underinsured. Assessing trends in rates of elective (as opposed to emergency) surgery for indigent patients might help address the question of whether access to hospital care is declining.

Methods: Using 10% subsamples of the National Inpatient Sample, we evaluated trends in the proportion of Medicaid, self-pay and no-pay, commercially insured, and Medicare patients receiving cardiac catheterizations, coronary artery bypass grafts and percutaneous transluminal coronary angioplasty at AMCs, other teaching hospitals, and non-teaching hospitals for the years 1989 through 1995.

Principal Findings: Although the proportion of these procedures performed electively has been decreasing among hospitals generally, the highest rates of elective surgery continue to be performed in AMCs. Comparing Medicaid and uninsured patients with commercially insured patients, the proportion of elective procedures received by Medicaid and the uninsured has been increasing for all types of hospitals (see, Table 1). AMCs, however, continue to be the principal providers, maintaining nearly half of the market for each of the years studied (data not shown).

Table 1: Proportion of patients receiving elective procedures who were insured by Medicaid or were uninsured

	1989	1990	1991	1992	1993	1994	1995
AMCs	9%	9%	8%	11%	14%	14%	14%
Other Teaching	8%	6%	7%	8%	9%	10%	14%
Non-Teaching	4%	4%	7%	8%	9%	8%	12%

Conclusion: These findings suggest that despite increasing financial pressures upon teaching hospitals and their medical and surgical staffs, through 1995, access to common cardiovascular procedures has not declined. These findings support the premise that teaching hospitals are maintaining their commitment to the care of the indigent.

MANAGEMENT OF PATIENTS WITH PAROXYSMAL OR NEW-ONSET ATRIAL FIBRILLATION: A REVIEW OF EMERGENCY ROOM AND INPATIENT PRACTICES AT A TERTIARY MEDICAL CENTER. EI Lubetkin, J Coromilas, and R Greene, Divisions of General Medicine and Cardiology, Columbia University College of Physicians and Surgeons, New York, NY.

Purpose: Although atrial fibrillation is the most common arrhythmia in clinical practice and is associated with an increased risk of stroke and death, a paucity of data exists as to the optimal management of the disorder.

Methods: Since August 1998 we have been conducting a prospective study examining the management of patients presenting to the emergency room or admitted with paroxysmal or new onset atrial fibrillation at the Columbia-Presbyterian Campus of New York Presbyterian Hospital.

Results: Over the past four months, we obtained data on 38 patients. The mean age of patients was 69.32 +/- 15.74 years and slightly more males than females were diagnosed with the condition (52.6% male/47.4% female) The most common presentations of atrial fibrillation were chest pain (36.8%) and dyspnea (34.2%). Nearly two-thirds of patients (65.8%) reported a past history of hypertension and almost one-fourth (9/23.7%) reported coronary artery disease. Only 2 patients (5.3%) had a history of rheumatic heart disease. Diabetes mellitus, the most frequently noted noncardiac condition, was reported in 21.1% of patients.

The most popular inpatient investigations were the echocardiogram (63.2%) and thyroid function tests (52.6%). By contrast, cardiac enzymes were drawn in only 8 patients (21.1%), 3 patients (7.9%) underwent a stress test, and 1 patient (2.6%) had an electrophysiology study. More than half of the patients (21/55.3%) were assigned to a telemetry bed.

Of the 23 patients (60.5%) given medications for ventricular rate control, 13 patients (56.5%) received digoxin, while 10 patients (43.8%) and 7 patients (30.43%) were treated with beta-blockers and calcium-channel blockers, respectively. Upon discharge, 12 patients (31.6%) had converted to normal sinus rhythm. No patients with a left atrial size above 4.5 cm were noted to be in normal sinus rhythm upon discharge.

With respect to anticoagulation, 12 patients (31.6%) had been taking warfarin and 8 patients (21.1%) had been on aspirin prior to presentation. While hospitalized, half of the patients had been anticoagulated with heparin and 3 patients (7.9%) were noted to have contraindications to anticoagulation. During the hospitalization, 1 patient (2.6%) experienced a major bleed and 2 patients (5.3%) experienced minor bleeds. Examining new medications at discharge, 7 patients (18.4%) were begun on warfarin and 4 patients (10.5%) were started on aspirin. The average length of stay was 5.42 +/- 4.60 days and two patients (5.3%) died over the course of the hospitalization.

Conclusion: Great variability exists in the management of patients presenting with atrial fibrillation, suggesting the potential for constructing clinical pathways.

SATISFACTION WITH MEDICAL PRACTICE: VA AND PRIVATE SECTOR PHYSICIANS. CJ Lin, JR Lave, J Whittle, DS Macpherson, JA Deneselya, N Brucker. Center for Research on Health Care, University of Pittsburgh; Pittsburgh VAMC.

Objective: Since satisfaction with practice will influence ability to attract and retain high quality providers, and both the VA and private sector health care systems are undergoing substantial changes, we compared work satisfaction of providers working in the VA healthcare system to that of private sector physicians (PSPs).

Design: We mailed a survey including questions regarding overall satisfaction with practice, ability to provide quality care, ease of referral, limitations on treatment decisions, and effect of costs on care to all 218 primary care practitioners in one of the 22 Veterans Integrated Service Networks. The survey was adapted from a 1995 Commonwealth Fund survey of PSPs. The response rate was 77% (n=168, 23 nurse practitioners, 35 physicians assistants, 106 physicians) and did not differ by training.

Results: (1) Overall satisfaction with medical practice: Among VA providers, 32% were very satisfied, 49% somewhat satisfied, 7% somewhat dissatisfied , 2% very dissatisfied, compared to 24%, 41%, 26% and 9%, respectively, for the PSPs. (2) Time spent with Patients: Similar proportions of VA providers and PSPs (30.4% vs 30%) indicated that they were somewhat or very dissatisfied with the amount of time they can spend with their patients, although this number was higher (38%) for PSPs working for staff model HMOs. (3) Ability to make decisions for patients: Fewer VA providers (28%) than PSPs (44%) reported that they were very satisfied with their ability to make decisions they think are right for their patients. Similarly, VA providers were less likely (45% vs 60%) to report very or somewhat serious problems with external review and limits on clinical decisions. (4) Referral: Among VA providers, 57% reported somewhat or very serious problems due to limitations on their ability to refer patients to specialists of their choices, compared to 34% of PSPs rating such problems for patients whose primary insurance coverage is fee for service, 69% for PSPs in group stafff model HMOs and 81% for PSPs rating access with discounted and/or capitated provider payment.

Conclusions: In this first study comparing satisfaction among VA and private sector clinicians, VA providers were more satisfied with the overall practice of medicine. However, VA providers may be less satisfied with their ability to make decisions they think are appropriate for patients, especially when compared to PSPs describing fee for service practice. The results suggest that the VA may become relatively more attractive as a practice site as the number of patients with pure fee for service insurance declines. Interpretation of our study results is limited by differences in the providers included in the two samples: one third of the VA sample was non-physician, while a substantial proportion of the PSPs participating in the Commonwealth survey were specialists. Additionally, the VA survey was conducted by mail in a single region, while the Commonwealth survey was conducted nationwide, using telephone interviews.

A COMPARISON OF THE QUALITY OF CARE BETWEEN THE U.S. AND A DEVELOPING COUNTRY

Jeff Luck, John W. Peabody, Fimka Tozija, Gordana Pecelj, Ninez Ponce, and Robert Nordyke; West Los Angeles VAMC; Schools of Medicine and Public Health, UCLA; RAND, Santa Monica, CA; International Policy Unit, Macedonia; UC Berkeley.

Purpose: Comparisons of quality between countries are complicated by many factors, including economic welfare, patient populations, financing, and the organization of services. The unanswered question in developing countries is whether health care suffers because of these factors alone or because the quality of care is inadequate. We used validated clinical vignettes to compare the quality of primary care between physicians in the U.S. and in a developing country. We hypothesized that although quality would be higher in the U.S., the range of scores would be similar.

Methods: Clinical vignettes were prospectively administered to primary care providers in two academic VA medical centers and four municipalities in the Former Yugoslavia Republic of Macedonia. The vignettes described an uncomplicated post myocardial infarction (MI) and a post MI complicated by mild heart failure. They were randomly administered to 40-50 providers in each country.

Scoring criteria for the quality scores were defined by international guidelines and reviewed by local expert panels in both countries. Providers were asked to indicate how they would proceed in five domains: history, physical examination, test ordering, diagnosis and treatment. Scores were calculated as the percentage of correct answers in each domain; differences in means were calculated and compared using a t-test.

Results: The mean scores of Macedonian doctors were lower than in the U.S—25% and 17% lower for the two cases, respectively. Comparisons of specific skills showed that history taking by the Macedonian physicians was 23% lower. Physicians in both countries ordered tests equally well (no statistical differences). The range of scores showed that the better doctors in both countries performed at a similar level, however, the lowest scores in the developing country were much lower than their US counterparts.

Conclusions: Clinically validated vignettes describing the essential elements of clinical care for post MI patients reflected substantial variation in practice in the U.S. and in Macedonia. The level of information asked for in the vignettes appears to be appropriate; US and Macedonian providers do not have problems using the vignettes or identifying what the critical information is when they know the correct answer.

Vignettes show promise as a way to compare the quality of primary care among groups of providers in different health care systems—even systems as disparate as in an academic VA practice and a developing country. Quantifying these variations can provide policymakers useful information and assist in the design of interventions to improve the quality of care.

SHOULD WE USE VIGNETTES AS A YARDSTICK? A PROSPECTIVE TRIAL COMPARING QUALITY OF CARE MEASUREMENT BY VIGNETTES, CHART ABSTRACTION AND STANDARDIZED PATIENTS

Jeff Luck, John W. Peabody, Peter Glassman, Tim Dresselhaus, Martin Lee, Ming Ming Wang; West Los Angeles VAMC, UCLA Schools of Medicine & Public Health, VA Center for the Study of Health Care Provider Behavior, San Diego VAMC, UCSD School of Medicine and RAND

Purpose: Chart abstraction is widely used to measure quality, but is subject to a number of potential biases. Clinical vignettes are becoming more widely used as an alternative, but their validity has not been systematically evaluated. The purpose of our study was to evaluate whether clinical vignettes are an adequate method for measuring actual clinical practice (process of care).

Methods: Prospective randomized trial comparing three methods to measure the quality of care that primary care physicians provided for common outpatient conditions. The methods were structured reports by standardized patients (SPs) who presented unannounced to the physicians' clinics, abstraction of the medical records for those visits, and the physicians' responses to clinical vignettes that exactly corresponded to the SP presentations. The study was conducted in two VA primary care clinics.

Ten physicians were randomly selected at each site; 97 percent of general internal medicine staff physicians, faculty, and second and third residents consented to be randomized. Each selected physician subject saw 8 SPs (2 cases for each of 4 conditions), yielding a total of 160 encounters. The main outcome measures were the quality scores based on identical explicit criteria for each of the three methods for each encounter (480 total scores). Statistical analyses were based on 4-way ANOVA models.

Results: Clinical vignettes consistently produced scores closer to the gold standard of standardized patient scores than did chart abstraction. This pattern of findings was robust across sites, condition, and case complexity. Patterns of findings across levels of physician training and domains of the clinical encounter displayed the same general pattern. Vignettes were also responsive to expected directions of variation in quality among sites and case complexity. The rate of detection of SPs was only 3%.

Conclusions: Carefully constructed clinical vignettes may be a useful way to measure the quality of care in an outpatient setting. They appear to be responsive to actual differences in quality, and to approximate actual clinical practice more closely than does chart abstraction. It is striking that low quality scores were observed across all three measurement methods—overall, only 76.2% of quality criteria were met. Further research is indicated to evaluate vignettes in a wider variety of settings.

Explaining Length of Stay Differences in Medical Patients

Elizabeth MacKay, William Ghali, , Hude Quan, Divisions of Internal Medicine and Community Health Sciences, University of Calgary, Calgary, Alberta, Canada

In light of the present focus on reduced utilization of acute care resources, length of stay is increasingly, being used by insurers and governments as a marker for efficiency. In Calgary's two teaching hospitals , length of stay , (LOS), has been shown to vary dramatically by teaching unit. In this study, we performed a risk-adjustment analysis to see if we could "explain" these LOS differences based on patient case-mix.

We examined LOS for all patients admitted to the Internal Medicine services of the two teaching hospitals in Calgary, Alberta for 3 six-month periods from 1995 to 1997. An administrative database was used to capture admission and discharge information for the 3,410 admissions. We used linear regression to sequentially risk-adjust hospital LOS values for 1) sociodemographic factors, 2) comorbidities, and 3) whether or not a patient had been the subject of inter-service transfers. Inter-service transfers could include transfer to or from an Intensive Care Unit, Family Medicine, Surgery, Geriatrics, rehabilitation or subspecialty services. We characterized case-mix by using a comorbidity coding algorithm developed by Deyo to identify the comorbidity variables which constitute the Charlson index. We then analyzed each variable independently (rather than as a summary index).

In the final 6 month period studied, unadjusted mean LOS was 7.6 days in hospital A, and 13.1 days in hospital B ($p<0.0001$). However, patients in hospital B were more likely to have comorbid illnesses, thus indicating that risk-adjustment is necessary. After adjusting for sociodemographics, comorbidities and inter-service transfer, the adjusted LOS was 10.0 days for hospital A and 12.3 days for hospital B ($p=0.0084$). We then examined the prevalence of inter-service transfers among the patients studied and found that such transfers were more prevalent in hospital B and accounted for the largest portion of variability in LOS (20 of 30 %). Overall, the LOS for those without transfers was 5.6 days versus 16.6 days for those with inter-service transfers. A restricted analysis which examined only those who did not undergo inter-service transfers revealed similar LOS in the two sites.

While on first glance there are large differences in mean LOS between the two teaching hospitals, these differences are significantly lessened in analyses which sequentially control for case-mix and inter-service transfers. While case-mix differences remains as an important variable when comparing hospitals, inter-service transfers increase LOS considerably. Further work is now needed to determine whether there are inappropriate delays occurring when patients are transferred from service to service.

THE PRIMARY CARE WORKFORCE: A GROWING CONCERN?

JD Lurie, DC Goodman. VA Outcomes Group, White River Jct, VT and the Center for Evaluative Clinical Sciences, Dartmouth Medical School, Hanover, NH.

Purpose: The Council on Graduate Medical Education (COGME) estimates that the current supply of clinically active generalists (66 per 100,000 population) is adequate to meet the needs of the population (60 to 80 generalists per 100,000). COGME predicts that this supply will remain relatively constant, but recent trends suggest that more physicians are entering primary care. Furthermore, COGME's requirement estimates ignore the 3-fold variation in the per capita supply of generalists. To provide additional information about future primary care opportunities, we developed a workforce model to examine the generalist workforce in relation to COGME's requirement estimates and two regional benchmarks: an area with high penetration of managed care (Minneapolis, MN – 68 generalists per 100,000) and an area predominated by fee-for-service (Wichita, KS – 61 generalists per 100,000).

Methods: We used Stella® software to project the supply of generalists into the future based on the annual number of physicians entering and leaving. We obtained the current supply of clinically active generalists (family medicine, general pediatrics and general internal medicine physicians, excluding residents and fellows) from the American Medical Association (AMA) and American Osteopathic Association Physician Masterfiles. The number entering was defined as the number of graduates in each primary care specialty, minus the number entering relevant subspecialty programs in the 1997 AMA Annual Survey of GME (approximately half of international medical graduates were expected to enter the permanent US workforce based on their immigration status). The number leaving was calculated using age-sex specific physician death, retirement, and productivity rates from the Bureau of Health Professions. We used the middle series population estimates from the US Bureau of Census.

Results: COGME assumed that 30% of new physicians would enter primary care fields and that about 90% would be clinically active. However, current data suggest that 37% of graduating residents are entering primary care fields and that 94% of these will be clinically active. As a result, the projected supply of generalists is expected to grow to nearly 81 per 100,000 by the year 2020. Adjusting for the changing demographics of the physician workforce decreases the "effective" supply to 78 full time equivalent generalists per 100,000 in 2020. Thus by the year 2020, the adjusted total supply of generalists will exceed current per-capita supply by 38,000 physicians, the Minneapolis benchmark by 33,000 physicians, the Wichita benchmark by nearly 56,000 physicians, and will come within 5,000 physicians of COGME's upper limit of projected requirements.

Conclusions: The supply of physicians clinically active in primary care will grow substantially at current levels of training. While increasing the ratio of generalists to specialists may be desirable, growth in the number of physicians entering primary care will likely result in a significant oversupply of generalists over the next 25 years.

INTERNET-BASED OFFICE-PATIENT INTERFACE IN PRIMARY CARE: A BASELINE STUDY OF FEASABILITY AND PATIENT PREFERENCES

Charles D MacLean, MD, University of Vermont, Burlington, VT

The Internet is becoming increasingly available to home and library computer users. There has been limited systematic investigation of Internet applications of physician-patient communication or of medical information available on the internet. Studies of feasibility, patient acceptance and health outcomes have generally been positive. A participatory decision-making style on the part of the physician is associated with a higher level of patient satisfaction. This project was designed to assess the feasibility of the Internet for communication between an office practice and its patients and to assess patient preferences for an internet interface.

Methods: Two primary care offices (7 MD's, 1 NP, 1 PA) launched a web site in August 1998. The internet site provides patient access to: personalized health information encrypted electronic requests for appointments and prescription refills; general health information from an online database; links to web sites of interest that have been reviewed by the provider group; updates from the practice regarding new information, (practice newsletter, warnings about medications, new updates regarding specific diseases), and reminders. Focus group analysis was used to assess initial patient feedback on the system. An email survey was used to assess: 1. demographic data, 2. patient satisfaction with current telephone access to the practice 3. satisfaction with access to medical information and 4. satisfaction with participation in medical decision-making.

Results: 421 patients were registered on the system. Two focus groups (n=18) showed a strong interest in the system providing consumer health information and clinical reminders. The email survey (n=134) showed users had a mean age of 49 years, with 20% over age 60; 55% female and 43% with less than a college education. Baseline telephone access was unacceptable for 39% of respondents; 40% reported they had too little access to health information. 80% reported they had just the right level of input into medical decision-making.

Conclusions: In this baseline study of two primary care offices, a secure practice-patient internet interface was established with 421 users and about 1500 visits to the internet site in the first two months. A focus group of patient users showed strong interest in consumer health information and in clinical reminders. Users had a broad range of age and education. Almost half the group would like to see improvements in access to consumer health information. 80% were satisfied with their level of participation in the medical decision-making process. Future research will be directed at assessing the impact of the internet interface on the satisfaction variables.

HOSPITALISTS' AND PRIMARY CARE PHYSICIANS' CARE OF PATIENTS AT THE END OF LIFE. P. Mahadevia, S. Kavuru, E. Cohen, D.N. Rose. Division of General Internal Medicine and Primary Care, Long Island Jewish Medical Center, New Hyde Park, NY.

Purpose: End of life issues are common in hospitalized patients. How hospitalists, inpatient specialists, care for patients at the end of life is unknown.

Methods: We performed a retrospective cohort study, comparing the care provided by a full-time internist hospitalist service (HS) to that provided by community-based primary care physician service (PCPS). The setting was an academic tertiary care hospital. We studied adult patients who died on the medical service over a 12 month period. We excluded patients whose attending was a subspecialist, patients cared for by both the HS and PCPS, and patients who died within 48 hours of admission. Data was obtained from medical record review and a hospital database.

Results: Among the patients who had medical records available for analysis, 36 were cared for by the HS and 39 were cared for by the PCPS. Both groups were also cared for by housestaff. There were no significant differences between the two groups with regard to age, sex and principal diagnosis except that there was more cardiac disease among the HS patients. Comparing the HS patients to the PCPS patients, attending end-of-life discussions were more commonly documented (67% vs. 39%, $p< .02$), were more frequent (a mean of 2.4 discussions per patient vs. 1.4 discussions per patient, $p <.005$) and more frequently lead to Comfort-Measures-Only (CMO) status (25% vs. 3%, $p < .01$). There were no differences between the groups with respect to timing of these discussions in the hospital course, number of residents' discussions of end of life issues, Do-Not-Resuscitate orders, proportion with completed advance directives, number of ICU transfers, or the number of invasive tests or procedures.

Conclusions: The differences in the frequency of end of life discussions suggests that the HS attendings may have been more attuned to their patients end of life wishes. The HS attendings may be better at recognizing the futility of curative care since a greater proportion of their patients had a CMO status. The extent of invasive care given to the two groups of patients was similar, suggesting that factors other than attending discussions affect the amount of aggressive care a patient receives. Hospitalists are a receptive group for a palliative-care intervention study.

THE RELATION OF HIV/AIDS PRACTICE VARIATIONS TO PHYSICIANS' JUDGEMENTS REGARDING ANTIRETROVIRAL THERAPY. FF Mansourati, VE Stone, KH Mayer, CA Duefield, RM Poses. Dept. of Medicine, Memorial Hospital of R.I., Brown Univ. School of Medicine, Providence, R.I.

Objective: Practice variations are widely recognized but remain largely unexplained. We examined variations in prescribing antiretroviral therapy (ART) and their associations with physicians' judgements about the effectiveness and adverse effects of ART.

Methods: We surveyed 2,500 general internists and ID specialists in four states (MA,NY,FL,CA) randomly selected from the AMA Masterfile. To date, 45% of eligible physicians (n=1057) have responded. Respondents read three standardized cases of patients with asymptomatic HIV infection and indicated their preferred treatment. Here we present the analysis of a case with CD4+ count 610 cells/ml and HIV RNA load 5;000 copies/ml; for such a patient, the need for ART remains controversial. Respondents were also asked to estimate the likelihood that the patient would have an undetectable viral load (UDVL) at 6 months, an AIDS-defining condition or death (ADCD) by 1 year, or an improvement in quality of life (QOL) at 6 months were they to receive 3-drug-ART vs. no treatment. From this, we calculated their estimate of treatment benefit in terms of reduction of ADCD and increases of UDVL and QOL. We also asked the responding physicians to estimate the likelihood of compliance and adverse drug events, were the patient to receive 3 drug ART.

Results: Overall, 56.4% chose to treat with ART. There was no association between the decision to treat with provider gender, graduation year, specialty, HIV experience, practice type or location. Respondents who chose to treat judged that ART provided more benefits in terms of reducing ADCD and increasing UDVL and QOL compared to those who chose no treatment (all comparisons significant, $p<0.05$). Respondents who chose to treat estimated the compliance with 3-drug ART to be better than those who chose no treatment ($p< 0.05$). Of those who chose to treat, 42% estimated that >60% of patients will be compliant with 3-drug ART, as compared to 30% of those who chose not to treat. Similarly, those who chose to treat estimated the likelihood of adverse events to be lower than did those who did not treat ($p=0.06$), with 15% of those who treated estimating that >60% of patients will develop a significant adverse reaction as compared to 20% of those who did not treat.

Conclusion: Some degree of practice variation with regard to ART prescribing appear to be associated with differences in beliefs about ART effectiveness, adverse effects and compliance. Perhaps better provider education about the effectiveness, adverse effects and compliance of ART in particular groups of patients with HIV may improve treatment decisions.

PHYSICIAN SPECIALTY AND RELINQUISHING CALCIUM CHANNEL BLOCKERS AFTER ACUTE MYOCARDIAL INFARCTION. SR Majumdar, TS Inui, JH Gurwitz, MW Gillman, TJ McLaughlin, SB Soumerai. Harvard Medical School and Harvard Pilgrim Health Care, Boston MA; and The Meyers Primary Care Institute, Worcester MA.

Purpose: Although differences between generalists and specialists in the adoption of new drugs are well-documented, little is known about how ineffective or unsafe drugs are relinquished. Therefore, we compared the use, by generalists and cardiologists, of calcium channel blockers (CCBs) in patients with acute myocardial infarction (AMI), before and after the adverse medical and media reports about CCBs in 1995.

Methods: We reviewed the medical records of 5138 patients admitted with AMI at 37 community hospitals in Minnesota, 2265 patients before (1993) and 2873 after (1996) the adverse reports. We studied temporal trends in the association between the use of CCBs at discharge and physician specialty, while controlling for sociodemographic variables, prior cardiac history and risk factors, AMI severity and hospital course, comorbidities, contraindications to beta blockers, other discharge medications, and possible within-hospital correlation of patient level data. We analyzed the data using multiple logistic regression and generalized estimating equations.

Results: From 1993 to 1996, overall CCB use in patients after AMI decreased from 24% to 10%, with generalists' use decreasing from 19% to 9% and cardiologists' use decreasing from 25% to 11%. In multivariable models, generalists were less likely to start CCBs during AMI hospitalization than cardiologists in 1993 (odds ratio 0.52 [95% confidence interval 0.35-0.76]). Following the adverse reports, and regardless of specialty, all physicians decreased new starts of CCBs at a common rate (0.33 [0.26-0.42]). However, if a patient was already using a CCB at the time of admission for AMI, generalists were more likely to continue their use (1.79 [1.23-2.56]). Variables independently ($p < 0.05$) associated with the increased use of CCBs included female gender, prior atrial fibrillation, and the use of aspirin and nitrates, while decreased use of CCBs was associated with new congestive heart failure, thrombolytic therapy, and the use of beta blockers.

Conclusions: Compared with cardiologists, generalist physicians were "therapeutically conservative," that is, they were slow to adopt a new drug, as quick to relinquish a drug associated with possible risk, and more likely to continue a drug once started. We believe that this pattern of practice may represent an adaptive response to an expanding, but increasingly risky and uncertain, pharmacopoeia.

THE OBSERVATION UNIT: A NEW INTERFACE BETWEEN INPATIENT AND OUTPATIENT MEDICINE 31-month experience with 6,649 patients at a large public hospital
E. Martinez, M. McDermott, B. Reilly (Cook County Hospital, Chicago IL)

From 6/96 through 12/98, a "23 hour Observation Unit" (OBS) staffed by attendings, residents and nurses in Medicine and Emergency Medicine at Cook County Hospital has cared for 6,649 patients initially evaluated and treated in the Emergency Department (ED). Uncertainty about the need for inpatient hospitalization is the principal criterion for OBS admission. Prior to 1996, ED patients with these diagnoses (Table) routinely were admitted to inpatient wards.

Clinical Syndrome	#Patients (% Hospitalized After 23 Hours' Observation)			
	6-12/96	1997	1998	6/96-12/98
Chest Pain, R/O MI*	271 (16)	667 (12)	611 (7)	1549 (11)
Asthma/COPD	329 (17)	460 (17)	398 (16)	1187 (17)
Soft-tissue infection	115 (16)	228 (13)	226 (17)	569 (15)
Diabetes (DKA, HONK)	122 (11)	184 (10)	133 (6)	439 (9)
Toxin ingest/withdrawal*	79 (10)	147 (13)	139 (18)	365 (14)
Pneumonia	83 (23)	119 (22)	88 (26)	290 (23)
Abdominal pain*	67 (10)	88 (20)	65 (20)	220 (17)
Pyelonephritis	59 (19)	77 (31)	61 (26)	197 (26)
Enteritis/dehydration	34 (24)	58 (16)	29 (21)	121 (19)
Congestive heart failure	42 (14)	40 (18)	24 (38)	106 (21)
Sickle cell pain crisis*	40 (35)	34 (41)	25 (24)	99 (34)
Seizures*	19 (16)	26 (15)	23 (26)	68 (19)
Other	360 (11)	526 (12)	553 (23)	1439 (11)
Total	1620 (15)	2654 (15)	2375 (13)	6649 (14)

Twelve syndromes consistently accounted for >75% of OBS patients during the study period. In seven of these syndromes, OBS allows assessment of patients' clinical response to 24 hours of indicated parenteral therapy (steroids, antibiotics, insulin, hydration, diuretics). In the remaining five syndromes (* in Table), OBS provides an opportunity primarily to observe patients' clinical course for outcomes more clearly requiring hospitalization (e.g., acute MI, delirium tremens, severe persistent pain, recurrent seizures). Hospitalization rates for each syndrome were remarkably stable over time. Overall, 86% of OBS patients during the study period were discharged home without inpatient admission.

Beyond its impact on hospitalization rates, OBS presents new opportunities for clinical research (prediction rules), quality improvement (therapeutic practice guidelines) and resident/student education (common syndromes) at the interface between inpatient and outpatient medicine. This emerging arena of care deserves more attention from researchers, administrators and educators.

ARE THERE GENDER DIFFERENCES OF THE MANAGEMENT AND OUTCOMES FOR THE PATIENTS OF ACUTE MYOCARDIAL INFARCTION IN JAPANESE INSTITUTIONS? K Matsui, T Fukui. Department of General Medicine, Aso Iizuka Hospital, Japan; Department of General Medicine and Clinical Epidemiology, Kyoto University Hospital, Japan.

To determine whether gender-based differences exist for management and outcomes among patients with acute myocardial infarction (AMI) at Japanese institutions. Retrospective cohort study by chart reviews performed at four Japanese teaching hospitals where cardiac catheterization and cardiac surgery are available. The consecutive patients who had admitted to these institutions with the diagnosis of AMI between July 1995 and June 1996 were included.

A total of 473 patients with AMI, 342(72%) were male. Women were older, had history of congestive heart failure (CHF), hypertension, and hyperlipidemia more frequently, whereas more men smoked, had liver disease. Predictors of coronary angiography were: male gender (adjusted odds ratio [OR] 3.13; 95% confidence interval [CI] 1.52 to 6.35), age 80 years or older (OR 0.09; 95% CI 0.04 to 0.19), and ST elevation on EKG (OR 2.47; 95% CI 1.15 to 5.32). Predictors of revascularization were: male gender (OR 1.48; 95% CI 0.95 to 2.31), age 80 years or older (OR 0.43; 95% CI 0.22 to 0.86), history of CHF (OR 0.27; 95% CI 0.08 to 0.98), and ST elevation on EKG (OR 1.76; 95% CI 1.11 to 2.80). Gender did not obviously predict to have coronary bypass graft surgery and mortality during hospitalization. However, using Cox proportional-hazards modeling, male gender was one of the multivariate correlates of discharge (adjusted hazards ratio 1.33; 95% CI 1.06 to 1.33).

These findings suggest that women were less likely to have cardiac catheterization and revasucularization in this Japanese population. However, in-hospital mortality was not different, and women tended to stay hospitals longer than men.

IMPACT OF PEER CHART REVIEW AND FEEDBACK ON QUALITY OF CARE FOR TOBACCO CESSATION IN RESIDENT CLINIC. KM Mayhew, MA Earnest, JS Kutner, R Gonzales. Division of General Internal Medicine, University of Colorado Health Sciences Center, Denver, Colorado.

Background: The United States Preventive Services Task Force (USPSTF) recommends assessment of tobacco use on a regular basis. A common strategy for improving compliance with this recommendation is chart review and feedback. The impact of having medical residents perform this activity on their own practice is not known.

Methods: We conducted a prospective controlled trial of chart review and feedback at a University Hospital-affiliated internal medicine resident clinic. Approximately half of the 2nd and 3rd year residents (n=16) were assigned to conduct chart audits and receive feedback of compliance scores based on the USPSTF recommendations (FB+), whereas the control group of residents (n=12) conducted audits and received feedback on a different topic (FB-). Scores were based on the presence of the following items documented in the chart:

Item	Points
smoking status	20
pack-year history	15
current amount of tobacco use	20
assessment of nicotine dependence	10
recommendation to quit smoking	15
offering behavioral modification	10
offering drug therapy	10
Total Score	100

The baseline period took place between April and August 1998, and the follow-up period took place between October and December 1998. Statistical significance between groups was tested using multivariate linear regression.

Results: Documentation of smoking status was present in 74/110 (67%) and 61/77 (79%) of patient charts belonging to residents in FB+ and FB- at baseline, respectively and did not change in either group following feedback (47/68 (69%) and 39/51 (76%), respectively). Among documented current smokers, the mean baseline compliance scores (± standard deviation) between groups were similar (FB+: 64 ± 27; FB-: 73 ± 24), and increased to a similar degree in both groups (FB+: 68 ± 28; FB-: 79 ± 24) (p=0.73).

Conclusion: In comparison to published studies, compliance with USPSTF guidelines for smoking assessment and treatment was high in our study population, and was not affected by peer chart review and feedback. Further improvements in the quality of care for patients addicted to tobacco may require more comprehensive intervention strategies.

USING AN ELECTRONIC MEDICAL RECORD TO IDENTIFY OPPORTUNITIES TO IMPROVE COMPLIANCE WITH CHOLESTEROL GUIDELINES
SM Maviglia, JM Teich, J Fiskio, DW Bates, Brigham and Women's Hospital and Partners Information Systems, Boston, MA.

In order to improve compliance with evidence-based practice guidelines, it is important to identify current patterns of noncompliance. Electronic medical records (EMRs) provide an opportunity to identify specific areas for improvement within large populations. We used such an EMR to evaluate compliance with a portion of the published NCEP cholesterol management guidelines.

Our study population included 48,811 patients who actually visited their PCP within the preceding year. Of these, 2,062 met NCEP cholesterol guidelines criteria for secondary prevention: 1,426 had coronary artery disease, 586 had cerebrovascular disease, and 400 peripheral vascular disease documented on their physician-maintained electronic problem lists. Among these qualifying patients, 1,614 (78%) were out of compliance with the NCEP guidelines. There was no LDL on record at all for 537 (26%); 238 (12%) had at least one LDL on record, but none in the last three years (189 of these were >100); and another 839 (41%) had an LDL in the last three years that was above the recommended target of 100. Of this last group, 448 (53%) were sub-optimally being treated with lipid-lowering medications, and 391 (47%) were not on any lipid-lowering therapy; in fact, 178 had a recent LDL >130, the threshold for initiating pharmacologic therapy, yet were not being treated. Non-compliance among secondary prevention patients with CVD or PVD but not CAD was even higher: 565/636 (89%) versus 1049/1426 (74%), p<0.0001. Most of the additional non-compliant cases were patients who never had an LDL checked. There were no significant differences in rates of compliance based on physician-specific factors, such as specialty, level of training, gender, panel size, volume of secondary prevention patients, percentage of secondary prevention patients, or location of practice. Important patient-specific factors that were associated with compliance were having a cardiologist (34% versus 13%); having had a recent admission for myocardial infarction, unstable angina, or angina (31% versus 17%); being male (27% versus 17%); and being white (25% versus 17%); p<0.0001 for all comparisons.

We conclude that compliance with nationally published and relatively well-accepted guidelines on management of hypercholesterolemia in secondary prevention patients was poor, that compliance was even lower when such patients did not have documented coronary disease, and that compliance was independent of physician-related factors but was associated with patient characteristics such as sex and race. Further, there were different mechanisms of non-compliance, suggesting the use of tailored approaches for remedy.

AN INVESTIGATION OF THE RELATIONSHIP BETWEEN RESPONSE RATE AND PATIENT SATISFACTION RATINGS
KM Mazor, TS Field, JH Gurwitz, R Yood, Meyers Primary Care Institute, University of Massachusetts Medical School and Fallon Healthcare System, Worcester, MA

Background: Surveys of patient satisfaction are increasingly used for management purposes related to individual primary care providers, including the determination of compensation levels and employment. We investigated the relationship between response rate and satisfaction ratings on a survey assessing patients' satisfaction with their primary care providers.

Method: Patient satisfaction surveys were mailed to a random sample of patients enrolled in a Massachusetts group-model HMO with >130,000 members who visited their primary care provider during the previous 3 months. Data for two quarters were combined for this analysis. Response rates were calculated as the number of returned questionnaires/number of distributed. For each patient survey, the mean of the 11 satisfaction items was taken. For each physician, the mean of all patient satisfaction means was taken. All items were on a 5 point scale, with 5 being the highest possible rating. The resulting data set contained ratings of 82 physicians by 6681 patients, with an average of 81 patients rating each physician (range 14 to 158). The correlation between patient satisfaction scores and response rate was calculated.

Results: The correlation between response rate and mean satisfaction rating is .52 ($p < 0.01$).

Conclusions: This result suggests that patients who are less satisfied are less likely to return surveys. While this may seem counter-intuitive, there is some indication from previous research that this may be the case. If less satisfied patients are less likely to respond, then obtained satisfaction ratings are over-estimates of true patient satisfaction. This is likely to be the case across all physicians, but the effect may be most marked for physicians with the lowest true satisfaction scores, hence introducing a bias.

PREVALENCE AND QUALITY OF WARFARIN USE FOR PATIENTS WITH ATRIAL FIBRILLATION IN THE LONG-TERM CARE SETTING. D McCormick, JH Gurwitz, RJ Goldberg, A Elwell, MJ Radford. Division of General Medicine, University of Massachusetts-Memorial Medical Center, University of Massachusetts School of Medicine, Worcester, MA; Qualidigm Inc., Middletown, CT; Center for Outcomes Research and evaluation, Yale-New Haven Health, New Haven, CT.

Background: Evidence-based clinical practice guidelines recommend warfarin for stroke prevention in elderly patients with atrial fibrillation (AF) without risk factors for hemorrhagic complications.

Purpose: To assess the prevalence of AF among elderly patients residing in the long-term care facilities; the percentage receiving anticoagulant therapy with warfarin; and how well patient0s given warfarin are maintained in the therapeutic range of INR (international normalized ratio).

Methods: The medical records of all residents of 21 participating CT nursing homes were screened to identify patients with atrial fibrillation as documented by EKG or by physician note. Patients with a length of stay under 30 days and patients with end-stage renal disease (ESRD) were excluded. The records of all remaining AF patients were evaluated for warfarin use and bleeding risk factors. For patients receiving warfarin, the percentage of days spent in therapeutic INR range (2-3) was also assessed.

Results: Atrial fibrillation was present in 441 of the 2,834 (16%) nursing home residents whose records were reviewed for this study. 40% or 436 patients without ESRD were receiving warfarin. 88 patients (20%) had no bleeding risk factors. Of these "ideal" candidates for warfarin 49% were receiving warfarin. 4% of all patients receiving warfarin had no monitoring with INRs at all. Nursing home residents who were receiving warfarin chronically were maintained in therapeutic range (INR 2-3) 55% of the time.

Conclusions: Atrial fibrillation is common among patients in long-term care facilities. Warfarin is underutilized for stroke prevention in long-term care facility patients with AF even when bleeding risk is taken into account. Control of anticoagulation intensity in patients who receive warfarin may warrant improvement.

PREVENTIVE HEALTH CARE FOR INJECTION DRUG USERS. K McGarry, J Clarke, P O'Sullivan, MD Stein, Promethius Study, Providence, RI.

Purpose: Injection drug users (IDU) are at high risk for certain communicable diseases which may be detected early or prevented through vaccination. This population often receives urgent health care, but little is known about their access to and use of preventive health services.

Methods: Persons with history of IDU (n=482) from a methadone maintenance program (MMTP) and the needle exchange program (NEP) in one city were interviewed between 7/97 and 5/98 as part of a study on health services use. IDUs were asked if they had ever been tested for HIV, TB, Hepatitis B, Hepatitis C and syphilis, and if they had received tetanus vaccine (last 10 years), pneumovax (ever) and pap test (last 3 years). We restrict analyses to persons who were HIV-negative.

Results: MMTP participants (n=240) were more likely to be female (44% v. 34%), insured (62% v. 36%), report having a regular site of medical care (76% v. 48%) than NEP enrollees (p <.01). Preventive

services received:	MMTP (%)	NEP (%)	p-VALUE
HIV	99	92	<.001
TB	99	96	.08
Hep B	86	58	<.001
Hep C	83	45	<.001
Syphilis	31	26	.22
Tetanus	70	72	.55
Pneumovax	6	4	.22
Pap	77	77	.51

In both cohorts, persons with a regular MD were more likely to report higher receipt of HBV and HCV testing (p<.05), but not other services. NEP participants never previously enrolled in formal drug treatment (n=27) were less likely to have HIV testing (82% v. 94%; p=.08) than persons who had received drug treatment.

Conclusions: Persons attending a needle exchange program more often lack knowledge of their hepatitis status than MMTP enrollees, limiting their treatment options. A distinct set of interventions, including pneumovax, should be delivered as part of drug treatment programs.

MEASURING JOB SATISFACTION OF PROVIDERS IN VA PRIMARY CARE: THE SEATTLE PROVIDER SATISFACTION QUESTIONNAIRE. MB McDonell,SD Fihn, J Marshall, DL Lessler, KE Kilpatrick, University of WA and VA Puget Sound Health Care System

Purpose: Determining the satisfaction of health care providers is critical given organizational changes and expectations that dramatically influence providers' perceptions about their ability to deliver high quality care. We developed/validated the Seattle Provider Satisfaction Questionnaire (SPSQ) to measure multiple dimensions of job satisfaction among VA primary care providers.

Methods: Open-ended interviews were conducted with 20 providers from a large group practice and the Seattle VA to identify factors contributing to work satisfaction. Interviews and published questionnaires were used to generate a prototype 78-item questionnaire.As part of the Ambulatory Care Quality Improvement Project (ACQUIP), the survey was tested among 236 general internists at 8 VA and non-VA facilities and condensed to 50 items. The 50-item questionnaire has been administered to 220 providers at 7 ACQUIP sites and 792 providers at 56 VA facilities participating in the PRIME program. Exploratory (EFA) and confirmatory (CFA) factor analyses were used to analyze dimensionality and validity of the SPSQ. ANOVA and linear regression were used to examine subscale and global satisfaction scores and to adjust for demographic characteristics. Scales were scored from 0 (least satisfied) to 100 (most satisfied).

Results: The sample of 1012 providers was comprised of physicians (69%), nurse practitioners (22%) and physician assistants (9%). 49% were female. Ages ranged from 20-65 years. 77% were Caucasian, 12% Asian, and 4% African American. Six dimensions (subscales) emerged from factor analysis and all demonstrated high internal consistency: clinical staff communication (Cronbach's alpha=.86); relationships with specialists (.89); hassle-free work environment (.89); patient (pt) characteristics (.77); philosophy of practice (.84); and colleagues (.84). The CFA also demonstrated both convergent and discriminant validity (p<.001). Mean scale scores were low: staff communication (38.6); specialists (41.5); hassle-free (37.7); pt characteristics (49.3); philosophy (66.4); colleagues (58.4). Subscale and global satisfaction scores did not differ significantly according to demographic characteristics but there were significant differences among facilities. In a regression model predicting global satisfaction, the philosophy domain (belief in organization's philosophy and ability to practice according to personal standards) accounted for 57% of the variance (p<.001). Clinic organization and staff communication were also significantly related to overall satisfaction (p<.001).

Conclusions: The SPSQ is a reliable, valid measure of multiple dimensions of provider satisfaction.The extent to which a provider's practice standards and philosophy are aligned with the organization is a key determinant of overall satisfaction.

THE "WEIGHT" OF MAILINGS FROM MANAGED CARE COMPANIES ON THE SHOULDERS OF PRIMARY CARE PROVIDERS. Thomas McGinn MD, MPH. Montefiore Medical Center/Albert Einstein College of Medicine

Background: The busy general internist frequently finds him/herself overwhelmed with productivity pressures and the ever increasing number of complex restrictions and recommendations from managed care companies. One method of informing physicians is through direct mailings which is at times overwhelming, impractical to read, and costly. The object of this not-so-objective study is to evaluate the actual contents and potential impact of such mailings by managed care companies on providers. The average primary care physician (PCP) participates in over five manage care plans not including Medicare and Medicaid. Little attention has been placed on the efforts of managed care companies to "educate" PCPs with regards to plan restrictions and practice guidelines through these direct mailings. This study looks at the mailings of managed care companies to their PCPs and their potential impact. **Methods:** Prospective collection of all managed care related mailings were collected for one busy primary care provider who is a full time faculty member at an academic medical center. While the provider belonged to over ten managed care plans his faculty practice made up less than 20% of his job description. The mail was first weighed then placed in various categories (1) educational (2) drug related (3) directories of providers (4) administrative and (5) other. No patient information was included in the study. Overlap and redundancy along with percentage read were examined. **Results:** Over twenty pounds of mail were collected during a four month period. The vast majority of the mail received was guideline related (20%) and drug formulary related (40%). Approximately 5% of the material was actually read and only one educational item was deemed useful but not implemented. Approximately two thirds of the educational material was repeated or overlapped by more than one company. **Conclusions:** This study is clearly not meant to be an objective evaluation of the current situation but hopes to highlight a problem. A tremendous amount of literature is produced and mailed from manage care companies to providers. A majority of the mailings are redundant and infrequently read. The spotlight of cost control needs to be focused back on managed care. The cost of producing and mailing such material is unclear. This simple study, however, has demonstrated there is significant room for coordination between companies and a potential reduction in unnecessary costs. In addition such coordination has the potential to reduce the unnecessary stress on primary care providers created by receiving such "weighty" mail.

EDUCATIONAL NEEDS ASSESSMENT IN A MANAGED CARE ORGANIZATION. MJ McGuire, M Chaberski, CA Bergman. Medical Affairs Department, Johns Hopkins Medical Services Corporation, Baltimore, MD.
Background: The Johns Hopkins Medical Services Corporation (JHMSC) is a managed care organization with 115,000 patients (75% capitated) and 18 primary care sites staffed by 100 physicians and 350 clinical staff. Administrative functions of the JHMSC are staffed by an additional 300 non-clinical employees. In 1996 a staff development and education department (SDES) was initiated to develop competency-oriented, guidelines-driven training to the clinical staff, and to implement an annual educational needs assessment for all employees. The survey was implemented in 1997, repeated in 1998 and is underway for 1999.
Methods: The survey was developed with multidisciplinary input from representing all corporate departments. The questionnaire assessed position, highest educational level, years employed, department, mandatory/OSHA training received during employment, major sources of job-related training, and learner-preferences (schedule, location, preferred learning mode). It requested self-assessment of need for training in 8 competency-related areas (clinical skills people skills, information systems, billing & coding, safety, leadership, business & contracts, and performance improvement) and provided a write-in option. The survey was mailed directly to all employees, and an incentive (raffle ticket) to complete and return the survey was included. Surveys were centrally collected and results were analyzed using a spreadsheet program.
Results: Of 700 employees surveyed, 371 (53%) in 1997 and 362 (52%) in 1998 returned forms. The response rates (responders/total in job category) were: 65% management, 89% non-clinical administrative, 55% clinical administrative, 47% physicians, 55% medical assistants, 68% nurses, 81% patient services, and 29% other. Top ten training requests were consistent both years and included medical informatics, working with difficult people, conflict resolution, medical coding, capitation/contracts, and CPR. The top physician requests for training were: 56% medical coding, 52% medical informatics, 44%CPR, 37% clinical documentation, 35% practice guidelines, 35% difficult people, and 35% disability determination. Nurses requested more clinical skills training (starting IVs, EKG interpretation, and phlebotomy skills).
Conclusion: We performed a training needs assessment in a managed care organization to improve quality and efficiency of care and to promote guidelines and competency-based training in our medical practices. A curriculum has beer implemented based partly on this assessment. Of note, physicians working in our managed care organization requested training in coding, informatics, and people skills, which are not commonly offered in medical CME programs.

BURNOUT IN US WOMEN PHYSICIANS: ASSESSING REMEDIABLE FACTORS IN WORKLIFE. JE McMurray, M Linzer, J Douglas, and TR Konrad for the SGIM Career Satisfaction Study Group, Depts of Medicine and Biostatistics, Univ of Wisconsin, Madison, Sheps Center, UNC, Chapel Hill.

Objective: To assess factors related to burnout in practicing women physicians in primary care and medical subspecialties.
Sample and Study Design: National random stratified sample of 6100 physicians (32% female; adjusted response rate=52%) assessing personal and practice characteristics, career satisfaction, and burnout.
Analysis: We used logistic regression to identify factors related to burnout for women physicians (scale score ≥ 3 on 5-item scale) including perceived control-of-practice factors, specialty, practice site, time pressure, patient mix, and significant other and colleague support.
Results: Twenty six per cent of women physicians vs. 21% of men surveyed had burnout scores ≥ 3 ($p<.05$). Burnout in women was associated with more work hours ($p<.05$) and lack of workplace control; i.e. less control of office schedule and patient volume ($p=.001$). For men, the correlates of burnout were having more hassles and less control over medical decision making ($p<.001$ and $p<.05$, respectively). For each additional 5 hours worked in a full time practice (>40 hours per week), the odds of burnout increased 12-15% for women ($p<.05$), while for men there was only a borderline association with burnout (5-6% increase in burnout for each additional 5 hours worked, $p<.1$). In a separate analysis of women $\leq$ age 45, women with more support from a significant other for their career or from colleagues for attempts to balance work and home had significantly lower odds of burnout than those without such support (as support by spouse increased one point on a 5 point scale, burnout risk decreased 40%, and as support by colleagues increased one point, burnout risk decreased 45%, $p<.05$ and $p<.01$ in regression analyses, respectively.)
Conclusions: Burnout is common in contemporary medical practice, and women physicians are at higher risk than men. Increased control over the work environment and support for balancing work and home could markedly diminish burnout in women physicians.

NATIONAL COMMITTEE FOR QUALITY ASSURANCE EXPANDS WOMEN'S HEALTH-RELATED PERFORMANCE MEASURES USING MEASUREMENT ADVISORY PANEL. ED McKinley, JW Thompson, Division of General Medicine, MetroHealth Medical Center, Cleveland, Ohio, Division of Pediatrics, University of Arkansas Medical Center, Little Rock, Arkansas.

The National Committee for Quality Assurance (NCQA) created the Women's Health Measurement Advisory Panel to address the limited ability of its performance measures to assess the quality of medical care provided to women. NCQA is an independent, non-profit organization that has developed a group of performance measures called the Health plan Employer and Data Information Set (HEDIS) to help assess the quality of care provided by health care delivery systems. HEDIS measures have come from a variety of sources and are continually evolving, but they have recognized gaps and limitations. While there are several Women's Health-related performance measures in HEDIS, many important health conditions that are more common in women, are unique to women, or affect women differently have not been targeted for measure development due to methodological and/or feasibility barriers, clinical uncertainty, or unrecognized potential for benefit.

To support the broader development of measures related to women's health, NCQA created the Women's Health Measurement Advisory Panel (MAP). The MAP is composed of 24 individuals with collective skills including clinical and methodological expertise, public health knowledge, and purchaser and consumer perspectives. The Women's Health MAP initially voted on a list of top 10 clinical conditions affecting women ranging from cardiovascular health to mental health. They then collected existing measures and created new potential measures within each category. After review of the evidence-based data for each of these 70 possible measures, the MAP voted to forward, delete, or hold some for future development. The MAP then identified members who would lead the development of a "measure work-up" detailing the measure's relevance, scientific validity, and feasibility following NCQA guidelines. If the work-up was voted forward, the measure was then pilot-tested and the results reviewed by the MAP. There are now two survey measures that have come from this more intensive review process that are being recommended for inclusion in HEDIS. The first is entitled "Options for the Management of Menopausal Hormone Changes" and the second is entitled "Birth Control Counseling". Two osteoporosis-related measures are on hold because their development has preceded published national guidelines.

The Women's Health MAP has developed an intensive and productive group process that has encouraged creative thinking about measure development and has helped standardize the process. Hopefully, this process will substantially broaden the assessment of the quality of health care provided to women in managed care plans.

PROPHYLACTIC TREATMENT OF MIGRAINE: EFFECTS ON EMERGENCY DEPARTMENT VISITS AND HEALTH PLAN COSTS. MA Medow, B Sill and D Pathak, The Ohio State University, Columbus, OH

Objective: Do migraineurs with and without prophylactic medications differ in the number of migraine related Emergency Department (ED) visits or health plan costs?

Methods: A cohort of OSU Health Care members, continuously enrolled from July 1996 – July 1998, 18 years or older at inception, with a diagnosis of migraine (ICD-9-CM 346.x) were identified. The prophylaxis group included all patients with more than one prescription for a prophylactic medication filled; those with zero or one prescriptions filled were controls. Prophylactic medications were: β-blockers, calcium channel blockers, tricyclic antidepressants, selective seretonin reuptake inhibitors, phenelzine, gabapentin, methysergide and divalproex sodium. The number of ED visits with a primary or secondary diagnosis of migraine and plan costs, excluding outpatient pharmaceuticals, were measured. We evaluated ED visits (categorized as 0, 1, 2, or > 2 visits) by contingency table analysis and multiple linear regression to adjust for age and gender. We analyzed the logarithm of health plan costs by *t*-test as well as multiple linear regression.

Results: 492 patients had a migraine diagnosis, of which 39 had prophylactic medications. The mean number of migraine related ED visits was 0.34 in the control group and 0.15 in the prophylaxis group ($p = 0.827$, $\chi^2 = 0.892$, $df = 3$). Median costs were $2324 in the control group and $4111 in the prophylaxis group ($p = 0.0675$, $t = 1.833$, $df = 490$ for log transformed costs). In multiple regression analysis, neither age, gender nor prophylaxis were independent predictors of the number of ED visits; age and gender, but not prophylaxis, were independent predictors of health plan costs.

Conclusions: Migraine patients on prophylactic medications had similar numbers of migraine related ED visits and did not have significantly increased health plan costs (just missing statistical significance). A number of limitations exist: this is a retrospective, observational study in a single, small, employment-based health care plan. Prophylactic medications may have been prescribed for reasons other than migraine prophylaxis and may not have been prescribed during the whole 2-year study period – both diluting any potential positive effects of prophylaxis. Prophylaxis maybe a marker for more severe disease, hence cases might be expected to have more ED visits and higher costs. Outpatient pharmacy costs were not included in the economic analysis. Finally, we used no comorbidity adjustment other than age and gender.

PHYSICIAN REPORTED DIAGNOSES FOR ANTIDEPRESSANT USE IN OUTPATIENT CANADIAN MEDICAL RECORDS. CA Meili[1,2], RL Robinson[1], SL West[3], M McNutt[4], ME Nennstiel[3]. [1]Eli Lilly and Company, Indianapolis, IN; [2]Indiana University School of Medicine, Indianapolis, IN; [3]Research Triangle Institute, Research Triangle Park, NC; [4]Saskatchewan Department of Health, Saskatchewan, Canada.

Utilization patterns of antidepressant (AD) medications in the United States (US) have been previously studied because of the perception that these drugs incur significant costs to health plans and are widely used for diagnoses other than depression. Examination of drug prescribing in Canada allows for a useful comparative benchmark for the US. Variations due to differences in health plan characteristics are eliminated in Canada due to its comprehensive health insurance coverage. For this study, a random sample of patients stratified by age (20-39, 40-64, 65-80 years), sex, and type of AD [40% selective serotonin reuptake inhibitor (SSRI) users, 40% tricyclic (TCA) users, and 20% monoamine oxidase inhibitors (MAOI) users] was selected in order to determine the indication for AD use. In order to capture new episodes of care, sample patients included those seen between 1/1/94 and 12/31/95 who had six months of coverage with no evidence of AD use prior to the receipt of the index AD. 293 prescribing physicians were contacted for permission to review charts: 58% consented, 34.5% refused, and 7.5% did not respond. 557 patient medical records (83.8% for patients of general practitioners) were abstracted including the records of 245 SSRI users, 224 TCA users, and 88 MAOI users. Indications for use, including multiple diagnoses, were determined from the charts for a period $\pm$ 3 months of the initial AD prescription. Depression was listed as an indication for use in 78.4% of MAOI users and 73.9% of SSRI users and was less common with patients receiving TCAs (27.2%) ($p<0.001$). Other depression related indications were specified infrequently (13.1% SSRIs, 9.4% TCAs, 13.6% MAOIs, $p=0.380$). TCAs had a much higher frequency of non-psychiatric diagnoses when compared with SSRIs (pain: 45.5% v. 28.2%, $p<0.001$; migraine: 5.8% v. 1.2%, $p<0.009$; fibromyalgia: 9.4% v. 2.9%, $p<0.006$). Diagnoses of other medical disorders for which ADs are sometimes prescribed including eating disorders and obesity were listed infrequently (<2%). When comparing additional diagnoses among those with and without depression, indications for use still varied by the type of AD in both subsets. For example, patients diagnosed with panic disorder but without depression showed a higher rate of MAOI use than the other ADs (33.3% SSRIs, 22.2% TCAs, 44.4% MAOIs, $p<0.001$). These data demonstrate that the primary indication for use of SSRIs is depression, while non-depression diagnoses are relatively common for patients prescribed TCAs. These findings are consistent with previous studies in the US in that utilization patterns vary across ADs. Yet when compared to previous US studies, Saskatchewan data across all antidepressants in this study tended to show much higher rates of depression as the indication for use.

PUT PREVENTION INTO PRACTICE: IS IT EFFECTIVE?

Melnikow, Joy, University of California, Davis, Sacramento, CA; Kohatsu, Neal, MD, Chan, Ben, MS.

Objectives: To evaluate the effect of *Put Prevention Into Practice (PPIP)* office-based materials on the delivery of eight clinical preventive services clinical preventive services. *Methods:* PPIP materials were provided with minimal technical assistance to a family medicine practice community-based residency training program that served an ethnically diverse, low-income population. A comparable control site was studied. Appropriate use of clinical breast exams (CBE), mammography, Pap smears, cholesterol, fecal occult blood testing, (FOBT), tetanus-diphtheria, pneumococcal, and influenza vaccines was assessed by medical record review at baseline, 6 months, 18 months, and 30 months. Logistic regression models were used to assess change in delivery rates of clinical preventive services. *Results:* Seven clinical preventive services were delivered at higher rates in the intervention site at 6 months compared to baseline. These rates, however, flattened or decreased by 30 months. The intervention site relative to the control site, showed more favorable trends for CBE, mammography, and FOBT. *Conclusions:* Use of PPIP materials resulted in a modest improvement in the delivery of certain clinical preventive services. Larger, sustained, improvement in the delivery of clinical preventive services will likely require substantial systems changes, training, and ongoing support.

MILDLY ABNORMAL PAP SMEARS: WHAT IS COST-EFFECTIVE MANAGEMENT?

Melnikow, Joy, University of California, Davis, Sacramento, CA; Nuovo, Jim; Willan, Andrew; Chan, Benjamin K; Birch, Stephen; Stewart, Gary K; Helms, L Jay, Kupperman, M..

Purpose: To estimate costs and outcomes of two policies: an early colposcopy (aggressive) policy or a serial repeat Pap smear (conservative) policy for management of mildly abnormal Pap smears. To determine the marginal cost-effectiveness of an aggressive policy compared with a conservative policy. *Methods*: Outpatient costs for Pap smears, colposcopy, and cryotherapy were estimated as actual resource use based on time-motion studies for personnel, clinic equipment, lab, and overhead costs. Costs for treatment of cervical cancer were determined from cost data provided by an HMO, including inpatient and outpatient care, pharmacy, radiology, and laboratory. Outcomes were estimated from meta-analyses of the medical literature, from original data from a system of family planning clinics, and rarely, by expert opinion. A decision tree analysis projected outcomes and costs over five years. Sensitivity analyses were conducted using Monte Carlo simulations. *Results*: Invasive cervical cancer is a rare outcome among women with mildly abnormal Pap smears regardless of which management policy is followed. In the baseline model, 653 invasive cancers per 100,000 women were projected over 5 years with the aggressive policy, compared to 787 invasive cancers per 100,000 women with the conservative policy. The average difference in cost per woman between the two strategies was $90 (with 5% discounting). The marginal cost-effectiveness of the aggressive strategy per cancer prevented was $66,727. Pursuing the aggressive strategy saved seven additional days of life on average. Marginal cost per year of life saved was estimated at $4,679, as each cancer prevented saved many years of life. *Conclusions*: An aggressive policy for the management of mildly abnormal Pap smears is somewhat more effective for preventing invasive cervical cancers. While the cost per additional cancer prevented by this policy is large, each prevented cancer saves many life years.

EFFECTS OF HOSPITALIST PHYSICIANS ON AN ACADEMIC GENERAL MEDICINE SERVICE: RESULTS OF A RANDOMIZED TRIAL

D Meltzer, J Morrison, T Guth, A Hernanadez, A Dhar, L Jin, A Rubenstein, and W Levinson, Section of General Internal Medicine, University of Chicago, Chicago, IL.

Purpose: Hospitalist physicians who specialize in inpatient care are rapidly increasing in number but there is limited evidence from randomized trials concerning their effects on resource utilization and outcomes or how they achieve their effects. This project aims to determine the effect of hospitalists on resource use and outcomes on a general medicine service in an academic medical center and the mechanism for their effects.
Methods: A longitudinal trial from July 1997-June 1998 with all patients admitted every fourth day assigned to teams led by hospitalist physicians (HPs) who care for inpatients 6 months per year versus teams led by non-hospitalist physicians (NHPs) who care for inpatients one or two months per year. Resource utilization was measured by length of stay, use of specific clinical resources, and costs. Patient outcomes were measured by 30-day mortality rates, readmission rates, and change in reported physical function and patient satisfaction. Housestaff satisfaction was also assessed.
Results: Of 3165 admissions to the general medicine service, 752 (24%) were to HPs and 2410 (76%) to NHPs. Average length of stay for the general medicine service was 5.2 days and average cost was $8200. In multiple regression analysis controlling for diagnosis according to Charlson group, HPs did not have different length of stay than NHPs in the first six months, but HPs had 0.8 day lower length of stay ($p<0.01$) in the second six months. HPs and NHPs did not differ in mean costs in the first or second six months, but regression analysis of log costs controlling for diagnosis found HPs had 11 percent lower costs in the second six months ($p<0.01$). Quantile regression demonstrated that this effect was due to $350 lower costs for the lower 50 percent of admissions by costs ($P<0.08$), with no effect on more expensive admissions. In analyses that controlled for month of admission, total volume of patients seen by the physician to that date, and total volume of patients with the same diagnosis seen by the physician to that date, the effect of hospitalists was completely explained by volume. This was almost entirely due to the effect of volume of patients with the same diagnosis. Further analyses demonstrated no difference between HPs and NHPs in in-hospital mortality rate, 30-day mortality rate, readmission rate, physical function, or overall patient satisfaction. Housestaff satisfaction did not differ between HP and NHP services.
Conclusions: Over the year, HPs decreased length of stay and costs compared to NHPs, but with no difference in outcomes. These decreases in costs were concentrated among lower cost admissions and appear to result primarily from the greater disease-specific experience of HPs in treating patients with common diagnoses. Experience treating patients with a given illness may be an important determinant of resource utilization, even for common conditions. Efforts to increase physician experience with specific clinical conditions may help lower resource use without sacrificing quality of care.

DEVELOPMENT AND VALIDATION OF A CLINICAL PREDICTION RULE FOR MAJOR ADVERSE OUTCOMES IN CORONARY BYPASS SURGERY. EB Miller, Brigham and Women's Hospital, Boston, MA; K Kahn, UC Los Angeles Medical Center, Los Angeles, CA; and DW Bates, Brigham and Women's Hospital, Boston, MA.

Objectives: To develop and validate a clinical prediction rule for predicting in-hospital major adverse outcomes in patients undergoing coronary artery bypass grafting (CABG) surgery.

Methods: All patients who underwent a CABG procedure and no other concomitant surgery at twelve academic medical centers were enrolled in the study. Only one episode per patient was included. We assessed in-hospital major adverse outcomes and their predictors using the following data sources: admission information, coronary angiographic information, and postoperative hospital course. A major adverse outcome was defined as: death, renal failure, reinfarction, cardiac arrest, cerebrovascular accident, or coma. Predictor variables were limited to information available before the procedure, and only outcomes that occurred postoperatively were included.

Results: A major adverse outcome occurred in 6.5% of 6237 patients in the derivation set and 7.2% of 3261 patients in the validation set. Death occurred in 2.5% of patients in the derivation set and 2.2% in the validation set. Sixteen variables were independently correlated with major adverse outcomes. A clinical prediction rule for any major adverse outcome was developed and prospectively validated. The rule stratifies patients into six levels of risk based on the severity score. The spread in probability between the lowest and highest risk groups of having a major adverse outcome was 1.7% to 32.3% in the derivation set and 2.2% to 22.3% in the validation set. The ability of the rule to predict major adverse outcomes was assessed by determining the area under the receiver-operating characteristic (ROC) curve and was 0.73 in the derivation set and 0.70 in the validation set. Model calibration for the entire cohort was assessed using the Hosmer-Lemeshow goodness-of-fit statistic and was good (0.79). In predicting mortality, the ROC curve area was 0.77 in the derivation set and 0.74 in the validation set. The Hosmer-Lemeshow statistic was 0.58.

Conclusions: This clinical prediction rule allows stratification of potential CABG surgery candidates prior to surgery according to their risk of suffering a major adverse outcome postoperatively. Such a rule may be useful in comparing outcomes across physicians and institutions, in evaluating trends in cardiac surgical practices over time, or in making clinical decisions for individual patients.

PREDICTION RULES FOR COMPLICATIONS IN CORONARY BYPASS SURGERY: A COMPARISON AND METHODOLOGICAL CRITIQUE. EB Miller, Brigham and Women's Hospital, Boston, MA; K Kahn, UC Los Angeles Medical Center, Los Angeles, CA; and DW Bates, Brigham and Women's Hospital, Boston, MA.

Background: Several clinical prediction rules have been developed over the past decade that use preoperative information to stratify patients according to risk of complications after coronary bypass surgery.

Objectives: To assess the methodologic standards employed by five additive risk adjustment scores—four previously published and one recently developed using the derivation subset of the Quality Measurement and Management Initiative (QMMI) patient cohort—that predict mortality and/or morbidity after coronary bypass surgery, and to assess the performance of each model in discriminating outcomes by prospective validation using a large, multi-institutional patient database.

Methods: All patients (n=9498) who underwent a CABG procedure and no other concomitant surgery at twelve academic medical centers from August, 1993 to October, 1995 were included in the QMMI patient cohort. Methodologic standards used for model comparison were adapted from published criteria. Cross-validation studies were performed by applying the published criteria for developing each model to the validation subset (n=3261) of the QMMI cohort and assessing the performance of each model in discriminating outcomes. Receiver-operating characteristic (ROC) analysis and the Hosmer-Lemeshow (HL) goodness-of-fit statistic were used to assess accuracy of model predictions and model calibration, respectively.

Results: Wide variations existed in the methodologies used to develop and validate the five scores evaluated. Cross-validation of the four previously-published models revealed degradation in all four models' abilities to discriminate outcomes. In predicting mortality, ROC curve areas ranged from 0.69 to 0.73 and HL statistics ranged from 0.18 to 0.80. In predicting major adverse outcomes, ROC curve areas ranged from 0.61 to 0.62, while HL statistics ranged from 0.02 to 0.51. For the recently-developed QMMI model, the ROC curve area was 0.74 in predicting mortality with an HL statistic of 0.82, and in predicting major adverse outcomes, the ROC curve area was 0.70 with an HL statistic of 0.92.

Conclusions: We found substantial variation both in the methodologies employed in developing clinical prediction models used to predict adverse outcomes in coronary bypass surgery patients and in each score's ability to predict outcomes. Models developed at single institutions or using relatively small numbers of patients may be less generalizable when applied prospectively in diverse clinical settings.

CAN PRIMARY CARE PHYSICIANS DIAGNOSE INNOCENT HEART MURMURS? D Mines, KM Fosnocht, JA Berlin, BL Strom, Division of General Internal Medicine and Center for Clinical Epidemiology & Biostatistics, University of Pennsylvania Medical Center, Philadelphia, PA.

Recent American Heart Association guidelines suggest that the diagnosis of "innocent murmur" can be made without echocardiography if certain clinical criteria are present. Because little is known about the auscultatory skills of primary care physicians (PCPs), we studied their ability to classify several murmur features used in these guidelines.

We used a cross-sectional design in which physicians evaluated a panel of 12 "virtual patients," whose heart sounds were produced by a high fidelity simulator. A convenience sample of 64 general internists and family physicians answered multiple choice questions about the auscultatory findings in each patient. We report sensitivity and specificity for each feature, along with 95% confidence intervals adjusted to account for clustering.

Sensitivity to detect a systolic murmur (present in all patients) was 98% (96%, 99%). To detect non-ejection shaped murmur, sensitivity was 65% (59%, 72%), and specificity 79% (75%, 83%). In patients with an ejection-shaped murmur, sensitivity to detect a peak in the second half of systole was 66% (57%, 72%), and specificity 53% (46%, 62%). To detect murmurs that got louder with a "maneuver", sensitivity was 80% (75%, 85%), and specificity 93% (91%, 95%). To detect any extra heart sound, click or diastolic murmur, sensitivity was 65% (58%, 71%), and specificity 86% (82%, 89%). Using a global measure of ability to detect *any* marker of a pathologic murmur, sensitivity was 95% (94%, 97%), but specificity was only 39% (32%, 46%).

Looking at physician-specific, rather than observation-level results, nearly all physicians (94%) had a global sensitivity greater than 85%. However, most physicians (63%) had a global specificity below 35%. Global specificity also varied considerably across physicians, with values ranging from 0 to 100%.

Certain physician characteristics were associated with better performance. Using multivariable logistic regression, global specificity was higher for doctors more than 10 years out of medical school compared to their less experienced peers (OR 2.3 [95% CI 1.13, 4.72]). Judgments rated "very confident" by physicians for all directly observed murmur features also had higher specificity in the logistic models.

Based on their evaluation of 12 simulated patients, the ability of PCPs to classify individual auscultatory components of systolic murmurs is inconsistent, although global sensitivity is excellent. If a single abnormality in any murmur feature would trigger echocardiography, PCPs would miss fewer than 5% of potentially diseased cases. Using this strategy, however, many normal patients would be referred for further testing.

ANGIOTENSIN CONVERTING ENZYME INHIBITORS FOR CONGESTIVE HEART FAILURE: APPROPRIATENESS OF DOSING AMONG FAMILY PHYSICIANS, GENERAL INTERNISTS AND CARDIOLOGISTS.
MJ Mintz, EA MacKay, Division of General Internal Medicine, University of Calgary, Calgary, Alberta, Canada.

Objective: To determine if physician specialty in one Canadian city is associated with underutilization and underdosing of angiotensin converting enzyme (ACE) inhibitors in patients with congestive heart failure.

Methods: Patients admitted to two Calgary hospitals with the primary diagnosis of congestive heart failure under the care of family physicians (FP), general internists (GIM) and cardiologists (CARD) were targeted for a retrospective chart review. A total of 500 patient charts were reviewed by two physician reviewers from the August 1996 and October 1997 study period. Information collected included patient demographics, ACE inhibitor use and appropriateness of ACE inhibitor dose, as dictated by published dosing guidelines.

Results: Patients admitted under FP were older, were more likely to be female, had a larger percentage with renal failure and had less of a chance of having a cardiac ejection fraction measured. Patients admitted under CARD were younger, more likely to be male, had more severe left ventricular dysfunction and had less of a chance of having renal dysfunction.

On admission, 59% of patients admitted under FP, 47% of those admitted under GIM and 64% of patients admitted under CARD were on ACE inhibitors. On discharge, 76% under FP, 77% under GIM and 85% admitted under CARD were on ACE inhibitors. On admission, 18% of patients under FP, 22% of patients admitted under GIM and 34% of patients admitted under CARD were on adequate ACE inhibitor doses whereas on discharge the numbers were 31%, 49% and 54% respectively. The change from inadequate to adequate doses was 11% under FP, 28% under GIM and 24% under CARD. There was no significant difference in the rate of ACE inhibitor use at discharge among the 3 groups ($p = 0.163$). There was a significant difference in adequate dosing at discharge between FP and either CARD or GIM ($p = 0.0003$ and $p = 0.003$ respectively) but no significant difference between ACE inhibitor dosing among the CARD and GIM ($p = 0.054$).

Conclusion: Approximately 50% of patients admitted to hospital with congestive heart failure continue to be discharged home on inadequate doses of ACE inhibitors despite convincing evidence of benefit. Patients admitted under family physicians were less likely to be discharged with an adequate dose of ACE inhibitor when compared to either cardiologists or general internists. This suggests that this group should be targeted for further interventions to increase the use of adequate doses.

CLINICAL AND NONCLINICAL PREDICTORS OF ANTIHYPERTENSIVE POLYPHARMACY IN THE U.S. B Misra, RS Stafford, Institute for Health Policy, Massachusetts General Hospital, Boston, MA.

Background: Polypharmacy, the use of multiple prescribed medications, may increase patients' risk for adverse drug interactions and potentially reduce the cost-effectiveness of therapy. National physician practice patterns regarding the prescribing of multiple antihypertensives (anti-HTNs) have not been examined.

Methods: Using the National Ambulatory Medical Care Surveys for 1985 and 1989-1996, we examined 29,470 visits by patients receiving one or more anti-HTN prescriptions among the six possible medications listed. Logistic regression was used to evaluate clinical and nonclinical predictors of the prescribing of three or more anti-HTN medications. Among patients taking three or more anti-HTNs, we examined the potential for adverse drug interactions.

Results: There were an estimated 70 million annual visits by patients treated with anti-HTNs. Among these patient visits, the mean number of medications was 1.3. The prescribing of three or more anti-HTNs was reported in 4.3% of visits to patients with treated hypertension (3 million annual visits). The following were significant independent predictors of anti-HTN polypharmacy: clinical comorbidities [especially congestive heart failure (OR: 2.7, 95%CI: 2.3-3.2)], patients 45+ years of age (1.8, 1.4-2.3), visits to cardiologists (1.9, 1.6-2.2), male patients (1.1, 1.0-1.3), nonwhites (1.2, 1.1-1.4), and patients living in the Northeast and Midwest (1.2, 1.1-1.4). Of those patients on three or more anti-HTNs, 12% were taking both ACE inhibitors and potassium-sparing diuretics.

Conclusion: While polypharmacy can be required to treat HTN, the potential for increased costs and adverse drug interactions is great. As suggested by the co-prescribing of ACE inhibitor and potassium-sparing diuretics, polypharmacy may include the use of drug combinations that place patients at an increased risk of adverse events. The prevalence of antihypertenisive polypharmacy and the demonstrated influence of nonclinical factors suggest an opportunity to improve prescribing practices for hypertension treatment.

CHARACTERIZATION OF A DISCHARGE CLINIC IMPLEMENTED IN ASSOCIATION WITH A FULL-TIME HOSPITALIST PROGRAM. **W Morris, CC Wang, C Marlett, PJ Kearns, Department of Medicine, Santa Clara Valley Medical Center (SCVMC), San Jose, CA.**

Background: The evolving role of hospitalists in American health care has focused increased attention on the hospital discharge process. Although separation of inpatient and outpatient physicians could lead to decreased patient adherence to follow-up, the innovations that accompany hospitalist programs present an opportunity to better understand and improve health care delivery, especially for lower-income and marginalized patients. **Methods:** SCVMC, a county teaching hospital, has utilized full-time hospitalists to supervise 50% of its resident ward teams since January 1997. In order to provide better outpatient follow-up of hospitalized patients who either had no primary health care provider (PCP) or who were unable to be seen in a timely manner by their regular physician, we implemented an on-site discharge clinic (DC) two afternoons per week as part of our hospitalists' duties. Data was collected in a prospective manner to characterize the DC patient population and utilization. Patients were randomly assigned to a pre-clinic phone call to investigate this intervention's impact on adherence to clinic follow-up. **Results:** During the initial 6 months of the DC 228 appointments were scheduled, an average of 4 per afternoon. 198 (88%) were first visits. The majority of patients were referred from hospitalist teams (67%), with PCPs identified in only 24%. Patients had an average age of 49 years, and were more often male (55%). 61% of the DC patients were non-caucasian and 23% had clear evidence of a language barrier. 43% of patients failed their first appointment. The benefit of a pre-clinic phone call on adherence to follow-up was not significant (relative risk =0.80, p=0.19). Overall characteristics of DC patients as well as of those who kept and failed their first appointment were as follows: (*p<0.05)

	overall	kept appt.	failed appt.	odds ratio (95%CI)
% smoker*	63	55	73	2.28 (1.10-4.74)
% alcoholic*	40	29	55	3.00 (1.55-5.82)
% drug use*	24	13	39	4.67 (2.13-10.36)
% homeless*	21	6	41	10.31 (3.98-27.83)
% hx non-adherence*	34	24	47	2.79 (1.44-5.42)
% psych hx*	15	9	23	3.13 (1.27-7.84)
% non-English*	23	30	13	0.37 (0.16-0.82)
% with PCP	24	24	25	1.00 (0.49-2.07)

Conclusions: Failed appointments were associated with addictive substance use, history of psychiatric illness, homelessness, and past evidence of non-adherence. Non-English speakers were more common in the group that kept their first appointment. An established PCP and a pre-clinic phone call had no impact on adherence to follow-up.

INVOLUNTARY DISENROLLMENT FROM MEDICARE MANAGED CARE: OUTCOME AND IMPACT. Nora Morgenstern, Ralph Gonzales and Robert J. Anderson, University of Colorado Health Sciences Center, Denver, CO.

Background: Several thousand individuals have been involuntarily disenrolled (ID) from Health Maintenance Organizations (HMO) with Medicare contracts.

Objective: To test the hypothesis that ID has significant patient impact.

Methods: We attempted to survey by telephone 450 ID individuals that had been receiving their care at an academic medical center with either an internist or a geriatrician as their primary care provider (PCP).

Results: Of 371 individuals that could be contacted, 57% changed to another system/PCP and 43% remained with their PCP at the academic center using traditional Medicare. Bivariate analyses found those remaining with their PCP at the academic medical center were more likely to describe a close ($p<.01$) and trusting ($p<.041$) relationship with their PCP than those transferring to another system/PCP. No differences in either overall satisfaction with care or self-assessed health status were found when those changing to a new system/PCP and those remaining at the academic center were compared. Multivariate analysis found that having received care at the academic site for >1 year (odds ratio or OR 0.34, confidence interval or CI 0.17-0.69), having more than a college education (OR 0.34, CI 0.17-0.70) and being of black race (OR 0.30, CI 0.13-0.68) were significantly and independently associated with remaining at the academic site, while a distant relationship with their PCP (OR 10.2, CI 1.13-91.09) was associated with changing to a new system/PCP. Of patients changing to another system/PCP, more than 60% felt that the process of changing to a new PCP or clinic was a problem for them. Patients changing to a new system/PCP were most concerned about establishing a new PCP/clinic relationship, lack of adequate notice and explanation for ID and changing in the middle of a diagnostic and/or treatment plan. Patients changing to a new system/PCP had a modest level of concern regarding transfer of records, continuity of medications, and adequacy of available information to select a new system/PCP; and little concern regarding location/transportation issues at a new clinic. Financial considerations were cited as an important factor in 52% of those changing to a new system/PCP. More than 85% of those not changing desired the ability to self-select specialist care, 55% agreed they could afford to pay more for their medical care and 45% did not trust HMOs.

Conclusion: These results demonstrate that ID has significant impact on Medicare recipients and delineate some of the concerns of ID patients that change to a new system/PCP. While multiple factors determine the subsequent actions of ID Medicare HMO participants, the duration and closeness of the patients' relationship with their PCP is a major determinant.

DEVELOPMENT OF AN HIV RESEARCH DATABASE USING MEDICAID CLAIMS DATA. JM Mrus, CJ Moomaw, TI Shireman, and J Tsevat, Division of General Internal Medicine, Department of Internal Medicine, College of Pharmacy, and Institute for Health Policy and Health Services Research, University of Cincinnati Medical Center, Cincinnati, OH.

Context: Medicaid insures a large portion of the HIV-infected, therefore Medicaid claims provide a substantial opportunity for HIV-related research. Previous database studies have relied upon HIV case identification using only ICD-9 codes, a technique that may lead to underestimation of true cases.

Objective: To develop a database from Ohio Medicaid claims data using an HIV case-finding algorithm that includes ICD-9 codes, State-defined therapeutic drug class codes, and CPT codes.

Methods: Potential HIV cases were selected from claims data from 6/97 - 9/98 using ICD-9 codes [HIV (042), retrovirus (079.5), cell-mediated immune deficiency (279.1), and asymptomatic HIV infection (V08)], CPT codes [HIV PCR (87534 - 87539), CD4+ T-cell analysis (86360, 86361)] and State-defined therapeutic drug class codes for antiretrovirals (W5A, W5B, W5C). After all potential cases were identified, records that were less likely to represent HIV cases were eliminated. Records were eliminated if they: 1) were selected by only ICD-9 code 279.1 and there were no associated HIV tests or drugs; 2) were selected only by CPT and there were not both HIV PCR and CD4 codes; 3) were selected only by drug code for lamivudine with a concurrent ICD-9 code for hepatitis C (070.54); 4) had an ICD-9 code for HIV exposure (V01.7) without a subsequent ICD-9 code for HIV, antiretroviral drug claim, or HIV-related CPT claim; or 5) were not selected by ICD-9 code and had two or fewer dates on which claims, flagged by our algorithm, were billed.

Results: Initially 3706 potential cases were identified. 246 of those claims were eliminated using the described logic, resulting in 3442 identified cases. The number of cases flagged by the various methods is shown below:

Method	ICD-9 alone or in combination	Drug alone or in combination	CPT alone or in combination	ICD-9 only	Drug only	CPT only
Number	3147	2490	850	868	295	0
% of total	91	72	25	25	9	0

Conclusions: Most cases were selected by ICD-9 code in our HIV case selection algorithm. Using antiretroviral drug codes in addition to ICD-9 codes increased the yield. CPT codes provided little extra information and can probably be eliminated from the algorithm.

THE USE OF LOW MOLECULAR WEIGHT HEPARINS FOR PERI-OPERATIVE ANTICOAGULATION WINDOWS IN A COMMUNITY-BASED HOSPITAL. Mulhall, Brian P.; Randall, Daniel C. Department of Medicine, Madigan Army Medical Center, Tacoma, Washington.

There are a number of conditions that require long-term anticoagulation where the risk of thrombo-embolic phenomena is too high to justify prolonged cessation of anticoagulant therapy--even for invasive or operative procedures. To address the perceived need, heparin "windows" were suggested in the 1970s. However, they necessitated prolonged hospital stays for the delivery and monitoring of unfractionated heparin while awaiting reversal of coumadin effects (with subsequent re-initiation). The Low Molecular Weight Heparins have been studied in an increasing number of settings to promote rapid, safe and effective anticoagulation without the need for intravenous medications or close inpatient monitoring. Given the significant cost and the inconvenience to the patient of these prolonged hospital stays, the use of Low Molecular Weight Heparins to allow for outpatient reversal of oral anticoagulants has been proposed by others.

This descriptive study examined outcomes and cost effectiveness of Low Molecular Weight Heparins for perioperative anticoagulation. Our goals were to assess the ease and cost-benefit of this approach. We enrolled volunteers for over 30 different procedures and monitored these patients for the clinical end-points of: death, significant bleeding, thrombocytopenia, successful return to prior level of anticoagulation, thromboembolic complications, and satisfaction of patient and providers. Additionally, we compared the defined institutional costs of this approach to those that would be incurred with the more traditional approach, using inpatient unfractionated heparin. Major outcomes included two major bleeds requiring ICU monitoring, but (overall) avoidance of greater than 100 days of hospitalization for the entire population studied. Time required for hospitalization was significantly reduced and satisfaction with this approach was nearly universal.

Based on our results, this approach is a relatively safe and cost-effective approach in order to facilitate operative procedures in a select population of patients. However, it became clear through our experience that this approach requires vigilant monitoring for adverse outpatient events by personnel experienced in the use of anticoagulation agents (especially with Low Molecular Weight Heparins). Due to the proximity to operative procedures and the concomitant use of another anticoagulant, we are advocating a higher degree of monitoring for this indication than may be required for other uses of Low Molecular Weight Heparins (for example, DVT treatment/prophylaxis).

We will define our experience and observations, and our suggestions for a reasonable approach to help limit avoidable adverse consequences in this population.

THE USE OF ALTERNATIVE MEDICAL THERAPIES. JJ Ng, MA Clark and AW Moulton. Departments of Community Health and Medicine, Brown University School of Medicine and Rhode Island Hospital, Providence, Rhode Island.

Background: Despite increased interest in alternative medicine among patients, insurers and health care providers, few national surveys document the prevalence of the use of alternative medical therapies.

Objective: To investigate the prevalence and determinants of alternative medical therapy use in the United States (US).

Methods: The 1996 Medical Expenditure Panel Survey Household Component (MEPS-HC) is a nationally representative survey of the US civilian non-institutionalized population with over sampling of African Americans and Hispanics. Participants of the MEPS-HC are a subset of the 1995 National Health Interview Survey (NHIS). Data on households and individuals were collected using Computer Assisted Interview Technology (CAIT). Sociodemographic information and data regarding the use of specific alternative medical therapies for calendar year 1996 were collected. Bivariate analysis was used to examine the association between alternative medicine use and sociodemographic factors.

Results: The sample consisted of 14,823 persons, 18 years or older (70.2% response rate). The estimated prevalence of alternative medical therapy use was 8.6 ± 0.4%. Of this, 36.3% received massage, 31.0% purchased herbal products, 23.6% practiced spiritual healing, 21.7% received nutritional advice, 11.2% received chiropractic therapy, 10.6% received acupuncture, 10.1% received training in or practiced meditation, imagery or relaxation techniques, 8.5% received homeopathic therapy, 6.0% received traditional (Chinese, Native American etc.) medicine, 1.1% received hypnosis and 6.8% reported the use of other alternative therapies. Of those who used alternative medical therapies, 13.6% received care from practitioners of alternative medicine, 35.5% discussed their use with their conventional provider and 12.7% were referred by their conventional provider. The prevalence of alternative medical therapy use was higher for women (10.3% $p<.001$), persons aged 35-49 (10.2% $p<.001$), persons with ≥5 visits/year to their conventional provider (13.8% $p<.001$) and persons who were privately insured (9.2% $p<.001$). African Americans were less likely to use alternative medical therapies (3.8% $p<.001$), as were persons who did not complete high school (5.5% $p<.001$). There was no association between use of alternative medical therapies and self-rated physical or mental health.

Conclusions: The MEPS-HC confirms previous findings that women, persons between the ages of 35 and 49 and persons with a higher level of formal education are more likely to use alternative medical therapies, and that African Americans are less likely. However the survey yields an estimate of alternative medicine use that is substantially lower than other samples. This may be due to more representative sampling, different methods of data collection and variations in the definition of alternative medicine.

Title: **THE ASSOCIATION OF HEALTH STATUS WITH CHANGES IN SATISFACTION WITH MEDICAL CARE,** Authors: Britt Newsome, Sheldon Retchin, Michael Jurgensen, Lou Rossiter, William Glasheen, and Lawrence Colley, Schools of Medicine and Allied Health, Virginia Commonwealth University, and Trigon Blue Cross and Blue Shield, Richmond, VA.

Purpose: To determine the patient and health care system characteristics that influence changes in patient satisfaction with medical care. **Background:** Increasingly, the results from patient satisfaction surveys are being presented to consumers as measures of quality for providers and health plans. However, many factors other than quality of medical care may influence satisfaction, including demographic characteristics, disease states, type of health care services and health status. **Methods:** This study surveyed a commercially insured cohort of 14,331 policyholders at baseline with follow-up one year later. A 47-item survey was constructed from the Short Form-36 (SF-36) and items on satisfaction with care from the Group Health Association of America's (GHAA) Consumer Satisfaction Survey including a multi-item scale assessing satisfaction with medical care. Patients were separated into three categories of change in satisfaction with medical care (increase, decrease, and no change). Logistic regression was used to analyze results. **Results:** 5,344 (37.3%) individuals returned complete surveys for both waves, providing a power to detect absolute differences of 0.10 between two groups of equal size with α=.01 and β=.90. 61% of respondents were male while 39% were female. Average age of respondents was 47.3 years. Among respondents, 2391 (44.7%), 2062 (38.6%), and 891 (16.7%) reported an increase, decrease, and no change, respectively, in satisfaction with medical care. Neither age, gender, race, type of health plan, disease state, nor health care utilization (hospital admissions, doctor's office visits) were related to observed changes in satisfaction with medical care. Patients who reported improved health and patients who reported a decrease in health status were equally likely (OR=1.29, 95% CI 1.03, 1.61 for both groups) to report an increase in satisfaction with medical care. **Conclusion:** As a meaningful outcome for patients, improved health status would be expected to be a strong positive influence on satisfaction with care. However, this study illustrates a more complex relationship because it identifies a group of patients that became more satisfied with their medical care despite a decrease in perceived health status.

RESOURCE UTILIZATION OF MEDICAID ENROLLED HOMELESS. T.P. O'Toole, J.L. Gibbon, B.H. Hanusa, M.J. Fine, Center for Research on Health Care, University of Pittsburgh, Pittsburgh, PA

Background: While the homeless have been shown to utilize health services at very high levels, the data collection is typically limited to patient interviews subject to recall bias or medical records reviews from a single facility.

Purpose: To describe resource utilization of homeless Medicaid recipients based on a review of all Medicaid claims and available medical records.

Methods: We conducted a cross sectional, community-based survey of homeless adults in Allegheny County, PA using 24 non-health care sites categorized by homeless population, randomly sampled over a five month period from April to September, 1995. We reviewed claims data and medical records from all reported sites of care by those individuals identified as Medicaid recipients to assess actual utilization during the six months preceding the interview.

Results: Of the 399 homeless adults interviewed, 162 were Medicaid-enrolled and received care in the previous six months. The majority were between 30 and 49 years old (77.0%), male (79.0%), African American (72.8%), with at least a high school education (67.3%). Overall, 87.7% identified a source for usual care, typically traditional ambulatory care sites (56.3%); 37.0% reported a chronic physical health condition, 48.1% a chronic mental health condition, 43.2% were taking a prescription drug chronically, and 82.7% reported active drug or alcohol use. The number of care episodes per person ranged from 1 to 115 with 22.8% having between 11 and 30 visits and 12.3% having >30 visits. The 162 persons had 2,391 episodes of care during the six months preceding the interview. Most care was delivered in ambulatory care sites (1,418; 59.2%) followed by inpatient admissions (354; 14.8%) and emergency departments (ED) (353; 14.8%). While the ED visits comprised 14.8% of all care episodes, 56.9% of the sample utilized the ED at least once in the previous six months. Overall, 53.9% of all episodes of care were for either a mental health (N=653) or substance abuse (N=636) primary diagnosis. Most of the care for these conditions occurred in ambulatory care sites (380 mental health care episodes; 60.2%, 493 substance abuse care episodes; 81.1%). Acute/episodic care (i.e. upper respiratory infections, cellulitis, etc.) and ortho/trauma related care accounted for 24.1% (N=576) of all episodes with 81% of the sample receiving care for one of these conditions during the previous six months. Most of this care was provided in EDs (245 episodes; 42.5%) followed by ambulatory care sites (166 episodes; 28.8%). The non-hospitalized homeless had 1.3 ED visits compared with 2.4 for those with one admission and 4.0 for those with two or more hospital admissions

Conclusions: The homeless have both a high burden of illness and utilize health services at a very high level in multiple settings. As Medicaid reimbursement shifts towards capitation special provisions and innovative delivery methods will need to be developed to more effectively provide care to homeless persons.

AN EVALUATION OF THE APPROPRIATENESS OF THE USE OF EXERCISE STRESS TESTING FOR THE DIAGNOSIS OF CORONARY ARTERY DISEASE IN A COMMUNITY OUTPATIENT SETTING.
K Olivier, T Mathew, L Guzzo, P Ciaschini, CO Jenkins and H Lee, Group Health Centre, Sault Ste Marie, Ontario, Canada.

Objective: To evaluate the clinical utility of the exercise stress test ordering behaviour of physicians for the diagnosis of coronary artery disease.

Methods: Information was prospectively gathered on exercise stress tests performed for the diagnosis of coronary artery disease (CAD) at a community clinic. Data regarding age, sex and chest pain characteristics were analysed to estimate pretest and post test probabilities of CAD according to a national practice guideline. Because this guideline does not take into account risk factors for CAD, patient charts were further reviewed to determine CAD risk factors in order to estimate their effect on clinicians' pretest assessment and to estimate new pretest probabilities based on the best available evidence. Low probability patients (defined as pretest risk < 10% of CAD) were followed up.

Results: From October 1997 to February 1998, 197 stress tests were ordered, of which 133 were performed for the diagnosis of CAD. Five (4±4%) patients had absolute contraindications to the test, while in 36 patients (27±7%) the predicted utility was limited according to the guideline. Based on the combination of chest pain quality, age and sex, pretest estimates of the risk of CAD were calculated as low, intermediate and high in 29 (22±7%), 98 (74±2%) and 6 (4±4%) patients, respectively. Within the low pretest probability group, 37% had one CAD risk factor and 43% had two or more CAD risk factors, suggesting that clinicians were influenced by these to order the test. With the integration of CAD risk factors to the model, however, only 7 of 29 (24%) patients were moved up into the intermediate pretest probability group suggesting that clinicians overestimate the effect of CAD risk factors in individuals with otherwise low probability of CAD.

Conclusions: Most stress tests ordered for the diagnosis of CAD are appropriate, although improvements in diagnostic yield might be achieved by better pretest integration of clinical characteristics. This study suggests that the use of a nomogram or algorithm might be better than either intuitive clinical assessment or a clinical guideline not taking into account concomitant CAD risk factors which the physician might consider important.

THE EFFECT OF A HOSPITALIST SERVICE ON PATIENT CARE IN AN ACADEMIC TEACHING HOSPITAL.
HC Palmer, N Armistead, S Manivannan, A Halperin, M Elnicki, K Evans, K. Halbritter, J. Neely, R. Powers, K. Anderson. West Virginia University, Morgantown, West Virginia.

Purpose: To evaluate the impact of a hospitalist service in an academic health care center on the cost and quality of medical care on an inpatient medicine ward service.

Methods: Prospective study of three internal medicine ward services: one staffed by three hospitalists each attending 4 months per year (H); one staffed by General Internal Medicine attendings each attending 1 month per year (GIM); and one staffed by subspecialty attendings each attending 1 month every 1-2 years (SS). Patents were assigned to one of the three teams based upon housestaff call schedule, not attending speciality. Team structure was identical except the hospitalist service also had a nurse discharge planner. Hospitalist attendings had no outpatient responsibilities while GIM and SS attendings had variable outpatient commitments during the ward month. Primary outcomes were average cost per patient (COST), length of stay (LOS), readmission rates (READM), case mix index (CMI), patient and housestaff satisfaction.

Results: Results based on 5 months of data are presented in the table

GROUP (n)	COST ($/PT)	LOS (days)	READM(%)**	CMI**
H (362)	3,627 ± 4,386*	4.2 ± 3.5*	9.4	1.00 ± .54
GIM (204)	5,353 ± 7,343	5.7 ± 5.7	6.8	1.04 ± .50
SS (416)	5,622 ± 7,708	5.9 ± 5.3	7.9	1.02 ± .53

*p values by ANOVA p< 0.0003; H had significantly decreased cost and LOS. There were no differences between GIM and SS.

**There were no significant differences in READM or CMI among the groups. Resident and patient satisfaction rates were universally high among all groups.

Conclusions: A hospitalist service resulted in significant cost savings per patient compared with both generalist and subspecialist staffed services. This difference was largely due to decreased length of stay. Readmission rates, patient satisfaction and resident satisfaction were not compromised.

THE PROFILE OF INJECTION DRUG USERS WHO HAVE HIGH HEALTH CARE UTILIZATION.
A Palepu, S Rae, J Muller, C Miller, S King, AH Anis, RS Hogg, MV O' Shaughnessy, MT Schechter. Centre for Health Evaluation and Outcome Sciences, St. Paul's Hospital, University of British Columbia, Vancouver, Canada.

Injection drug users (IDUs) often seek care at the Emergency Department (ED) and may require hospitalization due to complications of their drug use. We sought to characterize the profile of IDUs who are frequent ED users and/or who have been hospitalized frequently from a prospective cohort of IDUs in Vancouver, British Columbia.

In May, 1996, IDUs who had injected illicit drugs within the previous month were recruited through street outreach. Every six months they underwent serology for HIV-1 and a questionnaire on demographics, drug using behaviours, housing status and health service utilization in the previous six months for a total of 6 cycles. We obtained informed consent from 464 IDUs to review their medical records at an inner city hospital from May, 1996 to October 1, 1998 and linked this data with their survey responses. Logistic regression was used to identify the independent predictors of frequent (> 2 times) ED use as well as frequent (> 2 times) hospitalization.

Of the 464 participants, 30% are HIV-positive, 34% are female, 27% report working in the sex-trade, 36% inject >4 times/day, 64% use cocaine as their drug of choice, 40% lend needles, 60% borrow needles, 65% live in unstable housing conditions (living primarily in a hotel, boarding room, transition house or street) and 63% frequently use needle exchange services. 193 (43%) IDUs were frequent users of the ED and 59 IDUs had greater than 10 visits over 16 month study period. Soft tissue infections and drug related complaints were the most common reasons for ED visits. After controlling for HIV status, the only factor (adjusted odds ratio, 95% CI) independently associated with frequent ED use was unstable housing (1.8, 1.1-2.9). 38 (7.2%) IDUs had frequent hospitalizations and 12 IDUs had greater than 5 hospitalizations during the study period. Pneumonia/bronchitis (n=81) and soft tissue infections (n=58) were the most common reasons for admission. HIV-positive status (9.8, 4.3-22.2) and female gender (2.0, 1.0-4.2) were independently associated with frequent hospitalization.

Despite the high HIV-seroprevalence in our cohort, most health care utilization is due to injection-related complications such as soft tissue infections and pneumonia. The profile of IDUs who are frequent users of ED services differs from those who are frequently hospitalized. Unstable housing contributes to high ED use whereas HIV-positive status and female gender are strong predictors of hospitalization. This may reflect differences in social support, care-seeking behaviour or severity of illness among this vulnerable population.

THE EFFECT OF IMPLEMENTING A PATIENT CARE PARTNERSHIP PROGRAM ON COST AND QUALITY OF PATIENT CARE.
HC Palmer, M Elnicki, A Halperin, K Halbritter, K Evans, M Kolar, L. Stark, M Nuss, K. Anderson West Virginia University, Morgantown, WV.

Purpose: To evaluate the effect of implementing a physician-hospital administration intervention on cost and quality of inpatient care.

Methods: The Patient Care Partnering Plan (PCPP) was a joint effort by General Internal Medicine Physicians (GIM) and hospital administration in 1998. The intervention consisted of resident education in appropriate resource utilization, use of evidence based practice guidelines and a discharge planning nurse. The primary outcomes were averate cost per inpatient (COST), length of stay (LOS), readmission rates (READM), resident and patient satisfaction. Comparisons were made between GIM and subspecialty physician attendings (SS) on a general medicine service for 1997 and 1998. Patients were randomly assigned to services based on housestaff schedules, not attending specialty.

Results:

	GIM		SS	
	1997	1998	1997	1998
COST ($/PT)	4,953 ± 5,904	4,437 ± 6,478*	5,798 ± 7,592	6,479 ± 8,574
LOS (days)	5.35 ± 4.88	4.97 ± 4.95	6.05 ± 5.62	6.45 ± 5.88
READM (%)	7.6	7.4	7.9	6.6

*p=.05 compared with GIM in 1997

Compared with SS, GIM had significantly lower cost (p<.0001) and shorter LOS (p<.0001) with no difference in READM. These differences were also present in 1997. Patient (PS) and resident satisfaction (RS) were high for both services.

Conclusions: The PCPP resulted in significant cost savings and without compromising READM, PS, and RS. GIM attendings had significantly lower costs and LOS compared with SS.

A NEW INDEX OF HMO MARKET IMPACT. L.G. Pawlson. E. Moy, E. Valente and P.F. Griner. Purpose: The more stringent controls of reimbursement and utilization imposed by "managed care" has been postulated to affect virtually every aspect of health care. Many studies of these effects have used HMO penetration (P) or index of competition (IOC-sum of squares of HMO market share) or market "stage" to characterize markets. All of these have substantial limitations and have not been examined as to their effects on utilization variables that would be expected to change in response to market forces. Since providers are affected by both penetration and premium, we postulated that a measure that combined penetration with the labor market adjusted blended AAPCC and commercial HMO premium might provide a useful segmentation of markets that could be used in studies of managed care impact. Methods: Data from 1997 Interstudy survey of HMO's was merged with DHHS labor market and Medicare AAPCC rates. Data from the 56 largest metro areas was sorted quartiles of high penetration (P)-low premium (M), high P-high M, low P-low M and low P-high M. Other variables examined include Medicare and Medicaid market penetration, and utilization variables (bed days/1000, beds/1000 and LOS) that would be expected to be reduced by high levels of competition. Results: Quartile averages were P-49% M$115, P42% M$152. P 24% M$132 and P 21% M$148. Some cities in the highest quartile included Denver, Miami, Portland and San Franciso while Las Vegas, Indianapolis, Dallas and Nashville were in the lowest quartile. Variation by quartile was present in Medicare HMO penetration (32%,16%, 9%, 8%), LOS (6.0,7.1,6.8,7.0), BD/1000 (712,889,876,844), and Beds/1000 (3.09,3.38,3.76,3.73) but not Medicaid penetration (21, 25, 20, 6). The IOC was virtually identical in all four quartiles. By comparison quartiles created by using P or IOC alone or in combination showed minimal effect on utilization variables, and only P showed some effect on Medicare market share. Conclusions: The newly created index sorts SMSA's into groups that show substantial variation in key utilization measures. The combination of low premium, high penetration appears to have a marked effect on both utilization and the Medicare HMO penetration. The new index would appear to be a more useful measure of managed care market impact on providers than previously used indices.

CODING OF REASON FOR ENCOUNTER IN OUTPATIENT GENERAL INTERNAL MEDICINE. L Pult, H Stalder, F Borst.

Context :

Until the achievement of natural language processing systems, coding is the main tool for a computer to treat data in clinical medicine. Several classifications aim to code diagnosis, historically first to build statistics, then to contribute to medico-economics models. Today, coding a medical record should reach in addition the following goals: a better management of patient, a support for automatic medical decision making, and a basement for clinical research. In outpatient general internal medicine, a precise diagnosis is made in only 10 to 15% of cases. The reason for encounter (RFE) is far more represented (about 90% of cases). Therefore this element seems to be a better retrieval tool.

Objectives:

To evaluate the feasibility of coding de RFE in a university outpatient center of general internal medicine. To assess the aptitude of the International Classification of Primary Care to represent the RFE. To analyze the activity of this outpatient center with the ICPC.

Material and Methods:

1682 RFE have been included in the study, representing the 6 months activity of the policlinic of general internal medicine in Canton University Hospital of Geneva, for the encounters without a date. A personal classification was then built by the author to check the feasibility of coding RFE. This scheme was then compared with ICPC, which was also used to describe the medical activity.

Results :

RFE can easily be coded in outpatient medicine. The classification scheme made by the author out of the material of this study is simpler, but a little less specific than ICPC. Moreover, ICPC allows a better comparison with other medical centers and has a logic structure that helps encoding and data analysis. For instance, ICPC makes it easy to see that osteo-articular and respiratory systems are the most frequent anatomo-physiologic entities represented in the RFE in the studied outpatient population.

Conclusions:

ICPC, which is part of the WHO classifications and was admitted for a national standard in several European countries. is adequate for coding RFE in outpatient general internal medicine.

PHYSICIANS' ESTIMATES OF THE RISK OF CARDIOVASCULAR EVENTS AND THEIR DECISIONS TO USE PHARMACOLOGICAL THERAPY FOR HYPERLIPIDEMIA. M Pignone, C Phillips, A Fernandez, T Elasy, UNC- Chapel Hill, Vanderbilt, UCSF- San Francisco General Hospital, Divisions of Gen. Internal Medicine.

Introduction: The absolute benefit and cost-effectiveness of pharmacological treatment for hyperlipidemia depends on accurate assessments of the risk of future cardiovascular events. We sought to measure how well physicians estimate the risk of cardiovascular events and benefits of pharmacological treatment in patients with no previous history of heart disease, and we examined how their treatment decisions related to these estimates and to different treatment guidelines.

Methods: We administered a 12 scenario questionnaire to medical residents, fellows and attending physicians in cardiology and general internal medicine from 3 university teaching hospitals. For each patient scenario, subjects were asked to estimate the 5 year risk of a cardiovascular event (defined as new onset angina, non-fatal or fatal MI, or sudden death from CHD) without drug treatment and then with drug treatment. The questionnaire included 4 scenarios with low (2-5% over 5 years) risk, 4 with medium (7-8%) risk, and 4 with high (14-19%) risk, as calculated from Framingham multivariate risk equations. Subjects were then asked if they would recommend pharmacological treatment in each scenario. Subjects' estimates of risk without therapy were compared with the values calculated from Framingham risk equations. Estimates of relative risk reductions achieved with treatment were compared with values from recent primary prevention trials: we considered estimates of 33 ± 4 % to be accurate. Decisions to recommend or discourage treatment were compared with National Cholesterol Education Panel (NCEP) treatment guidelines and a risk-based guideline using a threshold of 10% risk of an event over 5 years.

Results: 82 subjects (55 residents, 9 fellows, 18 attending physicians) completed the survey. As a group, the subjects overestimated the absolute risk of cardiovascular events in all 12 scenarios; their mean estimates of the relative risk reduction achieved by treatment, however, were accurate in 8 of 12 scenarios and were overestimated in 4. Overall, 71% of their treatment decisions agreed with NCEP guidelines, with some variation among low, medium, and high risk scenarios: 71%, 94%, and 49% agreement, respectively. In contrast, subjects followed the risk-based guideline only 43% of the time overall, and 29%, 6%, and 96% of the time for low, medium, and high risk scenarios.

Conclusions: Physicians overestimate the absolute risk of cardiovascular events in patients with no previous history of heart disease. Their estimates of the relative risk reduction with pharmacological therapy were generally accurate. Treatment decisions were generally consistent with NCEP guidelines but not with a guideline based on absolute level of risk.

THE IMPACT OF HEALTH INSURANCE REFERRAL REQUIREMENTS ON ACCESS TO MENTAL HEALTH SERVICES AMONG PRIMARY CARE PATIENTS. D Reifler, F Lefevre, K Burkholder, S Verma, N Nwadiaro. Northwestern University Medical School, Chicago, IL

Objective: To assess differences in access to mental health services among primary care patients according to insurance referral requirements. **Methods:** We conducted a cross-sectional survey of 97 patients identified by search of computerized medical records as having been referred for mental health treatment within a 9-month period from an academic general internal medicine office. Patients who consented were interviewed by telephone, with the primary end-points being completion of an initial mental health visit and the total number of mental health visits within 3 months after the referral was given. Referral requirements varied among the multiple forms of insurance patients used—HMO (46%), POS (12%), PPO (20%), non-managed care (22%). Patients were also administered the PRIME-MD structured diagnostic questionnaire and the SF-12 Health Survey. **Results:** To date, 97 (41%) of 235 potentially eligible subjects have been contacted, and data collection continues. Subjects had a mean±SD age of 44±15 yrs and were 58% female, 71% Caucasian, and 79% college-educated. In the unadjusted analysis, rates of completion of the initial referral were insignificantly lower if insurers required a preauthorization telephone call (50% vs 58%, p=.44), whereas completion rates were insignificantly higher if insurers required a written referral (57% vs 53%, p=.71). Logistic regression adjusting for age, sex, race, education, SF-12 physical health score, mental diagnoses and prior mental health visits revealed an odds ratio of 0.49 (p=.06, 76% predicted correctly) for completion of a mental health referral when a preauthorization telephone call was required and an odds ratio of 0.58 (p=0.18) when a written referral was required. **Conclusions:** Our preliminary data suggest that telephone preauthorization is a strong disincentive to completion of a mental health referral from a primary care office. The effect of a written referral requirement is less clear, with unadjusted analysis suggesting that it might not impact on referral completion. Confirming data are needed.

COMPARISON OF HOSPITALISTS AND PRIMARY CARE INTERNISTS IN THE CARE OF INPATIENTS WITH PNEUMONIA. WD Rifkin, DS Connor, A Eichorn, DN Ross. Division of General Internal Medicine and Primary Care, Department of Medicine, Long Island Jewish Medical Center, New Hyde Park, NY

Purpose: Hospitalists are being used with increasing frequency. Advocates of hospitalism suggest that the availability and experience of inpatient physicians can lead to improved quality of care and more efficient use of resources. There is little objective data available to adequately evaluate this assertion. We compared the clinical characteristics, length of stay and hospital costs of patients with pneumonia cared for by full time hospitalists to those cared for by community based primary care internists.

Methods: At an academic medical center, we used a hospital database to identify eligible patients (principal diagnosis ICD-9 codes 481-486), compare relevant clinical characteristics and collect outcome measures. We excluded patients with a length of stay greater than 14 days or requiring mechanical ventilation. Variables were compared via unadjusted chi-square or Wilcoxon 2-sample tests. In addition, an age adjusted multivariate analysis was performed. The outcome measures were total hospital costs and length of stay (LOS).

Results: Between January 1, 1997 and September 30, 1998, 210 patients were cared for by hospitalists and 217 patients were cared for by primary care internists. Among 19 demographic and clinical variables, the groups differed only in three: patients of hospitalists were more likely to have had a history of cerebrovascular disease (16% vs. 7%, p=0.004), Medicaid insurance (8% vs. 3%, p=0.02) and were slightly younger in age (median age 76 yr. vs. 78 yr., p=0.003).

The median LOS was five days for the hospitalists' patients and six days for the primary care internists' patients (p=0.003). Likewise, total inpatient costs were $708 less for hospitalists' patients ($4078 vs. $4786, p=0.01). When controlling for age, the differences noted in LOS and total cost remained significant (p=0.02 in both cases).

Discussion: We found that patients with pneumonia cared for by hospitalists had shorter lengths of hospital stay and lower hospital costs than comparable patients cared for by primary care internists. Previously published studies of general inpatient medical care have shown similar savings. We performed a disease specific analysis in order to minimize bias due to case-mix variation. It does not appear that differences in case mix could explain our findings. The groups of patients were found to differ in only three of nineteen clinical and demographic variables. Further, of the three, only patient age was found to be predictive of hospital costs. However, even after controlling for age, hospitalists' patients had shorter lengths of stay and lower costs. The specific practice patterns that led to this are unknown. Future research should include further examination of case-mix, specific resource utilization, quality of care and patient satisfaction.

PRIMARY CARE PHYSICIANS' TIME TO AGREEMENT WITH ELECTRONIC NOTICE OF THEIR PATIENTS' DEPRESSION STATUS

BL Rollman, BH Hanusa, T Gilbert, T Sefcik, H. Lowe, WN Kapoor, and HC Schulberg. Univ. of Pittsburgh School of Medicine, Pittsburgh, PA

Objective. Screening patients for major depression and informing their primary care physicians (PCPs) of the diagnosis typically uses paper-based methods and has not improved clinical outcomes. Electronic medical record systems (EMRs) have the potential to improve depression treatment by directing clinicians' attention towards the diagnosis and exposing them to evidence-based treatment advice during the clinical encounter. Still, it is unclear: (1) how PCPs will respond to a message presented via EMR concerning major depression; (2) how rapidly PCPs will agree with this feedback; and (3) if time to agreement varies by patient or provider characteristics.

Methods. Data was obtained from a randomized clinical trial that disseminated a treatment guideline for depression via EMR at an urban, university-affiliated faculty internal medicine practice. 7,909 patients aged 18-64 who presented for care were screened for major depression using the PRIME-MD. Of these, 204 (3%) met PRIME-MD criteria for major depression, were not under treatment by a mental health specialist, had a Hamilton Rating Scale for Depression (HRS-D) >12, and agreed to enroll in our study. PCPs were informed of their patients' diagnosis electronically and were randomized to exposure via EMR to either: (1) guideline-based depression treatment at the time of the clinical encounter ("active care"); or (2) notification of the diagnosis alone ("usual care").

Results. In the 204 study patients, mean age was 44 (range 19-64), 71% were female, 72% were white, 30% were single, 33% married, 37% separated/divorced, 80% had at least a high school education, and 32% had a college degree. The mean HRS-D was 21 (SD 5), 37% had a co-morbid anxiety disorder, and 50% had been treated in the past for depression. All 13 PCPs received notification of their patients' depression status within 2 days after screening and were asked to indicate their agreement electronically. Initially, they agreed with 57% of the depression diagnoses and disagreed (10%), were unsure (19%), or failed to respond (15%) to the rest. Repeat reminders were sent to initial non-responders and those who disagreed or were unsure about the diagnosis. PCPs eventually agreed with 78% of the depression diagnoses. Using Kaplan-Meier analyses, the median time to agreement was 3 days (range 0-160). Greater levels of depression severity (HRS-D>20 1 day, HRS-D=12-20 5 days; p=0.02) and PCP exposure to "active care" (p=0.05) were associated with a shorter median time to agreement. However, patient sociodemographic characteristics, co-morbid anxiety, and history of prior treatment for depression were not. Male PCPs, those who feel depression is a "major problem" in primary care, and those less comfortable treating depressed patients also agreed with the diagnosis sooner. PCP age, clinical experience, number of clinic sessions/week, and comfort with the EMR did not affect time to agreement.

Conclusions. The majority of PCPs will acknowledge and agree with the PRIME-MD diagnosis of major depression when presented electronically. Repeat electronic reminders are necessary to maximize response rates. Time to agreement is associated with depressive severity, more extensive electronic feedback, and certain PCP attributes. Further study is necessary to evaluate the effect of screening for depression and electronic feedback on subsequent patient outcomes.

REDESIGNING CARE PRACTICES: THE CLINICAL DESIGN UNIT. Roberts, MS. Sharbaugh D, Merryman T. Departments of Medicine, Informatics and Process Improvement, Patient Care Services, UPMC *Shadyside*, Department of Medicine, University of Pittsburgh School of Medicine

Purpose: We describe the development and early experiences with a Clinical Design Unit (CDU): a functional patient care unit that serves as a laboratory for the detection, analysis, and development and implementation of solutions to problems in the delivery of patient care. This unit provides rapid design and evaluation capability to: 1) improve patient care, 2) increase caregiver time spent with patients, 3) improve patient, physician and caregiver satisfaction, and 4) decrease operating costs.

Methods: During the summer of 1998, a closed patient care unit was reopened for the purpose of care redesign. Nurses, aids and clerical staff were randomly selected from current patient care units to provide the operational staff. Space was allocated for group processes, brainstorming, data collection and observation. A physician, the VP of Patient Care Services, and a small team of facilitators and project managers directed the work. Questionnaires and interviews with patients, nurses, physicians and ancillary staff provided a large array of problems to be examined. A cyclic pattern of work was employed: the unit was opened as a functional patient unit for a pre-defined time, with staff examining and monitoring indicators and outcome measurements relevant to the problems uncovered by the questionnaires and idea generating sessions. The unit was closed for a week-long design phase, where potential solutions to the problems and complaints were developed. Upon re-opening, the CDU would implement process changes, and observe the effect of these process changes on several outcome measures.

Results: The CDU was operational for a total of 12 weeks. Eighteen improvement efforts were developed and initiated during this time. A major innovation was the development of an admitting team consisting of a nurse, pharmacist and unit clerk whose purpose is to complete the admission process for any patient admitted to the floor. The team goes to the patient is being admitted and completes the clerical and clinical tasks necessary for admission. This process saved the floor nurses 48 minutes per admission. Other innovations included the standardization of stock in supply rooms, aids to improve communication between staff and physicians regarding patient issues, and the development of automatic triggers to initiate evaluation by ancillary staff such as dietary and physical therapy. Based on time-motion observation, as well as inventory and staffing changes, these 18 innovations are expected to return 47,000 hours of caregiver time to patients on an annualized basis, as well as decrease operating expenses by approximately $400,000 if disseminated throughout all patient care units.

Conclusions: We have demonstrated the feasibility of utilizing a dedicated patient care unit for real-time redesign of clinical processes. During its first operational year, significant process improvements were implemented that improved satisfaction, returned nursing time to direct patient care, and reduced costs.

DIAGNOSTIC APPROACHES TO VAGINITIS: A COST-EFFECTIVENESS MODEL M Rothberg, PL Carr, JS Pliskin, D Felsenstein, RH Friedman. New England Medical Center, Massachusetts General Hospital, Harvard School of Public Health and Boston University Medical Center, Boston, MA

In evaluating symptoms of vaginitis, if a wet mount is non-diagnostic, the clinician may proceed to empirical therapy based on vaginal pH, selective testing based on disease prevalence, or more comprehensive testing.

Methods: We developed a decision analytic model to compare the cost-effectiveness of 13 initial diagnostic strategies comprised of none, some or all of the following tests: gram stain for bacterial vaginosis, cultures for candida, trichomonas, and herpes, and DNA probe for chlamydia and gonorrhea. After testing, clinicians could wait for results or begin empirical treatment for yeast, bacterial vaginosis, or trichomonas based on vaginal pH. Published literature provided estimates of prevalence for each vaginitis etiology, test characteristics, treatment efficacy and side effects. Variable costs at two university teaching hospitals were derived using TSI. Outcomes were expressed in days of any symptom, including treatment side effects.

Results: Ordering all tests at the initial visit and withholding treatment until diagnosis was least expensive ($201/patient) and resulted in fewer symptom-days (7.7/patient) than any other testing regimen or empiric treatment alone. Adding empiric therapy while awaiting test results cost $1 more, but reduced symptom-days by 0.4, with a marginal cost-effectiveness of $2.71/symptom-day avoided. Performing all tests at once was preferable, because most patients ultimately required all 6 tests, and sequential testing required more office visits. Because empiric therapy was both inexpensive and benign, the benefits of immediate treatment to those treated correctly outweighed the detriments to those treated unnecessarily. Within the range tested, results were relatively insensitive to test characteristics, treatment efficacy and costs.

Conclusions: When wet mount is non-diagnostic, performing all tests at the initial visit should be cost-saving over selective testing or empirical treatment alone. Once tests are ordered, beginning empirical treatment, while awaiting culture results, should further reduce symptom-days at a marginal cost of less than $3/symptom-day.

REIMBURSEMENT AND THE DECISION TO TREAT DYSURIA BY TELEPHONE M Rothberg. New England Medical Center, Boston and Mt. Auburn Hospital, Cambridge, MA

Although many physicians will treat dysuria over the phone in some cases, little is known about the practice. Because telephone visits are usually not billable, some physicians may have an economic disincentive to treat over the phone.

Objective: To examine the relationship between economic incentives and the decision to treat dysuria over the phone.

Methods: Two cases were presented via written anonymous questionnaire to all 155 physicians in the department of internal medicine at a community-based academic hospital. The first involved a 25-year-old woman with uncomplicated dysuria. The second involved a 40-year-old woman with uncomplicated dysuria and hematuria, out-of-state on business. Clinicians were asked if they would call in a prescription or require an office visit (or in the second case, direct the woman to an emergency room). The dependant variable in each case was decision to treat over the phone. Potential independent predictors were physician age, sex, years in practice, type of practice (health maintenance organization vs. other) and usual method of reimbursement (fee-for-service vs. non-fee-for-service). Bivariate analysis was conducted using Fisher's exact test for dichotomous predictors and logistic regression for continuous predictors. Multivariate logistic regression was also performed to address potential confounding.

Results: 65 (42%) of physicians responded. 95% stated they sometimes treat dysuria by telephone. In response to the hypothetical cases, the proportion willing to treat by phone was 80% for the local woman and 83% for the patient temporarily out-of-state (κ=0.08). In bivariate analysis, in the case of the local woman, only method of reimbursement was related to telephone treatment. Physicians paid fee-for-service were more likely to require an office visit than were salaried or capitated physicians (40% vs. 9%, p=0.006). For the woman travelling out-of-state, physicians with more years in practice were more likely to refer to an emergency room (p=0.012). Usual method of reimbursement was not related to emergency room referral (p=0.27). Physician age, sex and type of practice were not related to telephone treatment in either case. Multivariate analysis did not substantially change these relationships.

Conclusions: In a typical case, economic considerations appear to influence physician decisions regarding telephone treatment of dysuria. In a less typical case, and one in which billing is not possible, physician experience alone is related to the decision.

PROFESSIONAL SATISFACTION AND ATTITUDES OF FACULTY AND HOUSESTAFF CARING FOR PATIENTS WITH SUBSTANCE ABUSE. R Saitz, PD Friedmann, LM Sullivan, MR Winter, CA Lloyd-Travaglini, MA Moskowitz, JH Samet. Boston Medical Center and Boston University Schools of Medicine and Public Health, Boston, MA; University of Chicago Pritzker School of Medicine, Chicago IL.

Objective: Screening and intervention for substance abuse (SA) can improve health outcomes, but physicians often do not recognize or treat SA. The study objective was to assess attitudes, skills, experiences, and professional satisfaction, all potential barriers to involvement in patients' SA.

Methods: Categorical and primary care internal medicine housestaff and their general medicine faculty at one residency program completed a confidential written survey about professional satisfaction when caring for patients with SA, attitudes towards patients with SA, confidence in SA-related clinical skills, perceived responsibility for SA treatment, and acquaintances with SA. We derived scales from Likert-type items on attitudes (1=strongly disagree, 5=strongly agree), confidence (1=none, 5=very), and perceived responsibility (1=none, 5=very) using principal components analysis.

Results: Of the 149 eligible physicians, 91% completed the survey (95 housestaff and 41 faculty). They reported favorable SA-related attitudes (range of mean scores 4.0 to 4.3), levels of confidence in clinical skills (3.4 to 4.2), and perception that SA care was their responsibility (4.4 to 4.6). Most (72%) knew someone (other than a patient) with SA; it was a family member, close friend or self for one-third. Compared with care of patients with hypertension, housestaff professional satisfaction was lower when caring for patients with alcohol, drug abuse, and depression (Table); faculty were less satisfied caring for patients with drug abuse than for patients with hypertension. Housestaff were less satisfied than faculty when caring for patients with alcohol abuse and depression.

Table

At least a moderate amount of professional satisfaction when caring for patients with...	Housestaff (%)	Faculty (%)
Alcohol abuse*	32†	59
Drug abuse	30†	37†
Depression*	43†	71
Hypertension	79	73

†P<0.05 compared with hypertension. *P=0.003 comparing housestaff and faculty.

Conclusions: Despite favorable SA-related attitudes, confidence in skills, perceived responsibility, and commonly having close acquaintances with SA, physicians, particularly housestaff were less satisfied when caring for patients with SA than when caring for patients with another chronic disorder. To promote physician involvement in patients' SA issues, training should include strategies that result in professional satisfaction similar to traditional diseases such as hypertension.

DO PHYSICIANS JUDGE A STUDY BY ITS COVER? S Saint, DA Christakis, S Saha, JG Elmore, DE Welsh, P Baker, TD Koepsell. Division of General Medicine, University of Michigan, Ann Arbor, MI; Division of General Pediatrics and General Medicine, University of Washington, Seattle, WA.

Does the journal in which an article appears effect physicians' perceptions of the quality of the research presented? Reliance on the journal in which an article appears as an indicator of study quality may allow certain studies to exert undue influence on providers if equally well-done studies are denigrated solely because of the journal in which they appear. "Journal attribution bias" has been posited but never empirically validated. We therefore conducted an experiment to test two hypotheses. First, that attribution of a study to a "high" prestige journal would be associated with improved impressions and attribution to a "low" prestige journal would be associated with diminished impressions. Second, that formal training in epidemiology and biostatistics would mitigate the effects of this journal attribution bias.

A random sample of 208 internists from the AMA master file and 208 internists with formal general medicine fellowship training were queried using an experimental survey design. Participants were asked to read an article and an abstract from either the *Southern Medical Journal* (SMJ) or the *New England Journal of Medicine* (NEJM). Surveys were constructed that either attributed the article or abstract to its source or presented it as unattributed. After each article or abstract, respondents were asked five questions assessing the significance and quality of the study, which was converted into a 25 point impression score. The effects of attribution and formal epidemiology training on impression scores were assessed using linear regression.

Of the 399 eligible participants, 264 surveys were returned (response rate 66%). Changes in impression scores associated with attribution of an article or abstract to the NEJM were .71 [-.44, 1.87] and .50 [-.87, 1.87] respectively; changes in impression scores associated with attribution of an article or abstract to the SMJ were -.12 [-1.53, 1.30] and -.95 [-2.41, .52]. None of these changes were statistically significant. A stratified analysis of respondents trained in epidemiology did not meaningfully alter the effect of journal attribution on participants' impression scores.

This study failed to detect a significant effect of attributing an article or abstract either to a high or low prestige journal on internists' impressions of the study presented. However, the principle limitation of our study was that participants were offered an inducement to read an entire article carefully which may have created a "Hawthorne Effect" whereby respondents acted differently under experimental circumstances than they do in reality. Nevertheless, our results suggest that given the opportunity and the dedication necessary to review a study carefully, providers -- regardless of their formal training in epidemiology or biostatistics -- are able to read articles without significant or large discernible bias based on publication source.

ASSESSMENT OF QUALITY OF CARE FOR PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE. **GF Salman, SD Holcomb, DG Jolicoeur, MI Salmeron, EF Ellerbeck, Departments of Preventive Medicine, Internal Medicine and Family Medicine, University of Kansas School of Medicine, Kansas City, KS.**

To assess the quality of care for patients with chronic obstructive pulmonary disease (COPD), we developed and tested quality measures in a residents' ambulatory care clinic.

Based on guidelines developed by the Department of Veteran's Affairs and the American Thoracic Society, we developed measures of quality of care including diagnostic, therapeutic and patient education criteria. Using office billing records and review of medical records, we identified 48 patients with COPD seen in the residents' ambulatory care clinic between June and September of 1998. We completed telephone interviews with 31(65%) of these patients and identified records of pulmonary function tests from both the chart and the hospital's pulmonary function laboratory.

Of the 48 COPD patients identified by chart review, 27 (56%) had records of pulmonary function tests within the past 5 years. Of the 31 COPD patients who completed the phone interview, 23 (76%) had received influenza vaccine within the past year and 16 (53%) had ever received a pneumococcal vaccine. All patients were on a beta-agonist inhaler, but only 14 (47%) used it for persistent shortness of breath. Thirteen (43%) of the patients were on a steroid inhaler. Only 19 (63%) patients were told what inhaler to use for persistent shortness of breath, while 11 (37%) patients stated that they were not given any instructions on what to do if they became short of breath. Of 22 patients who had either daily symptoms or an FEV1<50%, only 13 (59%) were on an anticholinergic inhaler.

Chart review and survey instruments can be used to measure quality of care provided to patients with COPD. At this single site, we identified areas of overuse and under-use of diagnostic and management strategies for patients with COPD.

GENERAL INTERNAL MEDICINE PHYSICIAN ASSESSMENT OF THE IMPACT OF COMPANIONS ACCOMPANYING PATIENTS TO AMBULATORY VISITS. Lisa Schilling, Lisa Scatena, Gail Albertson, C. T. Lin, Lisa Cyran, Lindsay Ware and Robert J. Anderson, Univ. of Colorado Health Sciences Ctr., Denver, CO.

Background: In a recent analysis of 1,285 general internal medicine (GIM) ambulatory patients visits, we found that companions accompany patients to 39% of resident physician (RP) visits and to 23% of faculty physicians (FP) visits.

Objective: To obtain information on physician assessment regarding the impact of companions.

Methods: Resident and faculty physicians at a GIM ambulatory clinic completed a questionnaire immediately following 139 visits in which companions accompanied patients to the examination room.

Results: Physician contact with companions occurred during all portions of the medical visit: history (91% of visits), physical exam (87%), discussion/wrap up (88%), and in private (6%). RP had significantly more contact than FP with companions in private (11.3% vs. 1.2%, P<0.025). Companions were considered passive observers for 7.6% of FP visits and 22.1% of RP visits, p=0.025. The active behaviors exhibited by companions were comparable at FP and RP visits and included clarifying history (63%), supportive/encouraging (58%), asking questions/requesting explanations (46%), expressing concern for the patient (41%) and taking notes (12%). Companions at RP encounters were more likely to ask questions or request clarification than their FP counterparts, (66% vs. 34%, P<0.001). Physicians indicated that companions were discouraging or controlling towards the patient at 5% of visits and companions discussed their own symptoms at 14% of visits. Physicians felt that the presence of a companion increased their understanding of a patient's problem (57% of visits) and increased the patient's understanding of diagnosis and treatment (46% of visits). Although companions made evaluation and/or treatment requests in 18% of visits, the companion rarely influenced physician testing (4%), referrals (2%) or treatment plans (3%). Physicians indicated that a companion's presence increased time spent for explaining/counseling for 27% of all visits. The presence of the companion was felt not to affect the length of 78% of visits and to increase the length of 19% of visits. There were no significant differences between FP and RP assessments regarding length of visit and time spent counseling. RP and FP judged the companion's presence to be either helpful or very helpful for 84% and 57% of visits, respectively (P<0.001).

Conclusion: These results demonstrate that companions accompanying patients to the examination room are generally active, helpful participants in the internal medicine ambulatory encounter.

PHYSICIAN SATISFACTION IN THE INNER CITY: A NEW YORK STORY. MD Schwartz, TR Konrad, and WB Bateman. Gouverneur D&TC and Division of Primary Care, NYU, New York, Sheps Center, UNC, Chapel Hill.

Purpose: We sought to determine factors related to job satisfaction among doctors caring for urban underserved patients in New York City.

Methods: We used the National Physician Worklife Study questionnaire to survey 110/151 (73% response) of physicians at the Gouverneur Diagnostic & Treatment Center, a large municipal clinic serving Manhattan's Lower East Side.

Results: Compared with 418 inner city (IC) doctors around the U.S. from the national survey, Gouverneur doctors were more likely to be women (51% vs. 40%), minorities (44% vs. 36%), and to have lower incomes($100,000 vs. $125,000), p<0.001. Fewer Gouverneur patients were white (19% vs. 44%), insured (66% vs. 81%), and spoke English (48% vs. 74%), p<0.001. Despite reporting higher stress than national IC doctors (20% vs. 13%, p<0.05), Gouverneur doctors had similar high global job satisfaction (50% vs. 58%), and non-significant trends toward lower anxiety (6% vs. 11%), depression (4% vs. 9%), and burnout (15% vs. 21%). However, Gouverneur doctors were less satisfied than national IC doctors with their autonomy (21% vs. 54%) and resources (27% vs. 44%), and were more likely to report little or no control over workplace issues (47% vs. 25%), p<0.001. Gouverneur doctors requested 44% more time than allotted for a complete exam (vs. 25% IC) and 33% (vs. 14%) more time for a routine follow-up visit, p<0.001. For the 110 Gouverneur doctors independent predictors of high global job satisfaction were:

Factor	OR	95% CI
No burnout	32	2.4-415
Control over workplace	29	3.6-233
Female doctors	13	2.5-65
Good staff relations	7	1.6-26
Low time pressure	5	1-23
Adequate resources	4	1-16

Conclusions: These hardy, dedicated physicians cope with challenging, multicultural patients, with more stress, and less time, control, autonomy, and resources. As the market requires increasing productivity, these issues must be addressed to sustain careers in IC practice and maintain a primary care safety net for New York City's large underserved population..

INNER CITY PHYSICIAN JOB SATISFACTION: NATIONAL PHYSICIAN WORKLIFE STUDY. MD Schwartz, D Pathman, and J Bigby for the SGIM Career Satisfaction Study Group. Division of Primary Care, NYU, New York Department of Family Medicine, UNC, Chapel Hill, and Division of General Medicine, Harvard, Boston.

Purpose: To determine factors related to job dissatisfaction and intent to leave practice in doctors (MDs) caring for urban underserved patients.

Methods: National survey of a random, stratified sample of 5704 physicians (N=2326 respondents, adjusted response rate=52%). We compared 418 inner city (IC) MDs (urban and $\geq 90^{th}$ %tile of % Medicaid or % uninsured patients), with 1725 urban (U) MDs. Among IC MDs, we used logistic regression to model factors associated with physicians leaving their practice within two years. For all comparisons, $p<0.01$.

Results: Compared with U MDs, IC MDs were younger (42 vs. 48 years), more female (40% vs. 31%), and minority (36% vs. 25%). IC MDs were less likely than U MDs to own their practice (32% vs. 59%) or to be in private practice (52% vs. 73%). Patients of IC MDs were more likely than U MDs' patients to not speak English (26% vs. 8%), be minorities (56% vs. 34%), and have complex medical (45% vs. 37%), and psychosocial problems (36% vs. 24%). IC MDs needed 33% more time for a complete exam vs. 23% more time for U MDs. Of IC MDs, 25% reported little or no control over their workplace vs. 19% of U MDs. Although global job satisfaction (58%), burnout (23%), and stress (12%) were similar, 37% of IC MDs said they were likely to leave their practice vs. 28% of U MDs. Among IC MDs, compared with the 262 likely to stay, the 156 likely to leave reported: more time pressure (OR=1.7, 95% CI 1.3-3.1), less workplace control (1.7, 1.3-2.2), more stress (2.5, 1.4-4.7), more burnout (3.3, 1.9-5.5), more isolation in practice (2.0, 1.3-3.1), and lower global job satisfaction (4.9, 3-7.7); all controlling for age gender, minority & marital status, type & ownership of practice.

Conclusions: Compared with their urban colleagues, inner city physicians cared for more complex patients under greater time pressure, with less control over their workplace. This, along with stress, burnout, isolation, and global job dissatisfaction led to > 1/3 of IC physicians planning to leave their current practice within two years. Addressing these problems can improve satisfaction and retention of MDs, and ultimately improve care to the urban underserved.

COMPARING COST-EFFECTIVENESS OF AN "ABBREVIATED" *Helicobacter pylori* REGIMEN TO CONVENTIONAL TREATMENTS.

DN Shaffer, The National Institutes of Health, Bethesda, MD.

Background: Numerous regimens are utilized for *Helicobacter pylori* (*H. pylori*) associated duodenal ulcer treatment including a newer 3,7-day therapy (azithromycin and metronidazole for 3 days, lansoprazole for 7 days). Several reports have described the cost-effectiveness of traditional 7-day and 14-day regimens but none have included the abbreviated 3,7-day regimen. In addition, many fail to incorporate compliance.

Objective: This cost-effectiveness analysis (CEA) evaluated the cost-effectiveness of a 3,7-day treatment regimen for *H. pylori* eradication relative to two conventional treatment regimens.

Methods: A decision tree utilizing DATA™ 3.0 (TreeAge Software, Inc.) was created for the evaluation of three regimens: lansoprazole, azithromycin, and metronidazole (LAM, 3,7-day); omeprazole, clarithromycin, and metronidazole (OCM, 7-day); and omeprazole with amoxicillin (OA, 14-day). Expected costs and base-case incremental cost-effectiveness ratios were calculated for average wholesale price (AWP) and retail pharmacy price (RPP). One-way sensitivity analysis was performed on compliance (50-95%), eradication (30-94%), and recurrence (+/- 50%) rates as well as drug treatment costs (+/- 10% costs and LAM regimen $100 range). Effectiveness was coded as a dichotomous variable based upon ulcer recurrence.

Results: The shorter 3,7-day LAM regimen had the lowest expected cost ($50 AWP, $100 RPP) and base-case cost ($57 AWP, $114 RPP). The 7-day OCM regimen had the second lowest expected cost ($126, $150) and base-case cost ($155, $184), and the 14-day OA regimen had the highest expected cost ($162, $181) and base-case cost ($273, $305). Incremental base-case cost-effectiveness ratios comparing LAM to the other two regimens ranged from $70 to $216 per drug regimen-case of *H. pylori* eradicated.

One-way sensitivity analysis demonstrated robustness to varying compliance, eradication, and recurrence rates with LAM being the most cost-effective. OA was most often the least cost-effective but surpassed OCM when OA eradication rates exceeded 86-88%. One-way sensitivity analysis of drug regimen costs demonstrated LAM to remain most cost-effective. At least a 28% increase in LAM base-case cost was necessary for a threshold value to be identified, beyond which OCM became more cost-effective.

Conclusions: Further analyses evaluating the cost-effectiveness of abbreviated regimens are warranted with inclusion of drug side-effects as utility measures. Presently, attention to the LAM regimen is warranted as more cost-effective in the treatment of *H. pylori* duodenal ulcer disease relative to traditional therapies.

ANTICOAGULATION CLINIC COMPLICATION RATES BEFORE AND AFTER RELEASE OF GENERIC WARFARIN. J Shammash and R Hatchett, Department of Medicine, Weill Medical College of Cornell University and New York Presbyterian Hospital, New York, NY.

Purpose: To assess the impact of the introduction of generic warfarin on safety and efficacy of anticoagulation in an ambulatory general medical anticoagulation clinic while implementing simple procedures to standardize care. Methods: Sixty patients who received chronic anticoagulation for at least one year before and one year after the introduction of generic warfarin were selected for review from an anticoagulation clinic in a combined resident-faculty ambulatory general medical practice. An effort to prescribe Coumadin with "Dispense as Written" prescriptions and patient education letters was made to minimize the risk of altered pharmacokinetics, due to concerns of altered bioavailability and metabolism of generic warfarin. Inpatient admission data from complications related to the administration and discontinuation of anticoagulation were gathered from a manual anticoagulation logbook and via review of the ambulatory electronic medical record, which included dates for all inpatient admissions. Admission rates were compared for the patient group for one year before and after 11/15/97, a representative date for the release of generic warfarin as determined by telephone survey of approximately 30 local pharmacies. The percentage of International Normalized Ratio (INR) values within goal anticoagulation range and the number of INR's out of range (>±0.3 INR) were collected for 5.5 months before and after 11/15/97. Results: 41 (68%) of patients were female, and mean age was 69.7 years. Indications for anticoagulation were as follows: atrial fibrillation 30 (50%), stroke 7 (12%), recurrent DVT/hypercoagulable state 7 (12%), pulmonary embolism 6 (10%), prosthetic cardiac valves 6 (10%), and other 4 (7%). Despite efforts to standardize prescriptions, 14 of 56 patients contacted received generic warfarin. Six patients required admission to New York Presbyterian Hospital between 11/1/96 and 11/15/97, while 4 patients required admission between 11/16/97 and 12/31/98. A modified chi square test revealed no significant difference in the number of patients requiring admission in each period (P=0.727). The mean percentages of INR's within therapeutic range were 43% before and 44% after 11/15/97. There was no significant difference (P=0.177) between the mean number of INR values out of range before (4.00) versus after (3.47) 11/15/97. There were no statistically significant differences between the patients receiving warfarin and Coumadin with respect to the number of INR's out of range (P=0.477) or the percentage of INR's in range (P=0.951) in the period after 11/15/97. Conclusion: The introduction of generic warfarin did not adversely impact upon anticoagulation control or safety while implementing simple procedures to standardize care.

ACUTE CARE PATIENT TRANSFERS: IMPROVING THE PROCESS
A. Laurie W. Shrover, Jennifer E. Karel, Mary E. Plomondon, Paul Able, and Thomas Meyer (Denver VA Medical Center, Denver, CO)

The Denver VA Medical Center (DVAMC) is one of two tertiary care referral hospitals within the Veterans Integrated Service Network (VISN) 19, which services six outlying VA hospitals. The purpose of this project, therefore, was to conduct a pre-test and post-test comparison to determine the effectiveness of a series of administrative interventions which were intended to improve the acute patient inter-facility transfer process. The primary study hypothesis was that physician (MD) satisfaction (at both the DVAMC and outlying hospitals) would be improved. The secondary study hypothesis was that duplication of diagnostic tests at the DVAMC would be reduced.

A baseline survey was conducted in period from June 1997 to August 1997 to determine data related to MD satisfaction with different aspects of the acute care transfer process for patients transferred between July 1, 1996 to December 31, 1997. A follow-up survey was conducted in January 1998 to March 1998 to assess the same information for patients transferred from July 1, 1997 to December 31, 1997.

The study interventions were administered starting in June 1997. The study interventions included 1) implementation of a new organizational philosophy; 2) reorganization of the referral process administratively; 3) implementation of a new management tracking and reporting system; and 4) automated physician reminders for follow-up; and 5) transfer of patient and referral physician information through existing computer systems.

All VA MDs making/accepting referrals to the DVAMC during the period of patient transfers assessed were surveyed. DVAMC MD survey had a 65% (of 119) and 66% (of 123) response rate at baseline and follow-up, respectively. The outlying MD survey had an 80% (of 100) and 90% (of 90) survey response rate respectively. Using the subset of survey responses with matched pair data, Wilcoxon sign rank tests were used to compare the pre- and post- intervention survey findings. Overall, 50% of the DVAMC MDs indicated a reduction in the duplication of tests occurred (p = 0.02) as well as 56% indicated an improvement in satisfaction (p=0.002). For the outlying MDs, 42% indicated an improvement in the frequency of feedback received following transfer (p=0.009), as well as 56% indicated an improvement in satisfaction (p = 0.039). In summary, a coordinated inter-facility transfer process may be used to effectively improve physician satisfaction as well as minimize the duplication of services rendered.

DOES PHYSICIAN SPECIALTY REALLY IMPACT THE SURVIVAL OF ELDERLY PATIENTS WITH ACUTE MYOCARDIAL INFARCTION? MG Shlipak, CD Frances, H Noguchi, PA Heidenreich, M McClellan, Division of General Internal Medicine, Veterans Affairs Medical Center, San Francisco, CA.

Recent studies of elderly patients with acute myocardial infarction (AMI) have reported a mortality benefit associated with treatment by cardiologists, but they have been unable to distinguish a treatment effect from residual selection bias. METHODS: Using an instrumental variable (IV) approach to risk adjustment, we sought to determine the impact of physician specialty on 1-year mortality, while controlling for both observable and unobservable patient characteristics. We utilized the Cooperative Cardiovascular Project database of Medicare patients hospitalized with AMI between April 1994 and July 1995. Data on 161,588 patients were included in our analyses. We initially compared demographic, geographic, co-morbidity, severity of illness and admitting hospital characteristics among patients treated by cardiologists and non-cardiologists. Adjusting for these variables with conventional least squares (LS) multivariable regression, we determined the mortality reduction associated with treatment by cardiologists. An instrumental variable must be linked to processes of care, but not associated with patient outcome or risk characteristics. We chose the IV "differential distance", defined as distance from the patient's home to the nearest hospital subtracted from the distance to a hospital where AMI patients are predominantly treated by cardiologists. Because the IV effectively "randomizes" patients into groups with identical risk characteristics, the subsequent analyses adjust for both observable and unobservable characteristics. Using IV methods, we determined the adjusted association between physician specialty and both mortality and treatment outcomes. RESULTS: Cardiologists treated younger patients, who had fewer co-morbid conditions and less severe AMIs. Patients treated by cardiologists had a 10% (95% CI: -10.8 -- -9.5) lower mortality rate at 1-year. However, adjusting for known confounding variables with LS regression reduced this mortality difference to 2% (95% CI: -2.6 -- -1.4). We tested the IV by comparing patients with differential distances above and below the median values. The two groups were nearly identical in co-morbidity and severity characteristics. Using the IV to complete risk adjustment, we found no association between physician specialty and 1-year mortality, RR 0.99 (95% CI: 0.96 --1.02). Cardiologists were more likely to utilize thrombolytic therapy, aspirin, and calcium-channel blockers, but less likely to use beta-blockers in the adjusted analysis. After adjustment, around 30% more patients treated by cardiologists received catheterization and revascularization procedures. CONCLUSIONS: In a large population of elderly patients with AMI, we found no mortality benefit associated with cardiologist treatment. When an appropriate IV is available, IV methods can help eliminate the effects of residual selection bias and allow a more accurate assessment of quality of care.

THE IMPACT OF A COMPUTERIZED PRESCRIPTION ACTION PROFILE ON RESIDENT SATISFACTION IN OUTPATIENT PRACTICE. J Silverstein, V Paoletti, N Farber, Christiana Care Health System, Wilmington, Delaware.

Purpose: To determine if implementation of a computerized prescription action profile would improve the quality and efficiency of care and resident satisfaction with the task of prescription writing.

Setting: Internal medicine residency teaching clinic in an urban community hospital in Wilmington, Delaware.

Intervention and Methods: Preprinted templates that were designed to interface with the hospital pharmacy's computerized medication profile were developed. The prescription action profile substitutes for traditional prescription blanks and provides a current list of medications, including date of last refill and number of refills remaining. Residents completed written surveys before and after implementation of the tool. Data was analyzed using student's T test or chi-square analysis as appropriate.

Results: The percentage of residents spending less than 10 minutes per session writing prescriptions was increased from 42% to 72%. Ninety four percent of the residents felt the intervention led to improved quality of care. The prescription action profile improved perceived communication with patients, coordination of care, accuracy of therapy, time management and determination of patients' adherence to medical therapy, all with statistical significance of P<0.001. Overall resident satisfaction with the prescription system was significantly increased, from 28% before implementation to 92% after.

Conclusions: The computerized prescription action profile can improve patient care delivered by residents in an ambulatory clinic, along with their attitudes. Utilization of profiles, which allow residents to review current drug regimens, update prescriptions and prescribe new medications, improves resident satisfaction, efficiency and quality of care.

HIV CARE PROVIDERS DO NOT APPRECIATE THE FULL RANGE OF THEIR PATIENTS' SYMPTOMS

G Sinclair, A Justice, J Wagner, and S Weissman; Wade Park VA Med. Ctr., Case Western Reserve Univ., Cleveland OH

Relief of symptoms is a major motivation for seeking medical care. Yet patients and providers do not always agree on which symptoms are priority for treatment. We attempted to measure the agreement between patient and provider assessment of patient symptom burden.

Methods: We presented a written list of 20 symptoms common to HIV patients in the HAART era to 77 regular attendees of our clinic, and asked them to mark those which they were currently experiencing. Providers were later presented with the same list and asked to independently identify their patients' symptoms.

Results: The 5 most frequent symptoms by patient report were **fatigue** (86%), **diarrhea** (79%), **sadness** (79%), **insomnia** (79%), and **anxiety** (78%). The median numbers of symptoms reported by patients and providers were 15 and 2, respectively. Correlation between number of symptoms reported by patients and providers was 0.36 with a p=.001. For 13 of the symptoms, agreement was poor with insignificant kappa values. We did, however, find moderate agreement with significant kappa values for **neuropathy** (agreement=60%, kap=0.26, p=0.004), **skin problems** (agreement=57%, kap=0.25, p=0.004), **nausea** (agreement=57%, kap=0.21, p=0.01), **diarrhea** (agreement=53%; kap=0.18, p=0.02), **anxiety** (agreement=47%, kap=0.15, p=0.025), **bloating** (agreement=47%, kap=0.15, p=0.026), and **dizziness** (agreement=43%, kap=0.11, p=0.038).

Conclusion: Patients report having more symptoms than their providers realize. Furthermore, agreement between providers and patients about which symptoms the patients are experiencing is generally poor. Self completed surveys, such as this one, may help patients to better communicate the full range of their symptoms to their providers. In turn, providers may become better able to target therapy towards symptoms.

PERFORMANCE OF PHYSICIANS AT JUDGING SURVIVAL IN CONGESTIVE HEART FAILURE.

*WR Smith, *D McClish, ^R Poses, and the POCHF Investigators, *Medical College of Virginia of Virginia Commonwealth University, Richmond VA; ^Memorial Hospital of Rhode Island, Pawtucket, RI, Brown University School of Medicine, Providence, RI.

Background: Guidelines suggest that physicians should make Intensive Care Unit (ICU) triage decisions for acutely ill patients based in part on the likelihood that the patients will survive (and implying that patients with very low likelihood of survival, for whom care would presumably be futile, should be excluded from ICU's.) However, physicians may not accurately judge survival probability when they need to make triage decisions.
Objective: To asses how physicians use multiple cues to make judgments of survival for patients with acute congestive heart failure (CHF) and to assess the predictive ability of the cues they use.
Design: Prospective cohort study.
Setting: urban university, Veterans Administration (VA), and community hospital.
Patients/Participants: Sequential Emergency Department (ED) visits of patients with acute CHF, excluding patients with acute myocardial infarctions, and patients who died [or had already developed a life-threatening complication requiring ICU care] in the ED.
Measurements: Data on clinical variables that previous research or our clinical judgment suggested might relate to prognosis in acute CHF were collected by chart review. We modeled the relationship of these variables to 90-day survival using logistic regression (survival model), and the relationship of the same set of variables to the logit of the physicians' survival judgments (judgment model), which were collected prospectively in the hospitals' ED's, by linear regression.
Main Results: The R squared for the judgment model was .20. The area under the ROC curve for the survival model was .76. Of the eight variables that independently predicted judgments or survival (Table), one predicted only judgment, five predicted only survival, and two predicted both.

Variable	p, Judgment	p, Survival
Age	.0001	.0007
Sodium	.9982	.0003
Low systolic blood pressure	.0602	.0411
Orthopnea or paroxysmal nocturnal dyspnea	.7608	.0002
Acute Coronary Artery Disease symptoms	.0120	.6402
Prior requirement of ACE inhibitor	.1771	.0281
Charlson comorbidity score	.2217	.0138
Functional status (ED judgment)	.0001	.0001

Conclusions: Physicians' judgments of survival for patients with acute CHF may be inaccurate because they fail to use cues that predict survival while using others that do not predict survival. Developing better predictive models and teaching physicians how to use them may improve clinical prediction and thus clinical decision making.

EVALUATING THE QUALITY OF THE CONSULTATION EXPERIENCE.

S Skootsky; HH Liu; and KL Kahn, UCLA Dept of Medicine, Los Angeles, CA

Objectives: To characterize the quality of the consultation experience for primary care physicians (PCPs) who request consults to specialists for their ambulatory patients.

Methods: We systematically logged specialist consults requested by PCPs for capitated patients in a network of primary care offices. We used a stratified design to survey all PCPs who referred a patient to a specialist during the spring months of 1997. 120 patient specific surveys were completed by 21 unique PCPs from 8 separate practice sites evaluating the quality of the consultation experience from 69 different specialists from 24 unique disciplines.

Results: Most prevalent consults were orthopedics (12%), otolaryngology (10%), neurology (9%), and cardiology (8%). Most (82%) patients were seen by the specific provider the PCP intended as the consultant. 5 % of consults took place later than the primary care provider believed it should have. Most PCPs (72%) used a one page "managed care form" to communicate information about the reason for the consult to the consultant. Other methods of communication included: letter or report (27%), personal meeting (14%) and electronic mail (5%). Consultants communicated the results of the consultation visit to the primary care physician by written note (54%), personal meeting (22%), or electronic mail (19%). E-mail and personal phone calls or meetings took place earlier than written notes. Within 2 days 74% of e-mails, 73% of personal meetings, and 2% of written notes were communicated, while within 2 weeks 100% of e-mails, 96% of phone calls, and 98% of written notes were communicated to the PCP. 14% of PCPs reported receiving no communication from consultants. Most PCPs were satisfied with the overall quality of the consultation: excellent (47%), good (23%), acceptable (10%), poor (8%), and very poor (4%). However, 25% of referring PCPs were dissatisfied with at least one aspect of the consult including dissatisfaction with: communication received (19%), incorporation of appropriate clinical and demographic data (11%), patient and family communications (8%), subsequent referrals (2%) and the effect of the consult on the bond and trust between the patient and PCP(6%). Inadequate communication by the consultant to the PCP was the most significant predictor of dissatisfaction by the PCP with the consult (p<.0001).

Conclusions: The consultation experience is an important aspect of ambulatory care for both patients and PCPs. The quality of that experience has multiple dimensions that can be measured. These preliminary data suggest that although consultation overall seems satisfactory, several domains of the quality of the consultation experience can be improved. Quality of the consultation experience is an area of study that could benefit from further investigation.

A FEEDBACK INTERVENTION TO REDUCE VARIATION IN PRIMARY CARE PHYSICIAN ELECTROCARDIOGRAM ORDERING.

RS Stafford, RP Murray, SB Clifford, Primary Care Operations Improvement and Institute for Health Policy, Massachusetts General Hospital, Boston, MA.

Background: While national guidelines recommend against the routine use of screening electrocardiograms (ECGs), lack of consensus about ECG use among primary care physicians may lead to substantial practice variations.

Objectives: 1) To evaluate baseline patterns of outpatient ECG ordering in patients without cardiac diagnoses and 2) to study the impact of a feedback intervention aimed at reducing physician variation in ECG use. This hospital initiative's aim was to improve the quality of outpatient diagnostic testing.

Methods: We evaluated ECG ordering at visits to physicians in 10 group practices affiliated with an urban teaching hospital. Data from 10/96 to 9/98 were available from two computerized billing systems. Patients with diagnoses of cardiac disease, chest pain, or palpitations were excluded to permit us to focus on screening or routine ECGs. Physicians with < 320 visits or less than 12 months of data also were excluded. Data on 112 providers seeing 345,287 patient visits were available. Rates of ECG use were adjusted for patient age, gender and ICD-9 diagnosis. Beginning in 4/98, we provided physicians with individual feedback about their ECG use and summarized current guidelines. We emphasized the need to reduce practice variation, but not necessarily reduce overall ECG use.

Results: Prior to the intervention, ECGs were ordered in 4.4% of visits to patients without cardiac disease. Among the 10 group practices, adjusted ECG ordering rates varied 11-fold from 0.8% to 8.6% of visits. Adjusted ECG use among individual physicians ranged from 0.0% to 24% with a median of 2.5% and a coefficient of variation (CV) of 107%. Following initiation of the intervention, overall ECG use decreased to 3.1% in 9/98 (χ^2 p<0.001). Compared to earlier patterns, the range of adjusted ECG rates narrowed for both group practices (0.6% to 7.5%) and individual physicians (0.0% to 16%). The CV among physicians decreased to 96%.

Conclusions: After noting large, unexplained variations in ECG use, we implemented an ongoing intervention using individual physician practice pattern feedback. Our data suggest that feedback may motivate physicians to alter their practices. This approach may be applicable to other physician behaviors where practice style differences are not questioned because physicians lack data to compare their practices.

LOW RATES OF OBESITY REPORTING AND TREATMENT BY U.S. OFFICE-BASED PHYSICIANS. RS Stafford, B Misra, Institute for Health Policy, Massachusetts General Hospital, Boston, MA.

Background: Despite the public health value of physician intervention to address the growing prevalence of obesity, national physician practices related to the clinical recognition and management of obesity are not known.

Methods: Nationally representative data on obesity reporting and counseling were available on 55,858 adult physician office visits sampled in the 1995-96 National Ambulatory Medical Care Surveys (NAMCS). Supplemental data from the third National Health and Nutrition Examination Survey, 1988-94 (NHANES) allowed us to estimate the true prevalence of obesity at NAMCS visits. In turn, this enabled us to evaluate the likelihood of physician obesity reporting and to adjust treatment activities for the underreporting of obesity. We assumed, conservatively, that the prevalence of obesity at office visits was similar to that reported in NHANES for the U.S. population.

Results: Physician reported obesity was noted in only 9% of NAMCS physician visits in 1995-96. The 35% prevalence rate reported in NHANES suggests that physicians reported obesity in only 25% of their obese patients. Weight loss counseling occurred in 36% of visits by patients identified as obese. Adjusted for population prevalence, this finding suggests that weight loss counseling occurred in only 9% of all visits by obese patients. Counseling for exercise (33%) and diet (42%) also were common in visits by patients reported to be obese, but actual treatment rates adjusted for NHANES estimates were only 8% and 10%, respectively. Comparing the reported prevalence of obesity at NAMCS visits with prevalence derived from NHANES, obese women (28%) were more likely to be identified as such compared to obese men (19%, $p<0.01$).

Conclusions: Obesity is under-reported by office-based physicians, possibly because many physicians may not regard obesity as a condition amenable to intervention. While counseling for weight reduction, diet, and exercise occur in a third or more of patients specifically identified as obese; these services occur at less than a tenth of visits by all obese patients. Despite the lack of clear evidence that physician interventions produce sustained weight loss or improve obesity-related outcomes, these data suggest the underprovision of potentially important clinical interventions to treat obesity.

HOME TECHNOLOGY AMONG PATIENTS IN AN URBAN, PUBLIC HEALTH CARE SYSTEM. AW. Steele, Denver Health, Information Services, Univ. of Colo. Health Sci. Ctr., Denver, CO

Introduction: Technology is advancing at a rapid pace and many new health care applications are attempting to capitalize on using existing technology (phones, pagers, and computers) in the homes of patients. It is unclear if using this technology will be possible among patients seen in public health care systems

Methods: A convenience sample of 102 patients seen by one careprovider were surveyed for types of technology available in their homes. All patients seen during clinic half-days were interviewed between February and May 1997. Two patients were not able to complete the survey due to language barriers.

Results: The surveyed group was 63% female, had an average age of 54 years, was 28% Spanish speaking only, 29% bilingual Spanish-English, and 43% English speaking only. 93% of the patients had a telephone and 93% had a television. Among those with a telephone, 35% had messaging capability. Among those with a television, 48% had cable or satellite capability. 10% of the patients had a computer.

Conclusions: In this urban, public health care system the use of a phone and a television was highly prevalent. Only about one-third had phone messaging capability, a surprisingly high, one-half had cable television, and only a few patients had computers. New health care technologies relying on home technology such as computer-telephone-integration (CTI) and Internet-based applications will need to assess whether enough patients will have the capability to utilize these applications. Further, as the Internet is made more readily available over cable/satellite television modes of transmission, clinical applications based upon these technologies may become more appropriate for patients seen in urban, public health care systems.

CHANGES IN PATIENT SATISFACTION AFTER A CLINICAL REENGINEERING PROJECT IN AN URBAN, PUBLIC HEALTH CARE SYSTEM. AW Steele, J Heng, DA Wright, Denver Health, Community Health Services, University of Colorado Health Sciences Center, Denver CO

Introduction: Public health care systems are under increasing competition to provide high quality care at the lowest cost. Many organizations have undergone reengineering programs to redesign the process of taking care of patients. Very few studies have examined outcomes in relation to these efforts. We compared the results of an extensive patient satisfaction survey before and after a reengineering effort that was launched among 25 clinics with over 300,000 total outpatient visits per year.

Methods: All clinics participated in a reengineering project (4/96-5/97) focusing on improving the registration and care of patients. Major changes in staffing patterns and patient flow occurred to meet the needs of the patients. A 23 item patient satisfaction survey was performed in 4/96 and 10/97. A total of 3,847 surveys in 1996 were collected and of 2,018 surveys in 1997. In 1997 the survey was provided in English and Spanish using a convenience sample of patients at each of 25 primary and subspecialty care clinics with an average of 81 patients surveyed per clinic. The survey addressed five domains of care: access to care, waiting times, quality of clinical care, quality of business services, and courtesy. Patients rated their care on a four point scale and scores were calculated as the percentage of patients who "agreed" or "strongly agreed" to the survey questions.

Results: Of the five parameters surveyed, only one area showed some improvement; access to care increasing from 77% to 78% ($pvalue<0.05$). Three areas showed no change; waiting times scored at 73% in both surveys, quality of business services scored at 84% in both surveys, courtesy changed from 96% to 95% ($pvalue\geq0.05$). Quality of clinical care showed some decline in satisfaction decreasing from 91% to 90% ($pvalue<0.05$). There was wide variation in changes among individual clinics with maximum improvement occurring in one clinic in quality of clinical care (68% in 1996 vs. 94% in 1997), with the largest decline in satisfaction in one clinic in the area of access to care (78% in 1996 vs. 52% in 1997).

Conclusions: In a public health care system serving primarily a diverse, medically indigent population, comprehensive reengineering projects centered upon patient registration and care, may lead to only modest measurable improvements in patient satisfaction. Our ability to improve patient care through reengineering was limited to access to care although results may improve as the changes have more time to have an effect. The variation in changes with satisfaction among the clinics warrants further evaluation to determine if certain components of reengineering may impact specific aspects of patient satisfaction.

USING COMPUTER-TELEPHONE-INTEGRATION (CTI) TO REMIND PATIENTS OF UPCOMING CLINIC APPOINTMENTS: A DEMONSTRATION PROJECT IN AN URBAN PUBLIC HEALTH CARE SYSTEM AW. Steele, P Chin, G Ellenoff, S Evars, C Jensen, M Klein, A Semon. Denver Health, Information Services Department, Denver CO; U S West, Denver CO; Shared Medical Systems, Malvern, PA

Introduction: Public health care systems often have poor compliance with clinic visits with no-show rates in the 10% to 50% range. This leads to difficulty in operating efficient clinics as well as problems providing comprehensive care to patients. Recent advances in computer-telephone-integration (CTI) have created opportunities to automatically notify patients of upcoming appointments.

Methods: CTI technology was used at a community based family practice center in Denver, Colorado. Data from an automated appointment scheduling system was linked to an automated dialing system (interactive voice response unit) which called patients starting 72 hours prior to their appointment. Messages were delivered in English or Spanish per patient selection at the beginning of the call. Patients were reminded of the appointment date, time, location, and careprovider. Patients were offered the option of canceling their appointment by being directly connected to the scheduling desk or they were offered a number to call if the message was delivered after the clinic was closed. Messages were left on answering devices or voicemail services when able. If no answering device or voicemail service was detected, subsequent daily notification attempts were performed at different times of the day.

Results: During the period of 11/01/98 to 12/17/98, 788 appointments were included in a pilot project to test the automated patient notification system. 652 (83%) of the patients received the message. 361 (46%) had the message delivered in person, 291 (37%) had the message delivered to an answering device or voicemail service. Among the 361 patients that received the message in person, 200 (55%) chose to have the message in English, and 161 (45%) selected the Spanish version. 136 patients (17%) were unable to be contacted. 106 (13%) had no answer with multiple attempts during the 72 hour time period prior to the appointment date, and 30 (4%) had a wrong number.

Conclusions: In a public health care system serving primarily a diverse, medically indigent population, computer methods can be successfully used to automatically notify patients of upcoming appointments. About one fifth of the patients may not receive the message due them not answering the phone, not having an answering device or voicemail services, or having a wrong number. Further studies should be aimed to see if this new technology will lead to improvement with visit compliance.

SPECIALTY AND HIV EXPERIENCE: DO THEY PREDICT ANTIRETROVIRAL PRESCRIBING PRACTICES? VE Stone, FF Mansourati, RM Poses, CA Duefield, KH Mayer. Dept. of Medicine, Memorial Hospital of R.I., Brown University School of Medicine, Providence, R.I.

Objective: Controversy exists regarding who is qualified to provide care for patients with HIV/AIDS. Previous studies have shown an association between provider HIV experience and outcome in AIDS care. To explore the relationship between provider HIV experience, specialty, and the provision of appropriate AIDS care, we examined physicians' choices regarding antiretroviral therapy (ART) for two standardized cases.

Methods: We surveyed 2,500 internal medicine (IM) and infectious disease (ID) physicians randomly selected from the AMA Masterfile. To date, 45% of eligible physicians have responded (N=1057). Two standardized cases of patients with asymptomatic HIV disease, who differed only by CD4 count and HIV RNA load, were presented -- Case 1: CD4 count 330 cells/ml and HIV RNA load 250,000 copies/ml; Case 2: CD4 count 460 cells/ml and HIV RNA load 50,000 copies/ml. For each case, respondents were asked whether ART is indicated, and if so, to choose the specific ART regimen they would use. ART chosen was categorized according to whether it is recommended (REC ART) or not, based on the recent DHHS guidelines. Respondents' HIV experience was categorized as moderate to high (MOD/HI EXP) or none to low (NO/LO EXP), based on their reported number of HIV patients currently, and over the course of their career to date.

Results: For Case 1, 72.8% of responding physicians chose REC ART. REC ART was significantly more likely to be chosen by IDs (88.1%) compared to IMs (57.2%); OR= 5.56, 95%CI= 3.96, 7.79. Physicians with MOD/HI EXP were significantly more likely to choose REC ART (78.4%) than those with NO/LO EXP (44.1%); OR=4.58, 95%CI 3.16, 6.63. Of respondents with MOD/HI experience, IDs were significantly more likely ($p<0.05$) to choose REC ART (88.1%), than IMs (64.2%). The only other predictors of choice of REC ART were younger age and hospital-based practice setting ($p<0.05$). A logistic regression model was performed examining choice of REC ART while controlling for specialty, HIV experience, sex, race, age, and practice type. This model that found both specialty and HIV experience were significant independent predictors of REC ART; for ID specialty: OR=4.67, 95%CI 3.15, 6.90; and for MOD/HI EXP: OR=2.04, 95%CI 1.32, 3.13. Results for Case 2 were similar; all univariate and multivariate associations remained the same.

Conclusion: Appropriate choice of antiretroviral therapy for asymptomatic patients with HIV appears to be related both to physician specialty and HIV experience. These results may have important implications for the debate regarding who should provide HIV care. Enhancing HIV/AIDS education for IMs and those with limited HIV experience may be warranted to improve their antiretroviral prescribing practices.

PHYSICIAN FAMILIARITY WITH AND USE OF NATIONAL AND LOCAL PNEUMONIA PRACTICE GUIDELINES GE Switzer, EA Halm, J Goldman, CH Chang, BS Mittman, MB Walsh, MJ Fine. Center for Research on Health Care, Univ. of Pittsburgh Medical Center, and St. Francis Medical Center, Pittsburgh, PA; Mt. Sinai Medical Center, New York, NY; RAND, Santa Monica, CA.

Aims: Although guidelines for community-acquired pneumonia (CAP) have been published by the American Thoracic Society (ATS) and developed for local hospital use, physician (MD) familiarity with and use of such guidelines remains unknown. The aims of this study were 1) to assess MD familiarity with and use of the ATS and locally-developed hospital guidelines for CAP, and 2) to identify MD characteristics associated with being influenced by guidelines.

Methods: As part of a randomized trial of guideline dissemination, we developed a pre-intervention questionnaire to rate MD familiarity with and use of ATS guidelines and to determine the influence they have on MD management of patients (pts) with CAP. Questionnaires were sent to 641 internal medicine, pulmonary medicine, and infectious disease MDs from 7 hospitals in Pittsburgh, PA (1 university, 3 community teaching, and 3 community non-teaching).

Results: 352 MDs completed the questionnaire (55% overall response rate, ranging from 43% to 67% by site). Of the respondents, 79% were general internists or family practitioners, 78% were white, and the majority of their time was spent providing direct inpt or outpt medical care (median, 46 hrs/week). Overall, 78% of respondents (range 58% to 89% by site, p=.01) reported at least having seen the ATS guidelines, but only 20% (8%-28% by site) reported using them; 52% (42%-82% by site, p=.08) reported that these guidelines influenced treatment either not at all, or only slightly. Specialists (pulmonary and ID) were no more likely to be familiar with or influenced by ATS guidelines than were generalists. MDs were more likely to be influenced by ATS guidelines if they spent more time teaching (r=.16; p<.01), more time in administration (r=.12; p<.05), or more time reading medical journals (r=.14; p<.05). Six of the 7 study hospitals had locally developed CAP guidelines. Nearly half of the respondents (48%) were uncertain whether their own hospital had guidelines for CAP. For the 290 respondents from the 6 hospitals with a documented CAP guideline, 41% reported that no local guideline existed; for the 48 respondents from the single hospital with no guideline, 14% reported that one existed. Only 38% of respondents from hospitals with a local guideline reported that the guideline was moderately or very influential in management of their pts with CAP.

Conclusions: Although guidelines exist on a national and local level, a sizeable proportion of MDs are unaware of their existence and they appear to have limited influence locally on pt care. These findings indicate that more effective methods are needed for guideline dissemination and implementation.

QUALITY OF CARE IN A MANAGED CARE PROGRAM FOR THE MEDICALLY INDIGENT. RE SWANEY, DW Price, JR Goodspeed, JF Steiner, University of Colorado Health Sciences Center, Denver, CO.

Purpose: To assess the impact of a new managed care program for the medically indigent (MI) on the quality of care of patients with hypertension (htn), diabetes (dm), and asthma (asth).

Methods: The CU Care Program (CU) was a primary care-based, staff-model managed care program for low-income adults developed by University Hospital (UH), Denver which opened its primary care clinic in May 1995. Claims data were used to identify MI and Medicaid (MC) patients (pts) with htn, dm, and asth who were seen in UH clinics in both the pre-programmatic (1994) and programmatic (Jul 1995-Jun 1996) years. Pts with new diagnoses were excluded. Specified process and outcome measures were abstracted from charts for retrospective cohort study. There were three study groups: MC pts (MC), MI pts enrolled and seen in CU (CU), and MI not enrolled or not seen in CU (MI). The primary comparison was between CU and MC. Within-group comparisons (e.g. MC 1995 compared to MC 1996) were accomplished with paired, nonparametric Wilcoxan sign-rank tests and McNemar's test for paired proportions. Between-group comparisons (e.g. MC change from 1995-96 compared with CU change from 1995-96) were assessed by regression analysis adjusted for age, gender, race, and presence of medical co-morbidities.

Results: There were no consistent demographic differences between the groups (htn n=247, dm n=189, asth n=111). Primary care visits were increased in CU vs. MC for all three conditions (p=0.0003 for htn and 0.0001 for dm and asth). No improvements were seen in blood pressure (BP) control. In fact, the percent of pts with mean diastolic BP less than 90 decreased in CU (p=0.005). Although mean glycohemoglobin in CU dm pts dropped from 12.8 to 8.6 (p=0.02), this change was not significantly different from MC (which fell from 10.9 to 8.6). Significantly more dm pts who had htn were placed on ACE inhibitors in CU (p=0.03). In asth pts, there was a significant increase in the rate of peak flows used at home and measured at clinic visits (p=0.0004 and 0.002 respectively). When the overall MI group (CU + MI) was compared to MC, the only significant difference that remained (including visit data) was that peak flow was measured in the office more often in pts with asth.

Conclusions: The institution of a managed care program for the medically indigent resulted in an increase in primary care visits for pts who accessed the program. Although several quality of care improvements were noted, blood pressure control worsened and most comparisons with a Medicaid control group showed no differences.

EPIDEMIOLOGY OF TELEPHONE CONSULTATIONS TO PRIMARY CARE PHYSICIANS: WHAT ARE WE DOING?
PD Tesolin, C Dreyer, NE Gimpel, FA Augustovski. Division of Family and Preventive Medicine. Hospital Italiano de Buenos Aires. Argentina.

Background: There is scant information regarding the provision of medical care by telephone to the adult population.

Purpose: To describe the epidemiology of telephone consultations to primary care physicians (PCPs) in a managed care setting and to evaluate PCP behavior.

Methods: PCPs have a defined panel of patients who can reach them for telephone consultations through a beeper. We included a sample of callers to each PCP during one to two one-week intervals randomly distributed along the 6-month study period. During this period, the PCP carried a recorder and taped certain characteristics of the telephone consultation. Variables of interest were sociodemographics of callers and PCPs, reasons for the call, and management of the consultation by the PCP.

Results: 1013 beeper calls to 31 PCPs were included. Weekly calls among PCPs averaged 24 (range 7-82), and weekly PCPs time in this task averaged 2.5 hours (range 0.5-8.5). PCPs with a larger panel of patients and those with longer waiting times did more calls (26 vs. 21 for panels > vs. < 1000 pts ; 26 vs 20 if waiting time > vs. < 1 week, $p<0.001$). Mean response time was 89 minutes, and the adjusted duration of the consultation differed by PCP gender: 56% of calls made by female PCPs lasted less than 5 minutes as compared to 71% of those made by male PCPs ($p<0.001$). As compared with patients who did not call their PCPs, callers were more likely to be female (74% vs 57%, $p<0.001$) and older (48 vs 43yrs, <0.001). The main reasons for the consultations were (n=955, 95% of patients contacted): 59% health problems, 33% administrative, 2.4% inadequate, and 6% others. Reasons that accounted for ≥4% of the 563 calls related to health problems were: respiratory infections (19%), information of tests results (16%), musculoskeletal problems (11%), gastrointestinal problems (6%), psychosocial problems (5%); and preventive care, ob/gyn, urinary symptoms, hypertension, asthma/COPD and skin problems (4% each). PCPs with waiting times >1week received more health related calls than the others (65% vs. 52%, $p<0.001$). Of all calls, 65% were considered resolved with one telephone contact, 11% required telephone follow up, 14% non-scheduled visits to the PCP and 6.2% scheduled visits to the PCP. Only 38 telephone calls (4%) resulted in visits to the ER or walk-in clinic.

Conclusions: In this primary care oriented managed care setting, telephone access to PCPs is used mainly for health related problems. Two thirds of the calls are solved in only one telephone consultation and one fifth of them generate new visits to the PCP. The content of the consultation and the time involved are related to PCPs panel of patients and waiting time. Telephone consults with PCPs are an underevaluated and underpaid service. They can improve doctor-patient relationship and be used for problem resolution, reducing unnecessary visits.

EFFECTS OF COMPUTERIZED GUIDELINES FOR OUTPATIENT MANAGEMENT OF ISCHEMIC HEART DISEASE AND HEART FAILURE. WM Tierney, JM Overhage, MD Murray, LE Harris, XH Zhou, GJ Eckert, FD Wolinsky. Regenstrief Institute, Indiana University, Purdue University, and Roudebush VA Medical Center, Indianapolis, IN.

Practice guidelines aim to reduce variation in care and improve patient outcomes while controlling costs. Computer order-writing workstations allow such guidelines to be invoked while care is being delivered, rather than beforehand (as is the case with education) or afterwards (as with drug utilization review). We performed a randomized, controlled trial of guidelines for outpatient cardiac care among patients in an academic primary care GIM clinic. The guidelines, developed by a consensus committee of local general internists and cardiologists, were programmed into computer workstations used to write all outpatient orders. Each care rule had 4 components: patient eligibility criteria, the suggested treatment or test (displayed at the beginning of an ordering session), a short description (always displayed), and a long description (with references, displayed *prn*). Eligibility data came from patients' electronic records and their physicians (MDs), who were requested to enter today's blood pressure, weight, and NYHA class when initiating computer ordering. The clinic's 32 half-day sessions were randomized into 4 groups: control, MD intervention (primary care MDs received cardiac care suggestions for all of their enrolled patients), pharmacist (PH) intervention (PHs received similar suggestions via their terminals when filling any prescription), and both MD and PH interventions. Each patient was followed for a year and interviewed by telephone at enrollment and 6 and 12 months later to collect data on generic and condition-specific health status, medication compliance, and satisfaction with their primary care MD and the pharmacy. From patients' electronic records we obtained data on compliance with care suggestions, ER visits, hospitalizations, and health care charges. We also assessed MD and PH attitudes towards guidelines and our computer interventions to enhance their compliance.

We enrolled 706 patients: 81% had ischemic heart disease, and 54% had heart failure. During their 1 year in the study, 654 patients (93%) kept 6.0±4.0 outpatient visits. All but 3 patients were eligible for cardiac care suggestions (mean of 7.0±3.3 suggestions per patient, range 0-18). Compliance was 29.5% in the PH only group, 25.7% in the MD only group, 26.0% in the MD+PH group, and 25.4% in controls whose MD/PH got no suggestions (p=0.3). Even when analyzing individual care suggestions, neither MD nor PH intervention status predicted compliance. There was also no difference between study groups in health status, medication compliance, satisfaction with MDs or the pharmacy, all cause or cardiac-specific ER visits or hospitalizations, or health care charges. MD/PH attitudes towards guidelines and computer suggestions were mixed and often negative.

Although in this practice computer reminders have consistently increased the delivery of preventive care, computerized patient-specific care suggestions had no effect on processes or outcomes of cardiac care. This was possibly due to inadequate patient data (e.g., symptoms, prior history, care delivered elsewhere) or clinicians' negative attitudes.

PRIMARY CARE PHYSICIANS BELIEVE THAT CALCIUM BLOCKERS AND ACE INHIBITORS ARE SUPERIOR TO BETA BLOCKERS AND DIURETICS IN TREATING UNCOMPLICATED HYPERTENSION

Peter A. Ubel and Mary Adler; University of Pennsylvania, Philadelphia, PA.

Background: Based on a series of clinical trials showing no difference in efficacy or tolerability of most major classes of antihypertensive medicaitons, The Joint National Commission on high blood pressure treatment recommends that physicians prescribe beta blockers or diuretics as initial hypertensive therapy, unless there are compelling indications for another drug. Nevertheless, physicians continue to favor more expensive drugs like ace inhibitors and calcium blockers as first line agents. The persistent use of these agents raises questions about whether physicians are unaware of the results of these clinical trials or, instead, whether they perceive that their own clinical experience belies the trial results.

Methods: Mail survey of 1200 primary care U.S. physicians asking them to estimate, according to their own clinical experience, the relative efficacy and side effect profiles of these four classes of drugs in treating middle aged Caucasian males with uncomplicated hypertension (BP 170/105), and asking them about their knowledge of published hypertension trials.

Results: Based on their clinical experience, respondents thought ace inhibitors, beta blockers, and calcium blockers would have a 61% to 63% chance of achieving normal blood pressure in these patients, but that diuretics would only have a 44% chance ($p < 0.001$ for difference in perceived efficacy). Based on their clinical experience, they also thought that 12% to 15% of patients would need to discontinue ace inhibitors, calcium blockers, and diuretics due to side effects, but that 23% would need to do so for beta blockers ($p < 0.001$). Perceptions of their clinical experience were no different than their stated beliefs about published trials, in which they incorrectly thought that diuretics have been shown to be less effective and beta blockers have been shown to be less tolerated than the other medications. In addition, 40% of respondents incorrectly thought that ace inhibitors and calcium blockers had been "proven to reduce the risk of stroke in hypertensive patients."

Conclusions: Despite numerous clinical trials showing no difference in efficacy of side effect profiles of these four classes of drugs, physicians continue to believe that ace inhibitors and calcium blockers are either more effective or better tolerated. Whether this belief results from true differences between physicians' experiences and the results of clinical trials is unclear. To increase physicians' prescribing of beta blockers and diuretics will require an effort either to overcome misunderstandings of the effectiveness and tolerability of these medicines or a better appreciation of how these drugs are working outside of randomized control trials.

OUTCOMES OF CATARACT SURGERY IN RELATION TO APPROPRIATENESS RATINGS JK Tobacman[1], B Zimmerman[1], PP Lee[2], L Hilborne[3], H Kolder[1], RH Brook[3]. [1]University of Iowa, Iowa City [2]Duke University, Durham, [3]UCLA, Los Angeles.

1020 cataract surgeries from 10 academic medical centers were studied as part of the Academic Medical Center Consortium and RAND collaboration called the Clinical Appropriateness Initiative. An expert, multispecialty panel evaluated over 2900 clinical scenarios, called indications, to rate each for appropriateness of performing cataract surgery, using a 1-9 scale, with a rating of 1 for least appropriate, meaning that the risks of surgery clearly exceeded the expected benefit, and a rating of 9 for most appropriate, suggesting that the benefits of surgery far exceeded the risks. Each surgery was assigned to the indication that correlated best with the clinical data, considering the visual function, visual acuity in the operative and the contralateral eyes, unilateral or bilateral cataract, limited life expectancy, dementia, presence or absence of other ocular disease, and severity and visual potential of specific ocular comorbidities. 793 of these surgeries had postoperative data with regard to complications and visual acuity of the operative eye. Of these, 39% had ratings of appropriate and crucial, 52% appropriate, 7% uncertain, and 2% inappropriate. 327 complications occurred, including occurrences in 29% of those rated as inappropriate, 34% rated as uncertain, and 33% rated appropriate or appropriate and crucial. This suggests that a rating of uncertain or inappropriate was not associated with the occurrence of complications. In contrast, analysis of visual acuity at 2-4 months postoperatively, stratified by the preoperative visual acuity, reveals that 14.3% of the inappropriate ratings, 7.5% of the uncertain ratings, and 2.0% of the appropriate and crucial ratings had decline in the visual acuity from ≥20/40 to <20/50 or from 20/50-20/100 to <20/100. This variation between the results for the uncertain and inappropriate compared to the appropriate and appropriate and crucial is statistically significant, with p=.00062 (Chi-square test). Hence, the appropriateness ratings may distinguish a population who are more likely to have decline in visual acuity 2-4 months postoperatively. This provides validation for appropriateness methodology in cataract surgery.

NATIONAL PATTERNS OF LIPID-LOWERING MEDICATION USE, 1980-1996. TJ Wang, RS Stafford, JC Ausiello, Institute for Health Policy, Massachusetts General Hospital, Boston, MA.

Background: Three landmark trials involving HMG-CoA reductase inhibitors (statins) were published between 1994 and 1996 (4S, WOSCOPS, and CARE). These trials provided evidence that lipid-lowering therapy decreases cardiovascular events, including mortality. Whether this evidence was directly associated with a shift toward statin use has not been evaluated.

Methods: Using the National Ambulatory Medical Care Surveys (NAMCS) for 1980-1981, 1985, and 1989-1996, we analyzed 3,694 visits by patients taking lipid-lowering medications. Quarterly trends in specific lipid-lowering medications were assessed using both graphical techniques and time-series regression. We also used multiple logistic regression to determine the independent predictors of medication selection in 1993-96.

Results: In 1980, the most common lipid-lowering medications were fibrates (48% of all visits where lipid-lowering medications were reported) and niacin (45%). By 1985, decreasing niacin use (26%) was offset by the rising use of resins (20%), with continued high use of fibrates (45%). By 1989, statins (34%) replaced fibrates (33%) as the most commonly reported lipid-lowering drug. Statin use climbed continuously thereafter; it was reported in 82% of visits in 1996. By 1996, fibrate use had dropped to 13%, with other drugs each accounting for less than 5%. Prescribing of individual statins showed monotonic increases for pravastatin and simvastatin after their introduction. Lovastatin use, however, decreased between 1993 and 1996. Trends in statin use were temporally unrelated to the publication of clinical trials results. For patients receiving lipid-lowering therapy in 1993-96, statin use was significantly more likely for female patients, privately insured patients and among patients visiting cardiologists.

Conclusion: Lipid-lowering medication use is currently dominated by statins. Their use has risen continuously since 1989, prior to the publication of the recent statin trials. Increased statin use and an altered distribution of statin prescribing followed the availability of new statins. During much of this time niacin and resins were recommended as first-line agents by NCEP. Although publication of clinical trials may have added to an existing trend, a direct effect on patterns of lipid-lowering therapy is not apparent in the NAMCS data.

EFFECT OF PHYSICIAN GENDER, FINANCIAL PRODUCTIVITY INCENTIVES AND OTHER FACTORS ON QUALITY OF PREVENTIVE CARE. CC Wee, RS Phillips, HR Burstin, EF Cook, AL Puopolo, TA Brennan, JS Haas. Division of General Medicine, Beth Israel Deaconess Medical Center and Brigham and Women's Hospital, Harvard Medical School, Boston, MA and San Francisco General Hospital, UCSF, San Francisco, CA.

Previous studies suggest that factors such as physician(MD) gender may affect use of preventive services. Recent efforts to contain costs have resulted in strategies such as MD financial productivity incentives to improve efficiency. Whether MD factors including gender, productivity incentives, and practice characteristics affect quality of care once other clinical and site-specific factors are taken into account is uncertain.

Methods: We reviewed the charts of 4857 patients(pts)(mean age 45 years, 60% female, 25% nonwhite) between the ages of 20 and 75 years(yrs) cared for by 200 primary care providers(mean age 40 yrs, 45% female, 9% subspecialists, and 41% with productivity incentives), at 11 academically-affiliated practices in Boston. We collected data on pt age, gender, comorbid conditions, smoking history, and risk factors for cardiovascular disease and breast and cervical cancer. We also abstracted dates of the pt's last Pap smear, mammogram, flu shot, and cholesterol level. MD information(age, sex, productivity incentives, subspecialty, hours worked, and percent time spent on pt care) were collected by self-administered survey. We used multivariable analysis to study the effect of 6 MD characteristics on 4 outcomes based on HEDIS measures: 1)Pap smear within the last 3 yrs in women age 20-64 yrs; 2)mammogram within the last 2 yrs in women age 52-69 yrs; 3)cholesterol screening within the last 5 yrs in pts age 40-64 yrs; and 4)flu vaccination in pts >age 65yrs. Analyses were adjusted for MD factors, relevant clinical factors and practice site.

Results: After adjustment, pts of female MDs were more likely to receive Pap smears, adjusted odds ratio 2.54 (95%CI 1.83, 3.53), mammograms, 2.74 (1.58, 4.73), and cholesterol screening, 1.53 (1.04, 2.26). Pts cared for by MDs with financial productivity incentives were less likely to receive Pap smears, 0.38 (0.21, 0.69) and cholesterol screening, 0.64 (0.43, 0.96). Pts of subspecialists were less likely to receive Pap smears, 0.61 (0.41, 0.92), cholesterol screening, 0.72 (0.53, 0.98), and flu vaccines, 0.44 (0.23, 0.81). MD age, hours worked and percent time spent on pt care were less important. These results did not change substantially when we controlled for pt race, education and insurance status.

Conclusion: Pts of physicians with financial productivity incentives, pts of male physicians and pts of medical subspecialists were less likely to receive certain forms of preventive care. Our findings raise questions about the appropriateness of financial productivity incentives. Pts of male physicians and subspecialists should be targeted for increased preventive interventions.

PHYSICIAN MOTIVATION FOR SMOKING CESSATION COUNSELING. GC Williams, A Zeldman, S Wright, The Genesee Hospital. Departments of Medicine and Psychology, University of Rochester, Rochester, NY & Medical Society of the State of New York.

Objectives: Smoking cessation counseling by physicians occurs at low rates in spite of strong evidence that such counseling increases quit rates and reduces mortality. Physicians were surveyed to understand their motivations and barriers for use of the AHCPR Guidelines.

Design & Measurement: Cross-sectional survey measuring self-reported use of the AHCPR Guidelines, barriers to counseling, and the Self-Determination Theory concepts of perceived autonomy, and perceived competence for counseling, and perceived autonomy support from insurers.

Participants: New York State physicians (N=1060) responding to a survey mailed to 10,000 NYS physicians.

Results: Perceived autonomy, competence, and autonomy support accounted for 8.6% ($p<.001$) of the variance in time devoted to counseling, and 14.5% ($p<.001$) of the variance in use of the AHCPR Guidelines, after controlling for demographics and barriers of perceived time constraints and lack of reimbursement. As predicted, the effect of autonomy support on counseling was mediated by perceived autonomy and perceived competence.

Conclusion: When managed care organizations support physicians' autonomy and competence with respect to counseling, the physicians may be more motivated to use brief, guideline-based smoking cessation counseling.

IMPROVING PROCESS AND OUTCOMES FOR DEPRESSION IN MANAGED CARE PRACTICES: RESULTS OF A RANDOMIZED TRIAL. *†KB Wells, *CD Sherbourne, *M Schoenbaum, *N Duan, *LS Meredith, †J Unutzer, ‡J Miranda, *R Bell, *MF Carney, §¶*LV Rubenstein. *RAND, †UCLA Neuropsychiatric Institute, ¶UCLA School of Medicine, and §Sepulveda VA, Los Angeles, Ca; ‡Georgetown University Department of Psychiatry, Washington, DC. **Purpose:** To evaluate the effectiveness of two interventions for improving depression care in managed primary care practices. Practices implemented pre-designed study interventions consistent with AHCPR clinical practice guidelines, through their existing quality improvement mechanisms. One intervention aimed to increase effective use of antidepressant medications and the other, short-term cognitive behavioral psychotherapy. Both interventions incorporated nurse assessment of illness and patient preferences, patient and provider education, and local opinion leaders from primary care, mental health, and nursing. The medication intervention also involved nurse case management in a collaborative care model. **Methods:** Randomized trial; clinics randomized to one of two interventions or usual care. *Sites:* 46 primary care clinics within six public and private managed care organizations in 5 states, all with low or no academic affiliation. *Participating Providers:* 181 of 183 primary care clinicians in these clinics. *Evaluation Sample:* Consecutive visitors to each clinic were screened to enroll patients with a high likelihood of current major depression who met basic enrollment criteria (quick screen) and subsequently evaluated for eligible insurance prior to full enrollment, self-administered and telephone survey administration, and two year longitudinal follow-up. *Analysis:* Intent-to-treat regressions controlled for clinic-level clustering effect. **Results:** Of 27332 screened individuals, 3918 were eligible on quick screening, and of these, 2417 were assessed for insurance and informed about the study. Of the 2417, 2176 had eligible insurance and 1356 (70% of eligibles) enrolled. Intervention and control cohorts were equivalent at baseline on demographic, mental health and functional status measures. At 6- and 12- month follow-up, intervention patients were more likely than controls to have received appropriate antidepressant medication ($p<.0001$) and psychotherapy ($p<.005$), controlling for casemix. They also had fewer depressive symptoms, a higher remission rate, and greater likelihood of staying employed ($p<.05$). **Conclusions:** Structured pre-designed interventions to improve care for depression can be implemented using typical practice quality improvement mechanisms, and those studied here are effective in improving the process and outcomes of care for depression in diverse non-academic primary care settings.

CAN ROUTINE FEEDBACK ON DIAGNOSTIC TESTING SAFELY LOWER COSTS?

Ron A.G. Winkens, Peter Pop, J André Knottnerus
Transmural Diagnostic Center Maastricht and Dept of Family Practice, Maastricht University, the Netherlands

Introduction:
Feedback may improve test ordering and stop the growth of costs of diagnostic testing. In studies feedback is usually provided for a short period. Effects disappear as soon as feedback is stopped. We assessed the long-term effects of routine feedback given to 90 family physicians (FPs) in the Maastricht region (the Netherlands), twice per year ever since 1985.
Method:
The effects of feedback on appropriateness, volume and costs of tests were evaluated in two studies. First, in a quasi-experiment we assessed the long-term effects on volume and costs. We compared our data on all tests requested in the period 1983-1993 with similar data from another laboratory that did not provide feedback. Second, in a randomized trial feedback was given on the appropriateness of several tests. In a Latin-square design, FP-group 1 ($n=39$) received feedback on test-group A (ECG, endoscopy, cervical smears and allergy tests); the other ($n=40$) on test-group B (radiology and ultrasonography). FP-group 1 acted as controls for test-group B and FP-group 2 for test-group B. We evaluated changes in volume and rationality (compliance with guidelines) of tests.
Results:
Compared to the trend elsewhere without feedback, total test numbers declined by more than 60% in a 11 year period ($p<0.001$). Total test numbers decreased since 1985 (highest: 147212 in 1984; lowest 105003 in 1993). Individual tests showed reductions between 32 and 96%, especially when an alternative test was suggested. Compared to the trend without feedback over these years 9 years more than 1.5 million $ were saved in our region despite the costs of feedback. In the trial we found effects on the reationality of tests (fewer non-rational requests in the intervention group, $p=0.01$). Rationality especially improved for lumbar spine X-rays ($p=0.004$).
Conclusions: Routine feedback leads to a persistent change in test ordering behavior with major cost savings. In the meantime, rationality of tests ordered improved.

A SHORT STAY UNIT RUN BY ATTENDING STAFF REDUCED LENGTH OF STAY AND CHARGES AT A TEACHING HOSPITAL.
J Winshall, E Newton, G Thibault, HR Burstin. Division of General Medicine, Brigham & Women's Hospital, Boston, Massachusetts.

Purpose: In 1996, our hospital opened a medical Short Stay Unit (SSU), designed to care for patients requiring < 3 days of hospitalization. This unit is geographically distinct and staffed 24-hours/day by only attending-level physicians. While such units have been implemented in many sites, few data are available about their impact on resource utilization. This analysis was designed to assess the impact of such a unit on length of stay (LOS) and hospital charges.

Methods: There were 114 patients admitted to the SSU from 11/97-1/98. These patients were matched to a control group of 111 patients who were deemed appropriate for the SSU, but admitted to a general medical team with house officer involvement due to lack of available SSU beds. Patients were identified by record review and matched by date of admission and age (within 10 years). Patients admitted to the SSU, but later transferred to a general medical team were analyzed as SSU patients. Multivariate analyses were performed to determine whether admission to the SSU was an independent correlate of LOS and charges, controlling for co-morbidity (Charlson index) and case mix (DRG weight).

Results: After adjusting for co-morbidity and case mix, patients admitted to the SSU had a shorter LOS (59.8 hours), compared to matched patients admitted to general medical teams (72.7 hours) (18% reduction in LOS, p=0.02). After adjusting for co-morbidity and case mix, total hospital charges were also lower among patients admitted to the SSU ($5623), compared to matched patients admitted to a general medical team with house officer involvement ($7359) (24% reduction in charges, p=0.005).

Conclusions: These data suggest that a medical short stay unit run by attending physicians reduced length of stay and total hospital charges, even after controlling for co-morbidity and case mix. These results, if extrapolated to the present volume of admissions assigned to the SSU (200 per month), suggest a savings of 300 hospital days and $4.3 million in hospital charges per year. Further evaluation will help determine whether these results are attributable to the unique operating characteristics of a short stay unit, or the exclusive utilization of attending staff rather than house officers.

IS THERE A RELATIONSHIP BETWEEN PRIMARY CARE PROGRAM FEATURES AND ADJUSTED HOSPITALIZATION RATES?
EM Yano,*† M Lee,*† M Wang,* B Simon,* and LV Rubenstein.*‡§ *Center for the Study of Healthcare Provider Behavior, VA Greater Los Angeles Healthcare System, Sepulveda, CA; †UCLA School of Public Health; ‡UCLA School of Medicine; §RAND. **Purpose:** Evaluations of the effects of implementing structured primary care (e.g., ambulatory care firms) have shown reductions in rates of hospital use. Little is known about which features of primary care affect hospitalization. We assessed the relationships between primary care program features and hospitalization rates for all160 VA medical centers, controlling for medical center organizational and patient characteristics. **Methods:** We linked survey data from the 1996 VA Delivery Models for Primary Care Survey (DMPC) (100% response rate) to inpatient and outpatient utilization and satisfaction data for 1996. The DMPC Survey asked medical center top and middle management to report on their primary care programs and other characteristics. Satisfaction data is based on results from a mailed survey administered by the VHA National Customer Feedback Center to a random sample of 200 to 300 outpatients per medical center, using previously validated, reliable scales. Hospitalization rates are based on VA computer administrative data, and calculated as the number of hospitalizations per patient seen at the medical center per year. We used a path analysis approach across iterative multiple regressions to evaluate associations between discrete primary care program features and the logarithm of hospitalization rate, adjusting for medical center characteristics likely to be related to hospitalization rates such as mean patient age and facility size. **Results**: Lower mean patient age (p<.01), urban location (p<.05), smaller size (p<.05), higher academic affiliation (p<.05) and more support staff such as clerks (p<.05) were associated with lower hospitalization rates. Having more clinical staff, such as physicians, was not significant. Controlling for medical center characteristics, primary care program features associated with reduced hospitalization were presence of a formal primary care training program (p<.01) and more middle level administrators dedicated to primary care (p<.01). Hospitalization rates for sites with and without primary care teams were similar **Conclusions**: The presence at a medical center of a formal primary care training program, beyond having an academic affiliation, and the presence of dedicated primary care mid-level administrative managers, beyond having a given level of support staff available within the medical center, is associated with lower hospitalization rates. As expected, medical center characteristics such as mean patient age are significant determinants and should be controlled for in analyses of hospital utilization patterns.

PHYSICIAN INCOME AT-RISK FOR THE COSTS OF PATIENT CARE: RESULTS OF A NATIONAL PHYSICIAN SURVEY.
Wynia MK[1], Zucker DR[2], Supran S[2], Picken H[3], Selker HP[2]. 1) Institute for Ethics, American Medical Association, Chicago IL; 2) New England Medical Center, Boston MA; 3) Bridgewater Goddard Park Medical Associates, Brockton MA.

Capitated payment of physicians has been called "the purest form of risk sharing" and is the prototypical method of placing physician income at risk for the costs of their patients' care. However, reports vary on whether capitation affects quality of care and patient-physician interactions. We sought to determine: (1) physicians' views on the quality of care they offer their patients in capitated plans; (2) how often physicians discuss with patients how they are compensated for patient care; (3) whether physicians are advising patients with better or worse health status to enroll in or to avoid capitated managed care plans; and (4) whether increased experience with capitation alters physicians' views and responses.

A survey was sent to a national random sample of 1000 primary care physicians (PCPs) and an additional 175 PCPs from each of three high managed-care penetration cities during 1997 (response rate 62%). Results were analyzed for the overall sample and by level of physician experience with capitation.

Overall, capitation was viewed negatively by most physicians compared to salary or discounted fee for service: 71% said PCP capitation that included subspecialty referral costs posed a conflict of interest; 35% said the quality of care they could provide to their patients in capitated plans was of lower quality; and 76% preferred that their own family's doctors not be capitated. Physicians were willing to forgo 11% of their income to avoid capitation, but 55% said they could not practice medicine if they refused capitation. Most respondents (62%) discussed the risks and benefits of capitation with some patients (average 5.2/month, 53% patient-initiated); 35% encouraged complex/ill patients to avoid capitated health plans and 26% encouraged healthier patients to join them. In subgroups: of those who said capitated plans had acceptable quality 34% still encouraged complex/ill patients to avoid these plans; of those who said capitation had worse quality 24% nevertheless encouraged healthier patients to join these plans. Of those PCPs with the most experience in capitation 20% said quality in capitated plans was worse; these PCPs would forgo 7% of their income to avoid capitation, but 82% said they could not practice medicine if they refused it.

Capitation is perceived negatively by most PCPs. Substantial minorities are concerned that quality is impaired under capitation, and are complicit in risk-selection for capitated plans that runs counter to their impressions of plan quality. Those with more experience in capitation feel only somewhat less negatively about this payment system but much less able to avoid it.

ORGANIZATIONAL DETERMINANTS OF OUTPATIENT SATISFACTION.
EM Yano,*† AB Lanto,* M Wang,* B Simon*, M Lee,*† LV Rubenstein.*§# *Center for the Study of Healthcare Provider Behavior, VA Greater Los Angeles Healthcare System, Sepulveda, CA; †UCLA School of Public Health; §UCLA School of Medicine; #RAND, Santa Monica, CA. **Purpose**: Managed care organizations are concerned about patient satisfaction, but often unsure about what produces it. Organizational features of medical centers and of their primary care programs might be expected to influence patient satisfaction, and we have evaluated the links between these structural characteristics and patient satisfaction outcomes. **Methods**: Observational study based on (1) the 1996 VHA Survey of Delivery Models for Primary Care (DMPC), an organizational survey of ambulatory care structural features of medical centers and (2) the 1996 VHA National Ambulatory Care Survey (NACS), a national VA patient satisfaction survey. The DMPC is a previously evaluated national survey of top and middle management at each of the 160 VA medical centers that assesses overall medical center characteristics and primary care program features. The NACS is a national survey administered to 200-300 randomly selected outpatients per VA medical center by the VHA National Customer Feedback Center. The survey includes 7 previously validated and reliable scales We evaluated the three scales that most closely reflect Institute of Medicine primary care goals--continuity, coordination, and timeliness/access. We used ANOVA to examine the basic relationships between organizational variables and average patient satisfaction scores. **Results**: Satisfaction with continuity (p<.005) and coordination (p<.0001) were lower in large urban medical centers and among those delivering some care through outlying community-based clinics (p<.001). Patients were also less satisfied with continuity at academically affiliated medical centers, and at those centers that did not restrict specialist-to-specialist referrals (p<.005). Satisfaction with continuity (p<.001), coordination (p<.01), and timeliness/access (p<.05) was higher when primary care physicians were expected to follow patients from their panels who were admitted to the hospital. Formal primary care notification policies for admissions to the (1) hospital, (2) nursing home and (3) emergency room were associated with better perceived continuity (1-3) and access (1,3) (p<.05). **Conclusions**: Higher patient satisfaction with continuity, coordination and/or access is associated with the presence of structural features of care that reflect primary care tenets, such as policies fostering follow-up of patients across settings and discouraging referral from specialist to specialist. Large, academic and geographically dispersed settings are likely to have lower satisfaction ratings in the aspects studied, and probably face special obstacles in achieving care consistent with primary care goals.

LEARNER/TEACHER-CENTERED RESEARCH

PATIENT ATTITUDES TOWARD MEDICAL STUDENT PARTICIPATION IN AMBULATORY CARE VISITS: IMPACT OF RACE. David S. Adams, Lorraine Adams and Robert J. Anderson, Univ. of Colo., Denver, CO.

Background: More teaching of medical students in the ambulatory setting raises a variety of financial, time-management, educational and patient acceptance challenges. A substantial minority of ambulatory patients does not desire medical student participation.

Objective: To determine patient preconceptions regarding medical student involvement in their ambulatory care.

Methods: We developed a twelve item, self-administered survey instrument to assess patient attitudes and preconceptions regarding medical student participation in their ambulatory care.

Results: This instrument was completed by more than five hundred and fifty patients seen at five diverse internal medicine-based ambulatory clinic sites including two private practices, a Veterans Affairs clinic, an academic-based practice and an academic-based largely indigent practice. Neutral responses to the statements "I would benefit from having a medical student involved in my care" (2.95 ± 0.05 on a 1=low, 5=high, Likert scale) and "Having a medical student present would make my visit last longer than it otherwise would" (2.91 ± 0.06) were obtained. Disagreement with statements that "The sex of a student involved in my care would be important to me", that "I would be comfortable with a medical student answering my questions alone" and that "I would be comfortable with a medical student examining me alone" (2.26 ± 0.05, 2.35 ± 0.05, and 2.38 ± 0.04 respectively) were obtained. Favorable responses to questions related to medical students answering questions and examining patients when a doctor was present were found (3.70 ± 0.05 and 3.55 ± 0.06 respectively). There were no significant differences when responses obtained at the five diverse clinic sites were compared and responses were comparable when analyzed by age, sex, education and income of respondents. Non-Caucasian responses differed significantly ($p<0.05$) from Caucasian responses by scoring lower in response to benefit of having a student involved, feeling comfortable having a student answering questions alone, being examined by a student alone and having higher scores in response to questions regarding having a student present would make the visit last longer and that the sex of a student is important.

Conclusion: These results demonstrate that patients generally have neutral preconceptions regarding medical student participation in their ambulatory care but view more positively student participation in the presence of a physician. A significant negative impact of non-Caucasian race on patient preconceptions regarding medical student involvement in internal medicine based ambulatory care was also found.

MANAGED CARE NEEDS ASSESSMENT SURVEY OF INTERNAL MEDICINE RESIDENTS. L.Adams, M.Blake, R.Hanratty, J.Kutner. Division of General Internal Medicine, University of Colorado Health Sciences Center. Denver, CO.

Purpose: In order to improve managed care education, a needs assessment survey of current and former housestaff of one internal medicine residency program was done.

Methods: A questionnaire was mailed to 396 subjects (140 current housestaff; 256 graduates, 1990-97). Item selection was based on review of managed care and residency education literature and the advice of academic faculty and managed care organization representatives. The questionnaire included 17 managed care competencies/skills that the respondents rated on four-point scales of "importance" and "preparation during residency." After reviewing descriptive statistics for all respondents, current housestaff and graduates were compared regarding importance of and preparation in these competencies.

Results: The response rate was 47% (74 current housestaff, 113 graduates). Over 50% of all respondents ranked effective use of consultants, providing preventive care, providing cost-effective medical care, and knowledge of cost effective use of diagnostic treatment as very important. When all respondents rated their preparation during residency, the items which were rated fair to poor by more than 85% were: managing business aspects of a medical practice, understanding payment schedules, knowledge of the financing of health services, and ability to work in a managed care setting. As compared to current housestaff, graduates rated the ability to provide cost-effective medical care, the ability to manage business aspects of a medical practice, the ability to work in a managed care setting, knowledge of epidemiology, and knowledge of the primary care gatekeeper as more important. Graduates felt less prepared than current housestaff to manage the business aspects of practice, to use practice profiles, to understand payment schedules and capitation, and to understand financing of health services. Not withstanding these gaps in topics related to managed care, 90% of graduates rated the overall quality of training as excellent to good. Graduates felt the amount of time spent in tertiary care hospitals was excessive (59%) and the amount of time spent in hospital-based outpatient (56%) and community based outpatient settings (87%) was too little.

Conclusions: Both current and former housestaff were satisfied with the overall quality of their residency training, but they identified significant gaps in managed care content and needs for increased exposure to non-hospital settings of care during training. These findings will be used both to modify resident curricula and to motivate current housestaff regarding the importance of learning managed care concepts.

RESIDENT APPLICATION STATEMENTS CAN PREDICT POST-RESIDENCY TRAINING. M Adams, SS Rathore, SR Mitchell, JM Eisenberg, Department of Medicine, Georgetown University Medical Center, Washington, DC.

BACKGROUND: Educational experiences, demographics and personal characteristics are known predictors of subspecialization following residency training. However, it is unclear whether residents' career plans at application are accurate predictors of post-residency career paths. **METHODS:** We evaluated residents who had completed a categorical medicine residency at Georgetown University Hospital between 1990 and 1998 to compare their stated career plans at application with their actual plans after residency. Residents were coded as interested in generalism, subspecialization or undecided at time of application and followed-up after residency. We excluded transfers and transitional year residents; 198 residents were eligible for evaluation. Follow-up data were obtained for 162 (82%). **RESULTS:** The majority of residents with defined post-residency plans at time of application followed those career paths after graduation. 67% (18/27) of residents interested in general medicine entered generalist practice after residency. Similarly, 58% of residents interested in specialization (60/103) pursued fellowship training after graduation. In addition, 51% of those residents planning on a particular field of subspecialization who pursued fellowship training did so in the field they stated. Of note, 56% (18/32) of residents undecided at time of application entered generalist practice. We noted an overall movement of residents towards generalist practice after residency (79/162, 49%), despite low initial interest (27/162, 17%). **CONCLUSIONS:** Residents with clearly stated career plans usually pursue those plans after residency. In addition, more residents enter generalist practice after residency than indicate a preference on application. The predictive value of application statements and increased interest in generalist practice we observed may be of interest to program directors evaluating residency candidates.

THE PHARMACEUTICAL INDUSTRY'S INFLUENCE ON CHIEF MEDICAL RESIDENTS. L Adler, D Muller, P Bao, J Lan, S Haddow, Division of General Internal Medicine, Mount Sinai Medical Center, New York, NY.

Pharmaceutical representatives (PhR) have considerable impact on physicians, but little is known about their interactions with, and influence on, Chief Medical Residents (ChMR). A self-report questionnaire was sent to Chief Residents at randomly selected Internal Medicine programs around the country. 168 surveys were mailed and the response rate was 50%.

Questions about PhR involvement in Internal Medicine Programs revealed that 73% of programs had PhR-sponsored dinners outside the hospital, 100% had PhR-sponsored tickets to the theater or sporting events, and 96% received promotional items, equipment, or drug samples.

Questions about ChMR direct interactions revealed that 67% took an active role in soliciting funds and organizing PhR-sponsored events, 37% reported having one-on-one interactions with PhR more than three times per week, 67% had been taken to lunch, dinner, or the theater, and 30% said that PhR were more likely to get access to Housestaff if they left gifts.

When ChMR discussed products with PhR, 25% never asked for references, 18% never asked for drug comparisons, 27% asked for gifts, and 55% ask for samples. Despite the apparent lack of critical review, 10% of the ChMR ranked PhR above Attendings, the medical literature, and their peers as sources of information about new drugs.

88% of ChMR said that PhR influence housestaff prescribing practices and 77% said that PhR influence their own prescribing practices.

Only 50% of ChMR were familiar with any of the official guidelines that address physician's relationships with PhR. 35% said that their Department either did not have any guidelines or that they were unaware of any, and 22% reported PhR interactions that were contrary to their Departmental guidelines.

ChMR have extensive exposure to PhR and are strongly influenced by these interactions. Their role as leaders and mentors for housestaff gives them the unique opportunity to set a standard for professional conduct. Their lack of knowledge about the appropriate response to PhR may jeopardize their own professionalism and the example they set for their housestaff.

CORRELATING ACADEMIC PERFORMANCE WITH PHYSICAL EXAMINATION SKILLS USING "HARVEY" - A CARDIOLOGY PATIENT SIMULATOR. Y Agarwal, SJ Peterson, CL Karmen, S Kaur, SA Kline, and WH Frishman, Division of General Internal Medicine, Department of Medicine, New York Medical College, Valhalla, NY.

Purpose. "Harvey", a cardiology patient simulator (CPS) was introduced in 1976 and subsequently proven to be a useful tool for teaching and assessing physical examination skills. 'Harvey' is a life- size mannequin that accurately reproduces arterial and venous pulsations, precordial impulses and cardiac auscultatory findings. Using "Harvey", we attempted to correlate objective physical examination skills with documented academic performance (national ACP in-service exam) and with independent subjective evaluation by attending physicians, the clinical evaluation exercise (CEX).

Methods. Twelve second year medical residents at a University Hospital were tested on 6 cardiovascular disease simulations. The simulations were presented in a different order to each resident. The national 1998 in-service examination scores (%) in cardiology were used as indicators of academic performance and the CEX scores (1-9) were the subjective evaluation of physical examination skills.

Results. The residents correctly evaluated 47.22% of the simulations (34 of 72); range of correct responses were 1 of 6 (16%) to all 6 (100%). The mean in-service score was 47.5% (28-77%) and the mean CEX score was 6.3 (5-8). Correlation co-efficient between CPS and in-service scores was 0.67 (CI:0.15-0.89) and between CPS and CEX scores was 0.52 (CI:0.07-0.84), demonstrating a strong correlation between the objective measure of physical diagnostic skills and academic success, and a moderate correlation with the subjective evaluation by attending physicians.

Conclusion. Housestaff demonstrated about 50% accuracy in identifying 6 not uncommon cardiac valvular diseases. The CPS may be a more objective method to assess housestaff physical examination capabilities as well as monitoring improvement as it is well correlated with other established methods of assessing housestaff performance.

ENHANCING INTERACTIONS BETWEEN NURSES AND MEDICAL STUDENTS: N. Armistead, C. Bennett and D.M. Elnicki, Department of Medicine, West Virginia University, Morgantown, WV

Purpose: Interactions between medical students have been shown to be a frequent source of conflict. During their internal medicine clerkship we assigned third year medical students to spend a day in active duties with hospital nursing staff. We hypothesized that the intervention would improve interactions between the students and the nurses and lead to enhancement of the students' procedural skills.

Methods: From 1/98 through 12/98, all clerkship students were randomized to control or intervention groups. The intervention group of students spent one day, during their inpatient ward experience, with a single nurse observing/assisting the nurse in all his/her activities. Nurses were selected on a volunteer basis from the medical floors. All the students and participating nurses were surveyed using Likert scales. The number of elective procedures documented in students' procedure logs was examined.

Results: Twenty-four students worked with nurses, 31 were controls and 6 nurses participated. Nurses responded more favorably regarding the interaction's value in "enhancing the students' understanding and appreciation of the nurses' job"(mean 5.8 v 4.5; p = 0.06) on a 1 - 7 scale (1= not helpful, 7= extremely helpful). In contrast to the nurses, the students did not feel the interaction enhanced specific procedural skills: IV lines (3.4 v 5.8), bladder catheterizations (2.3 v 6.5), blood cultures (2.6 v 5.7) and NG tube placements (2.3 v 6.3) with all p values < 0.01. However, the students did state the nurses were equal or slightly better equipped than housestaff in teaching the above mentioned skills, mean scores ranging from 3.05 to 3.95 on a 1 - 5 scale (1= much worse, 5= much better). When asked if the project was "worth their time" students gave a mean score of 3.2 on a 1 - 5 scale (1=strongly disagree, 5= strongly agree) while nurses gave a mean score of 4.3 (p = 0.07). Sixty-one percent of the controls stated they would have liked to spend a day working with a nurse.

Analysis of the procedure logs found no significant difference between the two groups in the number of elective procedures done. However, all three students who documented bladder catheterizations belonged to the intervention group. There was a trend towards the intervention group's being more likely to have a nurse sign their procedure log (42% v 21%, p = 0.09).

Discussion: Both the students and the nurses perceived the interaction positively, but, in the limited duration of the intervention, we were not able to demonstrate greater student exposure to specific procedures that are now predominantly performed by nurses. Nurses generally perceived the experience more positively than students. We hope that the positive interaction will help improve student-nurse rapport.

DIFFERENCES IN OPINION BETWEEN PROMOTION COMMITTEE CHAIRS AND DEPARTMENT CHAIRS REGARDING THE PROMOTION OF CLINICIAN-EDUCATORS. Atasoylu AA, Wright SM, Beasley B, Cofrancesco J, Macpherson D, Partridge T, Bass E for the SGIM Task Force on the Clinician-Educator. Johns Hopkins University, Baltimore, Maryland, University of Kansas, Kansas City, Kansas, and University of Pittsburgh, Pittsburgh, Pennsylvania.

Background: Both department chairs (DC) and medical school promotion committee chairs (PCC) are involved in the promotion of clinician-educators. Previous studies have shown that many aspects of a clinician-educator's performance are considered to be important in promotion decisions by the two chairs. Because differences in promotion criteria at these two levels of evaluation could impede the successful promotion of a clinician-educator, we compared the responses given by internal medicine DCs and PCCs at the same medical schools to determine where the differences in opinion exist.

Methods: We surveyed medical school PCCs (in 1996) and internal medicine DCs (in 1997) in the U.S. and Canada, asking them to rate the importance of different areas of a clinician-educator's performance and rate the measures used to assess these areas, using a very similar questionnaire. We compared the paired data for schools that responded to both of the questionnaires. Such data was available for 84 of the 139 medical schools in the United States and Canada (60%).

Results: There was significant disagreement between the DCs and PCCs regarding the importance of 3 of the 11 areas of performance considered in the promotion decisions of clinician-educators, (all $p<0.05$). In each of these areas, coordination of a training program, conducting education-related research, and personal qualities, the DCs valued excellence in these areas more than the PCCs. There was also significant disagreement between the two chairs about the importance of the majority of measures (21/36) used to evaluate the performance of a clinician-educator. For example, the importance scores differed for 5 of 6 measures of clinical skills, 5 of 6 measures of research skills, and 3 of 5 measures of teaching skills. DCs assigned higher importance scores than PCCs for 17 of these 21 measures of performance. Of the measures used to assess clinical skills, there was a significant difference in the importance scores assigned by DCs and PCCs, where patient satisfaction, number of patients seen, and income generated from clinical practice were valued more by DCs than PCCs. Interestingly, the 4 measures which PCCs valued more than DCs included input from outside home institution regarding mentoring skills, peer evaluation for assessment of teaching skills, and external grant support and journal in which publications appeared for assessment of research skills.

Conclusions: Significant discrepancies in opinion exist between the DC and PCC at many institutions regarding the promotion of clinician-educators and this may interfere with their timely promotion. The results highlight the need for uniform promotion criteria that can be applied both at the department level and at the level of the promotion committee.

A MULTICENTER RANDOMIZED TRIAL OF COMPUTER-BASED INSTRUCTION ON GUIDELINES FOR CARE AFTER MYOCARDIAL INFARCTION. DS Bell, RD Hays, GC Fonarow, CM Mangione Department of Medicine, UCLA, Los Angeles, CA.

Objective: To assess whether a World Wide Web tutorial with animated statistical graphics improves self-study learning from guidelines on the care of post-MI patients.

Methods: Twenty learning objectives important for primary physicians' care of post-MI patients were written based on two nationally recognized guidelines. Two 20-item tests were constructed with one question for each learning objective. A Web tutorial called SAGE (Self-study Acceleration with Graphic Evidence) was written using Netscape Enterprise Server™. SAGE facilitates reading the guideline passages relevant to questions that the user missed on a pretest. Where the guidelines refer to landmark randomized trials, a Java applet provides an animated statistical graphic view of the evidence. Internal medicine and family practice residents were recruited at 4 institutions. Participants attended a session that began with administration of the pre-test. Attendees were then randomly assigned to study from SAGE or from printed materials consisting of the two guidelines, pretest answers, and learning objectives. Subjects in both groups were asked to study until they felt they had met the learning objectives. They then completed the post-test and a standard CME satisfaction survey. Tests are scored with one point for each correct answer. Learning efficiency is each subject's pretest to post-test score gain per hour spent studying. Learner satisfaction is the sum of 6 CME satisfaction items, each scored from 1 to 4. Subject characteristics are compared between study-mode groups using chi-square tests. Mean outcome values are compared between study-mode groups using the Wilcoxon rank-sum test because each outcome is non-normally distributed according to the Shapiro-Wilk test.

Results: One hundred fifty eight residents participated. Subject characteristics and pretest scores were balanced between study-mode groups. Scores improved significantly from pretest to post-test in both groups. Post-test scores were similar between groups, but those randomized to use SAGE spent less time studying, resulting in greater learning efficiency. Subjects using SAGE were more satisfied with their learning.

Study mode	n	Pretest	Study Time	Post-test	Test gain/hr	Satisfaction
SAGE	82	9.8	29 minutes	14.3	10.5	20.3
Print	76	9.6	38 minutes	13.9	8.0	18.8
• *P*-value		.44	.0002	.43	.04	.0001

Conclusion: Residents learned more efficiently from SAGE than they did from printed guidelines on post-MI care. Residents were also more satisfied with their learning from SAGE, but they achieved similar learning results. Further study is needed to develop Web-based instruction that motivates higher final learning achievement.

THE EFFECT OF HOUSE OFFICER WORKLOAD ON PATIENT SATISFACTION AND LENGTH OF STAY. MJ Bittner, EC Rich, PD Turner, RL Recker, and MW Lubeley, VA Medical Center, Omaha, and Center for Practice Improvement and Outcomes Research, Department of Internal Medicine, Creighton University School of Medicine, Omaha, Nebraska.

Previous research has shown that increased house officer workload has adverse effects on length of stay (LOS) and patient satisfaction. We evaluated the effect of house officer workload on resource utilization and patient satisfaction in an institution where controls on workload have been instituted. We studied patients of the 20 Creighton medical interns assigned to non-intensive care unit inpatient floors at the Omaha VA Medical Center July 6-November 30, using the American Board of Internal Medicine's Patient Satisfaction Questionnaire (PSQ) as a measure of satisfaction, given 15 to 40 hours after admission. We characterized workload by patient census and number of admissions in a 24-hour period. We used LOS as a measure of resource utilization. In multiple linear regression analysis we controlled for characteristics of patients (age, gender, race/ethnicity, weekend vs. weekday admission, night vs. day admission, APACHE II score, DRG weight), interns (gender, years since graduation, previous training, experience, faculty rating of humanistic qualities (FRHQ), faculty rating of medical knowledge), and utilization review (admission during strict review). 247 patients were evaluable for LOS and 195 for PSQ. Mean LOS was 5.3 days $\pm$ 7.0 (standard deviation). Mean PSQ score (1 best, 5 worst) was 1.8 $\pm$ 0.8. Mean daily admissions were 2.3 $\pm$ 1.3 (91% $\leq$ 4). Mean census was 4.8 $\pm$ 1.8 (maximum 10). Neither LOS nor PSQ was related to workload. Longer LOS was associated with higher APACHE II scores ($p < 0.001$) and DRG weights ($p = 0.015$). Better PSQ was associated with better FRHQ ($p = 0.017$). In a setting with controlled workload, intern workload did not contribute to longer length of stay or lower patient satisfaction. However, patient satisfaction was associated with care from interns with better faculty ratings of humanistic qualities.

PERCEPTIONS OF INTERNAL MEDICINE RESIDENTS CONCERNING THE IMPORTANCE OF PHYSICAL EXAMINATION SKILLS AND CORRELATION WITH KNOWLEDGE OF THE DIAGNOSTIC UTILITY OF PARTICULAR FINDINGS.

Bundrick, JB. Li JT. Schultz, HJ.

Department of Internal Medicine, Mayo Clinic, Rochester, MN

Purpose

To assess the attitudes of internal medicine residents regarding the importance of the physical examination and to correlate this with their ability to discern the diagnostic utility of particular findings.

Method

In May 1998, forty-six first year residents in an internal medicine training program at the Mayo Clinic participated in an eleven station objective structured clinical examination (OSCE). Immediately afterward, the residents were asked to complete a brief questionnaire surveying their perceptions regarding the relative contribution of physical examination skills to overall clinical performance and testing them on their knowledge of the diagnostic usefulness of various physical findings (five of which were known to be quite useful and four which were definitely not). A standard *t*-test was then utilized to compare these scores between those who had perceived the value of the physical examination to be high and low, respectively.

Results

All residents completed the survey. When asked to rate their physical examination skills, 65% felt that they needed some degree of improvement. Eleven residents (24%) believed that it was possible to complete the residency program with *major deficiencies* in physical exam skills and yet still maintain a reasonable degree of *overall* clinical competence. On the test of knowledge regarding diagnostic utility of various exam items, the median score for the entire group was 78%, with a definite tendency to overestimate the utility of the findings queried (median accuracy 100% for the useful items and only 62.5% for those of low utility). Those eleven residents who indicated a minimal role for the physical examination in clinical practice had significantly lower scores on the test (mean 63% vs 77%, $p<.01$).

Conclusions

Most Internal Medicine residents at the end of their second year of training seem to view the physical examination as a significant contributor to their overall clinical competence and recognize a need for self-improvement in this area. A significant minority, however, do not share this perception and are characterized by a lesser ability to discriminate between physical findings of high and low diagnostic utility. The precise causal relationship between these two variables remains to be defined, as does the intriguing possibility that this attitude may be partially amenable to remediation via instruction in the concepts and content of the "Rational Clinical Examination".

THE BENEFITS OF MEDICAL STUDENT RESEARCH IN THE INTERNAL MEDICINE CLERKSHIP. V Brown-Harrell, RY Wong, Division of General Internal Medicine and Geriatrics, Loma Linda University School of Medicine, Loma Linda, CA.

Purpose: This study evaluates the scholarly attainments of junior medical students involved in a clerkship sponsored research program.

Methods: Beginning in 1992 a new program designated "Honors" program was initiated at Loma Linda University School of Medicine in the 3rd year Internal Medicine clerkship. Participation was voluntary. Students were linked up with faculty mentors. A project either initiated by the student or in conjunction with work originated by a faculty member was developed. Students had until the early part of their 4th year to complete a proposed project. The results of the 6 years of this Honors program are presented.

Results:The numbers of students who participated on each block rotation averaged 8-10. The types of projects completed over the 6-year period are presented below. In addition, 20 students were able to present their projects at either regional or national meetings. To date the number of publications from these projects is 5.

Type of Scholarly Activity	Number of Projects
Interventional Trial	8
Basic Science	17
Observational	33
Educational Materials	4
Case Report	17

Conclusions: The Honors program at Loma Linda University confirms that when given the opportunity medical students can be involved in research while assigned to a clerkship rotation. In some cases, the quality of their work qualified for national presentations as well as publications in peer-reviewed journals. It is anticipated that students who have participated in this program will not only have gained valuable skills but will consider future careers in research and academic medicine.

IMPORTANCE OF NONVERBAL COMMUNICATION IN THE PATIENT ENCOUNTER. M Burke, C Griffith, and S Haist, Department of Medicine; J Wilson, S Langer, and C McAninch, Department of Behavioral Science, University of Kentucky, Lexington, KY.

Background: The evidence is mixed on whether physician nonverbal communication skills influence patient outcomes such as patient satisfaction. Further, studies of nonverbal communication generally do not take into account what is being said, i.e. the quality of information elicited from or provided to the patient. We wanted to investigate the importance of nonverbal communication skills in emotionally-charged encounters, taking into account the quality of physician information gathering and providing.

Methods: Subjects were 12 residents in a combined medicine/pediatrics residency, who participated in a 13 station Clinical Performance Exercise in November, 1997. Stations were 15 minutes long; 9 used a standardized patient (SP). After completing a station, the SP rated the resident on the quality of the information elicited or provided using a checklist of items. A checklist was also used to rate verbal and nonverbal communication and general interview skills. Two stations were videotaped, coded and analyzed for physician nonverbal behaviors. These stations were: 1) telling a mother her child has cystic fibrosis, and 2) counseling a woman with chronic pain and depression, who if questioned directly and empathically, gives a history of childhood sexual abuse. Factor analysis of the nonverbal behaviors resulted in four distinct factors: "warmth" and "calm" behaviors, body position, and speech characteristics.

Results: At the cystic fibrosis station, patient satisfaction correlated with the nonverbal "warmth" ($r=0.97$) and "calm" ($r=0.63$) behaviors, and with body position ($r=0.91$) but not with quality of the information provided or elicited ($r=0.11$). At the abuse station, only half of the 12 physicians uncovered the history of abuse. Those who did were rated as significantly calmer ($p<.05$) and as having a more interested, less bored tone of voice ($p<.05$). Patient satisfaction correlated with ratings of physician warmth, posture, and calmness (r all>0.75). Further, patients felt significantly more satisfied with the interaction if the physician elicited the history of abuse ($p<.05$), but patient satisfaction did not correlate with overall checklist performance or with depression-specific items.

Conclusions: In emotionally-charged encounters, physician nonverbal communication skills are important for eliciting sensitive information as well as for improved patient satisfaction.

SEARCHING LITERATURE DATABASES: IS THIS THE WEAK LINK IN THE EVIDENCED-BASED MEDICINE PRACTICE CHAIN? A SURVEY OF INTERNAL MEDICINE RESIDENTS. KA Bybee, VM Montori, Department of Internal Medicine, Mayo Graduate School of Medicine, Rochester, MN.

Background: Physicians are constantly challenged to remain updated on the best current medical evidence to use in clinical decision making. Physicians-in-training must learn how to use medical literature databases, such as MEDLINE, efficiently to succeed in the practice of evidence-based medicine. In our institution, significant efforts are underway to teach residents how to formulate a clinical question and how to critically appraise a clinical study. Computers connected to literature databases are available near the point of care but no formal training on how to use these databases is available. We feel this lack of training may be a major missing link in the practice of evidence-based medicine in our residents. In the process of preparing a course on medical literature database search skills, we surveyed the internal medicine residents to assess the need for such a course.

Purpose: To determine the perceived need for a course on improving medical literature database search skills in internal medicine residents.

Methods: A three-question survey was sent by e-mail to 162 internal medicine residents at the Mayo Clinic, Rochester. The questions were: How fast can you find 1-5 references that are pertinent to the clinical question you are considering? Do you find your search strategies are sensitive but not specific, specific but not sensitive, sensitive and specific, or not sensitive nor specific? Would you attend a hands-on course taught by an information specialist on how to harness the power of MEDLINE by improving your search strategies?

Results: 50 questionnaires were completed (31%). 36% of the residents surveyed felt they can find 1-5 references in less than 5 minutes, 56% can find references in 5-15 minutes, and 8% felt it takes too long to try. 20% felt their searches were sensitive and specific, 54% felt their search strategies were not specific, 24% felt their searches were lacking sensitivity, and 2% felt their searches were neither sensitive nor specific. 88% responded that they would like to attend a course to improve medical database search skills. Responses were similar among 1st, 2nd, and 3rd year residents.

Conclusion: In the population of internal medicine residents surveyed, there is a definite perceived need for a course to improve medical literature database search skills.

HOUSESTAFF SATISFACTION WITH HOSPITAL-BASED VERSUS CLINIC-BASED FACULTY. SY Chan, CC Wang, BJ Morris, D Low, JM Eng, PJ Kearns, Department of Medicine, Santa Clara Valley Medical Center, San Jose, CA.

Background: Hospital-based attendings in teaching hospitals have been shown to decrease the length of stay with outcomes comparable to traditional attendings. Housestaff satisfaction with supervision by hospital-based attendings (HBAs) versus clinic-based attendings (CBAs) has not yet been examined in detail.

Objective: To compare the satisfaction of resident physicians working on the general medical wards under the supervision of hospital-based attendings versus clinic-based attendings.

Design: A prospective trial.

Setting: A teaching service on the medical wards of a suburban county hospital.

Intervention: Residents were assigned to either a hospital-based attending or a clinic-based attending for the duration of the ward month. Patients were randomly admitted to the ward teams. HBAs attended ten months of the year with minimal clinic responsibility. CBAs attended fewer than three months a year and had clinic responsibilities even when serving as ward attendings.

Measurement and Outcomes: Resident satisfaction was measured by an anonymous 15-question survey, covering such areas as learning experience, quality of health care, level of autonomy, and attending availability and support. Residents were also asked about the amount of emphasis on cost containment, pathophysiology and evidence-based medicine. Finally, they were asked about the number of consults and radiologic exams obtained. All responses were recorded on a 5-point scale, with 5 being "good" or "high."

Results: On the resident satisfaction questions, the HBAs scored significantly higher than the CBAs (average score 4.5 ± 0.3 vs. 3.7 ± 0.4). The differences were greatest in the categories of attending availability and emphasis on evidence-based medicine. There was no statistically significant difference between the two groups in terms of the number of consults or radiographs obtained.

Conclusions: Resident satisfaction is higher under the supervision of hospital-based attendings than under clinic-based attendings. The number of consults and radiographs obtained is not significantly influenced by having a hospital-based attending.

FACTORS INFLUENCING RESIDENTS' SELECTION OF GENERAL INTERNAL MEDICINE FELLOWSHIP PROGRAMS: A NATIONAL SURVEY. E Caiola, DG Litaker and M Hewson. Department of General Internal Medicine, Cleveland Clinic Foundation, Cleveland, Ohio.

Introduction: The Society of General Internal Medicine (SGIM) has developed guidelines to help prospective fellows evaluate general internal medicine fellowship (GIMF) programs. However, it is not known whether candidates follow these guidelines or make their fellowship selection based on other factors. The goals of this study were to identify these factors and provide GIMF program directors with information on how to better meet the needs of future fellows.

Methods: A focus group of GIM faculty and fellows developed an 11-item questionnaire that addressed sources of fellowship information, quality and characteristics of a fellowship program, the interview process, and location. Question format included best answer, Likert scales and category ranking. GIM fellowship programs were identified from the *1996 SGIM Directory of GIM Fellowship Programs*. Active fellowship programs and the number of fellows in each program were confirmed by telephone. The surveys were mailed to program directors (n=27) for distribution to their GIM fellows (n=146).

Results: One hundred two fellows (70%) returned the survey. Fifty-nine percent (58/99) anticipated careers as clinician-researchers and 34% as clinician-educators. Most received information about fellowship programs from their residency advisor (72/102, 71%), whereas 30% used the SGIM directory and only 4% relied on journal advertisements. Of those who responded, 33/73(45%) ranked their residency advisor or faculty member as the single most important source of fellowship information. A positive interview experience was important or very important in program selection for 86/102 (84%) and access to an advanced degree program (*i.e.* MPH, MS, MBA) was an important selection factor for 72%. In a ranking of the top 3 fellowship selection factors, location was ranked highest by fellows (31/96, 32%). Other factors: the availability of a mentor, research opportunities and national reputation were ranked highest by 16%, 15% and 13% of the fellows respectively.

Conclusions: While factors such as location and national reputation are fixed, fellowship programs may better meet the needs of, and thus attract future fellows by increasing the availability of mentors, emphasizing research opportunities and offering an advanced degree program. Finally, fellowship program directors should consider targeting their advertising to include residency program faculty, who strongly influence their residents' decisions.

ASSESSING CORRELATION BETWEEN QUALITY OF PRIMARY CARE AND PATIENT SHOW RATE. T Conway, TC Hu, M Saleem. Department of Medicine, Cook County Hospital; Ambulatory and Community Health Network, Cook County Bureau of Health Services, Chicago, IL.

The quality of primary care is assumed to be a determinant of patient satisfaction and compliance. However, no studies have addressed the correlation between the quality of primary care and show rate. To assess this correlation, we conducted a prospective cohort study in the General Medicine Clinic of an urban public hospital. 172 primary care physicians were evaluated by their patients during the summer of 1998 (July/Aug). The quality of primary care was measured using the Component of Primary Care Instrument, which was developed based on the 10 required components of primary care as defined by the Institute of Medicine. Patient show rate was prospectively collected in the subsequent 2 months (Sep/Oct). To ensure the objectivity of patient-evaluated quality of care, physicians with less than 5 evaluations from their patients were excluded. Therefore, only 96 physicians were included for final analysis.

Of the 96 physicians, 4 (4.2%) were PG I, 27(28.1%) PG II, 35 (36.5%) PG III, 3 (3.1%) PG IV and 27 (28.1%) were attending physicians. Pearson's correlation coefficient (r) was calculated. A 2-tailed p-value < 0.05 was defined as having statistically significant correlation. Results are summarized as follows.

Component	Pearson's r	p-value
Comprehensiveness of care	.2244	.028*
Accumulated knowledge	.2591	.011*
Interpersonal communication	.2191	.032*
Preference for regular physician	.1610	.117
Coordination of care	.0906	.380
Advocacy	.1556	.130
Family context	.0302	.770
Community context	.1465	.154
Longitudinality with physician[1]	.0896	.385
Longitudinality with practice[1]	.1643	.110

[1] Longitudinality in years: < 1, 1-2, 3-5, 6-10, 11-15, 16-20, >20

Our data reveal a significant correlation of patient show rate with 3 of the 10 primary care components: comprehensiveness of care, accumulated knowledge and interpersonal communication. This provides useful information for the design and planning of in-service training for primary care physicians that could, subsequently, improve patient show rate in the primary care clinics of teaching hospitals.

'CHECKING-IN' WITH THE PATIENT AS A TOOL FOR SURVEYING PROBLEMS IN THE MEDICAL INTERVIEW. BA Costello, TG McLeod, Division of Community Internal Medicine, Mayo Clinic, Rochester, Minnesota.

Purpose: To evaluate resident-patient interactions regarding the use of 'check-in' questions by residents during medical interviews to establish all patient concerns for a given visit.

Methods: Clinical encounters between residents and patients in an internal medicine resident continuity clinic of a large Midwestern tertiary care medical center were directly observed and videotaped. Tapes were analyzed in detail to quantify the use of 'check-in' questions and characterize their placement and purpose in the interview. A 'check-in' question was defined as an open-ended question posed by the resident to survey for further patient problems or symptoms not otherwise voiced as the chief complaint.

Results: 31 resident-patient encounters were evaluated. 42% (13/31) of residents asked 'check-in' questions of their patients during the visits. Of these, 23% (3/13) of the residents asked a 'check-in' question early in the interview (i.e. at the end of the history of present illness). 54% (7/13) asked a 'check-in' question late in the interview (i.e. after the completion of the history). The final 23% (3/13) used both early and late 'check-in' questions during their interviews. 67% (4/6) of early 'check-in' questions elicited additional problems or concerns. 20% (2/10) of instances of late 'check-in' yielded further patient concerns for that visit.

Conclusions: Surveying patients for additional concerns (i.e. 'checking-in') using a question such as "What else?" during the opening segment of the medical interview has been recommended by several authors.[1,2] We have found that only 19% (6/31) of residents used this strategy for eliciting further patient complaints early in the interview. Early survey for additional concerns appears fruitful with 67% (4/6) yielding new complaints. Later 'check-in' questions, though well intentioned, appear less likely to yield new concerns and, if new issues arise, may not allow adequate time for investigation. Interview strategies such as 'checking-in' applied early in the course of the medical interview appear useful and, as suggested by other authors, may improve diagnostic accuracy, patient satisfaction, and may help to avoid awkward "doorknob discussions" (so-called "hidden agendas").[3,4]

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USE OF AN INTERACTIVE COMPUTER PROGRAM TO TEACH GRAM STAINS, URINALYSIS, AND PERIPHERAL BLOOD SMEARS: HOW MEDICAL STUDENT'S LEARN THESE SKILLS AND THEIR LEARNING PREFERENCES. Dawn E. DeWitt, Douglas Schaad, Michael Astion, Division of General Internal Medicine, Department of Medicine, University of Washington Seattle, WA.

Purpose. The objective of this study was to evaluate how students learn and prefer to learn laboratory-based studies and to evaluate the use of interactive computer programs during the medicine clerkship. Students' learning preferences and the best method of teaching these tests, given constraints on laboratory availability and teaching expertise, is unknown.

Methods. A survey and test questions were given to students taking the required Medicine Clerkship at a University Medical School.

Results. Seventy-seven percent of 419 students taking the Internal Medicine Clerkship over 11 consecutive quarters. Seventy-one percent of students rated knowing how to do and interpret Gram stains as "important" or "essential." Students reported seeing or doing a median of 1 Gram stain during their clerkship; 40% reported seeing or doing none. Gram stain teaching was rated unsatisfactory or absent by 51%. Forty percent of students reported using the computer-based-tutorials after they became available. Although 7% reported computer-based learning of Gram stains, 28% in the last 1.5 years of the study reported preferring computer-based learning.

Conclusions. Practicing physicians, program directors, and students believe knowledge of Gram stain, urinalysis, and peripheral blood smear interpretation is important for medical practice. Although students prefer "see one, do one, teach one" for learning basic laboratory tests, we conclude that this is unreliable and increasingly unfeasible. Interactive computer tutorials provide an effective, standardized, relatively popular alternative for learning these procedures.

TEST INSTRUMENTS FOR ASSESSING EVIDENCE-BASED MEDICINE COMPETENCY D Datta, L Adler, J Sullivant, RM Leipzig, Departments of Medicine and Geriatrics, Mount Sinai Medical Center, New York, NY

INTRODUCTION: Several authors have described the skills necessary to practice Evidence-based Medicine (EBM). These skills are part of the recommended curriculum in many internal medicine residency programs. However, there is no standardized instrument to measure the outcomes of this training, i.e., ability to apply these teachings to the evaluation of journal articles or to clinical practice. PURPOSE: To evaluate whether test instruments used in published evaluations of EBM programs measure competency in the skills described below. METHODS: The computerized databases MEDLINE, The Cochrane Library, PsycLIT, HealthSTAR, ERIC (Educational Resources Information Center), and HaPI (Health & Psychosocial Instruments) were searched using combinations of the following terms: "evidence based medicine", "critical appraisal", "assessment tool", "scale", "test", and "medical education". Articles were included if they described a test instrument that measured competency in EBM/critical appraisal. Articles were excluded if the test instrument assessed only statistical concepts or self-perceptions. Review articles were also excluded. Competency measures included whether learners could: 1) identify their own knowledge gaps on a medical topic; 2) create a searchable clinical question from a knowledge gap; 3) perform an efficient literature search targeting the appropriate data sources (including textbooks if appropriate); 4) critically appraise evidence for its validity; 5) calculate the relevant outcome measures, e.g., likelihood ratio or number needed to treat; 6) apply the results to clinical practice/scenarios; and 7) evaluate their own EBM skills. RESULTS: Our search yielded 14 articles each describing a unique test instrument to evaluate mainly medical students and residents. The instruments were administered to evaluate the outcomes of EBM educational interventions such as journal clubs, lectures, or workshops. Eleven instruments evaluated the ability to critically appraise evidence and calculate relevant outcome measures. Eight instruments included a self-evaluation of EBM skills. Only three instruments evaluated the residents' abilities to apply results to clinical practice or scenarios. None of the instruments assessed the ability to identify knowledge gaps, create a searchable clinical question, or perform an efficient search. One instrument assessed the ability to identify the study type to best answer the clinical question, however none evaluated the ability to identify the type of question (i.e., therapy, prognosis, etc). CONCLUSION: Most test instruments of EBM competency focus on critical appraisal skills and calculating the relevant outcome measures. Other skills required to practice EBM are not being evaluated. A more complete instrument is needed to measure the knowledge outcomes of EBM teaching. Once it has been shown that these competencies have been learned, the effect of teaching EBM on clinical practice outcomes can be assessed.

NEEDS ASSESSMENT OF MEDICAL TRAINEES FOR AN EVIDENCE-BASED MEDICINE JOURNAL CLUB. BW Duncan, JM Geraci. Department of Medicine, Baylor College of Medicine, and Houston VA Medical Center, Houston, TX.

Medical educators have increasingly recognized the need to instill in trainees an evidence-based medicine (EBM) approach to managing the scientific literature and caring for patients. In order to assess our trainees' background, habits and knowledge of critical appraisal and EBM concepts, we administered a brief written survey to attendees of a Journal Club at 4 teaching hospitals. Attendees were student clerks in internal medicine and interns and upper-level internal medicine house officers. The 15-item questionnaire obtained demographic information including training level, prior education in critical appraisal, and brief questions about the appropriateness of particular study designs in answering clinical questions.

Seventy-three questionnaires were completed. Respondents included 14 medical students, 30 interns (estimated response rate of 60%), and 27 2nd or 3rd year internal medicine residents. Only 2/3 of responding Baylor medical students reported prior education in critical appraisal, despite a mandatory 7-week curriculum on this topic 4 months prior to the survey. Approximately 28% of all respondents did not correctly identify the best study design to evaluate therapy (a randomized controlled trial) and less than one in four recognized the concept "Number Needed to Treat" (NNT). Nevertheless, most respondents did report performing one or more Medline searches within the previous month, and felt that the results of their searchers were helpful in their care of patients.

We conclude from the survey that, despite new efforts to incorporate EBM into the undergraduate medical curriculum, much work to make EBM concepts natural and useful to trainees remains to be done. We have developed a year-long curriculum in EBM for all internal medicine trainees and plan another survey later in the year for formative feedback and to determine whether any inroads in trainee understanding of EBM have been made.

DEVELOPMENT AND EVALUATION OF A NEW INSTRUMENT FOR ASSESING INTERVIEWING SKILLS E. Durante, K. Kopitowski, J. Estremero, A. Velazquez, F. Augustovski, F. Rubinstein
Unidad de Medicina Familiar y Preventiva- Hospital Italiano de Buenos Aires

Objective: To evaluate an instrument in Spanish to assess the interviewing skills of physicians for educational and research purposes.

Methods: we constructed an interviewing model grounded on evidence-based physician's behaviors that improve outcomes variables, such as patient satisfaction or health outcomes. The model is based on Skeff's framework for clinical teaching and includes six domains: the interview climate (IC) (to create an atmosphere that allows a communication without barriers), the control of the interview (CI) (the physician style influences the interview rhythm and focus), the data gathering (DG) (the gathering of clinical, emotional and contextual data), the problem definition (PD) (the physician, the patient and the family negotiate the problem definition and make a therapeutic agreement), establishing an ongoing therapeutic agreement (TA) (the development of a collaborative relationship in order to reach and support the therapeutic agreement) and self- care promotion (SCP) (promotion of the patient and the family motivation in identifying and acting according to their own needs). Each domain includes items that cluster behaviors related to the same objective in the interview (e.g. IC includes 3 items: specific behaviors that stimulate the problem expression, that produce patient involvement and that show interest and comfort). Sixteen items (3 in CI, 3 in IC, 4 in DG, 1 in PD, 4 in TA and 1 in SCP) were considered.

Two observers selected from the faculty of a Family Medicine Department were trained in the use of the instrument with seminars and practice with videotaped interviews that were selected from actual video-recorded physician-patient interactions. Each patient gave informed consent. Each observer received a copy of the interviews and independently rated the different items using a five point Likert scale. Interrater agreement was evaluated using weighted Kappa statistics.

Results: 23 interviews were evaluated. Global Kappa was 0.58 (95% CI 0.46-0.71). Agreement by domain was IC: 0.61 (95% CI 0.47-0.74), CI: 0.55 (95% CI 0.42-0.67), DG: 0.72 (95% CI 0.59-0.84), PD: 0.69 (95% CI 0.53-0.85), TA: 0.52 (95% CI 0.36-0.69) and SCP: 0. 51 (95% CI 0.32-0.71). Kappas for individual items ranged from 0.33 to 1.

Conclusions: This 16 item instrument showed good agreement between two observers directly involved in post graduate teaching activities. It provides a comprehensive framework for evaluation and feed back of the interviewing skills for physicians in training.

ASSESSING THE IMPACT OF A LITERATURE-BASED PRIMARY CARE CURRICULUM: DOES IT IMPROVE RESIDENTS' KNOWLEDGE AND SKILLS? **PJ Ellis, L Whitman, ML Green, SJ Huot, Yale Primary Care Residency Program, New Haven and Waterbury, CT.**

Purpose: To assess the impact of a literature-based curriculum on residents' knowledge and skills in managing common ambulatory problems.

Methods: In a prospective controlled trial, we administered a pre-test and post-test to primary care residents at 2 separate hospital-based teaching clinics. The curriculum consists of a syllabus of weekly articles and case-based questions emphasizing practical management of ambulatory problems. Residents participate in a 30-minute discussion prior to their weekly continuity clinic, facilitated by faculty who receive suggested answers to questions. Surveys of housestaff reveal a high degree of satisfaction with the curriculum and agreement that it improves their knowledge and skills.

Over a 9-week period, residents at one clinic (Clinic X) discussed 9 topics (Curriculum A) while residents at another clinic (Clinic Y) discussed a separate set (Curriculum B). The 54-item, short-answer and multiple-choice test covered all topics and used realistic, challenging, case-based questions to assess knowledge and management of common problems. For each set of topics, one group of residents served as the control group for the other (crossover design).

All residents with continuity practices at Clinic X (37 residents) or Clinic Y (33 residents) were eligible. The 1-hour identical tests were administered at 3 teaching hospitals approximately 1 week before and after the study period. One faculty member graded all tests in blinded fashion.

Results: Documented attendance at conferences was 58% (295 residents attended/513 scheduled). Two faculty scored 24 of 25 tests within 1 point of each other. 43 residents (61%) completed the pre-test; 46 (66%) completed the post-test; 29 (41%) completed both tests.

In Curriculum A, case residents (n=16) improved their mean scores from 47% to 60% (p=0.005) whereas the controls (n=13) did not (48% to 50%, p=0.37). In Curriculum B, the cases (n=13) failed to improve (37% to 40%, p=0.30) whereas the control group (n=16) did improve from 38% to 50% (p=0.009). In a multivariable analysis, the predictors of improvement for Curriculum A were case status (B=0.42) and number of conferences attended (B=0.37). For Curriculum B, the sole predictor of improvement was being on 3-month ambulatory block (B=0.46).

Conclusion: Residents participating in a literature-based primary care curriculum with weekly case-based discussions demonstrate modest improvements in a written test assessing management of common ambulatory problems. Similar curricula may have greater impact by enhancing residents' "need to know" information, encouraging regular reading and attendance at conferences, and incorporating periodic evaluation of residents' knowledge, skills and behaviors using validated instruments.

STUDENT PERFORMANCE ON THE INTERNAL MEDICINE CLERKSHIP: COMPARISON OF CLERKSHIP ROTATION EXPERIENCES. **B. Dwinnell, L.Adams. Division of General Internal Medicine, University of Colorado Health Sciences Center. Denver, CO.**

Purpose: In order to study the impact of the implementation of an ambulatory rotation within the internal medicine clerkship, student performance was compared by clerkship rotation experiences.

Methods: All third-year students in the 12-week Internal Medicine Clerkship during the 1997-98 academic year were included in this study. Students were classified in one of three groups. One group did all three 4-week rotations in inpatient settings only. The other two groups did two months of inpatient care and differed on the third month. One did an ambulatory primary care rotation with university and clinical faculty in the metropolitan area; the other did a rotation in a more rural Area Health Education Center (AHEC) practice which combined outpatient and inpatient experiences. Both the ambulatory and AHEC students completed a Case Workbook based on common internal medicine problems identified in the CDIM/SGIM Core Clerkship Curriculum Guide. Students were evaluated on three measures: a clinical score (based on numerical scores given by attending faculty and housestaff during the three four-week rotations), a written exam (the Medicine Shelf Exam), and a standardized oral exam given by general internal medicine faculty. Students also received a total score that weighted these evaluation measures that determined their final grade in the course. Students were compared based on their rotation group and their performance scores. Since students' rotations were assigned based on their preferences, prior academic performance was compared between the three groups to control for self-selection bias.

Results: There was no significant (0.72) difference in prior academic performance between the different groups. When the students performance was compared by rotation, none of the variables were significant ($p < .05$). The results:

Rotation	Clinical average	Oral exam average	Written exam % correct	Total average score	Number of students
AHEC	5.51	5.37	72.04	5.43	26
Ambulatory	5.44	5.24	71.25	5.35	36
Inpatient	5.46	5.24	71.80	5.38	44

Conclusions: Student performance on the clerkship was not adversely affected by introducing more ambulatory experience. Given the value of the ambulatory experience for exposing students to common internal medicine problems and their likely future practice in increasingly ambulatory environments, this data supports our curriculum change. Starting in summer 1999, all students will be required to do one month of the Medicine Clerkship in either an ambulatory or AHEC rotation.

REPORTING AND CONCORDANCE OF METHODOLOGIC CRITERIA BETWEEN ABSTRACTS AND ARTICLES IN DIAGNOSTIC TEST STUDIES. C. Estrada, R. Bloch, D. Antonacci, L. Basnight, S.R. Patel, S.C. Patel, and W. Wiese. East Carolina University School of Medicine, Greenville, NC.

Background: The reliability of whether abstracts provide enough information regarding the methodology of articles is unknown.
Objective: To evaluate the quality and concordance of methodologic criteria in abstracts vs. articles regarding the diagnosis of trichomoniasis. **Design:** Survey of studies indexed in MEDLINE (1976-1998) which used culture as the gold standard for the diagnosis of trichomoniasis.
Main Outcome Measure: Data were independently abstracted using four validity criteria: 1) prospective evaluation of consecutive patients, 2) test results did not influence the decision to culture, 3) independent and blind comparison to culture, and 4) use of broad spectrum of patients. The total number of criteria for each report was calculated to create a quality score (0-4).
Results: Of 374 studies, 33 of 70 articles on diagnostic tests used the gold standard. None of the abstracts or full articles reported all four methodologic criteria. Three criteria were reported in 18% of full articles and none of the abstracts. Two criteria were reported in 18% of abstracts and 42% of full articles. No criteria was reported in 39% of abstracts and 12% of full articles. The agreement of the reported quality criteria between the abstract and the full article was poor (kappa -0.09; 95% confidence interval -0.2 to 0) to moderate (kappa 0.53; 95% confidence interval 0.22 to 0. 83). The quality of the abstract was higher for structured (mean 1.4); as compared to non-structured abstracts (mean 0.7)(difference of 0.7, 95% CI 0.03 to 1.4).
Conclusions: Basic methodologic criteria in diagnostic test studies are lacking in both abstracts and corresponding articles. The concordance of such criteria between the abstract and article should improve.

RACIAL AND ETHNIC DIFFERENCE IN FACULTY PROMOTION IN INTERNAL MEDICINE. D Fang, E Moy, and L Bergeisen, Center for Assessment and Management of Changes in Academic Medicine, and Division of Community and Minority Programs, the Association of American Medical Colleges, Washington, D.C.

Purpose: To examine whether minority junior faculty in departments of internal medicine are less likely to be promoted to senior rank and are promoted more slowly than non-minority faculty.

Background: Previous studies have found that minority medical school faculty are less likely to be promoted to senior rank compared to non-minority faculty. These studies, however, are often limited by their research designs/methodologies. A recent study using survey data, for example, could not distinguish cohort effect from time effect, nor the effect of attrition, on the likelihood of promotion.

Methods: 2 cohorts of assistant professors (1978-80 and 1988-90) are analyzed using data from the AAMC Faculty Roster System, a comprehensive tracking system of medical school faculty. To examine the association between promotion and race/ethnicity, survival analysis technique is employed to control for demographic variables, academic variables (e.g., tenure track), and school characteristics, and to estimate the timing of promotion.

Results: Bivariate analysis shows that minority faculty of all groups are less likely to be promoted to senior rank than non-minority faculty. Multivariate analysis also shows that faculty who are Asians or other minorities are significantly less likely to be promoted to senior rank. However, for under-represented minority faculty, the disparity is not consistent across the two cohorts. The difference is not statistically significant for the 1978-80 cohort, but is significant for the 1988-90 cohort.

Conclusions: The findings of this study confirm racial and ethnic disparities in promotion to senior rank in departments of internal medicine.

INTELLIGENT PRESCRIBING--AN INTERNAL MEDICINE/ PHARMACY CURRICULUM. R. P. Ferguson, A. Hershey, Departments of Medicine and Pharmacy Union Memorial Hospital, Baltimore, MD.

Included among educational programs that have successfully influenced physician prescribing practices are those that have been initiated and sustained by pharmaceutical industry marketing divisions. A pilot program utilizing industry marketing techniques conducted by the Departments of Medicine and Pharmacy at The Union Memorial Hospital in 1996-1997, convinced us that an institutionally sponsored program could also significantly influence physician behavior, at least when applied early in graduate training (the study group was the 1996 PG1 medicine cohort at Union Memorial). As a result of this study, we developed a new curriculum that emphasized intelligent prescribing decisions. The goal of this program is to teach a rational approach in making prescribing choices that will be sensitive to patient and societal needs.

Core elements of the program include:

- Initiating each session with the most recent Medical Letter drug group review including price differential.
- Case based discussions emphasizing rational treatment decisions.
- Group prescribing patterns of the residency service returned via the hospital pharmacy database (hcs) are distributed to the residents at the educational sessions.
- Attention to pharmaceutical marketing strategies in each drug group including the status of clinic samples.
- A comfortable physician friendly atmosphere including a hospital-sponsored lunch served by caterers favored by local pharmaceutical representatives.

The following outlines the first two seminars given in 1998:

Seminar I--intravenous antibacterials--Medical Letter review; case discussions raising issues of adequacy of antibacterial coverage, ease of administration, clearance and cost; dissemination of numbers of orders of each drug made by residents in prior two weeks.

Seminar II--oral antihypertensives--Medical Letter review; (110 products listed in 1995 publication), cases emphasizing treatment of comorbidity; significance of differences within classes (or lack of significance); pharmaceutical marketing strategies of new product releases; review of retail costs of clinic samples.

Laminated formulary price lists are distributed as take-away gifts. Experience to date has been very positive. Attendance and participation has been outstanding.

TRAINING FOR HOSPITAL BASED PRACTICE: DO WE NEED A SPECIALIZED CURRICULUM? CL Fenton, WH Plauth, SZ Pantilat and RM Wachter. Department of Medicine, UC San Francisco, San Francisco, CA.

As the demand for hospitalists grows, departments of medicine are creating "Hospitalist" or "Hospital Medicine" tracks within their internal medicine residency programs. Early curriculum development for these tracks and for continuing medical education programs for practicing hospitalists has relied largely on anecdotal information.

To better define the curricular priorities for such hospitalist training programs, we surveyed by mail all physician-members of the National Association of Inpatient Physicians (NAIP). We asked the NAIP members to rate on five-point Likert scales the importance to their practice of, and the adequacy of their residency training in, 71 content and skill areas that were grouped within nine broad categories (general clinical skills, internal medicine and non-internal medicine disciplines, communication skills, continuum of care, medical administration, ethics, procedures, clinical analysis, and education/teaching).

We received responses from 738 of the 1778 physicians surveyed, for a 42% response rate. Of the 738 respondents, we analyzed the responses of the 479 physicians who met our definition of "practicing hospitalists." These physicians identified most general clinical skills as very important to their practice (4.5 or greater, with 5 being most important) and adequately emphasized in their residency training (4.2 or greater). In addition, they rated cardiology, infectious diseases, pulmonary medicine, nephrology, and intensive care medicine as very important (4.0 or greater) and adequately emphasized in residency (4.0 or greater). In contrast, they rated geriatrics (4.0), neurology (4.2) and peri-operative consultation (4.5) as equally important but less-adequately covered in residency (3.0, 3.5, and 3.6, respectively). Several other areas showed meaningful mismatches (high importance to practice scores vs. low adequacy in residency scores, with $p<.0001$) including: health economics (4.0/2.1), utilization review (4.2/2.1), quality assurance and improvement (4.1/2.1), multidisciplinary team management (4.2/2.6), knowledge of home care (4.2/2.2), prescribing the appropriate level of care (4.2/2.3), coordination of care between settings (4.3/2.2), communication with referring physicians (4.9/3.6), palliative care and symptom management of terminally ill patients (4.5/3.2), and referral to hospice care (4.1/2.5).

In our study, we identified content areas that hospitalists believe are important to their practice, but inadequately emphasized in residency training. Although some of these topics are in traditional clinical disciplines, most involve areas related to the physician's role in quality improvement, utilization management, physician-physician communication, and end-of-life care. Educational programs for hospitalist trainees and practicing hospitalists should address these areas.

DETERMINATES OF INTERNAL MEDICINE RESIDENTS' ATTENDENCE AT TEACHING CONFERENCES. J FitzGerald and NS Wenger, Department of Medicine, University of California, Los Angeles, CA.

Objective: The teaching conference is a major component of the internal medicine resident curriculum. Achieving high levels of attendance at these conferences is a concern of program directors. Common wisdom holds that attendance is enhanced by providing a meal (although funding source may raise conflict of interest issues), and that attendance wanes with higher inpatient census, with better weather and later in the year. We explored determinates of resident attendance at teaching conferences and evaluated the relationship of attendance with resident performance on practice board exams.

Methods: We collected attendance information at all conferences at one internal medicine teaching program during the 1996-97 academic year. Using logistic regression, we evaluated factors associated with attendance including: resident characteristics (age, gender, ethnicity, residency year, marital status and practice board test scores), resident assignment rotation, type of lecture (noon conference, grand rounds, pathology, morbidity and mortality [M&M], journal club, ethics), timing during year (in tertiles), whether lunch was provided, daily Medicine service in-patient census and daily ambient temperature. Residents were excused if they were on vacation, away rotations or selected services. Practice board scores were derived from tests administered to 2nd and 3rd year residents in January 1997 and were imputed for 1st year residents based on 1998 scores. Standard errors accounted for intra-resident correlations.

Results: There were 199 lectures for the 81 residents. Mean attendance was 51%. The logistic regression model revealed that lectures in the last third of the year were less well attended than in the first third (odds ratio [OR] 0.67, 95% confidence interval [CI]: 0.52, 0.85). Compared to general noon lectures, residents more often attended M&M (OR 2.0, CI: 1.6, 2.5) and grand rounds (OR 1.5, CI: 1.2, 1.9), and less often attended journal club (OR 0.61, CI: 0.45, 0.82) and ethics seminar (OR 0.34, CI: 0.25, 0.45). Residents attended conferences more often when lunch was provided (OR 1.24, CI: 1.05, 1.46) and when on in-patient rotations (OR 1.6, CI: 1.3, 2.0). Compared to residents who scored in the highest quartile on the practice board exam, residents in the 2nd, 3rd and 4th quartiles showed a trend toward lower attendance (ORs: 0.97, 0.82, 0.66, respectively), with the lowest scoring group statistically significantly lower (CI: 0.45, 0.97). Daily census, ambient temperature and resident demographics were not related to attendance.

Conclusions: These findings confirm, at least in one training program, the beliefs that attendance drops as the year progresses and that lunch increases attendance. Based on these data, poor attendance and poor performance on practice board exams cannot be causally linked, but the association merits exploration. Residency programs may want to place important lectures early in the year and weigh whether external funding of lunch is worth an additional 24% in attendance.

TEACHING EVIDENCE-BASED MEDICINE TO RESIDENTS: DOES IT WORK? WILL IT STICK? P.Ganschow, C.A.Smith, M.Saquib, S.Surabhi, S.Yadav, A.Osei, R.McNutt, A.Evans, B.Reilly. Department of Medicine, Cook County Hospital, Chicago, IL.

Purpose: Despite increasing interest in evidence-based medicine (EBM), little is known about how to teach the cognitive and technical skills needed to practice EBM. We designed a study to test the effectiveness of a 7-week EBM course in the PGY1 year and measured the durability of its effects 6-9 months later.

Methods: The study was a firm-based controlled trial involving 55 interns in three firms. One firm (n=18) was assigned to EBM curriculum and the other two firms served as controls (n=37). The 7-week course, taught by 3 senior faculty and 6 chief residents, included 2-3 hours/week of didactic, interactive and computer lab sessions focusing on four conceptual and technical domains essential to EBM: 1) question formulation, 2) literature searching, 3) quantitative assessment of diagnostic and therapeutic information, and 4) critical appraisal. EBM skills were assessed at baseline (pre-test) in 1/98 and again on three subsequent occasions over the ensuing 10 months: in 3/98, to assess the effectiveness of the teaching intervention; in 6/98, after the control group had also received the EBM course; and, in 11/98, to measure the durability of the intervention effect.

Results: Baseline scores in the EBM and control groups were similar. After the course, the EBM group achieved a significantly higher total test score compared to the control group; post-course differences were significant in all domains except critical appraisal (see Table).

Groups	Pre-test	Post-test	Adjusted Diff	Post-test (domains)			
				Ques	Search	Assess	Appraise
	% correct			% correct			
EBM	40	64	21%* (13-28)	81	72	58	46
Control	42	45		56	42	46	38
p value	0.6		<0.0005	<0.001	<0.001	0.004	0.4

*adjusted difference for score on pre-test (95% confidence intervals)

Subsequent testing revealed that the control group achieved similar results after they received the EBM course. The final test (80% follow up), administered to all study subjects 6 or 9 months after the intervention, demonstrated that the educational gains had persisted (mean pre-intervention: 41%, mean at 6-9 month follow up: 66% correct: p=0.002).

Conclusions: Our brief EBM course for interns in a large residency program had a highly significant educational effect that was sustained for at least 6-9 months after its completion. Improvements in question formulation, literature searching and quantitative assessment were most marked. Improving residents' critical appraisal skills may require revised or additional educational interventions.

DEPRESSION AND BARRIERS TO THE USE OF COUNSELING SERVICES BY MEDICAL STUDENTS, JL Givens and J Tjia, Section of General Internal Medicine, Boston Medical Center, Boston University School of Medicine, Boston, MA

Purpose: Depression is an underrecognized yet common and treatable disorder among medical students. Little is known about counseling service utilization rates and barriers to mental health service use.

Methods: We surveyed first- and second-year medical students (n=280) at the University of California, San Francisco to assess depressive symptoms, use of counseling services and barriers to utilization. We measured self-reported counseling utilization rates and prevalence of barriers to use. Depressive symptoms were measured with the 13-item Beck Depression Inventory (BDI).

Results: The response rate was 72% (n=194). Characteristics of the respondents were: 57% women; 47% under the age of 23; 52% Caucasian, 22% Asian/Pacific Islander, 11% African American, and 10% Latino. Moderate to severe depressive symptoms were identified in 24% (n=46) by the BDI, of whom 26% (n=12) reported suicidal ideation during medical school. In univariate analysis, female gender (p=0.02) and African-American status (p<0.01) were associated with moderate to severe depression, as was age over 30 among first-year students (p<0.01) and being gay or bisexual among second-year students (p=0.05). First-year students of Asian-Pacific Islander descent were at highest risk for severe depression (p=0.04). Of all depressed students, only 22% (n=10) were using counseling services. Barriers cited by depressed students not using counseling included: lack of time (50%), lack of confidentiality (39%), "no one will understand my problems" (33%), "my problems are not important" (33%), stigma associated with mental health (25%), fear of documentation on academic record (25%), fear of unwanted intervention (25%), difficulty with access to care (22%), and cost (19%).

Conclusion: Medical students have high rates of depressive symptoms. While lack of use of counseling services is often ascribed to the ennui associated with depression, depressed students frequently cite logistical and academic barriers. Medical schools can assist these students by addressing issues such as availability, confidentiality and documentation issues. Early care of impaired future caregivers may have far-reaching implications for the individual students, their colleagues and their future patients.

EXTENDING A MEDICAL DECISION MAKING CURRICULUM INTO CLINICAL CLERKSHIPS. Robert Golub, Maria Sbenghe. Northwestern University Medical School, Chicago, IL.

Background: We have had a formal preclinical medical decision making (MDM) curriculum for the last 4 years. During 90 hours of contact time the entire class of 175 students studies clinical epidemiology, study design, literature critique skills, biostatistics, decision analysis, cost-effectiveness analysis, and the psychology of decision making.

Purpose: To study the impact of a pilot intervention extending the MDM curriculum into the clinical clerkships, we measured knowledge of and attitudes about MDM and the practice of evidence-based medicine.

Methods: Before starting a 12-week Internal Medicine clerkship, 28 third-year medical students received a pre-test on knowledge and attitudes about MDM. During the first 6 weeks of the clerkship, 10 of the 28 students had a 2-hour weekly session presenting search, analysis, and application of medical literature constructed around the actual patients they were caring for; the remaining students had no particular intervention. At the end of the clerkship both groups were post-tested using the same questionnaire as before.

Results: There was no baseline difference in knowledge and attitudes between the 2 groups of students, with the exception of the mean number of articles read monthly, which was significantly higher in the control group (4.36 vs 2.75, p=0.05). After the intervention, there was no significant difference in the mean knowledge scores between the groups, although the control group showed a nonsignificant decrease and the intervention group a nonsignificant increase in scores. A greater percentage of students showed improvement in the intervention group (50% vs 39%); this did not reach statistical significance, possibly due to underpowering. On the attitude questions, at the end of the study period the intervention group was significantly more likely to feel that original research was important, and to be confident about reading, understanding, and translating the medical literature into patient care. A greater percentage of students in the intervention group improved in the number of articles read per month (100% vs 50%, p=0.006) and in their perceived thoroughness of reading research papers (40% vs 0%, p=0.003).

Conclusions: The present intervention achieved a significant improvement in attitudes toward and approach to reading and using medical literature, with a tendency toward increased knowledge which may reach significance as more subjects are studied. Even with a formal preclinical MDM curriculum, reinforcement and extension into the clinical years has additional positive impact.

SHOULD OUR MEDICAL SCHOOL CHANGE ITS GRADING SYSTEM? USE OF A DECISION ANALYSIS TO INFORM POLICY-MAKING. Robert Golub. Northwestern University Medical School, Chicago, IL

Background: Our current clerkship grading system is Honors – Pass – Fail. Recently a group of third-year medical students initiated a proposal to change it to Honors – High pass – Pass – Fail. This was brought to the medical school Curriculum Committee for consideration.

Purpose: This decision may have multiple positive and negative effects on different students. In the absence of empiric data to measure the net impact, a decision analysis was performed to help inform our deliberations, which would otherwise have been based solely on each committee member's personal philosophy.

Methods: A decision tree was constructed which incorporated what the committee felt were the most important consequences of a change in the grading system: prospects for students attaining the residency of their choice (increased, same, worse), and clerkship learning climate/competitiveness (same, worse). Baseline assumptions were made for the probabilities of each of these events; because there are no data to support these estimates, 1-way, 2-way, and 3-way sensitivity analyses varied all of the key probabilities from 0-100%, thereby exploring the entire range of possibilities. Outcomes from the student perspective were measured in utilities, obtained by having a sample of students from all medical school classes perform standard reference gambles using all possible combinations of events. The anchors were better (↑) residency with same learning climate (best outcome) and worse (↓) residency with worse (↓) learning climate (worst outcome). Sensitivity analyses were done on the range of responses.

Results: Mean utilities (range) for outcomes were (1) ↑ residency with same learning climate = 1.00, (2) ↑ residency with ↓ learning climate = .82 (.67-.95), (3) same residency with same learning climate = .78 (.66-.93), (4) same residency with ↓ learning climate = .53 (.45-.65), (5) ↓ residency with same learning climate = .27 (.19-.33), (6) ↓ residency with ↓ learning climate = 0.0.

The baseline analysis strongly favored the status quo (expected value .78 vs. .56). All 1-way and 2-way sensitivity analyses favored the status quo throughout their entire range, except that changing the grading system is favored only if the utility of the status quo is < .47 with all other utilities unchanged. 3-way sensitivity analysis favored the status quo except in an extreme and unlikely combination of probabilities.

Conclusions: Under all reasonable assumptions, the current grading system is preferable, as measured from the student perspective. Because the results were so consistent, the Curriculum Committee was able to more fully understand the implications of change, and to make its decision using considerations in addition to personal philosophy. By incorporating student utilities, it helped to assure that faculty's proxy judgments were reasonable. Decision analysis may be a useful adjunct to the educational policy-making process.

WILL TEACHING MEDICAL DECISION MAKING TO INTERNS TRICKLE DOWN TO MEDICAL STUDENTS? Robert Golub, Nduka Nwadiaro. Northwestern University Medical School, Chicago, IL.

Background: We have had a formal preclinical Medical Decision Making (MDM) curriculum for the last 5 years, with the entire class studying clinical epidemiology, study design, literature critique skills, biostatistics, decision analysis, cost-effectiveness analysis, psychology of decision making, and the practice of evidence-based medicine. We are now extending this into the clinical clerkships through a variety of methods.

Purpose: Since teaching from housestaff is central to student education for reinforcing content and role-modeling the importance of these MDM concepts, we measured (1) how often students hear these concepts discussed during the Medicine clerkship, and (2) the impact on this frequency of an effort to teach these concepts to new interns.

Methods: Students completing their junior Medicine Clerkship at the major teaching hospital over 4 consecutive rotations were asked to quantify the number of times they heard 18 specific MDM concepts mentioned by their interns or residents during the previous 6 weeks. These included use of probability in medical decision, heuristics and bias, test characteristics, calculating post-test probability, searching and critiquing literature, decision analysis, and cost-effectiveness analysis. The scoring system was 0=never, 1=once, 2=twice, 3=3 times, 4= 4 or more times. This comprised the baseline (pre-intervention) experience.

Incoming Medicine interns have a summer noon lecture series dealing with common medical problems and emergencies. This year we added 9 interactive sessions addressing all of the major topics in the student preclinical curriculum, preceded by an MDM exam. Students completing their Medicine Clerkship in the two subsequent rotations were then given the same questionnaire as the baseline students (post-intervention). Pre- and post-intervention results were compared using t-tests.

Results: The interns' pre-test mean score was .60 (SD=.11). The student pre-intervention scores ranged from .17 ("using 2X2 tables for test characteristics") to 2.87 ("effect of test characteristics on interpreting results"), with a mean of .93 (SD=.65). The post-intervention scores ranged from .44 ("heuristics", and "using 2X2 tables for test characteristics") to 2.93 ("effect of test characteristics on interpreting results"), with a mean of 1.01 (SD=.61). There were no significant differences in the pre- and post-intervention scores for any individual concepts, or for the means.

Conclusions: (1) Students rarely hear MDM concepts mentioned by housestaff. (2) Since this type of MDM exposure may be critical to reinforce the preclinical concepts and to validate them by role-modeling, it is important to have the housestaff understand and overtly use them. (3) The present intervention of an intern interactive lecture series was not effective for this. Reasons may have included distractions (e.g., frequently being paged away), incomplete attendance due to on-call admissions, or an ineffective learning format. Alternative forms of resident education are now being piloted and evaluated.

EVIDENCE-BASED MEDICINE TRAINING IN INTERNAL MEDICINE TRAINING PROGRAMS: A NATIONAL SURVEY. ML Green, Yale University School of Medicine, New Haven, CT

Objective: To characterize evidence-based medicine (EBM) training in internal medicine residency programs.

Methods: A survey was mailed to program directors, followed by a second mailing 6 weeks later for non-responders. Programs offering a freestanding (dedicated curricular time) EBM curriculum were queried about the objectives, format, curricular time, attendance, faculty development, resources, and evaluation. All programs responded to questions regarding integrating EBM teaching into established clinical and educational activities.

Results: Two-hundred-sixty-nine of 417 (65%) programs responded. Ninety-nine of 269 (38%) offered a freestanding EBM curriculum, which was equally common in community-based [54/146 (37%)] and university-based [45/116 (39%)] programs ($p = 0.8$). Among the freestanding curricula, the most common objectives were performing critical appraisal (78%), searching for evidence (53%), posing a focused question (44%), and applying the evidence in decision-making (35%). Formats included small group interactive sessions in 65/95 (68%) of the curricula. Seventy of 99 (71%) of the formats centered on an individual patient clinical scenario and 68/98 (69%) used the residents' actual patients. Fifty-one of 99 (52%) of the programs provided faculty development in EBM skills and small group facilitating. Information resources provided included MEDLINE (97%), Internet (78%), ACP Journal Club (77%), Best Evidence (33%), Cochrane Library (32%), and EBM Journal (21%).

Evaluation was performed in 36/98 (37%) of the freestanding curricula. Evaluation components included a satisfaction questionnaire (83%), exercise based on appraising an article (61%), documentation of participation (58%), exercise based on applying evidence to a patient (56%), attitude assessment (33%), EBM knowledge test (19%), and documentation of residents' practice of EBM (14%).

Most programs reported efforts to integrate EBM teaching into established venues, including attending rounds [218/261 (84%)], resident report [214/261(82%)], continuity clinic [199/261(76%)], bedside rounds [177/261(68%)], and emergency room [90/261(35%)]. However, only 50% of the programs provided on site electronic information or site specific faculty development and only 15% tracked the residents' EBM behaviors.

Conclusion: Moving beyond traditional journal clubs, one third of training programs offer freestanding EBM curricula, which commonly target important EBM skills, utilize the residents' experience, and employ a small group interactive format. Less than one-half of the curricula, however, include faculty development or curriculum evaluation and many fail to provide important medical information sources. Most programs report efforts to integrate EBM teaching, but many lack important structural elements.

LYING TO EACH OTHER: WHEN PHYSICIANS USE DECEPTION WITH THEIR COLLEAGUES. MJ Green, NJ Farber, RM Arnold, BM Aboff, JM Sosman, PA Ubel. Penn State University College of Medicine, Hershey, PA, Christiana Care Health System, Wilmington, DE, University of Pittsburgh, Pittsburgh, PA, University of Wisconsin, Madison, WI, University of Pennsylvania, Philadelphia, PA.

Purpose: To determine the circumstances under which resident physicians say they would deceive other physicians.

Methods: All internal medicine residents at four teaching hospitals were sent a confidential survey, consisting of five vignettes. For each vignette, residents were asked their likelihood of lying to a colleague to resolve a dilemma. To ascertain how small variations in circumstances affect the likelihood of using deception, two versions were randomly distributed.

Results: Residents completed 222 surveys (v1=110, and v2=112) for a response rate of 67%. 64% of respondents were male, 74% white, 35% PGY1, 34% PGY2 and 29% PGY3; 93% had a previous ethics course.

Percent "very" or "somewhat" likely to use deception

Vignette	%	p value	OR	95% CI
Lying to avoid taking extra call when your colleague wishes to:		.02	1.9	1.1-3.4
• visit her sick father	29			
• attend a bridal shower	44			
Misrepresenting a diagnosis in the medical record to protect confidentiality when the dx is:		.07	2.0	0.9-5.0
• arthritis	11			
• herpes	20			
Fabricating a lab value to an attending when:		.10	1.9	0.9-4.1
• admitting you don't know is acceptable	11			
• you would be ridiculed for not knowing	18			
Substituting your urine for a colleague's random drug check when the chance of being caught is:		.36	1.6	0.5-5.3
• 20-25%	4			
• Zero %	7			
Lying to cover up your medical mistake when the outcome is:		.09	3.1	.8-12.5
• benign	3			
• severe (the patient has an MI)	8			

Conclusions: Although most internal medicine residents would not lie to their colleagues about important clinical issues, a substantial minority will use deception to resolve dilemmas. In particular, they may lie to avoid taking additional call, especially when asked to perform extra work for non-urgent reasons. Residency directors should be aware of circumstances under which residents are likely to deceive.

RESIDENTS' CLINICAL QUESTIONS IN CLINIC: ARE THEY BEING ANSWERED? ML Green, MJ Ciampi, and PJ Ellis, Yale University School of Medicine, New Haven, CT.

Objective: To characterize residents' medical information needs in clinic and determine how frequently they meet them.

Methods: In a prospective cohort study, we studied residents in a university-based primary care residency program, for 4 weeks during their sessions in 2 hospital-based teaching clinics. After each patient encounter, including discussion with a preceptor, we asked them to identify any remaining unanswered questions "about the evaluation or management of the patient's problems." At the end of each session, the residents recorded their perceptions of each question on a Likert scale, regarding factors expected to motivate information seeking. One week later, we contacted them to determine if they pursued their questions and which information sources they consulted.

Results: Over 4 weeks, we interviewed 64 residents after 401/404 (99%) patient encounters. The residents identified a total of 280 new questions or 2 questions for every 3 patients. The types of questions included: therapy (35%), diagnosis (25%), etiology or harm (15%), prognosis (7%), prevention (6%), drug information (6%), clinical examination (4%), and clinical presentation of disease (2%). In a multivariable analysis, the number of new questions per patient was significantly ($p < 0.05$) associated with an earlier postgraduate year ($\beta = 0.12$), larger number of problems addressed ($\beta = 0.22$), the preceptor seeing the patient ($\beta = 0.24$), and return visits ($\beta = 0.26$).

We subsequently contacted the residents for 277/280 (99%) of the questions. Of these, 80 (29%) were pursued and 71 (26%) were answered, most commonly using textbooks (31%), original articles (21%), or attendings (17%). In a multivariable analysis, fear of malpractice liability (odds ratio [OR] = 2.1, $p = 0.05$) and the belief that the patient expected the answer (OR = 2.3, $p = 0.004$) were associated with information pursuit, but the type of question and resident characteristics were not. Lack of time (60%) and forgetting the question (29%) were the most frequent reasons cited for failing to pursue a question.

Conclusion: Residents in clinic frequently encounter new clinical questions but infrequently answer them. Efforts to demonstrate the feasibility of timely searches, remind them of their questions, and reinforce the "liability" (educational if not medical) of all questions may reclaim missed opportunities for self-directed learning.

THE LOSS OF STUDENT IDEALISM WITH CLINICAL EDUCATION. CH Griffith, JF Wilson, Depts of Internal Medicine and Behavioral Science, University of Kentucky College of Medicine, Lexington, KY
Purpose: Prior studies have suggested student attitudes in general change throughout their clinical education (more cynical, less idealistic). The purpose of this project was to specify what patient types students may become less idealistic towards with each clinical rotation, as well as how their attitudes towards the profession changes.
Methods: An 18-item questionnaire was designed and administered to 88 medical students (91% response) in August 1996 prior to their third-year rotations regarding their attitudes towards the medical profession and certain patient-types (the elderly, patients with chronic pain, smokers, drinkers, and the poor). The questionnaire was re-administered to students after completing their 16 week medicine-surgery clerkship, with 1/3 the class surveyed every 16 weeks. Analysis of co-variance approaches compared student responses prior to third-year with their responses after the med-surg clerkship, controlling for baseline student cynicism with a standardized validated cynicism scale.
Results: Students became less idealistic for primarily two patient groups: the elderly and people with chronic pain. Examples of item responses: after the clerkship students believed a less percentage of those over 75 could adequately take care of themselves without assistance (65% decreasing to 53%, p=.002) and that a greater percentage of patients over 75 were demented (26% increasing to 35%, p=0.01). After the clerkship, students believed a greater percentage of patients with chronic pain who request narcotics are actually drug seekers (16% increasing to 24%, p=0.006). Regarding the profession, after the clerkship students believed a less percentage of physicians love what they're doing (65 decreasing to 56%, p=. 003). There was no change in attitudes towards the poor, or smokers or drinkers. No specific student characteristics were associated with this loss of idealism (gender, age, GPA, board scores, residency choice)
Conclusion: Throughout the third-year of medical school students become less idealistic towards elderly patients, patients with chronic pain, and the profession.

A RHETORICAL ANALYSIS OF HOW MEDICAL STUDENTS LEARN ORAL PRESENTATION SKILLS: PEDAGOGICAL AND PROFESSIONAL IMPLICATIONS. RJ Haber and LA Lingard, Medical Service, San Francisco General Hospital, UC San Francisco, San Francisco, CA and Center for Research in Education, U of Toronto, Toronto, Canada

Purpose: Oral presentation skills are central to provider-provider communication, but there is little information as to how these skills are learned. Rhetoric is a social science which studies communication in terms of context and explores the action of language on knowledge, attitudes and values. We used rhetorical principles to qualitatively study how students learn oral presentation skills and what professional values are communicated in this process.

Methods: Twelve third year students on their Internal Medicine clerkship at UCSF/San Francisco General Hospital and 14 teachers were observed during 160 hours of provider-provider communications, including 73 oral presentations on rounds. Discourse-based (ethnographic) interviews of 8 students and 10 teachers were conducted and audio-taped.

Results: Students and teachers had different perceptions of the purpose of oral presentation and this was reflected in performance. Students described and conducted the presentation as a rule-based, data-storage activity governed by "order" and "structure". Teachers approached the presentation as a flexible means of "communication" and a method for "constructing" the details of a case into a diagnostic or therapeutic plan. Although most interviewed teachers viewed oral presentations rhetorically (contextually-sensitive), most feedback that students received was implicit and acontextual. This led to students' dysfunctional generalizations, sometimes resulting in worse communication skills (e.g. comment "be brief" resulted in reading faster rather than editing) and unintended value acquisition (e.g. request for less social history interpreted as social history never relevant).

Conclusions: Students learn oral presentation by trial and error rather than through teaching of an explicit rhetorical model. This may delay development of effective communication skills and result in acquisition of unintended professional values

DO LUNCHES MATTER ? FACTORS INFLUENCING EVALUATION OF ATTENDING STAFF BY RESIDENTS; RESULTS FROM A SINGLE INSTITUTION: Gurm HS, Hull A L, Department of General Internal Medicine, Cleveland Clinic Foundation, Cleveland, Ohio.

BACKGROUND: Staff evaluation is used to identify strengths and weaknesses of staff in teaching institutions. Non-academic factors may potentially influence the residents when they fill in their evaluations.

SETTING: A convenience sample of 77 medicine residents in a tertiary care teaching center.

METHOD: An anonymous questionnaire was administered to a group of residents attending a conference. Subjects were requested to rate the influence of various factors on their final evaluation of attending staff using a five point Likert scale (0 being of no influence and 4 being the most influential). Descriptive information was also obtained on gender, year in residency, percentage of staff evaluations filled and likelihood of filling an evaluation if it was more likely to be positive or negative.

RESULT: The questionnaire was returned by 83 % (64) of the residents. The subjects were predominantly male (65%) with a preponderance of first year residents (43%). Didactic teaching (mean score 3.76) and respect of residents time (mean score 3.37) were rated as the most important factors influencing staff evaluation. The mean rating given to other factors was as following; bedside teaching 3.42 autonomy to residents 3.34, interaction with families 3.26, reputation among residents 2.31, staff giving a good evaluation to the resident 1.62, specialty of the staff 1.07, treating team to lunch or dinner 0.93, and the staff being of the same gender 0.20. No significant difference in the rating was seen with respect to respondents' sex, year in residency, or the percentage of evaluations filled. Residents were more likely to fill evaluations if they had strong positive or negative opinions.

CONCLUSION: Residents perceive teaching, respect of residents' time, and staff's interactions with the families to most strongly affect their evaluations. Other factors that do not directly relate to teaching or patient care are felt to be of less influence in their evaluation of staff physicians.

GENDER BIAS IN EVALUATORS OF MEDICAL STUDENTS. RW Hagar, Department of Medicine, Stanford University, Stanford, CA.

Purpose: To assess if the gender of an evaluator affects scores given to male and female medical students.

Methods: One year of an 11-part standardized evaluation form were analyzed by the gender of the evaluators and students. Means and appropriate T-tests were used to test significance. There was a total of 33 female students and 40 male students, 57 female evaluators and 78 male evaluators.

Results: Female students were rated on a 1-9 scale on all 11 questions with a mean of 8.04 by female evaluators and 7.80 by male evaluators. Male students were rated on a 1-9 scale on all 11 questions with a mean of 7.94 by female evaluators and 7.84 by male evaluators. None were significant at a P of .05.

Conclusions: No bias was detected in one year of data between male and female students when the gender of the evaluator was considered. This contrasts with published studies for other trainees.

MEDICAL STUDENT ATTITUDES TOWARD THE PHYSICIAN – PATIENT RELATIONSHIP. P Haidet, J Dains, DA Paterniti, L Hechtel, T Chang, E Tseng, J Rogers, Department of Veterans Affairs Medical Center, Department of Medicine, and the Department of Family and Community Medicine; Baylor College of Medicine, Houston, Texas.

Background: The physician - patient relationship has been shown to impact various biomedical, psychological, and social outcomes among patients. Little data exist regarding medical students' attitudes toward this relationship and factors that may influence these attitudes. **Objective:** To explore associations between student attitudes toward the physician - patient relationship and year of school and other demographic factors. **Methods:** We administered a cross sectional survey to 413 first, third, and fourth year medical students at the Baylor College of Medicine. Our survey utilized the Patient -Practitioner Orientation Scale (PPOS), a validated instrument designed to measure individual preferences toward various aspects of the physician - patient relationship. Total PPOS scores are comprised of two subscales ('sharing' and 'caring') and can range from patient - centered (egalitarian, whole person oriented) to disease-or physician - centered (paternalistic, less attuned to psychosocial issues). Additional demographic data including gender, age, ethnicity, undergraduate coursework, family medical background, and specialty choice were collected from the fourth year class. **Results:** 253 students completed the PPOS. A significant decrease in PPOS score (less patient - centered) was associated with increasing year of medical school ($p=.03$). Among fourth year students, several characteristics were found to be associated with higher PPOS score (more patient centered); these included female gender, white race, and choice of a primary care specialty ($p<.05$ for each comparison). In addition, higher 'sharing' subscores were associated with a non - science undergraduate major, non - medical elective coursework, and female gender ($p\leq.05$ for each comparison). In multivariable analysis controlling for gender, white race ($p<.001$) and primary care specialty choice ($p=.02$) were associated with higher PPOS scores. A significant three way interaction between ethnicity, gender, and specialty ($p=.003$) was found due to the stronger effect of ethnicity in some groups over others. Age and family background had no significant association with PPOS scores. **Conclusions:** Our data suggest that students acquire paternalistic attitudes toward the physician - patient relationship during their medical education. These attitudes may be modified by cultural characteristics, specialty choice, educational background, and gender. Further research is needed to explore the development of these attitudes and the potential impact of medical education on them.

EDUCATIONAL INTERVENTIONS AND RESIDENTS' DRUG PRESCRIBING BEHAVIORS. Mark Harrington, Rhonda Tetz, Lisa Els, Elizabeth Eckstrom, and Jan Madill, Department of Internal Medicine, Legacy Portland Hospitals, Portland, OR.

Background: Learning to prescribe appropriate, cost-effective medications for acute and chronic medical conditions is an important component of ambulatory internal medicine residency training. Training in this practice is, however, rarely done in a structured, thoughtful way in continuity clinics, and so may allow lifelong inappropriate prescribing practices by physicians.

Objective: To determine if a multi-faceted intervention would change residents' prescribing practices for specific acute medical problems.

Methods: During a two-month intervention period we 1) eliminated drug sample closets and pharmaceutical representatives' access to the clinics; 2) created permanent, new closets with only the most cost-effective drugs for select diagnoses; 3) held noon conferences with residents to discuss cost-effective prescribing; and 4) met one-on-one with residents to discuss the same and to hand out portable reference booklets. To assess the effect of these interventions, charts were reviewed in the three months prior to and after the intervention period. Three diagnoses were selected for study, based on uniformity and ease of diagnosis, evaluation, and treatment as well as existence of literature supporting the cost-effectiveness of particular drugs. These diagnoses were acute bronchitis, sinusitis, and urinary tract infection.

Results: Five hundred and two patient encounters with the above diagnoses were identified. Two hundred and one were not evaluated because of incorrect diagnosis, inadequate documentation, or because the prescribing decision had already been made (e.g., by an emergency room physician). Analyzing all diagnoses together revealed no improvement in the percent of appropriate prescriptions (76% pre- and 75% post-intervention, $p = .85$). Subgroup analyses by post-graduate year and by diagnosis also failed to show any improvement.

Conclusions: Despite a multi-faceted educational intervention, residents did not improve their prescribing practices. This lack of improvement may have been because residents did not perceive a need to change their prescribing practices, did not receive reinforcement of new prescribing practices, were encouraged by other contacts to use less appropriate medications, or the interventions were not effective. It is notable that one fourth of prescriptions written for common outpatient diagnoses were not cost-effective, evidence-based choices. If residents are to enter practice with excellent drug prescribing behaviors, educational efforts during residency need to be broadened and intensified. Despite the lack of effect of our intervention, we have shown that a multi-faceted educational effort aimed at improving resident drug prescribing behaviors is feasible and potentially can be used to promote positive changes in prescribing behaviors among residents.

THE NEW MCAT: A BETTER PREDICTOR OF PERFORMANCE OF WOMEN THAN OF MEN. SA Haist, JF Wilson, CL Elam, AV Blue, SE Fosson, University of Kentucky, Lexington, Kentucky

Purpose. To determine if gender or age, independent of MCAT sub-scores, predicts medical school performance, and if MCAT sub-scores by gender differentially impact predicting performance.

Methods. A retrospective study was conducted of all matriculants in three successive classes at one school. Independent variables included MCAT Biological Science (BS), Physical Sciences, Verbal Reasoning and Writing Sample sub-scores, gender, age, and interaction terms. Dependent variables included USMLE Step 1 scores (Step 1) and USMLE Step 2 scores (Step 2), first-, second-, and third-year (GPA). Correlation and regression analyses were performed. For regression analyses, MCAT sub-scores were entered first, then demographics.

Results. Gender (being a woman positively affecting performance) significantly contributed to models predicting second-year GPA ($p=.01$), third-year GPA ($p=.02$), and Step 2 ($p<.01$). There was a significant MCAT by gender interaction in predicting first-, second-, and third-year GPAs, Step 1 and Step 2. The MCAT sub-scores were more highly correlated with the future performance of women than men (e.g. BS and Step 2, $r=.65$ for women and $r=.37$ for men; BS and third-year GPA, $r=.47$ for women and $r=.04$ for men). The slope between BS and Step 2 was greater for women than men. For BS sub-score above eight, a woman would be predicted to have a higher Step 2 than a man. For BS sub-score of 11, one would.predict a Step 2 of 225 for a woman and 212 for a man.

Conclusions. Gender, with being a woman having a positive influence, was an independent predictor of medical school performance at one medical school. The new MCAT was more predictive of performance of women than of men. For a given MCAT score (greater than 8) a woman would be predicted to perform better than a man. These findings, if generalizable, could have implications on medical school admission policies.

DIFFERING PERSPECTIVE ON SELF DIRECTED LEARNING DSHatem, DQualters, University of Massachusetts Medical School, Worcester, MA

Purpose: To compare student and evaluator's perceptions of whether teachers foster self-directed learning.

Methods: Studied a second year Physician, Patient, and Society (PPS) course which meets weekly in small groups (8 groups, 10 students per group, 1-2 facilitators/group) with a goal of fostering self directed learning (SDL). Learning Climate Questionnaire (LCQ), a validated 17 item instrument, used to evaluate student's perceptions of learning climate set by teachers at mid point (T1) and end of the year (T2). LCQ characterizes instructors as "Autonomy Supportive" or "Controlling " (score range 17-85, with lower scores more controlling). Scores assessed for change over time. Two small group teaching sessions per group at beginning and end of year audiotaped, transcribed and qualitatively analyzed by 2 evaluators utilizing an iterative consensus building process. Evaluators used a global measure and the four most common teaching behaviors to determine those who fostered SDL. Qualitative validity checks were used (data triangulation, member checks). Student and evaluators perceptions of teacher behavior compared.

Results: Students perceived all faculty to support their autonomy as the course progressed ($T1=67.0$, $T2=73.9$, $p<0.001$). There were no differences between groups. Evaluator's assessment demonstrated a wide range of teacher behaviors. Those behaviors felt to support SDL were in the same domains assessed by the LCQ but were more clearly observable and reproducible. Evaluators assessment demonstrated that 50% of facilitators encouraged while 50% did not encourage SDL. Dominant behaviors that encouraged SDL included using the students names, giving facilitator's perspective, and asking clarifying and synthesis questions. Dominant behaviors that did not encourage SDL included modeling knowledge and acting as expert, asking information seeking questions, and giving facilitator's perspective. Overlap in faculty behaviors in both SDL supportive and non-supportive groups suggests a contextual variable modifying assessment of specific behavior. Evaluators' global assessment of facilitator behavior had 100% agreement with Dominant Teacher behavior assessment.

Conclusions: Student and evaluator perceptions of teacher's support for SDL differed. While students perceived all faculty to support their autonomy, evaluator's assessment suggested that there were differences in the degree to which faculty supported SDL. This discrepancy may be due to lack of student clarity regarding faculty autonomy support and use of their relationship with faculty as a proxy for this. Also, behavioral skills to foster self-directed learning may be inadequately defined. Further delineation of such skills to aid faculty and students is critical.

FACULTY BEHAVIORS THAT FOSTER STUDENT SELF-DIRECTED LEARNING DSHatem, D Qualters, University of Massachusetts Medical School, Worcester, MA

Purpose: To develop teaching behaviors to foster self-directed learning (SDL)

Methods: Previous work demonstrates teacher's autonomy support fosters student SDL. Behaviors associated with "autonomy support" have not been described. We audiotaped 16 teaching sessions in a second year small group based Physician, Patient and Society course (PPS) which has a goal of fostering SDL. Sessions taped at the beginning, and end of year for 8 groups. Audiotapes transcribed, and qualitatively analyzed by 2 evaluators via iterative consensus building to determine behaviors that foster SDL. Behaviors coded, then organized by themes. Faculty evaluated as fostering or not fostering SDL by global measure and by their 4 most common teaching behaviors. Qualitative validity checks were used (triangulation and member checks).

Results: We documented teaching behaviors of 16 small group facilitators or co-facilitators. Three SDL fostering themes emerged, setting a positive learning climate (SLC), questioning for deep level learning (Q), and encouraging student involvement in learning (ESL). SLC behaviors include using student names, humor, encouraging students to express opinions about what is learned and providing student support. Questioning behaviors include asking application, causative, priority, and clarifying questions, all which require students to reflect and synthesize knowledge. Asking multiple questions without waiting for answers and predominantly information seeking questions hindered SDL. Behaviors facilitating student involvement in learning include examining student's thinking and performance, with reasoning probes and self assessment requests, and placing learning in a broader context by framing issues for discussion, modeling reasoning, reinforcing key points, and summarizing. Non facilitative behaviors included asking then answering your own questions, interrupting students, and acting as expert. Evaluators felt that 50% of faculty fostered SDL while 50% did not. Global assessments agreed with assessment of 4 dominant teaching behaviors 100% of the time. Data validity demonstrated by determining that behaviors fit into the SDL domains found in the medical and education literature. Performing member checks of faculty teaching PPS resulted in no new behaviors added.

Conclusions: We have described a set of behaviors felt to foster SDL in a small group setting. Validity via literature assessment and faculty member checks suggests content and face validity. Faculty demonstrate this behavior to varying degrees. Faculty development to enhance these behaviors should be encouraged. Learning outcome studies are needed.

STUDENT OBSERVATIONS OF PRIMARY CARE FACULTY TEACHING BEHAVIORS. J Herbert-Carter, V Taylor, Department of Medical Education and Department of Family Medicine, Morehouse School of Medicine, Atlanta, GA.

The purpose of this study was to characterize clinical teaching behavior among primary care faculty, as perceived by third year medical students. The goal was to improve teaching by focusing, in the faculty development program, on behaviors identified as lacking. Stritter, et al. (Journal of Medical Education, 1975) published a list of 34 "most helpful" teaching behaviors. These fell into 6 "dimensions": active student participation, preceptor attitude towards teaching, emphasis on applied problem solving, student-centered instructional strategy, humanistic orientation, and emphasis on references and research. We prepared a Likert scale questionnaire using Stritter's 34 items and surveyed students completing the third year clerkships in June 1998. Responses were analyzed using Chi square. We sought to identify items where there was statistically significant agreement or disagreement that one of the 34 helpful behaviors were observed. The response rate was 100% (20 of 20) of the students completing the primary care clerkships (Internal Medicine, Pediatrics, Family Medicine/Maternal and Child Health). There was statistically significant agreement that 29 of the 34 behaviors were observed. For five behaviors, less than a majority of students agreed that they were observed. However, statistical significance was not achieved in any of those five. In the "student-centered instruction" dimension, the less-observed behaviors were "advised students of their progress regularly" and "advised students of their progress systematically". In the "emphasis on references and research" dimension, the less-observed behaviors were "occasionally challenged points in journals and textbooks", "described research he/she has done personally", and "emphasized his/her own research". We conclude that to a large degree, our primary care faculty are perceived by their students to be exhibiting the "most helpful" teaching behaviors. The two dimensions where weaknesses were noted by students indicate areas where faculty development may prove especially useful. The items related to assessment and communication of student progress indicate that our faculty development curriculum should include increasing competence and comfort in evaluation of learners and giving feedback. The responses citing lack of discussion of the faculty member's research may indicate the need for faculty development to strengthen research skills and broaden opportunities to participate in clinical research activities. The item regarding occasionally challenging the literature may indicate that improvement in evidence-based medicine skills may be needed. Faculty development could address this item by improving our faculty's ability to critically read and discuss the literature.

VARIATION IN THE REPORTING OF POWER IN PROMINENT MEDICAL JOURNALS. RS Hebert, TA Elasy. Vanderbilt University School of Medicine, Nashville, TN.

Sufficient power is necessary to prevent falsely labeling a result as negative. We determined the percentage of negative articles that report power calculations in six prominent medical journals.

We systematically reviewed original research published in the British Medical Journal (BMJ), Journal of the American Medical Association (JAMA), Lancet, and the New England Journal of Medicine (NEJM) from the first six months of 1997. Further, we analyzed all original research published in the Annals of Internal Medicine and the Journal of General Internal Medicine (JGIM) in 1997. We excluded systemic reviews, meta-analysis, decision and cost-effective analysis, case reports, and studies without inferential statistics. Criteria for classifying a study as negative included an explicit statement in the article that any of three major outcomes, as defined in the abstract or introduction, were negative or did not reach statistical significance to the 0.05 level.

Six hundred and twenty eight articles were reviewed in the six journals. Twenty percent (127/628) were negative. There was no statistically significant variation between journals in the number of negative articles reported (p=0.96). Overall, sample size calculation was reported in 32% (41/127) of negative studies. Differences, however, exist in the reporting of sample size calculations between journals. Reported calculations are: Lancet 50%, NEJM 48%, JGIM 29%, JAMA 25%, BMJ 23%, and Annals 18%. Power is determined not only by sample size but also by delta (the difference expected between the exposed and non-exposed groups), as well as the standard deviation of the point estimates. Ninety five percent (39/41) of studies that reported a sample size also reported a delta. Only 27%(11/41), however, reported standard deviations.

Only one-third of negative studies in prominent medical journals include sample size calculations. Substantial variation exists in the reporting of sample size calculations between journals. A reader is frequently left with insufficient data to determine whether a negative result represents a true or a false negative.

PROCEDURAL EXPERIENCE AND COMFORT LEVEL IN INTERNAL MEDICINE TRAINEES. Christopher Hicks, Ralph Gonzales, William D. Kaehny and Robert J. Anderson, Univ. of Colorado Health Sciences Center, Denver, CO.

Background: Competence in performance of selected ambulatory and hospital-based procedures is integral for many internal medicine practitioners. Both the American Board of Internal Medicine (ABIM) and several subspecialty organizations have defined a quantity of selected procedures they deem as a minimal standard for procedural competence. This number has often been arbitrarily defined and there is little data correlating procedural experience with procedure comfort level in internal medicine trainees.

Objective: To ascertain procedural experience and to correlate this experience with procedure comfort level and ABIM recommendations in internal medicine housestaff in a university-affiliated training program.

Methods: All internal medicine houseofficers (n=140) were asked to complete a brief, self-administered survey delineating the number (0 though 20+) of selected procedures (including advanced cardiac life support (ACLS), abdominal paracentesis, arterial puncture for blood gas, central line placement, endotracheal intubation, flexible sigmoidoscopy, joint splint application, knee joint aspiration, lumbar puncture, pelvic exam/pap smear, skin biopsy, and thoracentesis) they had performed. Houseofficers were also asked to note their comfort level with performing each of these procedures independently on a Likert (1 equals very uncomfortable to 5 equals very comfortable) scale.

Results: Survey response was 64%. The minimum number of procedures performed to achieve a "comfortable" level - defined as the number of procedures indicated by two-thirds of respondents as necessary to feel comfortable or very comfortable - for performing the procedure was: ACLS, 11; abdominal paracentesis, 3; arterial blood gas, 1; central line placement, 11; endotracheal intubation, 11; flexible sigmoidoscopy, 11; knee joint aspiration, 6; lumbar puncture, 6; pelvic exam/pap smear, 1; skin biopsy, 11; splint application, 6; and thoracentesis, 6. Some procedures (skin biopsy, flexible sigmoidoscopy) were infrequently performed (42% and 68% of respondents reported zero, respectively).

Conclusion: To become comfortable, internal medicine trainees reported that they needed more experiences than recommended by the ABIM for most procedures (except paracentesis, pelvic exam/pap smear, and arterial blood gas). Also, some procedures required commonly in medical practice were rarely done. These results suggest that more data is required to define common procedural comfort and competence. Greater emphasis on performance of some common ambulatory procedures (e.g., skin biopsy) is needed in internal medicine training programs.

A RANDOMIZED TRIAL OF AN EDUCATIONAL INTERVENTION TO IMPROVE THE WRITTEN EVALUATIONS OF RESIDENTS BY FACULTY. ES Holmboe, N Fiebach, L Galaty, S Huot. Robert Wood Johnson Program and Department of Internal Medicine, Yale University, New Haven, CT.

Previous studies have shown that faculty evaluations of residents are often non-specific and rarely provide recommendations or give examples of specific skills or behaviors. This study investigated the effectiveness of a brief, multi-faceted educational intervention with faculty to improve their written evaluation of residents.

Methods: From July 1997 to May 1998 faculty attending on a general medicine inpatient service at either a university, Veterans Administration, or one of 2 community hospitals were enrolled in this prospective randomized control trial. Each attending was randomized only once, during their first ward month. All faculty used a standard evaluation form based on the American Board of Internal Medicine (ABIM) 9-point rating scale for overall performance and for 7 other specific categories of competence: clinical judgment, medical knowledge, clinical skills, humanism, teaching ability, professionalism, and medical care. All attendings received a standard pre-rotation packet outlining attending responsibilities and a monograph on effective teaching. Attendings in the intervention arm each participated in a brief, 15-20 minute didactic session. This session outlined key components of effective feedback and evaluation, the need for direct observation of clinical skills, and the importance of providing written, specific examples of skills or behaviors witnessed during the rotation, especially for any rating of 1-3 (unsatisfactory) or 7-9 (superior). Finally, attendings in the intervention group received a 3"X5" folding pocket card for each resident annotated with guidelines for effective feedback and evaluation. The card also provided ample space to record observations of resident performance as an "aide-de-memoir" when completing their written evaluation. Written comments on the evaluation forms were categorized by the investigators into a 4 level taxonomy: global comment only (e.g. "great resident!"); category specific only (e.g. for category medical knowledge, "has good fund of knowledge"); comments citing specific examples or behaviors (e.g. "compassionate care of patient dying with AIDS"); and recommendations (e.g. "needs to read more"). Differences in categorization were resolved by consensus. Evaluations of residents who spent less than 2 weeks with the attending were excluded. Chi-square, Fisher exact, and Wilcoxon rank sum tests were used to examine differences in taxonomic categories between the control and intervention group.

Results: Ninety-one faculty were randomized: 47 in the intervention group and 43 in the control group. No attending declined to participate. Forty-six of 47 (98%) attendings received the intervention, and 92% (265/288) of eligible evaluation forms were available for analysis. Attendings in the intervention group provided significantly more category specific written comments (mean 3.7 vs. 2.9, p=.02) and comments related to the clinical skills (e.g. history-taking, physical exam) category (36/145 vs. 16/120, p=.02) compared to control group attendings. Intervention faculty also provided more examples/behaviors (29/116 vs. 14/106) in their written comments versus control attendings, but this difference was not statistically significant (p=.09).

Conclusions: This educational intervention, designed to be brief and portable, led to positive changes in attending's written evaluations of residents on a general medicine service. Importantly, attendings in the intervention group provided significantly more comments in the clinical skills category, a dimension of competence often neglected in written evaluations.

IMPACT OF A HOSPITALIST TEACHING SERVICE ON INTERNAL MEDICINE RESIDENCY TRAINING. DK Hunt, MD, MSPH, Mark C. Henderson, MD, Robert G. Badgett, MD. UTHSC-San Antonio, TX.

Many hospitals, including academic institutions, are turning to hospitalist physicians to manage the medical care of their inpatients. Yet, little is known about how this change effects residency training.

Purpose: To measure the impact of a new hospitalist and teaching attending initiative on resident satisfaction, education, and patient contact at the University of Texas Health Science Center at San Antonio.

Methods: Beginning July 1, 1997 the Medicine inpatient service was reorganized from a traditional team run by an academic attending physician to a service supervised by an in-house hospitalist attending. Residents were surveyed each month using a questionnaire containing 22 Likert-scale questions developed to assess resident satisfaction. This questionnaire was pilot tested among general medicine faculty. Pre- and post-intervention financial data was analyzed using discharge information from the University Hospital Quality Risk Management Department. Data was collected between July 1, 1997 and June 30, 1998.

Results: 55/60 (92%) second and third year residents, the target of our study, completed a questionnaire. Intern response rate was 54/100 (55%). There were no significant differences found between groups, so the data was combined for an overall response rate of 109/160 (68%). Four areas of increased satisfaction were found: procedural supervision, cost consideration discussions, coverage of patients while resident is in clinic and overall quality of patient care delivery. Areas unchanged from the prior system were: degree of autonomy, time spent rounding, and amount of feedback given by attending. When housestaff were asked to assess their attendings for a variety of skills mandated by ACGME requirements, hospitalist attendings received very high scores on: knowledge and use of the medical literature, management of complicated patients, and role modeling. However, they were rated poorly for observation of history and physical examination skills of the housestaff. The patient data revealed a drop in ALOS from 6.1 days to 5.3 days. Total charges decreased from $21.5 million to $17.4 million. Admissions decreased from 63 per team per month to 61.

Conclusions: Housestaff education at our institution was not adversely impacted by the initiation of a hospitalist teaching system. In fact, procedural supervision was markedly improved. However, feedback and observation were not improved, which reinforces the need to train hospitalists working in academic environments to achieve these educational requirements. Furthermore, this system may decrease the length of stay for hospitalized patients further compressing the educational opportunities for inpatient medicine training.

IMPROVING RESIDENT USE OF ELECTRONIC MEDICAL KNOWLEDGE RESOURCES. Bruce Houghton., EC Rich, K Ryschon. Department of Medicine, Creighton University School of Medicine, Omaha, NE.

The purpose of this study was to evaluate the effect of an intervention to improve internal medicine resident use of various electronic sources of medical knowledge. We conducted this intervention with first year internal medicine, preliminary medicine, and medicine pediatric residents over a 12-month period. Thirteen out of 23 residents were assigned to an educational intervention on use of electronic medical knowledge resources. The intervention consisted of meetings to review use of CD ROMs, electronic medical textbooks, World Wide Web resources, and resident independent learning tasks relevant to each of the media. We surveyed the residents in July of 1997 and again in January of 1998 to assess their response to various questions regarding electronic medical information sources. The survey evaluated: 1) Comfort using computers, 2) Frequency of use of the media, 3) Confidence in the information, 4) How readily available the various media were, 5) How easy it is to find the information in the resource, and 6) How easy to apply the information to one's practice. The resources evaluated were: 1) Computerized bibliographic searches, 2) Electronic medical texts, and 3) Internet/World Wide Web sources of information. A Likert scale was used to rate the resources. Analysis of change scores (Δ) revealed that the intervention group experienced a statistically significant increase in the confidence in the information from electronic medical text (Δ + 0.72 intervention versus Δ-0.25 control, p=0.006), in the ease to find information in electronic medical text (Δ + 1.00 intervention versus Δ - 0.33 control. P=0.024), and in the ease to find information on the Internet (Δ + 0.73 intervention versus –0.44 control, p=0.025). Self-reported frequency of use in clinical practice was not significantly improved with the intervention. Our findings show that resident attitudes toward electronic medical sources can be improved with a simple intervention providing basic instruction. Improving use of these resources in clinical practice by busy interns, however, may require other strategies.

EVALUATION OF A NATIONAL CURRICULUM REFORM EFFORT FOR THE MEDICINE CORE CLERKSHIP. R Jablonover, D Blackman, E Bass, G Morrison, A Goroll. Departments of Medicine, Johns Hopkins University, Baltimore; University of Pennsylvania, Philadelphia; and Massachusetts General Hospital, Boston.

Purpose: In 1995, the Society of General Internal Medicine (SGIM) and the Clerkship Directors in Internal Medicine (CDIM) developed and disseminated a new model curriculum for the medicine core clerkship that was designed to enhance learning of generalist competencies and increase interest in general internal medicine. The purpose of this study was to evaluate the use and impact of this SGIM/CDIM Curriculum Guide.

Methods: In April, 1998, a questionnaire targeting internal medicine main clerkship directors at all U.S. medical schools was mailed to CDIM members. The questionnaire elicited information about the use and usefulness of the Guide and each of its components, barriers to effective use of the Guide, and outcomes associated with use of the Guide.

Results: Responses were obtained from 95 clerkship directors, representing 90 (72%) of 125 medical schools. Eighty-seven (92%) of the respondents were familiar with the Guide, and 80 respondents had used it. More than 50% of those familiar with the Guide reported that the main strengths of the Guide were "identification and prioritization of general clinical core competencies" (82%), "specification of learning objectives for general clinical core competencies and training problems" (72%), and specification of training problems and learning experiences" (53%). The most frequently identified weaknesses of the Guide were "too ambitious to carry out" (48%) and "too much information to assimilate" (47%). Components of the Guide used most frequently were: description of general clinical core competencies (used by 83%), learning objectives for these competencies (used by 83%), learning objectives for training problems (used by 70%), and specific training problems (used by 67%); 74 - 85% of those using these components found them moderately or very useful. The Guide's learning objectives for general clinical core competencies and training problems were used most commonly to orient students to the clerkship, guide changes in the clerkship, and help design lectures. The most frequently identified barriers to use of the Guide were insufficient faculty time to devote to the clerkship, insufficient number of ambulatory care preceptors and training sites, and need for more faculty development. About 30% or more of those familiar with the Guide reported that use of the Guide was associated with improved ability to meet clerkship accreditation criteria, improved performance of students on the clerkship exam, and increased clerkship time devoted to ambulatory care.

Conclusion: This federally supported initiative that engaged the collaborative efforts of the SGIM and the CDIM was successful in facilitating significant changes in the medicine core clerkship across the U.S.

RESIDENT PARTICIPATION IN FLEXIBLE SIGMOIDOSCOPY DOES NOT ADVERSELY AFFECT PATIENT SATISFACTION.

JL Jackson, E. Osgard, KR Fincher, Dept of Medicine, USUHS, Bethesda, MD.

Purpose To assess the effect of resident involvement in flexible sigmoidoscopy on patient satisfaction, comfort and procedure duration. **Method** Four hundred five adults undergoing flexible sigmoidoscopy completed previsit surveys on procedure indication, gastrointestinal-related history and functional status. Immediately after the procedure, satisfaction and procedure comfort were assessed. Additional information collected included procedure duration, depth of sigmoidoscope penetration, and visualization of diverticuli or polyps.

Results The four hundred and five participating adults undergoing endoscopy had a mean age of 61 years, 46% were women, 78% were white, 11% Asian-American and 8% African-American. These endoscopies were performed by one of four general internal medicine staff physicians with 111 (29%) performed by residents under these staff's supervision. Patient demographics, functional status and procedure indication were similar between sigmoidoscopies done by residents or staff. Ninety four percent of patients reported themselves to be fully satisfied with the care they received immediately after the procedure, not different between sigmoidoscopies involving or not involving residents (95% vs 92%, $p=0.22$). There were also no differences in patient reports of procedure discomfort ($p=0.78$) or willingness to undergo the procedure again in the future ($p=0.83$).

There were no also differences in the likelihood of completing the procedure, average depth of sigmoidoscope insertion (Staff: 55.9; Residents: 54.7 cm, $p=0.25$) or visualization of diverticuli or polyps. However, procedures involving residents were considerably longer than those not involving residents (22 vs 13 minutes, $p<0.0001$). Even after adjustment for patient age, specific staff endoscopist, preparation quality, depth of sigmoidoscope insertion and presence of diverticuli or polyps, resident participation added an average 6.9 minutes to the procedure duration. This represents a 38% increase in procedure duration over those done by staff physicians alone, after adjustment for these confounding variables.

Conclusion Patient satisfaction and comfort with flexible sigmoidoscopy and surrogate markers of procedure quality were not reduced by resident involvement, though procedure duration was significantly increased.

RESIDENCY PROGRAM DIRECTOR ASSESSMENT DOES NOT CORRELATE WITH STUDENT PERFORMANCE ON A FOURTH YEAR OSCE.

MJ Kahn, W Merrill, HM Szerlip. Tulane University School of Medicine, Department of Medicine. New Orleans, LA.

A growing number of medical schools have instituted fourth year objective structured clinical examinations (OSCE) to assess clinical competence. These examinations are postulated to be valid measures of clinical skills and were recently adopted by the ECFMG for certification of international medical graduates. They may soon be implemented by the NBME as a requirement for licensure. However, the utility of these exams to predict future clinical performance is not clear. We assessed the relationships between performance of fourth year students on an OSCE as well as other academic indices and program director's assessment of clinical skills.

We surveyed program directors about the performance of 50 graduates from our medical school chosen to represent the highest (OSCEHI) and lowest (OSCELO) 25 performers on our required fourth year OSCE. Our OSCE has been in place for four years and we are currently an NBME research site. Program directors were unaware of the OSCE scores of the graduates. We asked the program directors to use a 5-point Likert scale to evaluate residents with respect to clinical skills of history gathering, physical examination, laboratory usage, interpretive skills and medical knowledge. We also asked them to provide an overall assessment of the resident compared to other residents with which they have worked. We received responses for 44 residents (response rate = 88%). We compared the program director responses with OSCE scores, USMLE Steps 1 and 2 scores, and class rank.

There was no statistically significant correlation between OSCE scores and USMLE1 ($r=0.05$, $p=0.72$), USMLE2 ($r=0.16$, $p=0.26$), or class rank ($r=0.27$, $p=0.06$). Program directors scores were skewed toward higher scores (medians 4-5). OSCEHI students tended to be rated higher in each category by program directors. However none of these rankings was significant ($p>0.14$ for all comparisons). OSCE scores did not correlate with Likert scores for any parameter surveyed ($r<0.23$, $p>0.13$ for all comparisons). Similarly, program director evaluations did not correlate with class rank or USMLE scores ($r<0.26$, $p>0.09$ for all comparisons). By contrast, there were strong correlations among USMLE1, USMLE2 and class rank ($r>0.72$, $p<0.001$ for all comparisons).

We conclude that program director evaluation does not correlate with performance on an OSCE. In the groups studied, program director evaluation did not correlate with medical school class rank, or USMLE scores. This may represent the program director's tendency to rate clinical skills in a narrow, high range. If this is the case, more structured and objective evaluative tools may improve postgraduate training program assessment of trainees.

FACTORS INFLUENCING PROCEDURAL PRACTICE PATTERNS OF COMBINED MEDICINE-PEDIATRIC GRADUATES

M Johannessohn, MD, M Ciccarelli, MD, K Kroenke, MD, D Litzelman, MD Regenstrief Institute, Indiana University School of Medicine, Indianapolis, IN

Purpose: To describe 1) procedural practice patterns of Medicine-Pediatrics (M/P) graduates, and 2) the association between procedural practice patterns and gender, city size, years in practice, practice characteristics, subspecialty colleagues in group, and time spent in inpatient/outpatient care. **Method:** National survey of 1481 M/P graduates identified by the American Board of Pediatrics. The survey asked 3 questions about 58 procedures: 1) How often do you perform the procedure? 2) Would you like more, less, or the same amount of training in residency? and 3) Do you wish to perform the procedure more frequently? Logistic regression was used to analyze relationships between descriptive variables and 8 selected procedures (treadmill, circumcision, ingrown toenail removal, joint aspiration/injection, punch biopsy, ventilator management, colposcopy, and sigmoidoscopy). These 8 procedural skills are shared by primary care and subspecialty providers, and controversy exists regarding the appropriateness of having primary care physicians perform them. **Results:** 60% response rate was obtained. 75% of respondents indicated no subspecialty practice and only these respondents were used for this analysis. Respondents were 64% male. Most spent >75% of time in an outpatient setting. 60% of respondents are <5.5 years from graduation and 37% practice in small communities (<49,999 persons). All selected procedures are performed by >30% of respondents except for colposcopy (3%). Greater than 30% of respondents desired more training and to perform all selected procedures except ventilator management more often. Although no predictor variable was present in all models, the 3 most consistent predictors of procedure performance are more recent graduation (<5.5 years), small community and male gender (See Table).

Predictors (Odds Ratios) of Likelihood a Med/Peds Graduate Will Perform a Particular Procedure								
Predictor	Circumcision	Treadmill	Ventilator use	Punch biopsy	Ingrown toenail	Sigmoidoscopy	Arthrocentesis	Colposcopy
Small community	5.2	4.7	3.7	2.7	2.2	ns	ns	ns
Male Gender	ns	3.3	1.7	ns	2	3.3	2	ns
Recent graduate	ns	3.0	ns	1.9	2.9	0.5	ns	ns

Practice with a subspecialist who routinely performs the procedure and time spent in outpatient practice were not significant in any model. Regarding the other 2 questions (desire to perform a procedure more often and have more training in residency), recent graduation was the strongest predictor. More recent graduates were less likely to desire more training (OR 0.5-0.6) but more likely to want to perform a procedure more often. (OR 1.6-2.1). **Conclusions:** Understanding practice patterns regarding city size, gender, and graduation interval may shape training paths for M/P residents.

IMPROVING CANCER SCREENING IN WOMEN IN AN OUTPATIENT RESIDENCY SETTING: THE DURABILITY OF AN INTERVENTION TO IMPROVE COMPLIANCE.

CL Karmen, Y Han, K Hoyt, C Carosella, N Latterman, and SJ Peterson. Division of General Internal Medicine, Department of Medicine, New York Medical College, Valhalla, NY.

Purpose. Cancer screening tools are underutilized in minority and low-income populations. In the Adult Primary Care Center (APCC) of Westchester Medical Center, medical residents care for patients regardless of ability to pay. We previously studied the effect of an intervention in July 1994 to improve cancer screening, including intensive education of residents, introduction of a modified progress note requiring documentation of most recent screening tests and chart review by the attending physician. In this study, we attempt to determine the durability of these interventions.

Methods. Medical records of women over the age of 50 seen in the APCC between July 1997 and June 1998 were randomly selected for review. Patients with a history of cancer, those seen only once in three years, or for urgent care only were excluded. Charts were reviewed to determine if breast exams, mammograms and Pap smears were recommended within one year of the current visit. The number of patients to whom these screening tests were recommended was compared with the number screened before (January 1993-June 1993) and during (July 1994-January 1994) the intervention.

Results. Medical records of 250 women were reviewed. Sixty patients were excluded. Breast exam was recommended to 113/190 patients (59%), mammogram to 134/190 (71%) and Pap smear to 128/190 (67%) of eligible women. In comparison to the prior study:

Recommendation for	Before Intervention	During Intervention	After Intervention
Breast exam	50%	92%	59%
Mammogram	73%	83%	71%
Pap smear	35%	64%	67%

Conclusions. An inexpensive intervention initially increased breast and cervical cancer screening in an Internal Medicine residency setting. There was no recidivism in cervical cancer screening as the number of Pap smears performed remains improved. Breast cancer screening has, however, declined following the intervention. The reasons for this disparity require further investigation. An intensive effort is required to ensure appropriate cancer screening in women receiving care in a residency setting.

THE DEVELOPMENT OF RESIDENT ATTITUDES TOWARD APPROPRIATE MEDICAL CARE. JA Katz, HH Liu, AS Steimle, and NS Wenger, Harbor/UCLA Medical Center, Torrence, CA and UCLA Department of Medicine, Los Angeles, CA.

Objective: Physicians-in-training learn when to provide invasive and costly interventions to critically ill patients. To better understand how and when residents learn this skill, we examined the perceptions of appropriate medical treatments for seriously ill patients among the three post-graduate year (PGY) cohorts at one internal medicine training program and their generalist and specialist attending physicians.

Methods: For patients with specific serious clinical conditions, resident and attending physicians were asked to rate the appropriateness of 9 medical interventions including intensive care unit admission, cardiopulmonary resuscitation, hemodialysis, transfusion and antibiotics. Nineteen clinical conditions were presented, spanning the range of prognosis and organ system (e.g. "persistent vegetative state," "hematologic malignancy, new case" and "hematologic malignancy, ≥3 organ system failure"). Responses were rated on a five point scale from very appropriate (1) to very inappropriate (5). Attending physicians were presented only conditions for which they care. We compared mean appropriateness scores among PGY cohorts, and between residents and generalist and specialist attendings.

Results: Ninety-six percent of residents (65/68) and 73% of attendings (176/241) from 9 subspecialties responded to the survey. Overall, PGY1s rated treatments more appropriate than PGY2 and PGY3 residents (mean 2.59, 3.00, 2.93, respectively on 5-point scale). Residents rated appropriateness lower for patients with worse prognosis and for more invasive therapies.

PGY2/3s (mean 3.74) rated care similar to generalist attendings (mean 3.69). For most conditions, PGY2/3s and generalists rated treatments more appropriate than did specialist physicians. For example, for a patient with severe dementia (able to complete no activities of daily living), mean appropriateness ratings were: PGY2/3 4.13, generalist 4.05 and specialist 4.41. However for some conditions, specialists rated treatments as more appropriate. For example, for end-stage cardiomyopathy (non-transplant candidate), mean appropriateness ratings were: PGY2/3 3.36, generalist 3.37 and specialist 2.82.

Conclusions: Early in training, interns appear to have undeveloped attitudes about the appropriate use of treatments for seriously ill patients. These attitudes, at the studied training program, are established by the PGY2 year and appear to reflect those of the generalist attendings, rather than specialists, for most conditions. The divergent attitudes toward care aggressiveness of attending physician groups should be explicitly recognized in choosing role models to influence medical interns' attitudes toward inpatient practice patterns.

EFFECTIVE TEACHING BEHAVIORS FOR PRECEPTORS SUPERVISING MEDICAL STUDENTS IN AMBULATORY SETTINGS. WN Kernan, MY Lee, SL Stone, PG O'Connor. Sections of General Medicine, Yale University School of Medicine, New Haven, CT, Tufts University School of Medicine, Boston, MA, and The University of Massachusetts School of Medicine, Worcester, MA.

Background: Although medical student training now emphasizes ambulatory experience, optimal teaching skills for preceptors in this setting have not been defined. Our purpose was to identify effective teaching skills to guide faculty development.

Methods: Between 11/96 and 4/97, we conducted seven focus groups with 55 third-year students at Tufts and Yale. Students, who were in required ambulatory internal medicine rotations, were asked to specify effective teaching behaviors for preceptors. From focus groups transcripts, we constructed a survey of 94 behaviors in seven teaching domains that was administered to 150 students at three New England schools, including the two that participated in the focus groups. On two 5-point scales, students indicated if they recommend each behavior and rated how important each was to their learning. Behaviors recommended "strongly" or "somewhat" and rated "extremely" or "very" important by ≥75% of students were considered verified as valued by students.

Results: Among 150 students who volunteered, 122 (81%) returned a completed survey. Among 94 teaching behaviors in the survey, 51 (54%) were verified as valued. The greatest number of valued behaviors (19) fell into the domain of "teaching clinical skills" and included: 1) assure the student sees and examines patients alone, 2) ask for the student's assessment and plan before giving one's own, 3) delegate responsibility to the student for the wrap-up discussion, 4) delegate responsibility for ascertaining and interpreting test results, 5) guide the student in devising a plan of care (avoid just telling the student what to do), and 6) ask questions to lead the student to his or her own diagnosis or treatment. The next most numerous domain (10 behaviors) was "teaching knowledge" and included 1) use questions to probe the depth of a student's knowledge, 2) focus questions on important matters rather than trivia, and 3) take time to explain therapeutic choices (don't assume the student knows). Valued behaviors from the other five domains included: 1) periodically inquire about how the experience could be adjusted to better suit the student's needs, 2) hold discussions about diagnosis and treatment away from the patient, 3) give feedback at the time of a patient visit, not just in scheduled feedback sessions, and 4) catch students doing something well and praise them. 42/94 (45%) behaviors were recommended and rated important by 25%-74% of students. The only behavior recommended and rated important by <25% of students was asking the student to present the history and physical in front of the patient.

Conclusion: This research has identified 51 teaching behaviors that are recommended and rated important by ≥75% of third-year medical students. Because the behaviors are characterized in detail, they provide precise guidance to preceptors. Our findings provide the basis for a curriculum on teaching for ambulatory preceptors.

SEE ONE, DO ONE, TEACH ONE - THE MISSING LINK IN THE DELIVERY OF WOMEN'S HEALTH CARE B.Kearns, V. Rajani, S. Kamarei. Department of General Internal Medicine (GIM), The Cleveland Clinic Foundation, Cleveland, Ohio.

PURPOSE: To evaluate medical resident's and staff member's level of comfort as well as to identify statistically significant differences in managing commonest female-specific health issues. Using a medline search no other studies were found which directly compared resident and staff comfort in performing and managing these topics.

METHODS: 1303 female patient visits to our GIM clinic over a 6 month period of time were reviewed and an anonymous questionnaire was devised addressing the 13 most common reasons female patients visited our clinic, based on International Classification of Diseases version 9 (ICD9) codes. Using a Likert scale (1=comfortable and 5=uncomfortable) residents and staff rated their level of comfort in performing/managing the noted issues. 52/105 medical residents responded (50%). 25/30 staff members responded (83%). Responses were grouped into comfortable (grades 1,2) vs. uncomfortable (grades 3,4,5). Fisher's Exact Test was used to compare comfort vs. the independent measures; with alpha levels adjusted for multiple comparisons.

RESULTS: Comparing staff and residents level of comfort in performing/managing the 13 issues, a statistical difference was evident in 3 areas: a) urinary incontinence where 26% of staff vs. 63% of residents felt uncomfortable (p=0.003). b) depression & anxiety 9% of staff vs. 42% of residents felt uncomfortable (p=0.003). c) menopause 0% of the staff vs. 38% of residents felt uncomfortable (p=<0.001). Comparing male and female residents level of comfort in performing/managing the 13 issues, a statistical difference was found in one area, management of benign breast disease with 60% of male vs. 13% of female residents feeling uncomfortable (p=0.002). However, a trend was noted towards the male residents feeling more uncomfortable in performing/managing the medical issues compared to their female counterparts, but due to the stringent alpha level, no statistical significance was noted. There was also no significant difference observed in the degree of comfort by post graduate year level. 100% of residents indicated that additional training in women's health issues is desirable.

CONCLUSIONS: There is a strong concordance between resident and staff rank order list of issues with which they are both uncomfortable. We believe that these results pertain to most GIM clinics in teaching centers. It is therefore imperative that as academicians, we pay particular attention to the needs of our teaching staff as well as resident physicians with regards to women health. We recommend faculty development courses as well as specific rotations for the residents during their training.

RESIDENTS' PERCEPTIONS OF THEIR TRAINING IN WOMEN'S HEALTH ISSUES IN MEDICAL SCHOOL AND RESIDENCY. JR Kidd, AL Taylor and KK Papp, Department of Medicine, Case Western Reserve University School of Medicine, Cleveland, OH.

Purpose: Prior to the institution of an integrated program to increase women's health education in our residency program, residents' baseline perceptions of their education in women's health issues during medical school and residency were assessed.

Methods: A 45 item survey was distributed to 98 internal medicine residents in May of 1998 and to 38 new interns in August 1998. Demographic information included year of training, type of residency (categorical, primary care or other), gender, career plans, interest in a women's health fellowship and medical school attended. Participants were asked to rate the adequacy of their training concerning 12 women's health topics, the quality of the training methods used, the quality of available resources in women's health education, and their overall preparedness to give complete care to women using a 5-point scale (0= none; 3=adequate; 5=excellent).

Results: Seventy-six (56%) surveys were completed and returned (25 PGY1, 20 PGY2 and 30 PGY3 residents and 1 Chief resident); 39% men, 38% women and 24% unknown; 18% were primary care residents. The mean ± S.D. rating for medical school training for all 12 identified women's health topics was 2.88 ± 0.96. The mean rating of the residents' residency training was 2.15 ± 1.00. Perceptions of medical school training correlated with perceptions of residency training (Pearson's coefficient =0.29; p=0.02). Only 42% of the residents perceived their residency training to date adequately or better prepared them to give complete care to women. Interestingly, the interns' mean rating was highest overall at 2.55 ± 1.32, compared to a mean rating of 2.25 ± 1.02, 2.30 ± 0.95 in PGY2 and PGY3 residents, respectiveiy (p= 0.64). There was no difference in mean rating by gender (2.19 ± 1.24 for men versus 2.52 ± 1.16 for women; p=0.31) Compared to categorical residents, primary care residents had a slightly higher mean rating (2.64 ± 1.01 versus 2.19 ± 1.13; p=0.18). Residents rated their training as especially inadequate in both medical school and residency in nutrition, medical issues in pregnancy, eating disorders and domestic violence.

Conclusions: Most residents (58%) perceived their residency training to be less than adequate in preparing them to provide complete care for women, and there was no difference between male and female residents. Primary care residents were slightly more confident of their training compared to others, but their formal knowledge of women's issues was not assessed. More specific training in women's health issues and assessment of that training is needed in internal medicine residency programs.

A CROSS-CULTURAL EVIDENCE-BASED MEDICINE CURRICULUM: A NEW PARADIGM FOR INTERNATIONAL HEALTH ELECTIVES. PT Korthuis, L Nekhlyudov, M Green, AU Ziganshin, M Sadigh. Yale University Primary Care Internal Medicine Residency, New Haven, CT.

Internal medicine residents participating in international health electives represent an underutilized educational resource for host nation institutions. We conducted this study to determine the feasibility and impact of a cross-cultural evidence-based medicine (EBM) curriculum taught by internal medicine residents during an international health elective in Russia.

During a 5-week international health elective for senior U.S. internal medicine residents at Kazan State Medical University in Kazan, Russia, we implemented and evaluated an EBM curriculum. Subjects included English speaking Russian medical students, interns and faculty. We established a computer lab with sufficient Internet capability to access medical literature databases and negotiated a local Internet Service Provider contract for long-term viability. Seven 2-hour seminars were conducted to teach basic Medline skills, clinical epidemiology, and literature analysis using clinical questions formulated during daily ward rounds. Immediately before and after the seminar series, participants completed an identical case-based multiple choice EBM skills test (possible score 0-4). On the post-intervention questionnaire, participants also responded to Likert (1-5) statements assessing the impact of the curriculum on their EBM skills.

26 participants attended at least one seminar session. 13 completed both pre- and post-intervention questionnaires, and attended a mean of 5.9 sessions. A mean pre-test EBM score of 1.8 improved to a mean post-test EBM score of 2.8 ($p = 0.03$, difference = 1.0, 95% C.I. = 0.15-1.85). Participants reported substantial improvement in their research skills (4.38), provider skills (4.31), and analytical skills (4.69).

Cross-cultural training in evidence-based medicine can be accomplished as part of an international health elective. A series of seminars conducted by U.S. internal medicine residents was effective in improving Russian physicians' EBM knowledge.

WOMEN'S HEALTH IN THE CURRICULUM: A STATUS REPORT. Deborah Kwolek, Sandhya Venugopal, Department of Medicine, University of Kentucky, College of Medicine.

Introduction: The Council on Graduate Medical Education has stated that "changes in undergraduate and graduate medical education, in addition to continuing medical education, are needed to address adequately the comprehensive health needs of women." The purpose of this study was to survey current curricular innovations in women's health in medical schools and graduate training programs in the United States.
Methods: A medline search years 1990 to the present was used to review the literature on women's health curricula at the graduate and undergraduate levels. Approximately sixty articles as well as American Association of Medical Colleges and specialty board publications on this subject were reviewed.
Results: 1) No single specialty focuses exclusively on the training of physicians in the multidisciplinary comprehensive care of women patients and there is considerable debate as to whether such a specialty should exist, 2) deficits among residents and students in the evaluation of women's health clinical problems have been documented, 3) although current teaching of the medical care of women is fragmented between medicine, OB/GYN, and psychiatry, an effort to integrate these databases is underway nationwide, 4) few institutions have published reports of effective methods of integrating women's health education into their graduate and undergraduate curriculum.
Conclusions: The literature strongly documents the need for increased emphasis and innovations in women's health education in undergraduate and graduate medical training. Despite this, few published reports of such innovations are currently available in the literature.

SCREENING FOR DIABETIC NEPHROPATHY IN THE GENERAL MEDICINE CLINIC, E. Krishtul, C. Brod Miller, Division of General Internal Medicine, Mount Sinai Hospital, Department of Medicine, New York, NY

Background: General internists treat the majority of Type 2 diabetics. 20 to 40 percent of them will develop nephropathy. The earliest finding is microalbuminuria frequently evolving to overt proteinuria and progressive kidney failure. This risk can be greatly reduced by maximal control of blood pressure, especially with administration of Angiotensin Converting Enzyme Inhibitor (ACEI) which can even reverse the process when given at the early stage of microalbuminuria. Present practice guidelines by the American Diabetes Association recommend screening all diabetics for microalbuminuria by quantitative assay at least annually.

Objectives: Primary care physicians' compliance with these screening guidelines has been poor (C. Brod Miller, Mount Sinai Medical Journal, Abstract, 10/1998). The aim of this study was to assess the effect of an educational intervention on improving general internists' screening for diabetic nephropathy.

Research Design and Methods: We studied the frequency of microalbuminuria screening by the General Medicine Clinic (GMC) physicians (22 attendings and 120 housestaff). Diabetic patients were selected from the GMC computerized laboratory data by their HbA1C results (HbA1C ≥ 6.0%). The frequency of testing for microalbuminuria was compared between two periods: Pre-Intervention, May-October, 1997 and Post-Intervention, May- October, 1998: urine microalbumin excretion- random concentration, timed or ratio to creatinine, and urine protein excretion- random concentration or timed. The educational intervention (12/1997-06/1998) on management of early diabetic nephropathy, was done in addition to the usual curriculum, and consisted of one 1hr small group seminar focused on clinical case studies, and 1hr standard lecture given by a nephrologist.

Results: The percentage of diabetics tested correctly for microalbuminuria was 19% (1800 patients) in the pre-intervention period. After the educational intervention, that percentage was increased to 25% (2000 patients).

Conclusion: This type of teaching intervention resulted in a minimal improvement. Microalbuminuria in diabetics is well known to be a forerunner for overt proteinuria and increased cardiovascular mortality. Effective treatments to mitigate these complications are available. However, appropriate screening remains greatly underutilized. In order to improve the frequency of testing it appears necessary to increase primary care-physicians' compliance by: a) modification of the curriculum, including more intensive education on management for diabetic nephropathy; b) facilitating record keeping through computerization of medical records allowing automatic reminders to physicians and patients. However, the only effective solution may be the mandatory screening of all diabetics for microalbuminuria.

HOUSESTAFF TIME-MANAGEMENT IN A GENERAL INTERNAL MEDICINE OUTPATIENT TEACHING CLINIC. R Lee, S Reddy, and C-Y Wang, Division of General Internal Medicine, Department of Medicine, University of Texas Southwestern Medical Center, Dallas, TX.

Purpose: The purpose of this study is to document the time-management characteristics of internal medicine housestaff in a general internal medicine outpatient teaching clinic.

Methods: The activities of second and third year internal medicine housestaff were observed and timed by the supervising staff starting when a resident began reading the chart of the patient and ending when all activity related to a patient ceased. Activities were recorded into 5 major categories: chart review, direct patient contact, paperwork, teaching/case presentation, and miscellaneous.

Results: 44 observations were made (28 third year residents and 16 second year residents). On average, residents spent 37.6 total minutes of time per patient: 5.8 minutes were spent on chart review (16.5%), 15.8 minutes on direct patient contact (42.2%), 11.2 minutes on paperwork (30%), and 4.5 minutes on teaching/case presentation (12.1); <1% was spent on miscellaneous activities (i.e. answering pages, telephone calls). There were no statistically significant differences between second and third year residents in the total time spent (39.7 minutes vs. 35.3 minutes) or in any specific subset of activity time. The residents filled out an average of 6.6 forms per patient, not including the progress note.

Conclusions: Internal medicine residents spend a significant proportion of time on paperwork and a smaller fraction of time on case presentation / teaching activities. Decreasing the amount of time spent on paperwork will increase the time available for direct patient care or teaching related activities.

THE BROWSING JOURNAL CLUB: A NOVEL APPROACH TO THE MEDICAL LITERATURE. J Leviss, E Rizinashvili, N Kathuria. Department of Medicine, New York University School of Medicine, New York, NY.

Objective: In the traditional journal club format emphasis has been placed on teaching critical appraisal skills of the medical literature. Additionally, the journal club offers a means of keeping up with the expanding body of medical knowledge. Here we report our experience with a new journal club format which focuses on these goals.

Methods: The Browsing Journal Club was established three years ago as a complementary tool to the traditional journal club in order to teach skills necessary to survey biomedical literature. The Browsing Journal Club is a required weekly one hour conference for all interns and residents during the Ambulatory Care Block Month. Three general medicine faculty members co-precept the conference, frequently accompanied by additional faculty members. Objectives of the browsing journal club and presentation format are reviewed at the beginning of each rotation. During each one hour session two residents present self-selected articles from the preceding issues of The New England Journal of Medicine and either The Annals of Internal Medicine or The Lancet (one journal per resident) after presenting an overview of the entire issue. The presentations are structured to use evidence based medicine guidelines in presenting the articles. On average, six to seven articles are discussed, including clinical trials, reviews, and commentaries. A survey was conducted of the residents in the third year of the journal club.

Results: Over 90% of the house staff subscribed to at least one of the journals used in Browsing Journal Club. 88% agreed that the browsing journal club format was an "effective way to keep up with the medical literature;" 81% agreed that the journal club encouraged them "to read journals...[they] might not have read otherwise;" 94% agreed that "the discussions about individual articles were interesting and helpful in understanding new concepts in clinical medicine;" 46% reported reading "additional medical journals because of exposure to them at browsing journal club;" and 90% would "recommend the journal club to other training programs."

Conclusion: The journal club is ubiquitous as a teaching tool in medical and surgical training programs and is required for residency accreditation in internal medicine. Essential functions of the journal club include: teaching a critical appraisal of the medical literature; improving skills in epidemiology; maintaining a thorough knowledge of the current medical literature; and focusing on the literature's impact on clinical practice. The browsing journal club offers a novel approach to teaching skills important in surveying the medical literature and increases house staff awareness of the varied formats existing in the medical literature. The house staff who participated strongly recommended the format to other residency programs.

ASSESSMENT OF ADEQUACY OF RESIDENT OUTPATIENT CONTINUITY CLINICS AT DENVER HEALTH FOR PRIMARY CARE PRACTICE. UG Mason, B Smith, B Jeffers, and PS Mehler, GIM Division, Denver Health Medical Center, Denver, CO.

The purpose of this study was to examine the outpatient resident continuity training program in the General Internal Medicine Department at Denver Health Medical Center in order to identify areas where the training program needs improvement. Seventy-five surveys were sent to physicians who completed their residency at Denver Health between 1988 and 1997. Forty surveys (54%) were returned representing each year and various regions of the country. Thirty responders had completed the program within the previous five years. Devoting 67% of their time to clinical duties, 21 males and 19 females characterized their practices as urban, with a mean of 20 predominately white patients seen on a busy day, and with faculty appointments. Chi-square and other statistical analysis revealed that respondents rated the training program adequate or very well concerning their preparedness in the following areas: endocrine, allergy, pulmonary, and cardiac problems. The respondents rated their training in certain miscellaneous areas as inadequate or not-at-all including business aspects, adolescent medicine, female sexual dysfunction, nutritional problems and multiple sclerosis. In this day of managed care, internal medicine residency training should increasingly emphasize the business aspects of primary care while sustaining adequate training in the major medical areas.

LIMITATIONS OF THE USE OF STUDENT AND PRECEPTOR QUESTIONNAIRES TO ASSESS ACHIEVEMENT OF COURSE GOALS IN MEDICAL STUDENTS' LONGITUDINAL COMMUNITY-BASED CLINICAL EXPERIENCES. EI Lubetkin, SK Krackov, and C Storey-Johnson. Division of General Medicine, Columbia University College of Physicians and Surgeons and the Joan and Sanford Weill Medical College of Cornell University, New York, NY.

Purpose: Longitudinal interdisciplinary community-based programs have become increasingly popular to provide early clinical experiences for medical students but pose challenges to evaluating student achievement of course goals. We sought to examine the usefulness of assessing student and preceptor perceptions of student achievement of physical examination skills and other curricular goals.

Methods: We surveyed 114 first-year students and their preceptors in a longitudinal community-based program at the Weill Medical College of Cornell University. The survey used a Likert Scale to assess how well students and preceptors felt they achieved specific course goals and how well their expectations for achieving the course goals were met. Students also rated global learning and satisfaction during each office preceptor session on a Likert Scale. An independent assessment of student achievement of physical examination skills was made using a demonstration examination format at the Medical College.

Results: Preceptors' scores for student achievement of course goals were significantly higher than students' scores for all goals assessed ($p < .01$). Students' post-course scores for achieving their goals were invariably lower than their pre-course expectations ($p < .001$). Global learning and satisfaction scores were high and all students performed satisfactorily in the demonstration examination. Preceptors were confident in the perception of their ability to teach the curricular material and showed no change in this perception during the course.

Conclusions: This study shows that students and preceptors may not agree on student achievement of course goals and that students rate their post-course performance lower than their pre-course expectations of performance. This occurred even though the students' perceptions of global learning and satisfaction during office preceptor sessions were high. The students' lower ratings of post-course performance in the area of physical examination occurred in spite of satisfactory skill performance in an independent assessment. These findings suggest that (1) questionnaires assessing student and preceptor perceptions of student achievement of specific goals should be independently verified before making decisions to modify objectives and activities in these kinds of courses and (2) the high expectations of students with respect to level of mastery of physical examination skills may adversely impact the evaluation of the course.

PERFORMANCE TRAINING: AN APPROACH TO TEACHING COMMUNICATION SKILLS, Susan Massad MD, Long Island College Hospital, Brooklyn, NY

Consumerist trends in American medicine are placing increased demands on physicians to be more attentive to the relational aspects of care. The medical conversation, shaped by the scientific method in which physicians are trained, is linear, interrogatory, adheres to a defined agenda and is scientist driven. It is a mode of conversation that does not promote a consciousness of, nor allow examination of, the relational activity that is taking place. To address these issues a noncognitive, nonscientific, performatory approach to teaching communication skills was initiated for first year residents at Long Island College Hospital. Staff members from Performance of a Lifetime, a New York based performance school for non-performers, conduct eight weekly sessions of performance training for medical residents in which they improvise scenes, receive directions from skilled actors and create a play.

What we have found is that residents participating in performance training have the experience of creating a conversation—as opposed to simply engaging in a "pre-scripted"dialogue—with patients. Performance training as a pedagogical approach has proved valuable in teaching residents: a) active listening skills, b) to accept the pointlessness of patient centered conversations, and c) to effectively engage in conversations that involve medical uncertainty. A description and videotape of the training model and the results of a post-course survey in which residents responded to this unorthodox training approach will be presented.

DO HMO STAFF PHYSICIANS WHO PRECEPT DIFFER FROM PHYSICIANS WHO DO NOT? KM Mazor, TS Field, JH Gurwitz, D Hatem, Meyers Primary Care Institute, University of Massachusetts Medical School and Fallon Healthcare System, Worcester, MA

Background: Undergraduate medical education increasingly calls for the participation of community-based physicians as preceptors. Managed care organizations may be hesitant to encourage practitioners to participate in these programs since the potential impact on physician practice is unknown. We compared preceptors and non-preceptors on a measure of patient satisfaction, and selected physician characteristics.
Methods: Participants were 82 general internists (n= 62) and family physicians (n=20) in a group-model HMO in central Massachusetts. Physicians were classified as preceptors if they had precepted medical students in an ambulatory setting during the two previous academic years (n=32). Dependent variables were patient satisfaction ratings, panel size, specialty utilization rates, age, and years at current HMO. Satisfaction data were collected via a mail survey of a random sample of patients. Satisfaction ratings for each physician were calculated based on all returned surveys for that physician (mean number of returned surveys = 81). The mean across patients and across 11 items was computed to obtain a single satisfaction rating for each physician. All items were rated on a 5-point scale, with 5 being the highest rating. Satisfaction scores for preceptors/non-preceptors were compared using t-tests, as were between-group differences in physician characteristics.
Results: Patient satisfaction ratings for physicians who precepted were nearly identical to those of physicians who did not. The overall mean satisfaction rating for preceptors was 4.56 (sd=.124) compared to 4.52 (sd=.147) for non-preceptors. No significant between-group differences were found on any of the individual items, nor on any of the physician characteristics studied.
Conclusions: For the primary care physicians studied in this managed care setting, precepting medical students had no impact on patient panel sizes or satisfaction ratings.

CHALLENGING ASPECTS OF THE PATIENT-RESIDENT AMBULATORY ENCOUNTER. KC McKenzie, DA Fiellin, LB Hickey, J Concato. Yale University School of Medicine, New Haven, CT.

The importance of ambulatory training sites is increasing as medical care moves from inpatient to outpatient settings. Better characterization of resident-patient encounters at these sites can improve resident education. The goal of the current study was to identify and quantify the challenges that residents encounter while caring for patients in an ambulatory setting.

We conducted a survey of third year medical residents as they provided care for patients in three ambulatory training sites. All patient visits (n=177) to randomly selected residents during 24 continuity clinic sessions (8 sessions at each site) were included. A self-administered questionnaire was provided to the resident after each patient encounter. The residents were asked to describe, in an open ended fashion, aspects of the encounter that they found challenging, difficult, or time consuming, and were then prompted to consider issues of patient care, clinic administration and patient-physician communication. The resident's responses were independently categorized by two reviewers and organized, by consensus, to form a taxonomy. Similar responses within each axis and category of the taxonomy were tabulated.

Among the177 responses analyzed, 33 were excluded because they did not mention specific challenges. A taxonomy was constructed from 159 challenges cited in the remaining144 responses (some answers included more than one challenge). The taxonomy was organized into 2 axes: (1) patient-resident interaction (including categories of patient characteristics, clinical issues and family involvement) and (2) clinic site (including categories of information management and ancillary services). Responses describing patient-resident interactions included patient characteristics (37%), clinical issues (32%) and family involvement (1%). An example of a challenge in the category of patient characteristics was: "Patient has difficulty focusing on main complaint, but at the same time is obsessive about other details." An example in the category of clinical issues was: "I have spent one year and multiple VNA visits trying to get blood glucose control." Responses describing the clinic site included information management (16%) and ancillary services (13%). An example of a challenge in information management was: "Too many consulting clinics not coordinating care and not communicating to primary M.D."

We conclude that identifying challenges in patient care encountered by residents during clinical sessions can provide information to help guide resident education and improve patient care.

A METHOD FOR PERFORMING REAL TIME EVIDENCE BASED GENERAL MEDICAL ATTENDING ROUNDS. Thomas McGinn MD, MPH. Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY.

Objective: To assess the potential effect on patient care and practicality of evidence based general medical attending rounds.
Methods: During a month of traditional attending rounds randomly selected residents and medical students were requested to participate in a Evidence Based Attending Month. Residents and students were ask to develop questions related to the cases presented on rounds. They were then requested to search Med-line or other electronic data bases for literature to resolve their clinical question. The following day residents and students were requested to present their search strategy and findings to the group. Each post-call intern and student was requested to develop one question per call. Formal questions were not developed on weekend days or on Mondays. The residents, students, and interns were instructed to act as a team in the data retrieval and critical appraisal process. At the end of the month residents and students were asked to evaluate for each case whether or not the process had: (1) changed the management of the current patient, (2) changed the way they will manage future similar patients, or (3) informed them in any way about managing similar patients.
Results: In addition to routine questions and literature review an average of four questions were developed per week with subsequent searches and evaluation of the literature over a four week period. A total of 12 cases were formerly evaluated out of a potential 16 cases for a 72% completion rate. A total of 17 new articles related to the developed questions were retrieved and critically appraised. Approximately 50% of the participants thought the process affected the immediate care of the patient, 75% thought the process would affect care of future similar type patients, and over 90% of the participants thought the process informed them about the disease process in general.
Conclusion: Evidence based attending rounds that is literature based and question driven has the potential to impact the immediate and future care patients.

IMPROVING CLINICAL OUTCOMES WHILE INCREASING RESIDENT INVOLVEMENT IN THE CARE OF HIV OUTPATIENTS. LB Meade, KT Hinchey and AD Lawson. Baystate Medical Center, Tufts University Medical School, Springfield, Massachusetts

Introduction: Care of patients with HIV has shifted from generalist to HIV subspecialist since the advent of combination antiretroviral therapy (ARV TX). This trend presents a challenge to resident education and may not be feasible in many settings. The goal of HIV care is viral suppression; outside of a clinical drug trial, 50% - 65% of patients are achieve this goal. We developed a multidisciplinary HIV team to assist internal medicine residents with HIV care and proposed that this supportive program would improve clinical outcomes.
Methods: In July 1997 we initiated a prospective, historical study at an urban residency clinic with an AIDS case rate of 196/100,000 and the most common transmission category being intravenous drug use (57%). The multidisciplinary HIV team was accessible during clinic hours and consisted of an internist with HIV expertise, an HIV nurse and an HIV case manager. At the onset of the program and then again 16 months later we collected data on the number of HIV patients: 1. offered and educated about ARV TX 2. accepted ARV TX and 3. suppressed on ARV TX with a viral load < 400 copies/mL of RNA by PCR.
Results: Clinical measures were as follows:

*antiretroviral therapy (ARV TX)		offered/educated ARV TX*	accepted ARV TX	suppressed on ARV TX
No HIV team	# patients	46	42	13
n=64	%	72%	66%	31%
With HIV team	# patients	73	47	32
n=89	%	82%	53%	68%
	p value	>0.1	>0.1	<.05

Discussion: Potent combination ART TX was made available outside of a drug trial in January 1996. However, in July 1997, only 31% of HIV patients in this clinic were suppressed on therapy. An on site HIV team allowed residents to continue the primary management of their HIV patients with clinical support from an HIV expert. Residents were able to offer patients thorough HIV education before starting ARV TX. Patients were able to make an informed choice about starting and adhering to therapy. An on site HIV team significantly increased the number of patients with suppressed viral loads on ART TX and allowed for residents to maintain primary management of their HIV patients.

GENERAL INTERNISTS' KNOWLEDGE AND PRACTICE ABOUT WOMEN'S HEALTH ISSUES. RM Mejía, , R Fayanas, M Recondo, E Casal, EJ Pérez-Stable. Programa de Medicina Interna General, Hospital de Clinicas Jose de San Martín, Universidad de Buenos Aires, Argentina and University of California, San Francisco.

Purpose: In Argentina internal medicine training has traditionally not included women's health issues given that this has been the realm of gynecologists. General internal medicine programs have begun to introduce women's health issues to routine clinical care. We assessed the level of knowledge among practicing generalist clinicians from 11 medical centers in 4 regions of the country.

Methods: We distributed 291 surveys to internists affiliated with the medical centers to assess knowledge of topics in women's health (10 point scale) and frequency (always, frequently, occasionally, never) with which 12 specific clinical issues were discussed with their female patients.

Results:. 175 surveys were completed (60% response). 66% were men, average age was 46.4 yr., the average number of patients seen per month was 224, and of these 64.1% were women. The average knowledge score was 4.7 (±1.9) and only 12% of respondents scored ≥ 8. The proportion of physicians who always or frequently discussed specific clinical issues with their patients was: osteoporosis (88%), menopausal symptoms (81%), breast cancer screening (81%), cervical cancer screening (77%), menstrual problems (65%), hormone replacement (50%), STDs (50%), urinary incontinence (49%), vaginitis (46%), birth control (40%), sexual dysfunction (25%), and domestic violence (11%). There were no significant differences in responses between men and women. Only 51% of respondents had some training in women's health and 85% perceived a need for additional training.

Conclusions: There is a perceived need for enhancing internal medicine training in Argentina to include content on common clinical issues relevant to women's health and in physical exam skills for breast and cervical cancer screening. Sexual dysfunction and domestic violence were the two issues least likely to be addressed.

THE JOURNAL CLUB: REPORT OF A SUCCESSFUL FORMAT. VM Montori, JO Ebbert. Mayo Clinic. Rochester, MN

Purpose: To develop a format for a journal club (JC) that would be appealing, self-perpetuating, and practical while training internal medicine residents in critical appraisal skills.

Methods: The organizers choose a clinical question based on an actual patient. The best available literature is selected. This usually represents one or 2 articles of the same type (i.e., therapy). The clinical question and the articles are advertised to the residents through e-mail. The first 18 respondents are invited to attend. The JC is a monthly, resident-run, extracurricular activity held after-hours on a weekday in a local convention room. The meeting starts by describing the clinical scenario. Residents construct a clinical question, select an appropriate literature source and develop an optimal search strategy. Small groups of three follow the User's Guides to the Medical Literature to critically appraise the selected journal article. After reviewing the article, the entire group decides on the article's validity, results and clinical applicability to the patient in the clinical scenario. In the process, concepts of clinical epidemiology and biostatistics are reviewed as needed. A one-sheet meeting-generated critically appraised topic (CAT) is produced and posted on a dedicated web page. Attendants provide feedback using evaluation forms and offer clinical scenarios for future meetings. Organizing responsibility is shared by participating senior medical residents.

Results: The JC was often booked within 1 day of the advertisement. Meeting attendance approached 100%. Forty nine percent of the residents filled out an evaluation form. We report the evaluation data for the first 6 months. Ninety eight percent of the residents rated the educational value of the JC as "very good to excellent." All the participants wished to return. Seventy three percent of the residents reported questioning or changing their practice following the JC meeting while 24% reported that the activity justified their practice. Only 2% reported no practical benefit from participating.

Conclusions: We have established a viable and appealing case-based Journal Club format with perceived excellent educational and practical value.

DIFFERENCES BETWEEN RESIDENT AND STAFF ANTIBIOTIC PRESCRIBING PRACTICES IN A TEACHING CLINIC BA Mincey, MA Parkulo, Department of Internal Medicine, Division of Community Internal Medicine, Mayo Clinic Jacksonville.

Inappropriate use of antibiotics is considered to be a significant factor in the increasing prevalence of resistant organisms. Proper education of residents concerning prescribing during ambulatory training is theoretically very important in establishing a basis for appropriate antibiotic use in the future. We sought to compare the antibiotic prescribing practices of residents and staff physicians, and of residents at different educational levels, to determine if residents prescribe newer, broader-spectrum antibiotics more frequently than staff physicians. Methods: All patient visits for acute sinusitis (identified using ICD-9 codes) in our community internal medicine practice between July 1, 1995 and June 30, 1997, were reviewed. Level of training of the treating physician, antibiotic prescribed, patient allergies, race, and county of residence were recorded. Antibiotics were divided into two groups: older, narrower spectrum, less expensive agents (amoxicillin, 1st-generation cephalosporins, tetracyclines, clindamycin, erythromycin), and newer, broader-spectrum, more expensive agents (newer macrolides, quinolones, 2nd- and 3rd-generation cephalosporins, and amoxicillin/clavulanate). Comparisons of drug group prescribed were made between staff and residents at each level of training. Potentially confounding patient variables, including antibiotic allergies, race, and county of residence were evaluated. Statistical analysis was performed using the chi square test for each comparison. Multivariate logistic regression analysis was also performed using physician subset, and patient age, gender, race, county of residence, and allergy to penicillin or sulfa as possible predictors. Results: First (1st) and second (2nd) year residents as a group were more likely to prescribe narrow-spectrum antibiotics (56%) than third (3rd) year residents (35%) or staff (34%). The difference between 1st and 2nd year residents as a group and staff was statistically significant (p=0.013), as was the difference between 1st and 2nd year residents as a group and 3rd year residents (p=0.046). In the multivariate analysis, the only factors that predicted treatment were physician group and allergy to sulfa.

Conclusions: 1st and 2nd year residents are more likely to prescribe narrow spectrum antibiotics for acute sinusitis than are 3rd year residents or staff in our community-based, outpatient, internal medicine teaching practice. These results are opposite those expected, and indicate a need to further evaluate the teaching of prescribing principles in our program.

EFFECTING MEDICAL RESIDENTS' INTERVIEWING SKILLS: A RANDOMIZED CLINICAL TRIAL, DS Morse, A Nguyen, RW Kouides, JD Cappuccio, General Medicine Unit, Rochester General Hospital, Dept of Medicine, University of Rochester School of Medicine and Dentistry, Rochester, NY

Introduction: Medical residency presents an opportunity to develop skills in the medical interview (MI), integrating biomedical and psychosocial skills. Resident learning is complicated by stress, time, patient population, scheduling problems, and work load.

Objective: We sought to evaluate the effect of an interviewing curriculum on the skills of medical residents in performing a MI in the out-patient medical clinic setting.

Design: The residents were randomized according to clinic day, with all those in 3 clusters randomly assigned to the intervention group and the other 3 assigned to the control group. A sample size of 20 per group was estimated to detect a 20% difference in score between intervention and controls with beta=0.2 and a two-tailed alpha=0.05.

Intervention: The curriculum incorporated videotaping of interviews with small group review and facilitated discussion, including cross-cultural issues, the patient-physician relationship, group members' reflections, and challenging patients. The intervention was performed during clinic conference time, immediately prior to medical clinic, for 20-40 minutes. Residents' prior duties often made them late or miss the conference, or get paged out of it.

Setting/Partiicpants: The resident teaching clinics are in inner city Rochester, NY, with an uninsured and medicaid adult population. There were 38 residents, 1st-4th year level primary care internal medicine or medicine-pediatrics, 18% IMG's.

Main Outcome Measures: Baseline and then 3-9 month videotaped interviews were transcribed and analyzed for control and intervention groups using the Stewart method for assessing patient-centeredness in patient-doctor communication. They also completed a 3 minute demographics questionnaire.

Results:

	Intervention (N=16)	Control (N=22)	P-value
Mean (SD) Baseline Score	47.5 (8.1)	51.1 (9.4)	0.23
Mean (SD) Follow-up Score	53.3 (12.9)	55.1 (12.9)	0.68
Mean (SD) Change in Score	12.6 (8.0)	11.4 (11.2)	0.72
Percent with 20% Improvement	50.0%	37.5%	0.152

Conclusions: The curriculum did not demonstrate an effect on resident interviewing skills. High standard deviation suggests a large amount of variability in resident performance and benefit from the intervention. Significant barriers prevented completing and attending the intervention in the busy resident schedule. Future studies should address whether the current teaching of MI during protected teaching time allows significant change in demonstrated skills.

IMPROVING PHYSICAL EXAMINATION SKILLS OF THIRD YEAR MEDICAL STUDENTS THROUGH BEDSIDE TEACHING BY GENERAL INTERNAL MEDICINE FELLOWS

M Mustafa, M Qureshi, E Caicia, L Copeland, DG Litaker, and M Hewson, Department of General Internal Medicine, Cleveland Clinic Foundation, Cleveland, Ohio.

Introduction: The foundation of medical student clinical training is learning how to take a thorough history and perform a comprehensive physical examination. Medical students complain that they receive inadequate instruction to improve their physical diagnosis skills, however faculty often feel constrained by time to do so. Allowing GIM fellows to teach small student groups clinical skills at the patient's bedside (experiential teaching) is one way to address students' needs. This study seeks to determine whether an 8-hour bedside teaching program led by GIM fellows can improve students'self-assessed skills in performing physical examination.

Methods: 15 components of the physical examination were identified through student interviews. Each bedside teaching session lasted 2 hours and was aimed at teaching medical students the general and systemic physical examination. Each student attended four of these sessions during a clinical clerkship rotation in Medicine. Each group on an average comprised of 5 students. A questionnaire for students' self-assessment of skills in performing physical examination using a 5 point Likert scale (where 1= no skills at all and 5=extremely skilled) was developed. The instrument was administered to 29 third year medical students participating in the bedside teaching sessions conducted by three general internal medicine (GIM) fellows over a 6-month period, before the first session and immediately after the last. Following this intervention, changes in self-assessed skills in performing physical examination was assessed with the Wilcoxon signed ranks test. We compared composite pre- and post-summated rating for all physical examination components as well as individual physical examination components for each student. The threshold for significance was adjusted to .002 to account for multiple comparisons.

Results: The medical students' self-assessed ratings improved significantly from a summated median rating of 46 to 56 ($z=4.71$, $p < .001$). Subsequent data analysis suggested that there was significant ($P < .001$) improvement in the students' perceived skills in performing each of the following components of physical examination: abdomen, chest, consolidation in lungs, heart, head&neck, liver&spleen, jvd, murmur, central and peripheral nervous system, pulse, and rales. Fellows appreciated the opportunity to participate in this program.

Conclusion: A short educational program on physical examination skills taught at the patient's bedside to third year medical students significantly improves students' perceptions of their skills in performing a physical examination. Fellows may also be able to improve their own teaching skills through this program because of continuous feedback by the learners. These data suggest that GIM fellows can effectively provide experiential teaching at the bedside, focused expressly on students' learning needs.

THE ROLE OF FEMALE PHYSICIANS IN ACADEMIC MEDICINE AND BIOMEDICAL RESEARCH, 1979-1997.

Lynn Nonnemaker, Center for the Assessment and Management of Change in Academic Medicine, Association of American Medical Colleges, Washington, DC

Purpose: The purpose of this study is to examine trends in female physicians as full-time faculty members of medical schools and in careers as biomedical researchers.

Study Design: The data come from the AAMC's warehouse of information on medical students and medical school faculty. The warehouse contains data on all graduates from US medical schools, including participation in joint degree programs, career plans, and medical school appointments. The study employs multivariate regression analysis and hypergeometric analysis to test two man hypotheses: 1) that women are under-represented among full-time medical school faculty, and 2) that female physicians are not as interested in research careers as their male counterparts.

Principal findings: Although the proportion of medical school faculty who are women remains well below the proportion of female medical students (26% of faculty vs. 42% of graduates in 1997), women are entering the ranks of faculty at a faster rate than men. A hypergeometric analysis of medical school graduation cohorts shows that women are significantly more likely than men to hold a medical school appointment once out of medical school. From 1979-1997, women were over-represented among graduates with faculty appointments by an average of 3.4 standard deviations. At the same time, however, female medical students were less likely than men to pursue an MD/PhD degree by an average of 5.7 standard deviations. This difference persists even after controlling for differences in undergraduate experiences, test scores and grades, and demographic factors. Much of the difference can be explained by the fact that as a group female medical students express less interest in research careers than their male counterparts (8.6% for women vs. 10.7% for men, a difference of 11.3 standard deviations.)

Conclusions: Women are making good progress in achieving gender balance among medical school faculty, a fact that is often overlooked when data on the gender make-up of medical school faculty are presented. At the same time, however, few women are preparing for careers in biomedical research, in large part because women appear uninterested in research careers. This troubling finding suggests that while medical school populations are approaching gender balance, continued efforts are needed to strengthen the interest of women in careers in biomedical research.

PARACOCCIDIODOMYCOSIS IN PATIENTS WITH AND WITHOUT AIDS

Navarro V, Bertón R , Popescu B. Department of Medicine. Hospital Escuela Corrientes , Argentina

Paracoccidioidomycosis (PC) is the disease caused by the fungus Paracoccidioides brasiliensis, proliferates in areas with moderate temperature and high humidity, from the south of Mexico to north of Argentina.The incidence is higher in males than females ; the alcoholism , smoking , malnutrition and presence the others diseases like Tuberculosis and AIDS increase the incidence

Objectives:1)To describe clinical features of PC in patients with and without AIDS.2) To determine risk factors, diagnosis methodology and treatment given to those patients.

Methods: we reviewed the charts of all patients with PC at Hospital Escuela in Corrientes , Argentina from 1988–1998.

Results:15 patients with PC were treated, their ages ranged from 28 to 64 years old (mean 44.5 ± 10 years); 3 with AIDS and 12 without AIDS. All of them were men coming from the northeast of Argentina. Others risk factors shown in those with AIDS were: AIDS 3, Smoking 1, and Tuberculosis 1. In those without AIDS were smoking 10 patients, alcoholism 8 and finally 2 patients showed none of them. The period between the first visit and the diagnosis was ranged from 1 to 30 days (mean 5.3± 8). The signs and symptoms at the moment the first visit were in men with AIDS: Dyspnea 3 patients , skin lesions 2 patients; in the others: oral ulcers 3 (25%), dyspnea 2 (16.6%), obnubilation 2 (16.6%), mucocutaneous lesions, dysphagy, dysphonia, hyperkaliemic paralysis and weight loss 1 (8.3%) patient each one. The organs involved were in those with AIDS lung 100%, skin 33%, liver 33 %; in men without AIDS mucous membranes 58%, skin 17%, lung 50%, brain 17%, adrenal glands 8.4%. The fungus isolated in patients with AIDS was from sputum 1 patient, the skin 1 patient and during the necropsy of another in the lungs, liver, lymph nodes and spleen. In patients without AIDS by biopsies of the mucous membranes, the larynx, the brain, of 6 patients (50%), by BAL 1 (8.4%), by skin 2 (17%) by nephrectomy 1(8.4%), by serologic tests 2 (17%). Treatment: men with AIDS: amphotericin B 2 patients, 1 patient none. Without AIDS: ketoconazol 3 patients, amphotericin B 3 patients and itraconazole 6. The global mortality was 27%, (4 patients) and 6 patients did not continue with regular treatment

Conclusions: It is important for clinicians to remind and recognize the presence of this pathology in patients with or without AIDS from the endemic areas, considering that it should widespread and became lethal.

FACTORS INFLUENCING RESIDENCY SITE SELECTION: WHAT IS THE ROLE OF PATIENT POPULATION IN MEDICAL STUDENT DECISION MAKING ?

T. P. O'Toole, J. L. Gibbon, J. Harvey, G. E. Switzer. The Center for Research on Health Care, University of Pittsburgh, Pittsburgh, PA

Purpose: To identify factors influencing residency site selection among 4th year medical students (MSIV).

Methods: We administered a survey to all University of Pittsburgh MSIV students prior to ranking residency programs for the 1998 match. The instrument consisted of five parts: demographics; prior experiences and future plans; attitudes towards indigent patients; factors influencing future intent to work with indigent patients; and factors associated with residency site selection. Attitude and factors questions were scored with a bi-directional five point Likert scale of very negative influence (1) to very positive influence (5) and strongly disagree (1) to strongly agree (5).

Results: Overall, 91 of 126 (72.2%) MSIV students completed the survey. The majority was between 25 and 28 years (65.5%), male (56.0%), white (73.6%) and single (73.6%); 14.3% had children, 9.9% reported a post-graduation service obligation (military or public health service), and 11% were participating in the couples match. Most students reported an education debt > $100,000 (57.1%). Equivalent proportions entered primary care fields (family medicine, pediatrics, internal medicine) (48.4%) as specialty fields (48.4%). Overall, 66.0% reported volunteering during their first 2 years and 48.4% during their 3rd and 4th years; 91.2% reported exposure to indigent care within their curriculum. Almost all students planned to spend some portion of their future practice providing indigent care (98.9%); most < 25% of their time (65.9%). Among factors influencing plans to work with indigent patients, only 3 were identified as influential (all encouraging) by a majority of students: sense of professional responsibility (73.6%); physician role models (64.8%); and previous experience with indigent patients (63.8%). Overall, 57.3% of students reported the social mission of the institution and 52.8% the degree of community outreach as positively influencing their residency program selection. While most students did not identify special training in underserved or culturally sensitive care as an influential factor (58.2% neutral influence), 53.9% reported a large indigent population at the institution as a positive influence. Of note, residency programs that served a large percentage of indigent patients, had extensive community outreach, or had well articulated social missions were not adversely affected by these issues among students (7.7%, 2.2% and 0.0% negative influence, respectively). Managed care and the insurance status of patients served at the institution appeared to have neither a positive or negative influence.

Discussion: Social mission and proportion of indigent patient served by a program are important influences for students selecting residency sites. Residency programs that serve indigent patients would do well in their efforts to recruit students by promoting this feature their program.

IS HUMANISTIC QUALITY RATINGS FOR MEDICAL STUDENTS IN OBJECTIVE STRUCTURED CLINICAL EXAMINATION ASSOCIATED WITH ACTUAL PATIENT SATISFACTION IN OUTPATIENT CLINICS? Y Oda, S Yamashiro, H Onishi, T Shimada, S Emura, T Takashima, S Imanaka, S Koizumi, Department of General Internal Medicine, Saga Medical School, Saga, Japan.

Purpose To determine whether faculty humanistic quality ratings for medical students in Objective Structured Clinical Examination (OSCE) are associated with student's OSCE scores and actual patient satisfaction in a university hospital outpatient (general internal medicine) clinic.

Methods: A pilot study was conducted on last(sixth) year medical students in 1998. Humanistic quality were rated by faculty internists during OSCE sessions. Patient satisfaction ratings for students were also obtained in outpatient clinics by using six items from the American Board of Internal Medicine Patient Satisfaction Questionnaire (PSQ). Forty medical students underwent OSCE and were evaluated for humanistic qualities at the same time. They were evaluated by 117 patients through the six items of PSQ in outpatient clinics. Multiple regression analysis was used for this study.

Results: At OSCE, faculty humanistic quality ratings for student were associated with interview skill($p=0.004$), but not with physical examination score and student's gender. However, patient satisfaction ratings were not statistically associated with faculty humanistic quality ratings, other OSCE scores and patients demographic characteristics such as age, sex, occupation and education levels.

Conclusion: Faculty humanistic quality ratings for medical students at OSCE were not significantly associated with patient satisfaction at outpatient clinics. However, there are a few limitations in this pilot study, such that we did not use Standardized Patient rating and the same PSQ at OSCE.

LONG TERM USE OF PATIENT CENTERED INTERVIVIEWING TECHNIQUE AFTER INTENSIVE TRAINING DURING INTERNSHIP. THE PCI PROJECT. J Oh, J Gordon, J Boal, R Segal, A Jotkowitz. Department of Medicine, Long Island Jewish Medical Center, New Hyde Park, NY and Mount Sinai Medical Center, New York, NY

PURPOSE: Intensive training in patient-centered interview (PCI) technique during internship has been shown to improve knowledge and skills in interviewing. However, there are no studies available evaluating long term use of such training. The purpose of this study is to determine how often PGY-3s incorporate PCI techniques into their usual patient encounters.

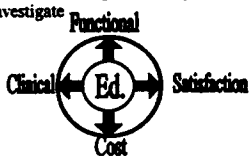
METHODS: Program A internal medicine housestaff were given intensive training in PCI technique in a protected block during their PGY-1 year. Patient-centered interviewing is a technique that focuses initially in the patient needs and physician-patient relationship. Housestaff in program B was not exposed to such training. For this cross-sectional study of use of PCI technique, a confidential survey on actual use of PCI technique was given on 12/98 to all PGY-3 residents at Program A (exposed group) and the control groups (all PGY-1 interns of Program A prior to intervention and a random sample of 14 PGY-3 residents of Program B not exposed to PCI technique). The survey consisted of 40 multiple choice questions on use of different interviewing and physical examination skills (5 related to use of PCI and 35 general questions not related to PCI).

RESULTS: Thirteen (of a total of 14) PGY-3 residents from the intervention group and 13 (of 14) PGY-1s from Program A (control group) and 11 PGY-3s from Program B (the control group) have completed our survey. The intervention group scored better in all five scales (Reflection of Patient's Emotion, Optimizing Setting for Interview, Self-Introduction, Open-Ended Questions and Segment Summary) but statistically significant differences were found only on the first of these. However, the baseline use of these latter three skills was very high in both control groups (PGY-1 s and 3s) not exposed to the intensive PCI training.

CONCLUSIONS: Our study suggests that intensive training at the PGY-1 level results in a sustained high level of use of Reflection of Patient's Emotion skill through the PGY-III year. This study suggests that the most useful part intensive training of PCI technique is the psychosocial component. We do recognize the limitations of using a non-validated instrument. However, the similar results in 2 control groups from different levels and residency programs suggest reliability. Further studies are needed to evaluate the beneficial effects of intensive training in PCI technique after post-graduate training.

UNDERSTANDING THE VALUE ADDED TO CLINICAL CARE BY EDUCATIONAL ACTIVITIES. GS Ogrinc, LA Headrick, and JR Boex. Department of Internal Medicine, MetroHealth Medical Center, CWRU, Cleveland, OH and Northeastern Ohio Universities College of Medicine, Rootstown, OH.

Background: Recently, several studies have demonstrated that clinical medical education may provide higher quality care than care provided in a non-teaching setting. This project sought to develop a conceptual model that will allow systematic examination of the value (quality/cost) of educational activities to clinical care in a way that is understandable to its many stakeholders. Methods: The study was conducted in two parts. In Part One, we conducted semi-structured interviews of nine stakeholders who make decisions regarding the allocation of resources for clinical medical education in a variety of organizations around the country. Then, in Part Two, the results of the interviews and a review of the pertinent literature were presented to an expert panel of investigators. Results: In the opinion of the interviewed stakeholders, educational activities add value to clinical care in the following five ways: (1) the desire to contribute to the future of health care, (2) improved clinician recruitment and retention, (3) improved quality of care, (4) an inexpensive labor force, and (5) improved clinician satisfaction. The expert panel, after considerable discussion and many permutations, agreed on the Value Compass for Education and Clinical Care (VCECC) as a way to portray the value of combined education and clinical care and identified several pertinent perspectives (health care organization, teacher, learner, patient, educational organization, and society). The VCECC consists of a traditional compass with three variables of quality – clinical, functional, satisfaction – at the western, northern, and eastern points, respectively. The southern point is marked by "costs." The outer circle represents the best that can be obtained along each of these four axes. In the center is the "sphere of education" with radiations to each point, symbolizing the influence educational activities have on each point of the compass (see Figure). Discussion: From the perspective of the stakeholders interviewed, educational activities add value to clinical care in multiple ways. The VCECC can be used as a model for a more comprehensive understanding of this added value. Working groups have been formed to investigate each "point" of the compass and have proposed future research to investigate how the value added to clinical care by educational activities can be assessed empirically. Through these efforts, the VCECC will help demonstrate the poorly recognized ways that educational activities can enrich clinical care and be a guide to ensure that value is added to the care provided.



COMPARISON OF INPATIENT CASE-MIX ON INTERNAL MEDICINE RESIDENT SERVICES IN A COMMUNITY HOSPITAL AND A UNIVERSITY HOSPITAL. AK Ojha, J Christiansen, L Kloek, JE Kerr, JG Dolan. University of Rochester, New York

Objective: To determine similarities and differences in the inpatient demographics, length of stay and spectrum of diseases managed by internal medicine residents in teaching services at two sites: a community hospital (Highland Hospital, HH) and an academic-university center (Strong Memorial Hospital, SMH).

Methods: At each hospital, the admitting resident created a patient record using a Microsoft Access 97 database on the day of admission. The record was updated daily, and the discharge data were entered before making the record inactive. Problems were reviewed and ICD-9 (International Classification of Diseases, 9th Revision) codes were assigned to each problem to standardize terminology. Problems were then categorized using the Clinical Classifications for Health Policy Research (CCHPR) diagnosis numbers. Further grouping was done on the basis of a modified version of the ICD-9-CM (Clinical Modification) diagnosis chapters. To ensure identification accuracy of the problems entered by the residents, a random independent review of 40 patient charts/discharge summaries was carried out at each institution (>90% accuracy). Comparisons between the two institutions were made for age, sex, length of stay and active problems.

Results: From July to October 1998, 1339 admissions were entered in the database: 1159 to SMH; 180 to HH. A significant difference was noted in the mean age in years (SMH, 61.03; HH, 70.2; $p=<0.0005$) and sex (SMH, M:F=43:57; HH, 32:68; $p=<0.0005$) of the patients. There was no significant difference in length of stay in days (SMH, 6.11; HH, 5.98). Cardiovascular diseases were the most frequently occurring problems in both hospitals. Cardiovascular diseases, respiratory diseases, neoplasms and genitourinary system diseases constituted the bulk of active problems encountered at both institutions (SMH, 48%; HH, 58%). Significant differences ($p < 0.05$) were noted in the frequency of infectious diseases (5.5% vs. 2.6%), blood disorders (4.1% vs. 2.4%), ischemic heart disease (7.6% vs. 10.7%), other heart diseases (13.3% vs. 8.6%), cerebrovascular disease (3.1% vs. 1.0%) and pneumonia (3.8% vs. 5.9%) at SMH and HH respectively. These differences were also noted when cumulative data from HH (n=1504; Jan-Dec 1997 and Apr-Oct 1998) were compared with the SMH data.

Conclusions: In our study, patients at HH were older, were more often women and more likely to have ischemic heart disease, congestive heart failure, hypertension and genitourinary diseases. Patients at the University hospital were younger, and had a higher frequency of infectious diseases and blood disorders. Inpatient databases can be created from computerized signout sheets that can provide information required to design and evaluate resident inpatient rotations to ensure a comprehensive experience. Resident education may be optimized by including inpatient rotations at multiple sites.

SERVICE AND EDUCATIONAL PRACTICES AT UNIVERSITY AFFILIATED INTERNAL MEDICINE RESIDENCY PROGRAMS. Kym E. Orsetti. University of Michigan, Ann Arbor, MI.

Purpose: The service-education conflict remains a problem for many teaching programs as patient acuity and volume continue to rise. "Formal" educational conferences (e.g. attending rounds, morning report) supplement the learning of practical skills and acquisition of clinical experience that come from patient care activities/service. Yet, attendance at conferences is frequently suboptimal. This survey of service and educational practices among residency programs is the first step in an investigation seeking solutions for re-organization of the residents' workday to enhance their ability to participate in "formal" educational activities.

Methods: A focus group session was held with '97-98 senior residents regarding the service-education conflict on inpatient services. Workdays that are "front-loaded" with several morning educational conferences emerged as a potential source of conflict with patient care activities. A survey was devised and distributed to 80 University affiliated residency program directors to determine the extent to which Internal Medicine residency programs hold all teaching and patient care rounds in the morning. In addition, the survey sought to answer the questions: 1) What is the prevalence of separate, attending teaching rounds that are distinct from patient management rounds with the attending physician? 2) Do attending physicians regularly participate in management/work rounds? 3) Is there a time limitation placed on work rounds with the attending physician? 4) What other formal educational conferences take place, how often, and at what time of day?

Results: 42 of 80 program directors responded to the survey. 81% of programs continue to hold separate, attending teaching rounds that are distinct from management rounds with the attending physician. The majority of attending teaching rounds are held in the morning, occur 3-5 days per week, and last an average of 1.5 hours. Only 3 programs report afternoon attending rounds. 73% of programs also hold work/management rounds with the attending physician, the majority of which also occur in the morning, take place 7days per week and last between 1-3 hours. Slightly less than half the programs place a time limitation on duration of attending work rounds. All programs have a "morning report" conference which occurs in the morning at 95% of the programs. There are a great variety of other formal teaching conferences such as clinical pathologic conferences, chief rounds, noon conference, and grand rounds, the large majority of which take place before 1:00pm.

Conclusion: The majority of teaching programs have a "front-loaded" workday schedule with most formal educational conferences as well as work rounds taking place in the morning hours. Only a small minority of programs hold attending rounds or morning report in the afternoon hours.

A change from this traditional workday schedule should be considered as a potential solution to decrease conflict between house officer participation in patient care activities and teaching conferences.

EXPERIENCES AND ATTITUDES OF INTERNAL MEDICINE RESIDENTS TOWARD MEDICAL INFORMATICS

Eduardo Ortiz, Nancy T. Lombardo, Michael J. Lincoln, Barry M. Stults

Veterans Affairs Medical Center and University of Utah Health Sciences Center Salt Lake City, Utah.

Introduction: The Accreditation Committee on Graduate Medical Education mandated in 1994 that residents in Internal Medicine receive formal instruction in medical informatics (MI). In order to gain better insight on the baseline experience and attitudes of new residents towards MI, we collected survey data in our residency program from 1995 to 1997.

Methods: Questionnaires were distributed to interns beginning their Internal Medicine residency training at the University of Utah in 1995, 1996, and 1997.

Results: Questionnaires were collected from 91 interns for a 97% response rate. All interns (100%) reported using computers, with 48% using them on a weekly or daily basis, 57% having a home computer, 43% having an e-mail account, and 22% using a computerized medical expert system. The most commonly used programs were word processing (99%), e-mail (66%), internet browsers (46%), spreadsheets (44%), finance (25%), presentation (21%), and statistics (19%). Most interns (75%) rated their typing abilities as good to excellent. Almost all interns (98%) searched Medline in the past year, 23% searched other databases, and 66% used them at least several times a month related to patient care. Only 27% of the interns received formal computer training, and 41% received Medline training in medical school.

Most of the interns (98%) rated the use of computers in medicine as important to extremely important, and 100% felt that using computers could improve the quality of patient care. All interns (100%) felt that the use of biomedical literature databases in medicine was important to extremely important. The most important perceived barrier to physician computer use was that computers were not readily available and accessible (29%). The least important was that computers depersonalize medicine and the patient encounter (8%).

50% of interns said that the MI curriculum influenced their choice of a residency program. Of these, 97% said it was a positive influence, with 78% rating it as important to extremely important.

Conclusions: All interns had some experience with computers prior to their residency training. Attitudes about MI were positive, with most interns believing that MI can play an important role in improving the quality of patient care. A substantial gap continues to exist in MI training, as only a minority of interns received any formal instruction in medical school. Medical schools and residency programs should increase their MI training to meet the ever-increasing demands of information management on patient care.

GRADUATE AND POSTGRADUATE PHYSICIAN TRAINING EFFECTS ON KNOWLEDGE OF BLOOD CULTURE USE. JP Parada, GD Schiff, DN Schwartz, HC Aggarwal, R Johnson, KB Weiss. Divisions of General Internal Medicine and Infectious Diseases of Cook County Hospital and the Center for Health Services Research of Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL.

Introduction: Blood culture (BCX) use is often sub-optimal. At teaching hospitals the responsibility for BCX acquisition is heavily dependent on house officers and medical students. Yet little is known about physician training and learning about BCXs. The purpose of this study was to determine how training impacts on knowledge of BCXs.
Methods: We developed A 37-item self-administered survey instrument to assess BCX-related knowledge. Responses from 23 infectious disease specialists were used to establish a reference standard. Of the 37 items, 15 (41%) demonstrated a 95% consensus opinion by infectious diseases specialists and were included in further analysis. The survey was administered to a convenience sample of attendings, house officers and students of a large urban teaching hospital. In an item-by-item analysis of these 15 items, agreement with the reference standard was scored as 1+ and disagreement as 1-. Those items were summed to provide an overall summary score for each subject. ANOVA was used for univariate analysis of the effect of level of training (Attending, Post-Graduate Year (PGY)≥3, PGY2, PGY1, students) and type of training (medicine (Med), emergency medicine (EM), surgery (Surg), family medicine (FM), obstetrics-gynecology (ObGyn), pediatrics (Peds)) on the summary scores. Regression analysis was used to analyze the independent effects of type and level of training.
Results: 269 respondents completed the survey (Attendings=57, PGY>3=35, PGY3=42, PGY2=42, PGY1=41, students= 52). Differences in mean scores were found by level of training (Attending=9.42, ≥PGY3=9.08, PGY2=8.52, PGY1=7.78, students=5.31) [$p<0.001$], and type of training (Med=9.52, EM=8.89, Surg=8.56, FM=7.94, ObGyn=7.32, Peds=7.20) [$p<0.001$]. After controlling for level of training, statistically significant differences persisted for mean scores for Med as compared to ObGyn [$p=0.004$] and Peds [$p=0.017$], while Surg, EM and FM ceased to show significant differences.
Conclusions: Our data suggests that level of training and type of training is related to BCX-related knowledge. Providers most directly involved with ordering and obtaining BCXs (e.g. housestaff and medical students) are the least knowledgeable about their indications and utility. Because BCX use has been shown to be sub-optimal, timely instruction to physicians in training in the appropriate use of BCXs may lead to improvements in BCX utilization.

RELATIONSHIP BETWEEN SELF-REPORTED INSTRUCTION AND BLOOD CULTURE-RELATED KNOWLEDGE. JP Parada, GD Schiff, DN Schwartz, HC AggArwal, R Johnson, KB Weiss. Divisions of General Medicine and Infectious Diseases of Cook County Hospital and the Center for Health Services Research of Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL.

Introduction: Little is known about physicians' knowledge or training in blood culture (BCX) utilization. The purpose of this study was to determine if self-reported instruction in BCX theory and practice predicts overall BCX knowledge.
Methods: We developed a 37-item self-administered questionnaire to assess BCX-related knowledge. Responses from of 23 infectious disease specialists were used to establish a reference standard. Of the 37 items, 15 (41%) demonstrated a 95% consensus of opinion by infectious diseases specialists and were included in further analysis. The survey was administered to a convenience sample of attendings, house officers and students of a large urban teaching hospital. Item-by-item analysis of these 15 items, agreement with the reference standard was scored as 1+ and disagreement as 1-. Items were summed for an overall summary score for each subject. ANOVA was used for univariate analysis of the effect of perceived, or self-reported, instruction (none, little, or some/much) in both practical and theoretical BCX-related knowledge on summary scores. Linear regression was used for analyzing independent effects of instruction and level of training.
Results: 269 respondents completed the survey (Attendings=57, Post-Graduate Year (PGY)>3=35, PGY3=42, PGY2=42, PGY1=41, students=52). Differences in mean knowledge scores were found for both reported practical BCX instruction (none=6.64, little=8.37, some/much=8.64) [$p<0.004$], and theoretical BCX instruction (none=7.00, little=8.33, some/much=8.64) [$p<0.027$]. Multivariate analysis revealed no significant difference in mean knowledge scores by reported instruction at higher levels of training (PGY2 and above). However, statistically significant differences in mean scores persisted for students by practical BCX instruction [$p=0.038$] and interns by theoretical BCX instruction [$p=0.021$].
Conclusions: Our data suggests self-reported instruction in practical and theoretical BCX-related knowledge is related to overall BCX-related knowledge. At the higher levels of training, effects of reported BCX-related instruction on summary scores is also closely related to level of physician training. At the lower training levels, perceived BCX instruction may be a reliable independent measure of overall BCX knowledge. If so, queries about perceived BCX instruction may help identify trainees who may benefit from additional education in BCX use.

MEDICAL STUDENTS' FIRST IMPRESSIONS OF HOSPITAL HUMOR

Genevieve Noone Parsons and Peter A. Ubel; University of Pennsylvania, Philadelphia, PA.

Background: House staff physicians frequently use humor and slang at the expense of patients on the clinical wards. Our study examines how medical students respond to this humor, and how it affects their development into physicians.

Methods: We conducted semi-structured, in-depth interviews with 33 medical students to look at how students understand and respond to derogatory humor and slang, and to learn how these behaviors effect and influence students during their transformation into physicians.

Results: Students' descriptions of the humorous stories and their responses reveal how students come to terms with humor and slang at the patient's expense as they move from outsiders to insiders in the medical culture. In the first phase of this transition, students are still outsiders; their perceptions of the humorous stories reveal their outsider status, and their responses to these stories show identification with patients and reinforce their position outside of the medical culture. In the second phase, students begin to see like insiders, in that they identify with residents' frustrations and disappointments, and therefore understand why residents use this kind of humor. In the third phase, students become insiders and begin to participate in the humor and slang, although often with reservations.

Conclusions: As students become cultural insiders, coming to terms with derogatory humor and slang can be difficult and painful.

BECOMING MORE LEARNER-CENTERED IN MEDICAL EDUCATION. SO Pinheiro, BD Friedman, KV Busch, K. Dobbs, E. Johnson. Michigan State University College of Osteopathic Medicine, E. Lansing , MI.

Purpose: Medical education has traditionally used a pedagogical/teacher-centered approach to teaching. Emphasis has been given to lecture as the main method of disseminating knowledge. Current societal advances in information technology have seen the role of teacher and learner change where the learner is more self-directed. This has necessitated a change in the teacher's role to one of facilitating learning or to become learner focused. Faculty Development is a tool in the process of assisting medical educators make the transition from teacher-centered to learner-centered approach of teaching. MSU College of Osteopathic Medicine has a year-long part time faculty development fellowship program to assist community-based faculty with this educational transition.

Methods: To enhance the educational skills of community-based faculty, ten full-day workshops were presented throughout the calendar year embedded in concepts of adult learning. Faculty were provided with a variety of teaching concepts such as: Andragogy, development of goals and objectives, presentation skills, small group facilitation, CAI, questions skills and others. In between each monthly session faculty development specialists individually mentor faculty at his/her home site. Through application of the concepts, guided reflection, and observation, the specialists assist the faculty member in the transition to a learner-centered teaching approach.

Results: Using the Conti's (1990) "Principles of Adult Learning Scale" (PALS), pre-and post-fellowship mean difference scores improved significantly (mean diff. =6.57, $p<.05$).

Conclusion: The community-based faculty development experience has been positive for the faculty members, the medical learners, and the host institutions. Faculty members have improved their teaching skills and have become more learner-centered in their approach to teaching. They have also reported to be more confident on their role as educators and have been able to teach these skills to other faculty in their institutions.

CHANGES IN THE CULTURE FOR PRIMARY CARE. AS Peters, SR Simon, AM Sullivan, NA Zotov, MT Connelly, SD Block. Department of Ambulatory Care & Prevention, Harvard Medical School and Harvard Pilgrim Health Care; Department of Psychiatry, Brigham and Women's Hospital (SDB), Boston, MA.

Purpose: To explore changes in the culture for primary care in academic health centers and, in the context of secular change, to evaluate the effect of the Generalist Physician Initiative (GPI).

Methods: National probability samples of clinical faculty, residents, and fourth-year medical students responded to confidential telephone surveys in 1993 and 1997 (n=1694 and n=1441, 84% and 80% response rates, respectively). We oversampled GPI schools where program reforms to enhance primary care training were implemented. Cultural indices included attitudes toward the clinical, research, and teaching competence of primary care physicians; faculty reports of encouragement of students and residents to choose primary care careers; and students' and residents' reports of being encouraged to choose primary care careers, and their exposure to primary care during training. To explore differences over time and between GPI and non-GPI academic health centers, we fit a series of logistic regression models for dichotomous and ordinal outcomes, and multiple linear regression models for continuous outcomes.

Results: Secular change in some attitudes and behaviors toward primary care occurred between 1993 and 1997. While most groups' attitudes did not change significantly and remained negative, residents held more positive views toward primary care physicians' clinical competence in 1997, with 15.2% expressing positive attitudes compared with 7.2% in 1993 ($p<.01$). Compared with faculty in 1993, more faculty in 1997 (42.3% vs. 35.3%, $p<.05$) rated the research of primary care physicians as good as or better than that of specialists. More faculty in 1997 reported encouraging students and residents to enter primary care than in 1993 (46.0% vs. 37.5%, $p<.01$). More students reported being encouraged to choose primary care by faculty (64.6% in 1997 vs. 52.7% in 1993, $p<.05$) and by housestaff (34.0% vs. 24.3%, $p<.05$). More residents reported encouragement by peers (29.6% vs. 23.1%, $p<.05$). Greater proportions of residents reported training in ambulatory sites (40.1% vs. 34.6%, $p<.01$); and more students trained with primary care faculty in 1997 than in 1993 (52.9% vs. 37.5%, $p<.01$). Changes in GPI schools followed secular trends except that, over time, the increase in ambulatory care training was greater than in other schools (42.0% vs. 28.7% in GPI; 39.6% vs. 34.2% in other schools, $p<.01$).

Conclusions: There has been observable change in the culture for primary care in US academic health centers. From 1993 to 1997 some – but not all – attitudes and behaviors became more positive toward primary care. Reported behaviors changed more than attitudes. Schools that focused on primary care curricular reform differed from others only in terms of program change.

TECHNOLOGY AND THE PHYSICAL EXAMINATION: USE OF PAGERS TO TEST VIBRATION SENSE. AV Prochazka, Denver VA and University of Colorado Health Sciences Center, Denver, CO.

Context: Impairments of vibratory sense often reflect posterior column disorders. Traditionally, tuning forks of 128 or 256 Hz are used to test for this. Having observed a resident use the vibration mode of a pager to test vibratory sense, I wondered how frequently this new technology was in use for this purpose.

Objective: To assess the prevalence and frequency of use of pagers to test for vibration sense.

Methods: A self-administered, anonymous survey was distributed at both inpatient and outpatient morning report and to Ambulatory Care staff at the Denver VA Medical Center.

Results: A total of 51 responses have been received thus far, including 17% from medical students (9/51), 20% interns (10/51), 44% (22/51) residents, 16% (8/51) attendings and 4% (2/51) nurse practitioners. Nearly all respondents carried pagers 96% (49/51). Half (51% (26/51)) of subjects reported using something other than a tuning fork to test vibratory sense. Of these all used the vibratory mode of a pager except for one respondent who used a monofilament. . None of the medical students reported ever using a pager, 75% (24/32) residents have used it at least sometimes. Only 25% (2/8) attendings used this modality and none of the nurse practioners (0/2) ever used a pager. This difference is highly significant with 75% of residents using pagers at least occasionally compared with only 11% of non-residents ($p=0.0001$). Nearly 20% (10/51) of respondents used a pager either often or always when testing vibratory sense. There was no apparent gradient among the residents with 70% (7/10) of interns, 80% (12/15) of R2's and 71% (5/7) of R3's and R4's reporting use of a pager for vibratory testing. There was some diversity in the type of tuning fork used by respondents with 43% (20/47) using a 256 Hz fork, 36% (17/47) a 128 Hz fork and 17% (8/47) not knowing which fork they used. The pager most commonly used in our program has a frequency of vibration of 91 Hz.

Conclusions: Pagers are commonly used for vibratory testing despite a lack of data on their reliability and accuracy for identification of sensory loss. The ubiquitous availability of pagers makes them attractive for testing, however, it is not known whether they are an adequate tool since their vibration does not decay, is applied over a wider area than the base of tuning fork, and may lessen in intensity with increased battery age. The use of pagers for vibratory testing is concentrated among residents, whether this represents a transient adaptation to the rigors of residency or a behavior that will continue once in practice remains to be determined.

EVALUATION OF "DOCTORING" - A COURSE IN PERSONAL & PROFESSIONAL DEVELOPMENT FOR PRIMARY CARE INTERNS. MW Rabow, Division of General Internal Medicine, UC San Francisco, San Francisco, CA.

Background: The literature suggests that, by enhancing personal awareness, physicians might improve professional effectiveness and personal satisfaction. In 1997-98, the 26 interns in the 3 UCSF Primary Care Internal Medicine programs participated in the "Doctoring" seminar - a course designed to encourage personal reflection and the sharing of meaningful experiences in medical training and practice.

Purpose: An evaluation of the acceptability, importance, and effectiveness of the Doctoring seminar.

Topics: Physician identity, physician well-being, burnout, death and dying, diversity and family of origin, advance directives, the patient-physician relationship, and the definition of health and healing.

Methods: Attendance at the weekly seminar was required of Primary Care interns during the 2 or 3 months they were on outpatient rotations. Each seminar session included between 3 and 8 interns at a time and each intern was able to attend between 8 and 12 sessions. The seminar format consisted of a confidential 3-hour period of discussion and directed, self-reflective activities facilitated by a faculty physician, senior resident, nurse, or clinical artist. The methods used included writing exercises; literature, poetry, and film critique; silent meditation; and art experientials using drawing, collage, and mask-making.

Evaluation: Participating interns completed one or more confidential questionnaires assessing the quality, acceptability, importance, and effectiveness of the seminar. 28 evaluations were obtained with least one evaluation from 22 of 26 interns. All respondents rated the Doctoring seminar positively and felt comfortable in it. Notable comments included "It helped me reaffirm why I was here," "It made me feel whole again," and "It helps us not to lose sight of the importance of compassion in medicine." All respondents felt that the seminar was an important part of their training, with a number reporting the seminar to be "very valuable," "extremely vital," "invaluable," or "of utmost importance." 14 of 22 interns reported positive changes in their personal or professional life as a result of the Doctoring seminar. 2 interns said they had an intention to make personal or professional changes. There were no reports of negative consequences as a result of course participation.

Conclusion: A course promoting facilitated personal reflection for Primary Care interns was well-received, considered important, and led to positive personal and professional development.

CAREER DECISIONS OF UNACCEPTED MEDICAL SCHOOL APPLICANTS: FINDINGS FROM A NATIONAL STUDY. SS Rathore, M Adams, BP Linas, WL Colquitt, CD Killian, CM Bazell, JM Eisenberg, Department of Medicine, Georgetown University Medical Center and Association of American Medical Colleges, Washington, DC and US Bureau of Health Professions, Rockville, MD.

Rejected medical school applicants represent a potential resource to the health care workforce. However, the career paths of this group after rejection are unknown. We mailed a self-administered questionnaire to 3,000 randomly selected applicants, stratified by sex and ethnic group, who had not been accepted to a US allopathic medical school in 1990-91 in order to determine their career paths after initial rejection. We received 591 responses; 40 subjects were disqualified; 34 withdrew and 630 surveys were returned due to incorrect addresses. The response rate from those for whom the address was correct was 26%. Respondents were primarily female (59.2%), non-minority status (49.4%) and 24.8 years old at time application on average.

Two hundred and fifty six respondents (43.3%) reapplied at least once after initial rejection; 66 respondents (11.3%) reapplied twice or more. Reapplication decision was independent of race, gender, academic performance (GPA and MCAT scores), academic background, personal debt, perceived cost of reapplication, hometown population, interest in primary care or willingness to practice in an underserved area. Reapplicants, however, were younger at time of initial application (24.1 yrs v 25.3 yrs, $p<0.001$), had a higher family income (82.4% v 75.5% above $25,000, $p=0.01$) and believed they had been unfairly rejected (50.2% v 39.9%, $p=0.022$).

A majority of respondents were employed in health care or health care related fields. While 240 respondents (40.6%) were later accepted to a medical program (137 allopathic, 71 osteopathic, 32 foreign), another 167 (28.3%) were employed in health care related fields. Of those not accepted, 199 (56.7%) planned on obtaining other graduate education; 90 (25.6%) planned on reapplying.

We conclude that there is significant reapplication by initially rejected medical school applicants. Further, a majority of unsuccessful applicants remain in health care and health care-related fields, suggesting that the workforce of physicians and other health professionals is shaped not only by the decision to apply to medical school, but also to reapply.

WHITHER BEDSIDE TEACHING. S Ramani, JD Orlander, L Strunin & TW Barber, Boston University School of Medicine / School of Public Health, Boston, MA.

Previous reports document diminishing time spent on bedside teaching (BT), with more time spent away from patients in conference rooms and corridors.

Aims: We sought to understand why this decline was occurring in internal medicine (IM) training, by soliciting views from different groups of teachers. Specifically, we wanted to elicit a definition, determine appropriate teaching strategies, perceived benefits and barriers to BT in order to determine ways to increase and improve teaching at the bedside.

Methods: We used focus group interviews of clinical teachers in our large IM training program. The 4 groups consisted of: (1) medical chief residents (n=6), (2) residency program directors (n=6), (3) core medicine faculty selected from a list of skilled bedside teachers generated by resident surveys (n=5), and (4) a convenience group of other faculty (n=5). We audiotaped, transcribed and then analyzed the 60-90 minutes sessions using qualitative methods.

Results: Overall, there was consensus on definition and perceived benefits of BT. Our most significant findings related to barriers to BT. Major Themes included: (1) **Lack of role-models**: All groups felt that BT skills had declined among faculty and they blamed it partly on the decreasing numbers of teaching role-models and the lack of emphasis on such teaching. (2) **Teaching undervalued**: Our groups uniformly felt that teaching was not valued sufficiently in current academic medicine with few rewards or incentives for teachers. Our skilled teachers felt that the bedside teaching ethic has been eroded in modern day medicine and it is vital to reestablish this ethic. (3) **Aura**: The most interesting barrier in our data was a concept, which we label, " the aura of the bedside teacher". This concept relates to the perception that skilled bedside teachers should possess an incredible degree of diagnostic skill, which is out of reach of most clinical teachers. This aura leads to intense performance pressure, thereby causing teachers to avoid the bedside to escape embarrassment. Our skilled group of faculty, however, debunked this myth. They felt that the only way to alleviate this pressure and discomfort is to do more BT and get familiar with such teaching by practice alone. (4) **Additional barriers** emphasized by our groups include: teacher discomfort due to inexperience or lack of confidence, lack of control of the teaching session, and perceived patient discomfort.

Conclusion: Bedside teaching is unanimously regarded as a highly valuable teaching tool in clinical medicine and yet time allotted by clinical teachers for BTis declining. Many barriers may adversely affect the time spent as well as the quality of bedside rounds. Our clinical teachers validated many concepts previously discussed in the medical literature and also identified new barriers, reflecting training and attitudinal issues. Faculty development which addresses both skills training and attitudes may be effective in reinculcating BT skills and help take medical teaching back to the bedside.

PHYSICIANS' ATTITUDES AND KNOWLEDGE ABOUT DRUG COSTS. S. Reichert, T. Simon, E. Halm. Departments of Medicine and Health Policy. Mount Sinai School of Medicine, New York, NY, Englewood Hospital, Englewood, NJ

Purpose: Escalating drug costs are one of the fastest growing proportion of medical care. Small studies suggest that physicians' knowledge of drug cost is poor. We sought to determine physicians' attitudes about drug costs and knowledge of the cost of 33 commonly used drugs costs in primary care. We distributed a self-administered written survey to all internal medicine houseofficers (HO) and general medicine attending physicians in a university teaching hospital. Physicians (MDs) estimated average wholesale price for 30 day supply of drugs using 5 prespecified cost categories.

Results: We received completed surveys for 134/188 physicians (71% response rate). Among respondents, 30% were attendings and 70% HO (22% PG-1, 21% PG-2, 27% PG-3). Attendings had a mean 14 years in practice. Overall, 88% of MDs felt cost was important when choosing drugs, and 71% were willing to sacrifice some degree of efficacy to make a drug more affordable to the patient (Pt). Only 8% of MDs preferred brand name drugs. However, 80% often felt unaware of actual costs, only 33% had easy access to cost information, and only 13% had any formal education on the topic. Fewer than 16% of MDs reported asking Pts about the costs of medicines to them. Sources MDs used to obtain drug cost data were: The Medical Letter (65%), other MDs (52%), Pts (45%), pharmacists (41%), drug representatives (25%), and ads (17%). Patient's insurance status influenced attitudes as 94% of MDs strongly considered the cost of drugs when Pts were self-pay, 68% when Pts had Medicare, and 30% when Pts had Medicaid or were in an HMO. Of the 33 drugs surveyed, the cost of 40% were underestimated, 45% rated correctly, and 15% overestimated. Respondents correctly estimated the cost of nearly all (90%) generic drugs, but only half (56%) the brand name ones. Almost all (91%) expensive drugs (>$50/mo) were underestimated, while inexpensive ones (<$30/mo) were judged accurately (80%). Overall, HO were 2.3 times as likely to underestimate drug costs as attendings (95% CI, 1.0-5.2) and 3.4 times more likely to feel unaware of drug costs (CI, 1.5-7.8). Housestaff were less likely to consider the cost of drugs for Medicare Pts (OR=0.3, CI, 0.1-0.8). The HOs also made less use of the Medical Letter (OR=0.4, CI, 0.2-1.0) or pharmacists (OR=0.3, 0.1-0.6) for cost information.

Conclusion: Most MD's felt that the cost of drugs was important to decision making. However, knowledge of brand name and expensive drugs was poor. Few MDs have been educated about cost or have access to resources. Many MDs did not appear to understand that Medicare does not pay for medications. Attendings were more cost conscious and more knowledgeable then residents. We have developed an educational intervention to address these shortcomings that include formal didactic sessions and a pocket guide containing cost information on 100 commonly used drugs in primary care.

BE A PLAYER OR BE A VICTIM: DESCRIPTION AND EVALUATION OF A HEALTH POLICY CURRICULUM FOR PRIMARY CARE RESIDENTS. SB Rein, A Reisman, F Gany, M Lipkin, Division of Primary Care, NYU Medical Center, Department of Medicine, New York, NY, Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD.

As residents graduate, they enter a rapidly evolving health care system undergoing complex changes. Therefore residents, especially those working with the underserved, need to understand the vocabulary, institutions, economics, players, and methods of effective action in health policy and economics. The Division of Primary Care at NYU Medical Center began an 8-week course on health policy to third year residents in 1987 to enable participants to understand and advocate about policy decisions at the local, state and federal levels. The course leaders and those most central in running systems and affecting policy, including politicians, clinic, HMO, and hospital administrators, lobbyists, lawyers, and journalists, and others with expertise on topical issues, conduct three to five 2-hour seminars each week. Residents also choose two to three themes to research, prepare position papers on, and eventually present on trips to Albany and Washington D.C. To assess the long-term impact of the first ten years of the course, an anonymous survey was mailed up to three times to all graduates (40), yielding a 48% response rate. The course usefulness and its individual components were evaluated on a 4 point Likert scale. Open-ended questions allowed additional comment. Respondents agreed that the course was a valuable use of time (74%); as a result of the course they are better prepared to understand changes in the health care system (74%), and the course demystified the world of health policy (74%). Some felt better able to influence the health care system (53%) and to advocate for the profession (53%), for themselves (47%) and for patients (37%) because of the course. Sessions on managed care, Medicaid, Medicare and insurance were most frequently rated very useful or somewhat useful (74%). The field trip to Albany (58%) and the sessions on International Health (54%) were most frequently rated not useful or a poor use of time. 58% felt residency was the optimal time during training to learn about health policy, 42% felt that medical school was more appropriate.

In conclusion, an eight-week course in health policy during residency was useful to the majority of responding graduates through improved understanding, demystification, and enhanced ability to be players rather than victims in the changing world of health policy. This course may stimulate other post-graduate training programs and medical schools to prepare their graduates for the complex practice world that lies ahead.

THE "MOCK EPIDEMIC OF HAMPTON ROADS": A MODEL COLLABORATION BETWEEN MEDICINE AND PUBLIC HEALTH. P Preston Reynolds, D Dickinson, C Chun, N Welch. Johns Hopkins University and Eastern Virginia Medical School. Baltimore, MD, and Norfolk, VA

Medicine and public health, while separate disciplines with distinct education curricula and graduate schools, contribute vitally to the nation's health. Educators of both disciplines are calling for more instruction in public health in undergraduate and graduate medical curricula. This study describes a successful innovation, "The Mock Epidemic of Hampton Roads" designed to teach principles of public health using experiential education and problem-based learning methodologies.

The six learning principles of the "Mock Epidemic" are to: 1) solve health-related problems by working as part of a team; 2) practice skills in epidemiologic investigation, history taking, and the organization and presentation of data; 3) experience the relevance of epidemiology to a real practice situation; 4) learn about common-source epidemics, hygiene, and related concepts; 5) practice communication skills with health subjects in a community setting; and 6) interact with role models for community-based primary care. Health department staff work with medical school faculty to identify a common organism that will be the cause of the mock epidemic. The team then writes the scenarios, recruits volunteers, trains actors, and on the day of the "Mock Epidemic" serves as faculty for the second year medical students at Eastern Virginia Medical School (EVMS).

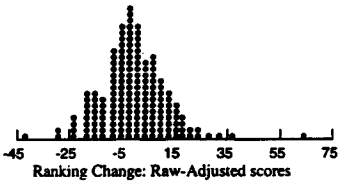
EVMS medical student qualitative and quantitative evaluations of this active learning program for the two years 1996 and 1997 prove the value of this collaboration between medicine and public health.

ADJUSTED VS UNADJUSTED SCORES FOR NATIONAL RESIDENCY MATCHING PROGRAM (NRMP) RANKING: IT MATTERS WHO YOU INTERVIEW WITH. Roberts, MS. Internal Medicine Residency Program, UPMC *Shadyside*, Department of Medicine and the Center for Research on Health Care, University of Pittsburgh School of Medicine

Purpose: Residency programs use interviews as one measure of the qualifications of applicants. Because of inter-rater differences, some applicants may be paired with interviewers who systematically rate with higher or lower scores than others. In our program, interviewers provide a composite score based on the interview, application and scores. The average interviewer score forms the basis of the initial rank-list, from which group discussion determines final rank. Assignment is not random, but there is no systematic pairing of interviewer to candidate types. We examined the effect of using raw vs adjusted rankings on the initial and final position in the NRMP rank list.

Methods: During 1993-94, interview data indicated that significant variation existed by interviewer. Over the next 4-year period, average scores of reviewers who rated more than 10 applicants ranged from as low as 6.2 to 8.4 on a 10-point scale. This 2.2 point raw score difference would change the initial position on the rank list by about 35 positions. After 1996, we adjusted scores by each interviewer's mean and standard deviation (assigning each applicant an average Z-score): this score forms the initial rank list. We examined the magnitude by which using raw vs adjusted ranks would change initial ranks, and compared this magnitude to the average change in rank that occurred after group discussion between the initial and final rank list.

Results: Initial rank lists ordered by adjusted score and unadjusted score differed substantially. Initial placement on the rank list changed by an average magnitude of 8.8 (range –42 to +64), on a rank list of fewer than 100 applicants. Moreover, the change in initial ranking as a consequence of using adjusted scores moved applicants on average a greater magnitude that did the adjustments made by group discussion in the final ranking meeting, a difference that approached statistical significance. (p=0.07). More importantly, for several applicants, the magnitude of movement had the ability to change the ranking of the applicant beyond our rank-list acceptance threshold.



Ranking Change: Raw-Adjusted scores

Conclusions: Individual interviewers have idiosyncratic scoring styles that may affect the scores given to applicants during interviews. Adjusting these scores to a common mean and variance mitigates the effect of inter-rater differences, and minimizes the impact of an applicant being assigned to a particularly "tough" or "easy" interviewer.

A PORCINE MODEL TO TEACH SKIN BIOPSY PROCEDURES IN AN INTERNAL MEDICINE RESIDENCY, Theresa Rohr-Kirchgraber, MD, SUNY-HSC @ Syracuse, Department of Medicine, Division of General Medicine, Educational Programs Office.

Internists routinely examine the skin. However, skin biopsies are infrequently performed by Internists in part because of a lack of training in the technique. To encourage such procedural learning during residency, we devised a program to integrate skin biopsy into the required Ambulatory Care Block (ACB) curriculum.

Objective: To develop an interactive method to train Internal Medicine residents in the essentials of skin biopsy techniques.

Participants: 21 second year IM residents assigned to a 4 week rotation in the Ambulatory Care Block (ACB) from July 1997 to June 1998 participated.

Methods: Residents were assigned reading material about the techniques of skin biopsy and then attended an hour long small group session with two faculty members (one from Dermatology and the other from General Medicine). The faculty had hands on practice sessions using pigs' feet for the procedures. The residents were instructed in punch, shave, and excisional biopsy procedures; suturing techniques; and wound care. Skin tag, small lesions, and wart removal were also discussed

Evaluation: The residents were asked to evaluate the session at the end of the rotation and comment on the usefulness of this procedure in their continuity clinic practice. The evaluation return rate was 63%. A Likert scale of 1 - 9 with 1 being least desirable was used. The range was 5 - 9 and the average score was an 8.6.

Discussion: The faculty felt uneasy instructing residents in this procedure since patients were aware that the residents were not proficient. Correcting and instructing the resident during supervision of the procedure made both the patient and the resident uncomfortable. We have been able to combine a written description of how to do procedures with actual hands on sessions that allowed the residents to be more confident in their skills. Hands on practice session with a porcine model allowed the learners to ask questions and learn new skills without the concern for patient well being. We hope that the broad acceptance of this model by our residents may spur an expansion to other training programs that would complement a Dermatology elective or to be used as a proxy.

INFLUENCE OF CHARGE DATA AND GROUP PROCESS ON CLINICAL DECISION-MAKING. DW Rudy, M Ramsbottom-Lucier, J Georgeson, and JF Wilson, Department of Medicine, University of Kentucky, Lexington, KY.

Purpose: We developed an interactive case-based workshop to teach residents principles of cost-effective medicine. We hypothesized that providing charge data to residents would influence their test-ordering behavior and that group decision-making would differ than that of individuals.

Methods: The participants, 23 Internal Medicine residents, attended a one-day workshop. The case-based presentation consisted of a 17 year-old with accelerated hypertension. After presentation of the history and physical examination, a menu of diagnostic and therapeutic options were presented to the residents. Groups of residents were then either provided with no charge data, charges before or after test ordering. After individuals gave their choices, group consensus was reached. Outcome variables were total charges and an expert-generated index of optimal test ordering. The effects of level of charge information and group discussion were analyzed with planned contrast in a multiple regression analysis.

Results: Individuals receiving charge data either before ($1,341) or after ($1,281) selecting a test ordered evaluations which were less costly than individuals not receiving any charge information ($2,223, p=0.04), as well as higher optimal test scores (p=0.02). After discussion, the effect of group consensus on test ordering was examined. Group decisions ($2,524) on test ordering resulted in higher total charges than individuals ($1,661, p=0.001) and a less optimal test score (p = 0.02).

Discussion: A brief intervention with availability of charge data resulted in less costly, more optimal test ordering for one complex case. In addition, group discussion resulted in more costly and less optimal test ordering than individual decisions. Future research should focus on group decision-making processes in a wide variety of clinical scenarios.

EFFECTS OF THE HCFA E&M GUIDELINES ON INPATIENT TEACHING. AM Schleyer, H Kelly-Hedrick, DM Martin, SD Fihn. University of Washington and VA Puget Sound Health Care System, Seattle WA.

Objective: In July, 1996, the Health Care Financing Administration (HCFA) introduced Medicare's Final Rule for Teaching Physicians mandating increased levels of supervision of trainees and documentation by attending physicians. We assessed the effects of these guidelines on inpatient teaching.

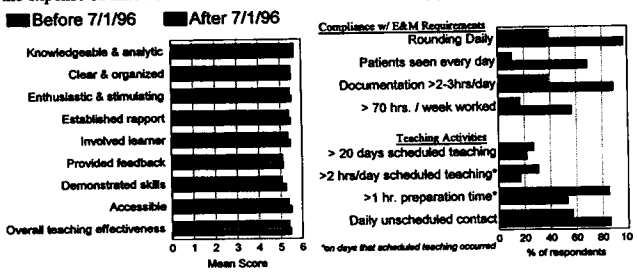
Setting: A university medical center and an affiliated county hospital where the guidelines were implemented and at an affiliated VA medical center where they were not.

Participants: 67 full-time faculty who attended on the general medical wards for ≥1 month for 2 of 3 consecutive years prior to and 18 months after July 1, 1996 when the guidelines became effective.

Study Design: Retrospective cohort study comparing standard teaching evaluations that were routinely completed by residents and students before and after 7/1/96 for attendings at all 3 sites. We also surveyed University and county hospital attendings about their perceptions of inpatient teaching activities and effectiveness before and after 7/1/96.

Results: Comparing 835 teaching evaluations completed before 7/1/96 and 526 completed after, there were no significant differences at any of the 3 hospitals on any of the 9 items assessed (left figure). There were also no significant differences between the university and county hospitals vs. the VA. 88% of 41 university and county attendings returned surveys. They reported highly significant increases in time devoted to attending responsibilities and diminished time spent on teaching activities (right figure).

Conclusions: Physicians reported a dramatic increase in overall time spent attending along with a modest decrease in time spent teaching. Yet, evaluations of their teaching effectiveness did not change. In all likelihood, teaching effectiveness was maintained at the expense of time devoted to all other endeavors including personal activities.



EFFECT OF A THIRD-YEAR AMBULATORY BLOCK ON STUDENT PERFORMANCE ON THE INTERNAL MEDICINE SUBJECT EXAMINATION Henry Sakowski, EC Rich, P Turner, Department of Medicine, Creighton University School of Medicine, Omaha, NE

In 1997, Creighton University implemented an Ambulatory Internal Medicine (IM) experience as part of a combined Primary Care Clerkship (PCC) utilizing the efforts of the Internal Medicine (IM) and Family Practice (FP) departments. Students were given the National Board of Medical Examiners (NBME) Internal Medicine Subject Examination (IMSE) after they had completed both the core Internal Medicine clerkship (IMC) and the IM portion of the PCC. We evaluated whether the addition of an ambulatory Internal Medicine improved IMSE scores. We also evaluated whether the order in which the PCC occurred during the academic year effected students' performance on the IMSE. Using multiple regression, we compared IMSE scores of students from the 1996-97 class (without the PCC) and the 1997-98 class (with the PCC) controlling for student age, ethnicity, MCAT scores, and date the test was taken,. A similar analysis was conducted for the order in which the clerkship occurred for the 1997-98 class. Our analysis determined that the introduction of PCC was significantly associated with improved subject exam scores (B=1.89, p=.049). The order of clerkships had no influence on subsequent IMSE scores (B=.134, p=.937). Also we noted that in 1996-97 (with no PCC) taking IMC later in the academic year was significantly associated with IMSE scores (t=2.23, p=.03), but this was not found in the 1997-98 after the introduction of PCC (t=.33, p=.74). Our results confirm that an ambulatory IM experience in addition to IMC. The order in which these experiences occurred in the academic year, does not influence IMSE performance. However, clerkship directors need to consider these results in designing equitable evaluations for third-year clerkships in IM and PC.

DOMESTIC VIOLENCE SCREENING: CAN A BRIEF EDUCATIONAL INTERVENTION CHANGE BEHAVIOR? J Schuur, LJ Capponi, Division of Primary Care, Department of Medicine, New York Univ. School of Medicine, New York, NY.

Background: Domestic violence (DV) screening in primary care clinics is frequently recommended, but rarely done. We examined whether a brief clinic-based education program could change residents' behavior.

Methods: Patients in an urban community-based internal medicine clinic were interviewed after they saw resident physicians, to determine the prevalence of DV and to assess if the residents had screened for DV. During July and August 1998, one investigator (JS) interviewed sequential patients about smoking, DV and exercise. For each issue, the question to determine prevalence was followed by a question to assess if screening had occurred. Some patients were missed due to overlap of release times. Midway through the study period, the residents received a brief, two session, DV educational program directly before seeing patients. The first session consisted of a DV quiz, followed by a question and answer period. The second session was a 15 minute, interactive role-playing exercise addressing how to ask about, document and address DV. Residents were requested to screen all new patients (anyone who had not been seen in six months or more) for DV. Pre and post-intervention DV screening rates were compared using chi-square analysis and Fisher's exact test.

Results: There was no significant change in screening rates of all patients, all new patients, or new female patients (see table).

Group	Pre Ed Screen Rate	Post Ed Screen Rate	p≤
All Patients	5.7% (3/53)	4.4% (3/68)	.75
New Patients	8.0% (2/25)	7.1% (2/28)	1.0
New Female Patients	0% (0/10)	20% (2/10)	.24

94% of residents (17/18) participated in the quiz and answer session, and 77% (10/13) participated in the role-playing session. 93% (121/130) of patients agreed to be interviewed. 44% (53) were women, mean age 47. DV lifetime and one year prevalence respectively were 35.8% (+/- 13.1%) and 7.5% (+/- 1.1%) among women, and 7.4 % (+/- 6.3%) and 2.9% (+/- 0.6%) among men. 87% (13/15) of self-reported DV went undetected by residents before intervention and 78%(7/9) went undetected after (p≤.49).

Conclusions: DV is highly prevalent in our urban outpatient sample. One third of women were victims of DV within their lifetime, one in 12 within the last year. Our brief clinic-based educational intervention had no significant effect on residents' DV screening behavior. Residents identified victims of DV poorly, screening only 17% of them. The change in screening rates of new female patients was not significant because of sample size. This agrees with our overall screening rates which showed no change. Our intervention addressed resident knowledge and behavior, but lacked a graded evaluation and mandatory attending physician follow-up. Emphasis on DV screening by attending physicians may be necessary to change residents' DV screening behavior.

FACULTY TEACHING PERFORMANCE—A COMPARATIVE ANALYSIS OF AN OPEN AND ANONYMOUS EVALUATION PROCESS. Chirag Shah, Nelia Afonso, Anil Aranha, Lavoisier Cardozo. Wayne State University School of Medicine, Detroit, Michigan 48201-2153.

Purpose: There is a perception, that the open evaluation process tends to inflate the mean performance grade. A literature search to date, reveals a paucity of research in this area. There is data on use of evaluations as a means to improve faculty performance through workshops and other teaching modalities, however the process of evaluation itself has received little attention.

Objective: 1) To analyze differences between the open and anonymous faculty evaluation process, 2) To detail barriers perceived to hinder optimum faculty evaluation by learners.

Methodology: Our institution has an open faculty evaluation format where a total of eighteen teaching performance items are rated on a 1 to 5 Likert scale. This study was conducted over two months during an Internal Medicine in-patient rotation. Residents and medical students evaluated faculty using the open format and 48 hours later they completed an identical anonymous evaluation on the same faculty member. A total of 46 pairs of completed evaluations were available for study. The two groups were compared, using the student t test. In addition, the learners were also given a form that listed 12 barriers perceived to hinder optimum evaluation of the faculty which were also rated on a 5 point Likert scale

Results: 15 out of 18 items showed statistically significant differences ($p \leq 0.05$) between the open and anonymous evaluations. In addition the composite scores between the two groups showed a statistically significant difference ($p = 0.0119$). The major barriers to the open evaluation system are also detailed.

THE PHYSICAL EXAM INITIATIVE AT JOHNS HOPKINS BAYVIEW MEDICAL CENTER. RA Shunk, SC Durso, Division of General Internal Medicine, Johns Hopkins Bayview Medical Center, Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD.

Introduction: Physical exam skills are at risk. Despite data that internal medicine residents can recognize only 20% of common cardiac findings, only 27% of Internal Medicine residencies specifically teach the cardiac physical exam.

Purpose: The purpose of this initiative was to improve physical examination skills in a cohort of internal medicine residents and to document a comprehensive approach to the teaching of the physical exam.

Methods: The 44 internal medicine residents at Johns Hopkins Bayview Medical Center participated in weekly 30 minute physical examination rounds while rotating on the internal medicine inpatient wards. The physical exam rounds were held during the residents' scheduled daily teaching sessions and were organized by the chief residents. Multiple formats were used to teach the physical exam, all involving direct patient contact. These included 1) "guess the diagnosis" rounds during which each of four internal medicine ward housestaff teams went to the "unknown's" bedside to evaluate a particular organ system or physical finding, 2) group lecture with an opportunity to perform the exam, e.g., examining a thyroid nodule, 3) history and physical exam of a patient with a systemic illness, e.g., systemic sclerosis, and 4) cardiac auscultory rounds with bedside faculty supervision for confirmation and discussion of relevant cardiac pathophysiology.

The physical exam rounds were one aspect of the physical exam initiative which also included two other specific interventions. First, a greater emphasis was placed on the physical exam during morning report. Second, residents were given a pocket manual containing a consensus of physical diagnostic skills competent internists should acquire, allowing residents to document their proficiencies and encouraging faculty to observe and confirm residents' exams.

Results: A post intervention survey was completed by all 44 residents. The 7 months of physical exam rounds were well attended and 40/44 (91%) of residents reported attending at least one session. Residents strongly approved of the content as well as the presentation/materials (median 4, scale of 1-5). More importantly they noted an improvement in their knowledge base and improvement in their skills (median 4, scale of 1-5).

Conclusions: Residents perceived that physical examination rounds improved their knowledge base as well as their skills in the physical exam. Time and materials devoted specifically to the teaching of the physical exam should be integrated into an internal medicine curriculum providing opportunities to teach the physical exam in many settings.

RESIDENTS' AND PRECEPTORS' PERCEPTIONS OF CONTINUITY CLINIC EXPERIENCE IN TWO CLINIC TEACHING MODELS. JA Shea, EE Reynolds, LA Lynn, KJ Kovath, and LM Bellini. University of Pennsylvania, Philadelphia, PA.

Background: For many internal medicine residents, continuity practice is a traditional hospital-based "clinic:" a dedicated space, underserved patients, and faculty who precept there but practice elsewhere. Another model, which offers greater faculty involvement and patient diversity, places residents in faculty practices. The purpose of this project was to compare experiences and attitudes of residents and preceptors assigned to traditional clinics versus those assigned to faculty practices.

Methods: Four months after implementing a new faculty-based practice model for some interns and residents, we surveyed all residents and preceptors. Residents were assigned to eight different clinics: 2 traditional clinic models, 1 VAMC site, and 5 faculty practice sites. In the resident survey, respondents rated 14 aspects of the clinic on a 1 (poor) to 5 (excellent) scale. They also noted which three features of a practice experience were most important to them. Faculty responded to similar questions.

Results: Of the 142 residents, 119 (84%) responded. The 43 residents in faculty practices gave higher ratings ($p \leq .05$) than their 54 peers in traditional clinics with regards to overall educational experience, diversity of patients' diagnoses and backgrounds, quality of patient care, ancillary support, after-hours telephone system, and overall practice function. Ratings were nearly significant ($p \leq .06$) for availability of social services, education re: non-medical aspects of care, site accessibility, and feeling like the primary care provider. There were no differences ($p > .06$) in learning from the preceptor, conference availability, or conference quality. About 70% of the residents within each model rated learning from the preceptor as one of the most important features of the practice. Other features frequently listed as important by both groups included diversity of diagnoses, feeling like the primary care provider, and quality of patient care. A subgroup ($n = 17$) of second and third year residents who moved from a traditional clinic to a faculty practice held significantly more favorable views than those who did not change clinic type ($n = 47$) on the majority of the clinic features.

Of the 46 preceptors, 36 (78%) responded; 18 precepted in faculty practices, 7 in traditional clinics, and 6 in the VA. Small group sizes precluded formal analyses. However, ratings by preceptors in faculty practices were more than one-half standard deviation higher for their knowledge of patients, quality of patient care, overall practice function, and overall quality of the educational experience. They gave lower ratings to their ability to be productive during precepting and to their enjoyment of teaching.

Conclusions: Residents and faculty rate many aspects of patient care and learning as higher in a faculty practice model than in a traditional resident clinic model. Offering more clinic experiences in faculty practices, while monitoring educational experiences across sites, could improve learning opportunities.

AN INOVATIVE SYSTEM FOR CREDENTIALING RESIDENTS IN INVASIVE PROCEDURES. SJ Sibbitt, TA Blackwell, Department of Internal Medicine, University of Texas Medical Branch, Galveston, TX.

Purpose: To improve the accuracy and validity of the resident credentialing process for invasive procedures as required for certification by the American Board of Internal Medicine, and future Hospital privileges.

Methods: Achievement of our goal centered around the development of a *CLINWEB* based 'invasive procedure' recorder that could be easily accessed by resident physicians from any hospital based computer terminal. The procedure recorder had to efficiently perform multiple functions. First, the recorder would function as a numerical database and document all procedures completed by residents to ensure numerical criterions were met. Second, it would authenticate that all procedures were appropriately supervised. If the user was not a credentialed physician the system could not proceed until a 'recognized' (via personal I.D. number) credentialed physician had also logged in. Third, the system would assess the resident's knowledge of the indications, contraindications, and complications of the specific procedure; the system would deliver a multiple-choice test to the user upon successful completion of a specified numerical criterion. Fourth, it would function as a medical record documentation tool generating an accurate 'Procedure Note' that would be placed directly into the medical record. Finally, the system would provide the program director (or designee) with easily accessible data clearly identifying residents deficient in specific procedures, and those successfully meeting all criterion for credentialing.

Results: Such a database recorder was developed and implemented within one academic year. Residents found the system easily accessible (from any terminal in the hospital) and efficient (less than 3 minutes form the time of log on to the generation of a Procedure note). We are now able to document 100% of all procedures performed by residents. As important, we have found the database recorder to be a vital management tool as residents deficient in necessary procedures can be quickly identified. Additionally, for any resident a detailed 'Procedures Completed' report can be effortlessly generated and placed in the resident's permanent file.

Conclusions: Utilization of our Invasive Procedure Database Recorder has improved the accuracy and efficiency of our credentialing process of resident physicians. It also has enhanced the validation of proficiency in specific invasive procedures as required for certification by the American Board of Internal Medicine, and future Hospital privileges.

SURVEY OF FACULTY AND RESIDENT LEARNING NEEDS IN MEDICAL INFORMATICS. I Sim, Division of General Internal Medicine, University of California San Francisco; San Francisco, CA.

Purpose: To describe the range of informatics skills, knowledge, and topical interests among faculty and residents in the UCSF Division of General Internal Medicine, for the development of a formal medical informatics curriculum. **Method:** A 66-item questionnaire was sent to 27 faculty and 60 primary care residents. The survey items were yes/no and Likert-like questions that were adapted from Cork, et al (1996). Respondents were asked about their prior informatics training, their attitudes towards computers in medicine, and their self-perceived skills and learning needs (e.g., the usage of e-mail). The skills and learning needs were assessed for 29 skills in 8 domains: 1) the understanding of fundamental concepts in medical informatics (e.g., privacy, limits of artificial intelligence); and the use of computers to 2) access information sources; 3) provide clinical care; 4) communicate; 5) organize information; 6) present information; 7) teach, and 8) improve clinical care. For each skill, respondents rated their proficiency, and whether they would find instruction in that skill worthwhile. **Results:** Twenty-three of 27 faculty responded (85%). Their mean age was 37.1 (range 30 to 51) and 61% were male. Twenty-nine of 60 residents responded (48%). Their mean age was 30.2 (range 26 to 41) and only 38% were male. *Training:* More residents than faculty had had informatics training in medical school (17% versus 4%) or in residency (4% versus 0%). Seventeen percent of both faculty and residents had had no informatics training at all. *Attitudes:* Residents were significantly more optimistic about the effect of computers on dealing with complexity, and on the enjoyment of medicine. All respondents were concerned about the effect of computers on patient privacy and on the doctor-patient relationship. *Skills and learning needs:* On average, the faculty reported being proficient in more of the 29 skills than did the residents (6.96 versus 4.83, p=0.04). Thirteen percent of the faculty and 48% of the residents reported having 5 or fewer skills. Thirteen percent of the faculty and 21% of the residents were uncomfortable with e-mail. For both faculty and residents, the greatest learning needs and interests were in using computers for patient care, managing information, giving talks, and teaching. Most respondents had little interest in performing outcomes assessment using large databases, or in the challenges of bringing computers into health care settings. Residents considered acquiring the 29 skills to be more worthwhile than did the faculty (2.41 versus 1.79 (p=.051) on scale of 1 to 3, 3 = definitely worthwhile). **Conclusion:** Faculty and residents have comparable learning needs in medical informatics. Substantial minorities of both residents and faculty require training in basic computing literacy. Medical informatics curricula should address the learning needs of faculty as well as those of students and residents.

THE USE OF MINUTE PAPERS TO CONTINUALLY IMPROVE RESIDENT MORNING REPORT. MK Singh, LA Headrick, and C Thomas, Division of General Medicine, MetroHealth Medical Center, Department of Medicine, Case Western Reserve University, Cleveland, Ohio.

Background: Minute papers, a brief way to obtain immediate feedback from learners, have been used in higher education for ongoing improvement of learning activities. This paper describes how minute papers can help tailor morning report to the needs of the residents. **Objective:** To illustrate how minute papers can be used to measure continuous improvement in resident morning report. **Methods:** Traditionally, at our institution, all internal medicine residents participated in a combined morning report. In response to residents' feedback, the format was recently changed to separate morning reports, one for the interns and one for junior/senior residents. Before and after making this change, residents were asked to fill out and return a minute paper at the end of every morning report. They responded to four questions: 1. On a scale of 1 to 5 rate the usefulness of the session (1=not useful and 5= very useful). 2. What are the major take home lessons? 3. What questions remain? 4. What would you suggest for improvement? The mean scores from question number 1 were used to create run charts for each post graduate year. Three months later, we conducted a supplemental cross-sectional survey to validate the minute paper results, asking residents to compare the old, combined morning report to the new, separate format with regard to 4 specific qualities: effectiveness, conducive environment to participate, contents match and format match to the level of learner. **Results:** The minute paper data suggested an increase in resident satisfaction after the new format was introduced. The mean score for level of satisfaction for the postgraduate year 1 (PGY1) residents in the combined morning report was 4.20 and in the separate morning report was 4.57. For the PGY2, combined= 3.75 and separate=4.44 and for the PGY 3, combined= 3.75 and separate=4.3. Qualitative data from the minute papers were used to further tailor the conference to the residents' expressed needs. The supplemental survey confirmed this improvement. The mean score for effectiveness: combined=3.82 and new=4.11 ($p>0.05$). For conducive to participation: combined=3.68 and separate=4.16 ($p<0.05$). for content matching level of learner: combined=3.71 and separate=4.13 ($p<0.05$) and format match to level of learner: combined=3.61 and separate=4 ($p>0.05$). The minute paper approach has been adopted for ongoing feedback in other resident conferences. **Conclusions:** Minute papers are an effective and valid method to obtain immediate and ongoing feedback in educational programs for residents.

DEVELOPMENT AND EVALUATION OF AN INTERNET-BASED CURRICULUM FOR AMBULATORY CARE EDUCATION OF INTERNAL-MEDICINE RESIDENTS. SD Sisson, TW Gress, MT Hughes, JM Watanabe, M Weiner. Division of General Internal Medicine, The Johns Hopkins University, Baltimore, MD.

Internal-medicine residency programs increasingly emphasize ambulatory care, but resources for teaching and finding information in the clinic are often inadequate. The Internet enhances access to information but has seldom been reported as an educational tool for residents. Our goal was to develop and evaluate an Internet-based curriculum that uses asynchronous learning to teach internal-medicine residents about ambulatory care.

Topics for focus of educational efforts were identified with a needs assessment, which included surveying residents and recent graduates, identifying common illnesses, and assessing results of in-service training examinations. Faculty designed case-based modules with objectives, case presentations, questions and answers, a quiz, and references. Modules were reviewed by committee and distributed on a Web site accessible to residents and faculty. We asked all internal-medicine residents at our institution (N = 96) to register once online. Users of the Web site can easily view and save online modules or related abstracts, articles, images, and patient education materials. Approximately twice per month, residents receive electronic mail about a new module. They then review online modules independently and receive instantaneous, automated feedback about their responses to questions. Clinic preceptors discuss modules with residents. Residents submit an online quiz, and the module is discussed at a conference for all residents. An end-of-year examination is planned to assess performance on topics covered throughout the year.

The needs assessment indicated that residents desire or need more training in orthopedics and dermatology (survey); diabetes mellitus and hypertension (common conditions); and cardiology and nephrology (in-service exam). Residents reported that limited time for learning in clinics hindered ambulatory education. We implemented our curriculum in 9/98. After 4 months, 6 modules had been presented, and 11 Web-site visits per day (on average) were documented. Eighty percent of residents had registered to participate and, on average, 34% of these had accessed any given module. Residents used online and paper-based surveys to evaluate online modules and conferences, respectively. Of housestaff users, 36% completed online evaluations, and 74% of online evaluations indicated that residents accessed modules away from clinic (e.g., hospital or library). Most (85%) of the online evaluations indicated that online instructive value was "good" or "excellent", and 83% of 104 paper-based evaluations indicated that the curriculum stimulated additional learning. Most (81%) also reported that the curriculum would change the way individuals practice medicine. Time constraints continue to hinder learning. In conclusion, we have developed and are evaluating an Internet-based ambulatory-care curriculum. Although a minority of residents access the Web-based modules, many users highly value the program. Barriers of time continue to require new solutions.

THE LEARNING OF PREVENTIVE MEDICINE IN AN EVIDENCE-BASED AMBULATORY CARE MORNING REPORT. PJ Sousa, University of Hawaii John A. Burns School of Medicine, Department of Medicine, and the Queen Emma Clinics, Honolulu, Hawaii.

Purpose: Implementing Internal Medicine curricula that "work" in the ambulatory setting has traditionally been extremely difficult for a variety of previously described reasons. This has been particularly so with Preventive Medicine (PM) curricula. We instituted a flexible, resident-driven, faculty-supported curriculum in PM as part of our premier ambulatory training site's Ambulatory Care Morning Report (ACMR.)

Design & Methods: Our existing weekly ACMR (abstract poster-presented and published in JGIM 1997) format was modified at the beginning of the 1998-99 academic year to include a list of required topics in PM, from which residents had to select and present during each ambulatory block rotation. Topics include cholesterol, hypertension, and diabetes screening; cancer surveillance (prostate, cervical, colon, breast); domestic violence, sexually transmitted diseases, and others. Topic presentations require focused clinical questions, medical literature searches, critical appraisal of retrieved articles, and clinical applications/summaries (fundamental Evidence-based Medicine (EBM).) Pretests and posttests were given at the beginning and end of each block, respectively. Tests consisted of MKSAP and MKSAP-like questions. Exit questionnaires (4-pt Likert) were completed at the conclusion of several blocks. Pretest and posttest scores were compared to see if there had been any significant improvement attributable to this format, and exit questionnaire responses were analyzed.

Results: Six months of data were collected, with N=24 residents. The pretest score average (±SD) was 60%(±0.10), compared to an average posttest score of 74%(±0.07), p=0.02 (two-tailed student's t-test.) 100% of residents polled by questionnaire at random (N=7) agreed or strongly agreed that: ACMR was a valuable forum for teaching and learning aspects of health maintenance and preventive medicine; being required to research the literature, present cases, and teach their colleagues about PM enhanced their medical knowledge; learning about PM in ways that are self-directed and peer-taught was valuable; the key learning issues of PM topics are adequately covered in ACMR; this format fulfills their educational needs in PM; and that they enjoyed teaching their peers about PM.

Conclusion: In the midst of medical education moving increasingly to the ambulatory setting, ACMR has emerged as a strong, viable, and greatly needed forum, within which the difficult task of teaching (and hence, learning of) core ambulatory medicine topics has been made far less difficult. These limited results suggest that implementation of a curriculum in PM that is flexible, resident-driven, and faculty-supported/supervised is feasible, and results in a measurable and objective improvement in retention that is statistically significant and meaningful.

OUTPATIENT MORNING REPORT: A NATIONAL SURVEY AND A PROSPECTIVE TRIAL **Anderson Spickard, III and Rick Earnest, Vanderbilt University School of Medicine, Nashville, Tennessee**

Objective: To determine the prevalence, structure, and value of outpatient morning report.

Methods: 1) A survey of US internal medicine residency program directors, and 2) a one-year prospective survey of residents finishing their outpatient rotations who participated in outpatient morning report at Vanderbilt University.

Results: Remarkably, 377 out of 404 program directors responded to the national survey (91.5% response rate). Outpatient morning report, defined as a conference for residents and medical students that is dedicated to the presentation and discussion of outpatient cases, is used by 24% of US internal medicine residency programs. It is more prevalent in larger programs (37% of those with more than 50 residents vs. 15% of those with less than 50 residents, p<0.001). In general, attending physicians and chief residents lead the conference, while residents choose and present the cases. Although 66% of the programs invite medical students to attend outpatient morning report, less than 20% permit them to choose or present patient cases.

Sixty residents responded to the local survey (90% response rate). The residents rated the educational value of outpatient morning report 4.71 on a 5-point scale. Over 88% of the residents rated the following features of the conference as very good or outstanding: the learning atmosphere, the leadership skills of the attending physicians and chief residents, the practicality of the cases, and the ability of the conference to meet personal learning needs and to cover topics not covered elsewhere in their training. None of the residents thought medical students, who shared an active role during the session, detracted from their learning at the conference.

Conclusion: Approximately 24% of US internal medical residencies have an outpatient morning report. Residents at a large teaching hospital highly valued this conference reporting that it helped to achieve learning goals not met elsewhere in their training. They also appreciated the active participation of medical students in this setting. Tailored to the particular needs of each institution, outpatient morning report can offer residents and students a highly educational experience that reflects the current realities of medical practice.

BAYVIEW AMBULATORY SUBSPECIALTY INTERDISCIPLINARY CURRICULUM (BASIC): EVALUATION OF A NEW AMBULATORY CURRICULUM. D. Stornelli M.D., R. Ziegelstein M.D., N. Lowitt M.D. Department of Medicine, Johns Hopkins Bayview Medical Center, Baltimore, MD.

Purpose: To initiate and evaluate a new ambulatory-based subspecialty curriculum for Internal Medicine Residents. *Methods*: Beginning in July 1997, Residents have spent three months during the PGY-2 and 3 years rotating through Rheumatology, Cardiology, Pulmonary, Gastroenterology, Nephrology, Hematology-Oncology, Endocrinology and Geriatrics clinics. The curriculum is designed to provide clinic-based educational experiences, supplemented by small group didactic sessions, interdisciplinary case conferences, and a written curriculum focusing specifically on topics frequently encountered by outpatient practitioners that are not covered in the inpatient setting. Program evaluation took place through feedback sessions as well as written questionnaires completed by Residents and preceptors. *Results:* 22 out of 23 (96%) participating Residents completed a 9 item questionnaire for each subspecialty clinic attended. Resident feedback was generally positive. Rheumatology, which already had an established clinic-based curriculum, scored highest on the Resident questionnaire in terms of achieving learning objectives (average score 4.9 out of 5), while Gastroenterology scored lowest (average score 2.8 out of 5). 9 of 12 (75%) of faculty-preceptors completed a 6 item questionnaire. All but one faculty-preceptor agreed that the learning objectives of the curriculum were met, and they enjoyed teaching in the clinic as much as on inpatient rotations. Interestingly, while residents felt they had adequate faculty supervision and teaching time, the greatest concern of the faculty was the lack of institutional support to lighten patient loads during teaching clinics to facilitate precepting/learning. *Conclusions:* A well-organized ambulatory subspecialty curriculum can successfully facilitate learning aspects of Internal Medicine which are unique to the care of ambulatory patients. As more training is shifted to the outpatient setting, residency programs must reconcile increasing clinical demands with the need to protect time for teaching.

EFFECTIVENESS OF A FACULTY DEVELOPMENT PROGRAM ON "TEACHING CARING ATTITUDES". M Srinivasan, S Bogdewic, M Gaffney, M Galvin, G Mitchell, P Treadwell, L Willis, D Litzelman. Indiana University School of Medicine, Indianapolis, IN.

Introduction: Assessing a learner's professional behavior has recently become a significant focus in medical education. However, little is published on methods to prepare clinical teachers to effectively address unprofessional behavior.

Objective: To evaluate an intervention that provides clinical teachers with the ability to recognize, evaluate, and address unprofessional behavior in their trainees, in ways that optimally lead to learner self-reflection & behavioral change. **Methods:** Full day & half day interventions were conducted focusing on: recognizing trainee's behavior reflecting disrespectful, hostile, or uncaring attitudes; characterizing & practicing intervention strategies to effectively respond to these observed behaviors; goal setting in anticipating future teaching challenges. Educational materials included trigger tapes & scripted role-plays. Participants completed a 21-item self-assessment instrument, to evaluate specific behaviors or reactions to trainees' displays of challenging attitudes, based on their own performance after the workshop and before the workshop (viewed retrospectively). Using Wilcoxon matched-pairs signed-ranks test, participants' self-ratings before & after the workshops at 0 & 6 mo were analyzed.

Results: Most half day & full day faculty (HDF, FDF) completed the survey, initially (12/12;10/10) & at 6 mo (11/12;7/10). Compared with pre-workshop ratings, faculty reported improvements in 9 of 21 items ($p < 0.05$) immediately after the workshop. Both HDF & FDF felt more comfortable addressing attitudinal issues & exploring circumstances precipitating behavior. Additionally, HDF were more likely to empathize with learners. FDF were less apt to ignore behavior or use nonverbal disapproval responses. Most initial changes persisted at 6 months. At 6 months, several new skills emerged for each group. Both HDF and FDF were more likely to question the behavior's potential impact on patients. HDF were apt to provide reasons for why the behaviors might be detrimental. Further, FDF were more likely to empathize, provide clear behavioral goals, & acknowledge emotional links to unprofessional behavior. **Conclusion:** Faculty development programs can improve clinical teacher's self-reported comfort with dealing with attitudinal challenges as well as their ability to address unprofessional behaviors over a six-month period. Greater improvement was noted with the longer intervention module.

EVIDENCE BASED MEDICINE WORKSHOPS: A PRELIMINARY REPORT ON THE USE OF INTERACTIVE WORKSHOPS TO IMPROVE CRITICAL APPRAISAL SKILLS IN INTERNAL MEDICINE RESIDENTS KG Thomas, HJ Schultz. Mayo Foundation, Rochester, MN

Background: Evidence Based Medicine (EBM) and critical appraisal education are increasingly being recognized as important in the training of Internal Medicine (IM) residents. Curricular development for consistent EBM teaching in IM residency programs remains a challenge.

Objective: To develop an EBM workshop for first year IM residents which systematically teaches critical appraisal of the literature as an integral part of an IM residency program.

Methods: Workshops were comprised of four weekly one-hour EBM sessions conducted using the format of the McMaster University EBM Annual Workshops. Residents were each provided a notebook containing instructional units outlining the approach to articles on therapy, diagnosis, prognosis, and systematic review. Each unit contained a clinical vignette; a clinical question; an article addressing the clinical question; a copy of related articles from the EBM Working Group's *User's Guide to the Medical Literature*; and a series of questions pertaining to article validity, results, and applicability as outlined in the *User's Guide*. Residents were instructed to read the assigned materials prior to their scheduled workshops. Workshops were comprised of three to four G-1 residents and were conducted by the chief medical resident as interactive discussions.

Results: Since its initiation, a total of 12 residents have completed the ambulatory EBM workshop. Using a scale from 1-5 (1 = Strongly Disagree, 5 = Strongly Agree), participating residents reported the following: 100% agreed that formal teaching of critical appraisal and EBM techniques is important (Mean=4.92, SD=0.29); 100% agreed that the EBM workshop was a valuable learning experience (Mean=5, SD=0); 100% agreed that the small group format was effective for learning about critical appraisal and EBM (Mean=4.83, SD=0.39); and 83% agreed that their critical appraisal skills and understanding of EBM techniques had improved following the EBM workshop (Mean=4.67, SD=0.78). Ten of the participating residents reported increased confidence in their critical appraisal of all article types discussed.

Conclusions: Formal instruction of EBM in the format of small group interactive workshops is perceived by resident participants to be an important and valuable learning experience. Residents participating in this workshop reported increased confidence in their critical appraisal of the literature. Objective assessment evaluating the efficacy of this instruction is ongoing.

TEACHING RESIDENTS EVIDENCE BASED MEDICINE: COMPARING TWO METHODS IN AN INTERNAL MEDICINE RESIDENCY PROGRAM

MR Thomas, KG Thomas, HJ Schultz, EB York. Mayo Clinic and Foundation, Rochester, MN.

Background: Techniques of Evidence Based Medicine (EBM) and critical appraisal are becoming widely recognized as important in the practice of Internal Medicine (IM). However, EBM education in IM residency programs is inconsistent and objective assessment is lacking.

Purpose: To objectively assess and compare two different methods of EBM teaching in the first year of an IM residency program.

Methods: Two methods of EBM teaching were compared. Method A consisted first of a one-half hour introductory lecture about the techniques of EBM. A notebook of information detailing the techniques was provided for independent study, including pertinent *User's Guides to the Medical Literature* from the EBM Working Group, previously published in *JAMA*. The residents then were required to attend a weekly EBM conference, and to prepare and formally present a single critically appraised article for the conference. Ten first-year residents randomly assigned to general medicine inpatient rotations participated in Method A. Method B consisted of four weekly one-hour small group discussions, conducted using the format of the McMaster University EBM Annual Workshops. Residents were provided a notebook containing instructional units outlining the approach to articles on therapy, diagnosis, prognosis, and systematic review. Each utilized a clinical vignette, a clinical question, a pertinent article, and the related *User's Guide*. Ten first-year residents randomly assigned to an outpatient clinic rotation participated in Method B. Following EBM instruction, both groups were objectively assessed using a brief questionnaire, which tested the ability to phrase clinical questions and to calculate and utilize relative and absolute risk reductions, the number needed to treat, and the likelihood ratio. Both groups were compared to Control groups of first, second and third-year residents who had not received any formal teaching of EBM techniques.

Results: The test contained 25 possible points. The 1st Year Control group scored 47.1 ± 13%, while the 2nd Year Control group (50.2 ± 22%) and the 3rd Year Control group (46 ± 22%) did not score significantly differently. The Conference group (Method A) scored 48.8 ± 18%, not significantly different from any of the Control groups. The Small Group (Method B) scored higher than the other groups (71 ± 18%), p = 0.003 vs. 1st Year Control, p = 0.03 vs. 2nd Year Control, p = 0.06 vs. 3rd Year Control, and p = 0.01 vs. Conference (Method A).

Conclusion: Interactive small group discussion was a more effective EBM teaching method than independent conference attendance and presentation in this group of first year IM residents.

PREDICTION OF ABIM CERTIFYING EXAMINATION PASS RATE USING A MULTIVARIABLE MODEL.

F Toebbe, J Tsevat, L Coberly, L Simbartl, and G Rouan, Division of General Internal Medicine, Department of Internal Medicine, and Institute for Health Policy and Health Services Research, University of Cincinnati College of Medicine, Cincinnati, Ohio.

Background: Satisfactory performance on the American Board of Internal Medicine (ABIM) certifying examination is important for both trainees and Graduate Medical Education programs. Previous work indicates that the In-Training Examination (ITE) is a good predictor of ABIM certifying examination performance.

Purpose: We set out to determine how well standardized exams and performance evaluations predict ABIM test scores.

Design: We performed a retrospective three-year cohort analysis on consecutive graduates from a large academically-based internal medicine residency program. Seventy of 71 (99%) had complete information including ITE scores for each year of training, USMLE-2 and USMLE-3 scores, and summary evaluations. These variables were included in a logistic regression model predicting ABIM certification. We also performed a linear regression analysis using the In-Training Examination during the third year (ITE-3) score as the dependent variable.

Results: Sixty-one of 71 (86%) consecutive first time takers passed the ABIM certifying examination. The ITE-3 score was the most important predictor of passing (odds ratio = 24.89, p<0.001). When a cutoff ITE-3 "raw score" of 62 (28th percentile) was used, the model perfectly discriminated between those who passed and those who failed (C-statistic = 1.0). In the linear regression analysis, second year ITE (ITE-2) and USMLE-2 scores predicted ITE-3 scores ($r^2 = 0.93$).

Conclusions: We conclude the ITE-3 was the most important indicator of ABIM certifying exam performance with perfect discrimination at a cutoff raw score of 62. In addition, ITE-2 and USMLE-2 are important variables in predicting ITE-3 performance. If validated in other settings, this information will be useful in early identification of those at high risk of ABIM certifying examination failure.

WHAT DO AMBULATORY CLERKS NEED TO KNOW? EVALUATION OF A STUDENT EVIDENCE-BASED MEDICINE EXERCISE.

PA Thomas, Division of General Internal Medicine, Johns Hopkins University School of Medicine, Baltimore, MD

Purpose: To evaluate use of an evidence-based medicine exercise to identify student knowledge gaps and promote critical thinking in a medicine clerkship.

Methods: Qualitative and quantitative review of checklists used to grade evidence-based medicine (EBM) reports submitted as part of the learning portfolio for the clerkship. Students are instructed to use a structured format for the report, beginning with a clinical question arising from the clerkship experience. Reports are graded with a checklist of 13 items, rated 0-3 for completeness of each item. Checklists were analyzed for the following: 1) diseases/ problems addressed by students; 2) success in completing criteria for the EBM report; and 3) items which predicted performance of the last item, "going beyond—new thinking, new studies, new issues and questions raised by the exercise."

Results: All 137 checklists from one academic year were reviewed. 39% of these reports addressed training problems included in the clerkship curriculum, including hypercholesterolemia (14), diabetes management (11), hypertension (9), and smoking cessation (9). 106 reports questioned therapeutic interventions; 86 of these related to drug, 12 lifestyle and 8 surgical interventions. Only 25 reports explored diagnostic interventions. 113 (82%) cited morbidity outcomes; 38 mortality outcomes and 17 quality of life outcomes. Students did well with completion of checklist items. The most common deficiency was failure to explicitly state a patient outcome in constructing the original question (mean rating 1.8) and "going beyond" (mean rating 1.9). The remainder of checklist items averaged 2.6 or better. The structure of the clinical question did not correlate with how well the student applied the paper to the original problem or the ability of the student to go beyond the exercise in the analysis. Of the 12 checklist criteria entered into a multiple regression model with "going beyond" as the dependent variable, 2 items--performance in stating the measured outcomes, and stating the main results--were predictive of "going beyond".

Conclusions: The EBM exercise provided valuable information regarding what knowledge deficits were perceived by students, and has been used to modify the curriculum content. To encourage broader use of evidence-based medicine, students should be challenged to question more diagnostic and non-pharmaceutical interventions, and explore quality of life outcomes. Students who are able to succinctly state the outcomes measured and main results of a study appear better able to incorporate and apply conclusions of the study in thinking about a clinical problem.

ASSOCIATIONS BETWEEN INTERNS' ATTITUDES TOWARD SUBSTANCE ABUSE AND PAIN MANAGEMENT

WA Ury, Saint Vincents Hospital; CS Berkman, Fordham University Graduate School of Social Service; DP Sulmasy, Saint Vincents Hospital, New York, NY.

Purpose: The goal of this study was to assess the relationship between interns' comfort level in managing pain in patients with a history of substance abuse with: 1) their comfort level and attitudes regarding various aspects of pain treatment; and 2) clinical experience in medical school with pain management.

Methods: A self-administered questionnaire was distributed to interns during orientation in 1996, 1997, and 1998 (n=157, response rate 96.9%). Measures included: 1) amount and type of education and clinical experience with acute and chronic pain management; 2) self-perceived comfort and skill in relation to pain management; 3) attitudes about the use of opioids and various other aspects of pain management; and 4) comfort level in taking care of patients with a history of substance abuse. A Comfort in Managing Pain (CMP) Scale was created by summing four items (alpha=0.85), with a higher score indicating greater comfort.

Results: Most interns rated their comfort level with managing pain in general, using opioids to manage acute pain, using opioids in patients with a history of addiction, and using opioids for patients with intractable nonmalignant pain as fair or low. Comfort level in taking care of patients with a history of substance abuse was correlated with: 1) comfort in using opioids to manage acute pain due to malignancy (r_s=.31, p<.001), as well as in patients with a history of substance abuse (r_s=.40, p< .001); 2) CMP Scale score (r_s = .39, p<.001); and 3) attitudes about whether opioids should be used to manage acute pain (r_s = .17, p<.05). Comfort in taking care of patients with a history of substance abuse was also correlated with the number of patients managed with a morphine drip in medical school (r_s = .20, p<.01) and the number of chronic non-cancer patients with pain managed in medical school (r_s = .20, p<.01).

Conclusions: Lack of comfort in caring for patients where substance abuse is an issue was correlated with lack of comfort in treating pain in general and with inappropriate attitudes and lack of comfort regarding the use of opiates in non-addicted patients. This suggests the possibility that the manner in which interns treat patients with substance abuse might be a barrier to optimal pain treatment. Education on appropriate use of opiates in patients with a history of substance abuse and the recognition of addictive behavior and its differentiation from pseudo-addiction might be necessary to improve pain treatment for all patients.

BRIEF CASE-BASED INPATIENT PALLIATIVE CARE TEACHING MODULES: AN EFFECTIVE METHOD OF INTRODUCING NEW MEDICAL TOPICS. WA Ury, New York Medical College and Saint Vincents Hospital, New York, NY; CM Tesar, WB Burton, Albert Einstein College of Medicine, Bronx, NY.

Purpose: Palliative care training has recently become a residency review committee requirement. How can this topic be taught in a time-effective manner that improves learners' knowledge, skill and confidence and sparks an interest in future learning?

Methods: Five inpatient palliative care teaching modules (inpatient pain management, ethical issues in end-of-life care, artificial nutrition and hydration, symptom management and team communication and decision-analysis) were developed as part of a palliative care curriculum at a university-based internal medicine residency program. The modules were one-hour small-group seminars that utilized discussion, syllabus reading, didactic teaching and case-based learning. Interns and residents were given a survey one day before and after the teaching of each unit. The range of response rates for the five pre-module surveys was 77-93% (n=19-32) and was 71-89% (n=12-25) for the five post-module surveys. The survey instruments measured three self-rated domains: 1) knowledge, 2) skill and 3)comfort, using five point Likert-type categories. The items were analyzed individually and as summated scales for each of the three domains.

Results: Paired t-tests showed that 14 of the 15 summary scales from the five units showed significant improvement ($p<.05$). The knowledge scale for the inpatient pain management unit did not show significant improvement ($p=.13$).

Conclusions: These results demonstrate the potential of a brief case-based educational intervention to positively affect residents' knowledge, skill and comfort. Further research is needed to understand: 1) if these improvements are sustained; 2) how education can be linked to clinical experience; and 3) if these self-perceived ratings of knowledge, skill and comfort are associated with clinical practice and quality end-of-life care.

PAIN MANAGEMENT EDUCATION: WHAT ARE THE IMPORTANT FACTORS? WA Ury, Saint Vincents Hospital, CS Berkman, Fordham University Graduate School of Social Service, DP Sulmasy, Saint Vincents Hospital, New York, NY.

To assess the association between classroom and clinical undergraduate medical education with self-perceived skill and comfort in pain management, a self-administered questionnaire was distributed to interns during orientation in 1996, 1997, and 1998 (n=157, response rate= 96.9%). Measures included amount and type of education and clinical experience with acute and chronic pain management and attitudes and self-perceived comfort and skill in relation to pain management. A Comfort in Managing Pain (CMP) Scale was created by summing four items (alpha=0.85), where a higher score indicates greater perceived comfort.

Results: Only 13.2% of the interns had formal teaching about pain management in both the pre-clinical and clinical years, and 28.3% reported that they had no formal teaching in all of medical school. Two fifths had never used a morphine drip to manage pain and 38.2% used a morphine drip with only one to three patients. Almost two thirds reported taking care of either no patients (17.9%) or one to three patients (47.4%) with chronic non-cancer pain.

More clinical experience with pain management during medical school was associated with a greater comfort level with pain management as measured by the CMP Scale ($r_s=.26$, $p<.001$), but not with more positive attitudes or skill in managing pain. Classroom teaching was not associated with attitudes, skill, or comfort level. There were moderately strong positive correlations between the number of patients managed using a morphine drip during medical school and level of comfort in: 1) managing pain in general ($r_s=.26$, $p<.001$); 2) using opioids to manage acute pain associated with malignancy ($r_s=.27$, $p<.001$); 3) using opioids to manage intractable nonmalignant pain ($r_s=.22$, $p<.05$); and 4) using opioids to manage acute pain in a patient with a history of substance abuse ($r_s=.29$, $p<.001$).

Conclusions: Clinical experience was associated with increased comfort in pain management, but neither clinical experience nor formal teaching was associated with self-perceived skill or more positive attitudes about pain control. The CMP Scale could provide a useful measure for studying comfort with pain management and its relationship with education, clinical experience, knowledge, skills, and attitudes about pain. Further research is needed to develop the CMP Scale and to learn more about effective means of pain management education.

INITIAL RESULTS OF A BLOCK CURRICULUM IN EVIDENCE-BASED MEDICINE FOR INTERNAL MEDICINE RESIDENTS. **Eric W. Vogel, Division of General Internal Medicine, MCP Hospital, MCP-Hahnemann University, Philadelphia, PA.**

Purpose: To develop and implement an evidence-based medicine (EBM) curriculum for internal medicine housestaff in a large, urban, university-based residency program.

Design: A curriculum development project, consisting of a needs assessment, curriculum design, implementation and evaluation of the curriculum.

Participants: Second-year internal medicine residents (N=42)

Intervention: An eight-week EBM curriculum within residents' two four-week ambulatory care blocks. The first four-week block consisted of classroom teaching and group exercises on developing clinical questions from patient encounters, using the best quality information sources, and evaluating articles on therapeutics, as well as a four-hour computer training in searching Medline and the Internet for information.

Results: Results from the first block are as follows: Both before and after they received the curriculum materials, residents performed Medline and Internet searches based on a clinical scenario, and received a twenty-five question written test. The performance from before and after the unit was compared. After the unit, residents' mean written test scores increased significantly (pretest 49%, to posttest 86%, $p<0.001$), and residents' computer searching skills also improved markedly. The curriculum was useful for residents and very well-received by them. Implementation and evaluation of the second block is underway. Evaluation of overall changes in residents' EBM abilities and behaviors is also planned.

Conclusion: The first of two blocks of an EBM curriculum improved residents' knowledge of the EBM principles presented, and their computer searching skills. The curriculum content and design can potentially be adapted for other programs that are considering formally teaching EBM to their residents.

MEDICAL RESIDENTS' AND ATTENDING PHYSICIANS' ATTITUDES TOWARD AND KNOWLEDGE OF INPATIENT CLINICAL PATHWAYS AT A UNIVERSITY TEACHING HOSPITAL H. Wald, J. Cohen-Kogan, J. Shea, N. Fishman, Hospital of the University of Pennsylvania, Philadelphia, PA.

Background: Clinical pathways have been developed as a result of managed care paradigms which emphasize cost savings, standardization of care, improved efficiency, and increased patient satisfaction. Medical students and housestaff have begun to encounter pathways in the inpatient setting. Few investigations, however, have addressed the implications of clinical pathways on medical education.

Methods: One year after the introduction of inpatient clinical pathways at our institution, we surveyed all medical housestaff and attending physicians in the Divisions of General Internal Medicine and Pulmonary/Critical Care. Attitudes toward clinical pathways were measured with 13 questions using a 5-point Likert scale. Knowledge about the content of the asthma and community acquired pneumonia (CAP) pathways was evaluated with multiple choice questions. Questions also assessed instruction regarding pathways and use of pathways in teaching. Self-reported pathway use was compared with capture rates.

Results: Of the 163 houseofficers and faculty mailed surveys, 114 responded (70%); 89 (78%) were houseofficers. Many respondents assigned high ratings ("most" or "all of the time") to attitudes reflecting the practical merit of clinical pathways including improved delivery of ancillary services (67%) and safety for patients (70%). Most respondents felt that most pathway contents were evidence-based (58%). In contrast, a minority of respondents believed that pathways were educational for housestaff (12%), and that pathway use encouraged resident autonomy (3%). Sixty-eight percent of respondents believed that clinical pathways favor a "cookbook approach" to patient care. Only 25% of the CAP and 33% of the asthma pathway content questions were answered correctly. Self-reported pathway use, defined as greater than 50% of the time, varied from 42% of respondents for all medical pathways, to 44% for the CAP pathway, and 78% for the asthma pathway. Actual capture rates during the same period were 47%, 15%, and 59%, respectively. Respondents who gave pathways high practical merit ratings were more likely to report use of pathways ($p=.03$), recall instruction regarding pathways ($p=.03$), believe in their educational merit ($p=.0001$), and use them to teach ($p=.03$).

Conclusions: While respondents believe that clinical pathways have practical merit, most believe their use detracts from housestaff education. It is concerning that a minority of respondents were knowledgeable about pathway contents. If pathways are to be used in training centers, medical educators must explore how to use them to teach "best practice" and encourage critical thinking skills. When exploited for their use as teaching tools, pathways may find more acceptance among housestaff and higher capture rates.

IDENTIFICATION OF CONTENT, PRIORITY, AND METHODS OF INSTRUCTIONAL DELIVERY FOR A WOMEN'S HEALTH COMPONENT IN AN INTERNAL MEDICINE RESIDENCY PROGRAM. Alicia J. Williams. Department of Education. West Virginia University, Morgantown, WV.

The purpose of this research was to determine the general content, topics and sub-topics, priorities of the content, and methods of instructional delivery for a women's health component within an Internal Medicine residency program.

Panel members chosen for the study were General Internal and Family Medicine physicians and other faculty and staff members who worked in a health-related field for at least two years and had an interest in women's health. A modified Delphi method was used for this study to determine the content. Panel members also identified their current and preferred methods of instructional delivery in a separate section of the study. The panel consisted of sixteen members from rural medical institutions.

The results of the study indicated the top priority content items to be violence and assault, preventive health, menopause, cardiac diseases, and breast conditions (18% of the topics were women's health issues). The top priority sub-topics were breast exam, breast malignancy, coronary artery disease, mammography, hormone replacement therapy, estrogen replacement therapy, smoking cessation, exercise, contraception, and pap smear (70% of the sub-topics were women's health issues). The lowest ranking topic was oral health. The lowest ranking sub-topics were breast augmentation, cosmetic surgery, computer-visual disorders, and tempero-mandibular dysfunction.

The results of the current instructional delivery methods revealed that the top four methods were lecture (56%), discussion (33%), clinical (28%), and slides (27%). The top four ideal methods were lecture (33%), discussion (32%), computer-aided instruction (22%), and problem-based learning (18%). A drop of 23% in lecture suggests that the panel members preferred less teacher and more student-directed teaching and learning methods and an interest in using electronic means as a method for teaching and learning.

By understanding the biological differences between men and women, the future development and implementation of a women's health component in Internal Medicine education can only further knowledge for the students/residents and provide for better patient care. The field of women's health needs to be integrated into the mainstream of medical education via appropriate teaching and learning methods to fill in the gaps left from previous training.

TRENDS IN THE USE OF INFORMATION RESOURCES BY NEW INTERNAL MEDICINE RESIDENTS. MC Wilson, AB Ebright, RS Hayward, Section of General Internal Medicine, Wake Forest University Baptist Medical Center, Winston-Salem, NC.

Background: Prior studies have examined the familiarity of residents with computers and medical information resources; however, none have assessed the impact on clinical decision making, or examined changing practices over time.

Design/Objective: A survey was administered to incoming medicine interns from 1993-98. Questions focused on: 1) computer access and self-rated computer and informatics skills; 2) use and clinical impact of computer-based and traditional medical information resources; and 3) prior training in these areas.

Results: Response rate was 98% (n=156 of 159 interns). Computer ownership has risen from 16% in 1993 to 86% in 1998. There has not been an accompanying increase in self-rated computer skills. Ironically, the use of computerized medical texts has remained static and infrequent (68-88% using monthly or never), while use of traditional texts has been consistently frequent (85-100% using weekly or daily). There was a trend over time to more frequent use and higher clinical impact of original research articles, review articles, and computerized literature searching. Those reporting a major clinical impact from these sources were 18%, 62%, and 52% respectively. In contrast, a greater number of interns perceived a major clinical impact coming from discussions with colleagues (97%), use of quick reference manuals (95%) and textbooks (92%)--a trend which was stable over time.

Across the years, approximately 80% had prior training in computerized literature searching. There was little evidence that interns were progressively receiving more training in medical informatics. Most interns, 72-98%, felt they would benefit from training in the use of medical information.

Conclusions: Despite a marked increase in computer access, new interns have been slow to utilize computer-based information resources. This implies an ongoing need for medical school education in informatics and computer-based information resources.

VALIDATION OF A GLOBAL MEASURE OF FACULTY TEACHING PERFORMANCE. **BC Williams, University of Michigan; DK Litzelman, Indiana University; SF Babbott, Baystate Medical Center, Springfield, MA; RM Lubitz, St. Vincent Hospitals, Indianapolis, IN.**

Purpose: **To validate the Global Rating Scale (GRS), a single-item, 5-point global measure of faculty clinical teaching performance previously shown to be reliable among senior medical residents.**

Methods: **In June, 1998, 85 senior medical residents from three academic institutions completed the GRS for all teaching faculty at their institution. Residents each also completed the SFDP26 for overlapping sets of 10 faculty (total of 98 faculty) with whom they had had teaching contact during residency. The SFDP26 is a 26-item, validated questionnaire developed in conjunction with the Stanford Faculty Development Program for Clinical Teaching that measures clinical teaching performance along 7 scales - learning climate, control of session, communication of goals, understanding and retention, evaluation, feedback, and self-directed learning.**

Results: **The mean (SD) number of residents rating faculty on the GRS and the SFDP26 was 20.4 (9.1) and 8.9 (6.0), respectively. The mean (SD) GRS score was 3.6 (0.7). Correlation coefficients comparing the mean GRS score and the mean score for each of the 7 SFDP26 scales ranged from .77-.80 for all observations, and .76-.83, 54-.84 and .82-.88 for each of the three institutions. Correlations were somewhat higher, with a similar pattern among institutions, when limited to faculty with >6 raters.**

Conclusions: **The Global Rating Scale (GRS) is a valid measure of teaching performance when compared to measures of 7 specific aspects of teaching quality among senior medical residents. Though some inter-institutional variation was observed, the GRS was valid across institutions. The GRS is a simple, readily administered measure of faculty teaching performance that can be used by residency programs as part of an incentive or reward program, to identify teachers as potential candidates for faculty development, or for consideration in promotion decisions.**

AN INNOVATIVE CURRICULUM FOR TEACHING CANCER PREVENTION SKILLS: A PILOT STUDY. K Worzala, BS Ling, A Geller, S Sarfaty, D Wachs, MN Prout, Section of General Internal Medicine, Boston University, Boston MA.

Background: Previous studies indicate that health care providers are not counseling their patients on cancer prevention measures. To address this need we have developed a unique curriculum to teach communication skills regarding cancer prevention to third year medical students.

Methods: Participants are third year medical students who are beginning their internal medicine clerkship. The curriculum consists of a two-hour small group interactive role playing session. The session is divided into five, twenty-minute stations. Each station addresses topics in cancer prevention: breast, cervical, colorectal, skin cancer screening and tobacco cessation. At each station, 2-5 students role-play case scenarios, in which each student assumes the role of physician, patient or family member. An observing faculty moderator provides immediate and constructive feedback to each student.

Evaluation: The curriculum was evaluated by a pre and post-session self-administered Likert-scale questionnaire. The student's self-assessed: (1) their ability to discuss cancer prevention with patients, (2) the level of their confidence in incorporating communication strategies into routine practice, (3) their opinion on using role-plays as a useful teaching modality in improving communication skills and (4) their understanding of the patient barriers to effective cancer prevention screening. Paired t test was preformed on pre and post- test mean differences.

Results: There were 36 third-year medical students who volunteered to participate in the curriculum. Pre to post session, students reported their ability to discuss cancer prevention skills significantly improved ($p<0.0001$) and their confidence in their ability to include preventive medicine communication strategies in routine practice improved ($p<0.0001$). Role-playing was found to be a useful tool for increasing communication skills ($p<0.0002$) and student's self assessment of their ability to understand patient barriers to cancer screening also increased ($p<0.0001$).

Conclusion: We present a novel curriculum to teach cancer prevention communication skills using role-play as the primary teaching modality. The curriculum has been well received and there is evidence of improvement of these skills.

USE OF STANDARDIZED PATIENTS IN TEACHING CLINICAL BREAST EXAMINATION. K Worzala, M Maincuso, AM Harrington A Ash, KM Freund, Boston University Medical Center, Boston MA

Background: Clinical breast examination (CBE) detects up to 25% of all breast cancers, however health care providers report a need to improve their CBE skills. To address this need, curricula have been developed which use either standardized patients or silicone models as teaching tools. We performed a prospective randomized controlled study to determine whether there is additional value of standardized patients as compared to using silicone models alone in teaching CBE.

Methods: Participants included practicing providers, internal medicine residents and medical students throughout Massachusetts. The control group was instructed on silicone models alone whereas the investigational group received equivalent teaching time but on both silicone models and standardized patients. We used a pretest, posttest design to evaluate the effectiveness of the training program on CBE technique and lump detection on silicone models. We evaluated the overall improvement of both the investigational and control group combined and then compared the investigational to the control group.

Results: 83 participants were randomized to the investigational or control group. After training 91% self-reported improved CBE skills. Overall CBE techniques improved from pre to post-training for use of finger pads (72% to 92 %), use of overlap pattern (30% to 79%), examination of the entire breast (63% to 88%) and use of a clear search pattern (58% to 82%) (all p's<0.01). Overall sensitivity in lump detection in silicone models improved from 53% to 61% (p<0.03). The proportion of participants who improved from the pre to post training was greater in the investigational group compared to controls in the use of overlap pattern (37% vs 16%) and in use of finger pads (54% vs 41%) (p's<0.001), with no difference between groups in use of a clear search pattern or examination of entire breast. Lump detection improved 13% in the investigational group compared with a 5% improvement for the control group (p=0.30).

Conclusion: The use of standardized patients in addition to silicone models improves CBE technique over the use of silicone models alone.

WHICH RESIDENT HUMANISTIC BEHAVIORS DETERMINE PATIENT SATISFACTION IN HOUSESTAFF CLINICS? DC Yao, HR Rubin, CC Voorhees and PA Thomas, Division of General Internal Medicine, Johns Hopkins Medical Institutions, Baltimore, MD.

Objective: To determine specific resident humanistic behaviors that are related to patient satisfaction with primary care in housestaff practice after adjusting for patient characteristics, patient clinic operations, and resident characteristics.

Design: Cross-sectional study from September 1996 to May 1997, using a patient satisfaction questionnaire (PSQ) to survey patient satisfaction with the clinic visit overall and with the resident physicians' interpersonal skills. Information on patient demographics, access to care issues and, resident characteristics were obtained.

Setting: Two urban academic internal medicine resident clinics.

Participants: All post-graduate year two and three internal medicine residents were included. Patients were asked to complete the questionnaire on the day of the clinic visit

Measurement and Main Results: The PSQ evaluated 29 items, including 19 that addressed humanistic behaviors of the residents, using a 5-point rating (Strongly Agree-Agree-Neutral-Disagree-Strongly Disagree). A research assistant interviewed patients after their clinic visit. 366 PSQ surveys were collected on 58 resident physicians. Forty-four percent of patients rated their overall clinic visit as excellent, 24% as very good, 28% as good, 3% as fair, and <1% as poor. Using ordinal logistic regression to determine associations with overall clinic visit satisfaction, nine items were found to be statistically significant (p<0.05) predictors. Resident behavior items found to be statistically significant were: (1) being truthful with patients, (2) including the patient in decision making, (3) asking questions about patients' symptoms, (4) examining the patients carefully, and (5) answering the patients' questions. Access items that were statistically significant included waiting time for an appointment, location and convenience of the office, and length of waiting time at the office. Among patient characteristics, only patients' age was found to be a predictor of satisfaction, with older patients being more satisfied with their visit. Patients' self-assessment of their general and emotional health was not related to their overall clinic visit satisfaction. Resident characteristics, including gender, years of training, or type of program (primary care vs. categorical) did not predict patients' overall clinic visit satisfaction after adjusting for other variables.

Conclusion: Resident humanistic behaviors as well as access to care items are important components of overall patient satisfaction in our teaching clinics. Nine items in the Patient Satisfaction Questionnaire, including five items on humanistic behaviors, are associated with overall clinic visit satisfaction, and should be targets for residency education and performance improvement. Providing resident feedback and training in interpersonal skills as well as addressing teaching clinic operational issues can improve patient satisfaction.

PATIENT SATISFACTION IN RESIDENT AND ATTENDING AMBULATORY CLINICS WS Yancy, D Macpherson, R Buranosky, BH Hanusa, R Arnold and WN Kapoor, Division of General Internal Medicine, University of Pittsburgh Medical Center, Pittsburgh, PA

Background: Patient satisfaction correlates with improved patient compliance and perceived health status. While anecdotal evidence suggests that patient satisfaction is higher for attendings than residents, the two groups have not been compared within primary care ambulatory clinics.

Methods: For a period of 8 weeks, patients of PGY2, PGY3 and attending general internists were asked to complete a questionnaire at check-out in 4 University and VA primary care clinics. At each site residents and attendings utilized the space and support staff. Patients who were seeing a physician for the first time or could not complete the questionnaire without assistance were ineligible. Questionnaires consisted of items from the Visit Specific Questionnaire (Davies and Ware, 1991) and Patient Satisfaction Index (Hall et al, 1994) as well as the SF-12 and demographic questions. Three dimensions were derived from the satisfaction items: satisfaction with the clinic structure (e.g., competency of the staff, accessibility of the office, time waited to get an appointment); satisfaction with the physician this visit (e.g., competency level, interpersonal manner); and satisfaction with the affective component of the long-term patient-physician relationship.

Results: 288 questionnaires were completed (157 patients of 60 residents and 131 patients of 25 attendings). Patients of residents were more likely to be black, male, less likely to have post high school education and had lower SF-12 summary physical health scores. Comparing satisfaction with the clinic structure, 47% of the attendings' patients rated all items as excellent as compared to 30% of the residents' patients (χ^2=8.2, p=0.004). For satisfaction with the physician this visit, 68% of the attendings' patients rated their physicians as excellent on all items as compared to 49% of the residents' patients (χ^2=9.6, p=0.002). On the affective component, 87% of the attendings' patients rated their physicians as excellent on all items as compared to 57% of the residents' patients (χ^2=30.5, p<0.001). Differences in satisfaction persisted in multivariate analyses that controlled for patient differences.

Conclusions: Residents patients had lower satisfaction scores in all three dimensions even after accounting for differences in demographics and health status. Interventions to improve satisfaction will need to focus on both the structure of the clinic in which the residents work and how residents interact with the patient.

EFFECT OF ATTENDING PHYSICIANS' TEACHING SKILLS ON THEIR PERCEPTION AS ROLE MODELS BY RESIDENTS. MM Yeh, LA Lange, CA Haynes, KM Taylor. Department of Internal Medicine, St. Joseph Mercy Hospital, Ann Arbor, MI and Department of Biostatistics, School of Public Health, University of Michigan, Ann Arbor, MI

As role models or mentors, attending physicians may have a profound effect on residents' professional development. However, little is known about the effect of clinical teaching skills on a resident's perception that an attending would be a potential role model or mentor. PURPOSE: To identify which teaching skills predict whether an attending physician would be considered a positive role model or mentor. SETTING: A community teaching hospital with 57 internal medicine residents and 134 teaching physicians. DESIGN & METHODS: A 21-item questionnaire was administered to medical residents asking them to assess 69 teaching physicians only if they had worked enough with them to make a meaningful evaluation. The outcome measure asked whether the attending physician could serve as a role model or mentor for the resident. The other twenty questions served as covariates that addressed different categories of clinical teaching skills based upon the Stanford Faculty Development Program (SFDP) model. These categories were learning climate, control of session, communication of goals, understanding and retention, evaluation and feedback, and self-directed learning. The survey's 5-point Likert scale was dichotomized for data analysis. Chi-square tests were then produced for the covariates. Because of the correlation among observations due to repeated evaluations of attendings by residents, generalized estimating equation (GEE) models were fit to the data. RESULTS: Fifty-five medical residents completed 1,824 surveys rating 69 physicians, of whom 26 (38%) were rated positive role models or mentors. We found that responses of all twenty survey questions were directly predictive of the attending's role model rating ($p < 0.001$). Scores in all SFDP clinical teaching skills categories were also predictive of the role model rating ($p < 0.001$). In our community hospital-based setting, attendings were more likely to be perceived as role models if they were male, less than age 50, and not a general internist. Analysis of the data by resident gender and post-graduate year (PGY) level yielded similar results. CONCLUSIONS: Our study suggests that the likelihood an attending would be considered a role model or mentor by a resident is directly related to the attending's proficiency in clinical teaching. Since many of these teaching skills are modifiable, academic centers that wish to foster role model or mentor roles for their faculty should focus on improving clinical teaching skills.

PUTTING IT ALLTOGETHER: AN EFFECTIVE AND EFFICENT VIDEOTAPE SEMINAR FOR SENIOR RESIDENTS. S Zabar and A Kalet. Division of Primary Care, Department of Medicine, New York University Medical School, New York.

Efficient strategies are needed to assess and to address the ability of senior medical residents (SRS) to integrate all that they have learned. Most residents graduate with limited observations of their clinical encounters by faculty. Our experience with videotape review (VTR) led us to introduce a seminar in the fall of 1997 for SRs. The purpose of this seminar was to review core psychosocial and biomedical aspects of patient care with residents and help SRs improve their time management.

Methods: During the fall of 1997 and 1998 we conducted five weekly one-hour faculty facilitated, learner-centered, case based videotape reviews sessions. In 1997(n=7), qualitative observations by faculty were recorded. In 1998(n=7), a pre and post session questionnaire was given. Each week a single SR would provide to the group a videotaped encounter with an established patient. Sessions were structured to help residents set their own goals and to establish strategies for improving clinical skills. Feedback was provided by faculty and by the SR's colleagues. Residents were asked their learning goals and their comfort level with videotape review before starting and after completing all sessions.

Results: All residents found the seminar acceptable, but there was a high level of baseline discomfort. At the end of the series, 70% of questionnaire respondents reported increased comfort with videotape review and the rest reported no change in comfort level. Common goals for SRs included increasing efficiency in the clinical encounter, increasing the effectiveness of rapport building, and calibration with colleagues. The tapes revealed a broad spectrum of patient diagnosis and psychosocial issues. Despite this diversity, several difficulties were repeatedly encountered including: 1) inefficient time spent on the medical record, 2) difficulty moving on after psychosocial issues become evident, 3) difficulty recognizing and labeling emotional states. At the end of the series, residents thought they had gained 1) an increased repertoire of interview skills, 2) further understanding of the efficiency of directly addressing emotional content early in interview, and 3) an increased consciousness of the functions and structural elements of the medical interview. SRs saw VTR as a future tool of self-learning.

Conclusion: A series of one hour VTRs with SRs provides a wealth of data about residents performance in "real life" situations and shows common themes that require improvement. Residents report that this process solidifies knowledge, helps calibrate their skills with colleagues and helps prepares them for further learning. This method has potential for formative evaluation early into the final year of residency and can start residents on the road to becoming the mature sophisticated efficient physician we hope they will be.

GENERAL INTERNISTS LOOKING FOR JOBS: WHAT ARE THE HELPFUL STRATEGIES? LJ Zakowski, TG Cooney, GL Noel, Depts of Med, Univ of Wisc, Madison, WI and Oregon Health Sci Univ and Portland VAMC, Porland, OR.

Purpose: To determine the most helpful methods for General Internal Medicine (GIM) fellowship graduates to find jobs.

Methods: Using a mailed survey, we asked general internists who graduated from academic GIM fellowships (*graduates*) from 1988-1994 about methods used to search for jobs. We also asked Department of Medicine chairs, chiefs of medicine and chiefs of GIM (*employers*) the methods they used to find general internists for available positions. We listed 7 possible methods used and asked graduates and employers to rate the choices with a four-option Likert-type scale: not used, not helpful, somewhat helpful and very helpful.

Results: Most *graduates* found the following strategies either somewhat or very helpful: contacting people I know or have met about available positions (73%) and hearing about available positions from GIM fellowship director or other faculty (63%). Fewer graduates found the following approaches either somewhat or very helpful: sending letters without solicitation to centers in which I was interested (37%), responding to advertisements in journals (29%), receiving direct solicitation via letter from employers (15%) and using published information at national meetings (12%). Only 13% of graduates utilized professional employment agencies, and only 4% found it somewhat or very helpful. Most *employers* found the following four strategies either somewhat or very helpful: contacting physicians I already know who may be interested in the position (80%), responding to individuals who sent letters without solicitation (62%), placing advertisements in journals (55%) and contacting fellowship directors, chairs, or faculty at other institutions (54%). Fewer employers found the following strategies somewhat or very helpful: sending letters to graduating residents, fellows and colleagues with whom I have had no previous contact (17%), posting announcements at national meetings (16%), and contacting professional employment agencies (14%).

Conclusions: Developing personal and professional contacts, or networking, may be an important method by which graduates attaining jobs and employers find potential employees. This emphasizes the need for both to have well-developed networks to enhance employment opportunities.

MEDICAL HUMANITIES

THE FLOATING HOSPITAL, NEW YORK'S SHIP OF HEALTH: A CENTURY OF CARING FOR NEW YORK'S POOR. GL Baron, N Kathuria*. The Floating Hospital, New York, NY, *Department of Medicine, New York University School of Medicine, New York, NY.

Since 1872, The Floating Hospital has played a vital role in the health care of New Yorkers. The idea of a "floating hospital" originated in response to the crowded and unsanitary living conditions children faced during the 1870's. Initially, editors of *The New York Times* devised a day-long picnic in the countryside to remove children from the heat and squalor of the tenements. In 1872, St. John's Guild, a church philanthropy, expanded upon this idea by offering an excursion on a barge staffed by physicians. The physicians would provide free medical services while the children participated in different playtime activities. In 1875, a ship was purchased especially for these trips; the ship became known as The Floating Hospital, "New York's Ship of Health."

The Floating Hospital has operated on five ships: The Emma Abbott, The Helen C. Julliard I, The Helen C. Julliard II, The Lloyd Seaman, and the present day ship, The Lila Acheson Wallace. Review of the original archives from 1866 suggest that each ship and its programs has been custom-tailored to fit the public health needs of poor New Yorkers.

In the late 19th century caring for the poor revolved around ameliorating unsanitary living conditions. The first two ships tackled the problems of poor hygiene by removing children and mothers from the tenements and providing them with fresh sea air, free lunches, and baths. As the 20th century progressed and The Floating Hospital began to expand its programs, serving the poor took on a new meaning. In 1916 a new ship was commissioned to serve the poor by treating the acute, chronic diseases of childhood, including cholera. Two decades later, another ship was needed to accommodate the changing public health needs of New Yorkers, namely the rise in poliomyelitis seen among children. In 1935 The Floating Hospital initiated a fourth ship dedicated to serving the poor by catering to handicapped children and offering much needed social services. By the late 20th century the fifth ship was commissioned to accommodate the goals of serving the poor through health education and preventive care.

As our base of medical knowledge has evolved over the past 126 years so have the services provided by The Floating Hospital. In the 1870's the most effective medical treatment available was fresh air and good food. As time progressed and our armament of medical expertise expanded to include effective drug therapy and preventive medicine, the manner in which The Floating Hospital dealt with the sick changed accordingly. Throughout these changes, The Floating Hospital has remained committed to its mission to afford relief to the poor, sick children of the City of New York without regard to creed, color, or nationality, and to provide all care free of charge.

COST EFFECTIVENESS IN OUR CLINICAL DECISION UNIT. A Bazerbashi, T Raiji, SJ Smith. McLaren Regional Medical Center/Michigan State University - Flint Campus, MI.

Cost effective medicine is an increasingly important component of practicing medicine. In the managed care environment, organizations and protocols have heavily influenced the medical decision making of individual doctors in their pursuit of cost-effectiveness and the elimination of over-utilization patterns. Congruently, the emphasis on evidence-based medicine and medical necessity traditionally assumed by academics has now been adopted by those interested in cutting costs. Accordingly, in our 375 bed hospital, six months ago we opened a 22-bed, dedicated "clinical decision unit" (CDU) for 23 hour patient placement.

This unit houses patients who need observation for several hours, those whose presentation requires that serious illness be ruled out, or those with medical problems amenable to short term management. The patient is attended by his or her own physician or housestaff who are caring for patients on the regular medical-surgical floors.

Before opening this dedicated unit those patients were housed on the regular floors where most of them were "lost" in an inefficient system of delivering care spanning days not hours. In the CDU, nurses, care managers, social workers, ancillary support departments, are trained to work in a high performance, rapid turnover system geared for efficiency.

In the first two months of operation, we staffed the unit with agency personnel while training our own staff resulting in high initial net costs. However, dramatic savings have been demonstrated for the next four months, documenting the benefit of a dedicated unit staffed and run in a highly efficient manner.

MANAGING THE DIFFICULT PHYSICIAN-PATIENT RELATIONSHIP IN A PRIMARY CARE PRACTICE. A.Bazerbashi, SJ Smith. McLaren Regional Medical Center/Michigan State University - Flint Campus.

In managed care, primary care is the cornerstone of patient care and decision making. The average primary care physician will perform at least 200,000 medical interviews during a 40-year career, making it the most commonly performed "procedure" in clinical medicine.

Recent research suggests that physicians find as many as 10 percent of all patient interviews to be highly difficult. Causes of these difficulties include the patient's and/or family's personality, the physician's personality, the severity and chronicity of the patient's illness, thwarted efforts by the physician to help the patient, and psychosomatic presentations among others. Such problems preceded managed care, however, the perception by the patient of the primary care physician as the gatekeeper has further strained this relationship, due to its intrinsic conflict of interest. In fact, there is a strong correlation between communication failure and overutilization of health care services, including patient initiated specialty and subspecialty consultations. Furthermore, breakdown of the patient-physician relationship was identified as a reason for malpractice litigation in 71 percent of depositions.

The management goals for such troubled doctor-patient relationships include maintaining professional self-esteem, maintaining physician-patient continuity, and minimizing unnecessary hospitalizations and referrals. To achieve these goals the physician must earn the patient's trust. Empathy and nonabandonment are critical elements of the successful doctor-patient relationship. In some instances, the physician may find it necessary to elicit input from representatives of the patient's social milieu. In addition, specific community agencies may be useful partners in redressing the patient's psychosocial problems.

In conclusion, when there are difficulties in a patient-physician relationship, most often, there is a combination of factors contributing to the difficulty. Dealing effectively with the difficult patient-physician relationship, in primary care practice has an enormous effect emotionally, legally, and financially.

DISCLOSURE OF FAMILIAL GENETIC INFORMATION: JEWISH WOMEN'S PERCEPTIONS OF THE DUTY TO WARN. LS Lehmann[1], JC Weeks[2], N Klar[2], JE Garber[2]. [1]General Medicine Division, Massachusetts General Hospital, [2]Dana-Farber Cancer Institute, Boston, MA.

BACKGROUND: Cancer susceptibility testing has raised difficult ethical questions about confidentiality since genetic information about an individual patient reveals information about family members. We assessed women's perceptions of their duty to warn family and their beliefs about physicians' duty to warn family members.

METHODS: A population-based sample of 200 Jewish women in Boston participated in a 30 minute telephone survey. Jewish women were selected because of their increased risk of carrying a mutation in *BRCA1/2* (breast cancer gene 1/2). The survey assessed sociodemographic information, *BRCA1/2* knowledge, and insurance discrimination concerns. Participants were read two versions of a hypothetical scenario. The focus of the first scenario was a disease than could be prevented by screening, modeled on colon cancer. The second scenario dealt with breast cancer, indicating that screening could result in early detection but not prevention. Respondents were then asked questions about disclosure of results from the genetic susceptibility test. Logistic regression was used to identify variables predictive of a belief that physicians have a duty to warn at-risk family members.

RESULTS: The mean age of the sample was 46 years (range 18-69 years). 75% of women were college graduates. When questioned about a disease which could be prevented with a yearly screening procedure, 98% of respondents said patients should share genetic information with family members. 92% felt physicians have a duty to inform patients about the familial implications of genetic information, but only 17% believed physicians have a duty to warn at-risk family members against a patient's wishes. When questioned about breast cancer, 94% of respondents said patients should share genetic information with at-risk family members. 86% felt physicians have a duty to inform patients about the familial implications of their genetic information, but only 22% felt physicians have a duty to warn at-risk family members against a patient's wishes. Patients tended to respond similarly to the two scenarios (kappa=0.6, 95% CI 0.43-0.76). Individuals with more knowledge about *BRCA1/2* testing were less likely to believe physicians have a duty to warn family members (OR 0.71, 95% CI 0.52-0.96). Respondents who were more concerned about insurance discrimination were also less likely to believe physicians have a duty to warn at-risk family members against a patient's wishes (OR 0.89, 95% CI 0.82-0.99).

CONCLUSIONS: Most Jewish women think genetic information should be shared within families and most think physicians have a duty to inform patients about the familial implications of genetic susceptibility tests. However, few women thought physicians have a duty to warn at-risk family members against a patient's wishes even when this knowledge could result in disease prevention.

ATTITUDES TOWARDS IMPLEMENTING ADVANCE DIRECTIVES: DIFFERENCES BETWEEN ATTENDING AND RESIDENT PHYSICIANS P.S. Heckerling, J. Brensilver, C. Fleming, A.R. Eiser. Univ. of Ill. at Chicago, Chicago, IL and Soundshore Medical Center, New Rochelle, NY

Implementation of advance directives may be influenced by physician dependent or patient dependent factors, e.g. level of training or patient age or diagnosis. We surveyed 58 attending physicians and 43 resident physicians at two public hospitals and one private hospital in NY by presenting 6 clinical vignettes of patients that had completed, while possessing decisional capacity, do not resuscitate orders (DNR) in advanced stages of heart failure, respiratory failure, and AIDS and subsequently lost capacity as their conditions worsened. Cases were paired for a given disease with two distinct age categories. Responses to questions were scored on a 1-5 Likert scale and were analyzed using repeated measures ANOVA.

Attendings were more likely than residents to indicate that case patients would not want aggressive intervention when arrest was imminent (4.02 vs 3.46, p=.03) and were less likely to transfer patients to the ICU (2.63 vs. 3.21, p=.012). In addition, attendings were less likely to see a need to contact the surrogate urgently for guidance (2.47 vs. 3.11, p=.02). Both groups of physicians were less likely to treat aggressively older patients than younger patients with advanced cardiac failure (p=.0003) but no such age differential was noted for advanced lung disease (p=.36) or with advanced AIDS (p=.47). For a given patient age (55 yrs old) physicians equally endorsed aggressive treatment for all three diseases. We conclude that attending physicians were more inclined to comply with a patient initiated DNR order and to broaden the scope of that directive than residents were. Differences between attendings and residents could reflect experiential or cultural differences. In addition both groups of physicians appeared to modify compliance with a DNR order on the basis of age in a diagnosis dependent manner.

PRIME-TIME TELEVISION VS U.S RATES OF USE FOR ALCOHOL, ILLICIT DRUGS, AND TOBACCO. J.A. Long, P.G. O'Connor, G. Gerbner , J. Concato. Yale University, New Haven, CT and Temple University, Philadelphia, PA.

Much attention has been given to the role TV may have in promoting the use of addictive substances. TV is believed to exert an influence on behavior through both "glamorizing" use and by providing too many images. Previous quantitative research of addictive substances on TV have all been frequency counts of the substance. The frequency of use by characters has not been previously studied or compared to the rates of use in the general population. This study compares the prevalence of alcohol, illicit drug, and tobacco users among prime-time TV characters to the prevalence of users in the U.S. population. The data comes from a study designed to analyze TV messages regarding addictive substances. During 1995 and 1996, for 4 sample viewing weeks, this study catalogued alcohol, illicit drug, and tobacco use for 4,904 dramatic, prime-time TV characters, and 797 "main" characters according to sex, age, and race. For comparative control we used analogous rates for the U.S. population from the 1996 National Household Survey on Drug Abuse. Finally, we compared ratios of users in demographic subgroups (males vs. females, for those who were 18-34 years old vs. under 18 or over 34, and whites vs. minorities) and compared them to similar U.S. ratios.

Characters using alcohol, illicit drugs, and tobacco were consistently under-represented on TV. Although the prevalence of users was higher among main characters than all characters combined, none of the 95% confidence intervals (CI) around the observed prevalence included the U.S. rates.

Total Rates of Addictive Substance Users in the U.S and on Prime-Time TV

Substance	U.S. (N=18,269)	All Characters (N=4904)	Main Characters (N=797)
Alcohol	51%	11%	29%
Illicit drugs	6%	1%	2%
Tobacco	29%	3%	5%

When comparing the prevalence of users in subgroups to the general population we found no consistent pattern by sex, age or race. Alcohol drinkers on TV were less likely to be males than females, more likely to be 18-34 years old than under 18 years old, and more likely to be white than minority. For illicit drug users, characters were less likely to be white than minority. Finally, tobacco users were less likely to be 18-34 than over 34 years old.

This study of quantitative counts of persons does not assess the qualitative impact of images. In addition, TV may introduce viewers to images of alcohol, illicit drug, and tobacco users. In this study, however, we found the prevalence of addictive substance users to be infrequent and much lower on prime-time TV than in the U.S. population.

INTERNISTS IGNORE ADVANCE DIRECTIVES AFTER IATROGENESIS ? A Moreno, JD Orlander, A Ash, Section of General Internal Medicine, Boston Medical Center and Boston VAMC, Boston University School of Medicine, Boston, MA.

Purpose: Advance directives (ADs) preserve autonomy for patients and help physicians make medical decisions; however, they are often not followed. We investigated the influence of iatrogenic complications (ICs) in internists' decisions to honor ADs in severely vs. terminally ill patients and the rationale for their decision.

Methods: We conducted a nationwide mailed survey of practicing internists. Using a factorial design, we randomly sent to each internist 1 of 4 versions of a questionnaire. Each questionnaire contained a clinical vignette and 16 questions. All described a 65-year-old severely ill woman with chronic obstructive pulmonary disease and a symptomatic pleural effusion who developed a tension pneumothorax (PTX); the patient also had an existing AD in which she requested comfort care and refused resuscitation. In versions #1 and #3, the PTX was the result of a thoracentesis (IC); while in #2 and #4, it was a spontaneous complication (SC). In versions #3 and #4, the effusion was known to be malignant, making the patient terminally ill. ADs were considered to have been ignored if the response to the clinical vignette included willingness to intubate the patient.

Results: Of the 1005 surveys mailed, 24% were returned and analyzable. If intubation were needed to stabilize the patient, internists would have ignored 53% of the ADs in the severely ill patient with an IC compared to 13% in the severely ill patient with a SC, 14% in the terminally ill with an IC, and 6% in the terminally ill with a SC ($p=0.001$). No difference was found among the percentages of ignored ADs in the last three scenarios ($p=0.5$). For all scenarios, those who honored the AD were more likely to select medical futility as an important justification for their decision compared to those who ignored the AD, 32% vs. 4% ($p=0.001$). On the other hand, compared to those physicians who honored the AD, those who ignored it were more likely to select the following reasons as important justifications for their action: potential risk of a future litigation 77% vs. 31%; likelihood of treatment success 87% vs. 47%; and the belief that ADs bind only during events that are part of the disease's natural history, 56% vs. 34% ($p=0.001$). Those who ignored the AD during an IC were more likely to consider the potential risk for a future litigation as important justification than those who honored it during an IC, 56% vs. 0% ($p=0.01$). No difference was noted among all the subjects comparing demographics, specialty, and self reported amount of training about medical, legal, and ethical aspects of ADs.

Conclusions: Internists are more likely to ignore an AD in a severely ill patient with an IC than in a similar one with a SC, or in a terminally ill person whether or not the complication is iatrogenic. This difference may be explained in part by fear of litigation, misunderstanding of when ADs are valid, and perceived likelihood of treatment success.

HUMANISM AND HUMAN RIGHTS: THE INTERNATIONAL CAMPAIGN TO BAN LANDMINES. P Preston Reynolds. Johns Hopkins University. Baltimore, MD

The United Nations General Assembly on December 10, 1948, ratified the Universal Declaration of Human Rights which laid the foundation for subsequent international treaties and laws that further protect the integrity and rights of individuals. The Universal Declaration of Human Rights guarantees basic human rights which include the right to health, food, shelter, clothing, and education, to freedom of expression, to move freely within one's country and across borders, and more. In many countries throughout the world, however, an individual's right to life is threatened daily by landmines which kill and maim indiscriminately.

Human Rights Watch and Physicians for Human Rights in 1991 first called for a comprehensive ban on the use and production of landmines, and later that year helped to bring together a handful of NGO's, non-governmental organizations, to explore how they could work together to achieve a new human rights objective. In October 1992, Handicap International, Human Rights Watch, medico international, Mines Advisory Group, Physicians for Human Rights, and Vietnam Veterans of America Foundation issued a "Joint Call to Ban Antipersonnel Landmines" and in doing so, launched the International Campaign to Ban Landmines (ICBL).

Using archival sources, oral interviews, and newspaper and journal accounts, this study will describe the origins and growth of the International Campaign to Ban Landmines which culminated in the Ottawa Treaty signed in December 1997, and the 1997 Nobel Peace Prize awarded to members of the ICBL steering committee and Jody Williams, campaign coordinator. It will analyze motivations of the Canadian government in assuming leadership of the Ottawa Process which was successful in obtaining enough signatures to establish an international comprehensive ban on the production, use, and stockpiling of antipersonnel landmines.

ART EXPERIENTIALS IN "DOCTORING" – THE ARTWORK OF PHYSICIANS FROM A COURSE ON PERSONAL & PROFESSIONAL DEVELOPMENT. MW Rabow and C Perlis, Division of General Internal Medicine and the Art for Recovery Program, UCSF/Mount Zion Medical Center, San Francisco, CA.

Background: The literature suggests that, by enhancing personal awareness, physicians might improve professional effectiveness. Artistic expression may facilitate personal awareness. Interns in the UCSF Primary Care Internal Medicine programs participate in a seminar on personal and professional development called "Doctoring." The seminar, which has previously been shown to be well-received and valued, involves personal exploration through the creation of art.

Purpose: A presentation of the artwork created by Primary Care interns and accompanying analysis of the themes depicted.

Methods: Attendance at the weekly Doctoring seminar is required of Primary Care interns during the 2 or 3 months per year they are on outpatient rotations. About 25% of the seminar time is spent creating two- and three-dimensional art to address various questions about identity, the patient-physician relationship, and death and dying. The "art experiential" sessions require no previous artistic training or talent and are facilitated by an artists who works primarily with patients with life-threatening illness. Techniques used include drawing, collage, and mask-making.

Evaluation: All interns were willing to participate in the art experiential sessions. Analysis of the artwork reveals a number of common themes with which Primary Care interns struggle. In response to questions about identity (e.g. "Who were you before medical school and who are you now?") the interns depict dual feelings of gain and loss-- now being more rooted and focused but feeling their values and principles are being overwhelmed and threatened by their residency training. Disconnection between the mind, body, and spirit is a common expression. In response to the question "What is a healer?" interns typically include concepts of compassion, empathy, love, and holiness-- images that are in sharp contrast to depictions of their regular workday activities. Drawings depicting "a patient you cared for who died" reveal painful feelings of fear, guilt and confusion, as well as gratitude towards patients and a hope for the relief of patient suffering

Conclusion: Art experientials in a course on personal and professional development are a rich source for personal exploration and help identify some common themes both inspiring and challenging to Primary Care interns.

LT WRIGHT, MD AND THE NAACP: PIONEERS IN HOSPITAL RACIAL INTEGRATION: 1912-1965. P Preston Reynolds. Johns Hopkins University. Baltimore, MD

Louis T. Wright was a leading surgeon in the first half of the twentieth century, earning distinction as the first African-American elected into Fellowship of the American College of Surgeons. His early professional life, however, was marked by overt discrimination. Wright emerged from harsh barriers to surgical practice determined to achieve equity in health care for his African-American physician colleagues and patients.

Research sources on LT Wright include personal and professional manuscripts housed in archives at the Countway Library, the Moorland-Spingarn Research Center, and the New York Academy of Medicine. Primary documents of the NAACP are found in the Library of Congress.

In 1919, Dr. Louis T. Wright was hired to work in the out-patient clinic at Harlem Hospital, becoming the first black physician admitted to a New York City hospital's part-time or full-time staff. By the end of the 1920s, he successfully forced the hospital to hire black physicians full-time onto all the major clinical services and to open the residency and nursing programs to qualified black applicants. Recognized nationally as an investigator and gifted surgeon, Wright was named chairman of the Department of Surgery at Harlem Hospital, a position he used to achieve racial integration in all aspects of patient care and professional education.

Dr. Louis T. Wright served as chairman of the Board of Directors of the National Association for the Advancement of Colored People from 1935-1952. This became his passion -- a means to keep abreast of the struggle for freedom from oppression, and a pulpit from which to teach and expand the lessons of civil rights the organization pioneered. While fighting for better housing, jobs, and clean water, he argued standards of excellence be applied in the care of both black and white patients. His vision created the movement to racially integrate health care in the United States; thus, the NAACP emerged as the first leadership organization with an agenda and strategy to racially integrate all aspects of medicine.

CONFLICTING OBLIGATIONS: A CASE ANALYSIS OF A PEDOPHILIC PEDIATRICIAN. JY Song and PB Terry. Johns Hopkins Medical Institutions, Baltimore, MD.

An ethical case analysis is presented to demonstrate the myriad obligations that arise when caring for a sex offender and the factors providers should consider when determining the extent of the obligation to protect potential third parties. **Case:** Dr. M is a 43 year-old pediatrician from another state who was admitted to the Psychiatry Service. Dr. M is a well-respected community member, married, with three sons. One evening, the patient forcefully attempted to fondle his 14 year-old son. After much family discussion, the boy agreed not to press charges, and the patient sought treatment. Evaluation revealed that he has had a long-standing obsession with young boys, although he has attempted to block such thoughts. He adamantly denied any indiscretions in his practice. Dr. M was a model patient who participated fully in his care, and it was the opinion of the treating team that Dr. M's response was optimal, although they acknowledge the possibility of relapse. After treatment, the patient revealed his plans to close his practice, move his family to another state, and start another practice. **Analysis:** The primary ethical conflict is whether the treating psychiatrists should maintain confidentiality or attempt to protect potential victims through notification. Many obligations inform this decision: the obligation to Dr. M; to his children; to Dr. M's previous and future patients; to society; and to the medical profession. The most obvious obligation is to Dr. M who has voluntarily engaged the psychiatric team in an incorporation of medical service - the patient-physician relationship. The duties which arise from this fiduciary union are profound, and one of the most significant of these is the physician's promise to maintain confidentiality. We examine the deontological and consequentialist justifications of confidentiality in this case, then explore the other duties to determine whether they ought to override this duty to maintain confidentiality. We consider the salient empirical and moral dimensions of the potential harm to third parties - the magnitude of harm; the vulnerability of potential victims; the identifiability of victims; the likelihood of harm; the effectiveness of available interventions; the opportunity to prevent harm; and the cost of preventing harm. **Conclusion:** We conclude, then, that it is only the obligation to protect Dr. M's children that has the moral authority to compel his physicians to notify. Finally, we make recommendations that would best fulfill this duty while preserving as best as possible Dr. M's rights and dignity.

PROFESSIONAL RESPONSIBILITY AND REPORTING UNETHICAL RESEARCH BEHAVIOR. NS Wenger, SG Korenman, R Berk and HH Liu. Departments of Medicine and Statistics and Sociology, University of California, Los Angeles, CA.

Objective: Researchers, as professionals, have a responsibility to self-regulate and to police the actions of fellow researchers. However, whistleblowing is rare. We investigated researchers' infrequent disclosure of unethical behavior by studying their responses to scenarios describing unethical research acts and compared the responses of researchers to those of research administrators.

Methods: A survey containing randomly generated scenarios of scientific behavior (deception, misappropriation of others' ideas, conflict of interest, and noncollaborative behavior) was administered to National Science Foundation principal investigators and institutional representatives (IRs) to the U.S. Public Health Service Office of Research Integrity. We compared researcher and IR responses to unethical research behavior and evaluated the scenario factors associated with responses.

Results: Sixty-nine percent of scientists (606) and administrators (91) responded to the survey. Respondents rated 68% of scenarios as unethical and both researchers and IRs proposed to respond to nearly all research behaviors that they rated as unethical. Most commonly proposed responses to the unethical behavior were: speak to the scientist committing the ethical infraction (68%), discuss with colleagues (54%), inform a supervisor (47%), inform an administrator or dean (31%), inform a journal editor (19%) and inform a funder (16%). Scientists more often proposed responses limited to the research team while IRs more often proposed to inform an administrator or dean, journal editor, funding agency, professional society or reporter. Scientists would limit reporting to researchers for 58% of cases compared to only 25% of cases for IRs ($p<0.001$). The unethical level of the research behavior and the prior behavior and academic rank of the protagonist in the scenario were associated with responses, but the consequences of the unethical behavior were not.

Conclusion: Researchers appear to perceive that they uphold their responsibility to respond to unethical behavior by disclosures within the research team, while IRs report to externally accountable individuals. Researchers and administrators should debate whether this behavior constitutes professional self-regulation or cover-up.

MARTYRDOM, SUICIDE, AND EUTHANASIA: JOHN DONNE'S ARGUMENT WITH AUGUSTINE. DP Sulmasy, The Departments of Ethics and Medicine, St. Vincents Hospital, New York, NY.

Old arguments often re-appear in new forms. In *Biathanatos*, John Donne's little known and posthumously published book (1647 C.E.) defending the morality of suicide, he argues that there is no difference between martyrdom and suicide. Noting the zeal that often resulted in the martyrdom of Jesuit missionaries, he taunts, "So if this desire of dying be not agreeable to the Nature of man, but against it, yet it seems that it is not against the Nature of a Jesuit." Across the centuries, he attacks the distinction between martyrdom and suicide first proposed by Augustine in *City of God* (426 C.E.). Augustine's distinction is based on whether one intends to die or accepts death as an unintended side-effect of one's unwillingness to renounce the faith. Augustine's formulation of the distinction between martyrdom and suicide is structurally the same as the distinction between killing and allowing to die defended by several contemporary medical ethicists. Donne argues that martyrs, in fact, seek and desire death, and that Augustine's distinction, based on the purported unintentional death of the true martyr, is specious. Donne argues further that circumstances must always mitigate laws, and that one ought to defer to the primacy of individual conscience in determining whether a particular act of martyrdom or suicide is permissible. He argues that suicide is not always an act of desperation, but can be an act of charity, or at least an act of reason. He argues that the prolonged fasts of ascetical saints amounted to slow suicide, stating, "it makes no difference whether thou be long in killing thyself, or do it at once." He also argues that doctors are "a punishment from God," often making sickness worse, and that there can be no moral obligation to seek their services. In some respects, Donne misrepresents the Augustinian position, but he is always witty and deadly serious. Significantly, each of Donne's arguments has recurred, 350 years later, in the contemporary debate about euthanasia and assisted suicide. Revisiting these historical arguments sheds light on the present debate regarding these thorny issues.

US POSTAL SERVICE & CANCER SCREENING: STAMP OF APPROVAL? S Woloshin, LM Schwartz. VA Outcomes Group, White River Junction, VT and Dartmouth Medical School, Lebanon, NH.

Background The US Postal Service recently unveiled breast and prostate cancer stamps with strikingly different messages. Despite strong supporting evidence, the breast cancer stamp does not suggest undergoing screening mammography ("breast cancer: fund the fight, find a cure")- in contrast, the prostate stamp advocates screening despite the absence of evidence demonstrating a benefit ("prostate cancer awareness: annual checkups and tests"). We wanted to find out why this happened.

Methods We interviewed key personnel and reviewed all publicly available documents, press releases, and relevant Congressional testimony.

Results The Postal Service's Citizens' Stamp Advisory Committee selects 30-50 new stamps each year from over 40,000 proposals. 16 health related stamps have been issued to raise public awareness of specific diseases (e.g., breast cancer, AIDS), promote specific behaviors (e.g., give blood, exercise), and advocate early detection of cancer. None have been reviewed by experts to assess their scientific content.

The idea for the breast cancer stamp emerged from advocates for breast cancer research. Although the Postal Service had always avoided a direct role in fund-raising (given political and practical concerns about which causes to support), advocates were able to exert considerable political pressure. Congress passed legislation directing the Postal Service to issue the nation's first ever fund-raising stamp. The new stamp costs 40 cents: 32 cents for postage and 8 cents for Federal breast cancer research.

The idea for a prostate cancer stamp emerged within Congress and the Postal Service in reaction to the breast cancer stamp. Several men in each group were prostate cancer "survivors" and vocal advocates of PSA screening. Using the breast cancer stamp as a model, they drafted legislation for another fund-raising stamp. Reluctant to support yet another fund raising stamp, the Postal Service opposed the bill - which ultimately "died in committee". At the same time, the Advisory Committee expressed support for a standard Prostate Awareness stamp reflecting it's familiar position of advocating early detection. The Postal Service designed the wording of the stamp specifically to promote prostate cancer screening which they believe is "the key to successful treatment of prostate cancer and to saving the lives of husbands, grandfathers, fathers, sons, brothers, uncles and friends".

Conclusion While the Postal Service's history of issuing stamps to raise awareness of important public health issues is laudable, the Postal Service should avoid prescribing testing and treatment.