

The Internal Medicine Subinternship—Now More Important than Ever

A Joint CDIM-APDIM Position Paper

T. Robert Vu, MD¹, S. V. Angus, MD², P. B. Aronowitz, MD³, H. E. Harrell, MD⁴, M. A. Levine, MD⁵, A. Carbo, MD⁶, S. Whelton, MD⁷, A. Ferris, MD⁸, J. S. Appelbaum, MD⁹, D. B. McNeill, MD¹⁰, N. J. Ismail, MD¹¹, and D. M. Elnicki, MD¹² CDIM-APDIM Committee on Transitions to Internship (CACTI) Group

¹Indiana University School of Medicine, Indianapolis, IN, USA; ²University of Connecticut School of Medicine, Farmington, CT, USA; ³University of California, Davis, School of Medicine, Sacramento, CA, USA; ⁴University of Florida College of Medicine, Gainesville, FL, USA; ⁵University of Vermont College of Medicine, Burlington, VT, USA; ⁶Harvard Medical School, Boston, MA, USA; ⁷Georgetown University School of Medicine, Washington, DC, USA; ⁸Drexel University College of Medicine, Philadelphia, PA, USA; ⁹Florida State University College of Medicine, Tallahassee, FL, USA; ¹⁰Duke University School of Medicine, Durham, NC, USA; ¹¹Baylor College of Medicine, Houston, TX, USA; ¹²University of Pittsburgh School of Medicine, Pittsburgh, PA, USA.

For decades, the internal medicine (IM) subinternship has served as a critical interface between undergraduate and graduate medical education. As such, the vast majority of U.S. medical schools offer this rotation to help students prepare for post-graduate training. Historically an experiential rotation, a formal curriculum with specific learning objectives was eventually developed for this course in 2002. Since then, graduate medical education (GME) has changed significantly with the regulation of duty hours, adoption of competency-based education, and development of training milestones and entrustable professional activities. In response to these and many other changes to residency training and medical practice, in 2010, the Association of Program Directors in Internal Medicine (APDIM) surveyed its members—with input from the Clerkship Directors in Internal Medicine (CDIM) Subinternship Task Force—to determine which core skills program directors expected from new medical school graduates. The results of that survey helped to inform a joint CDIM-APDIM committee's decision to re-evaluate the goals of the IM subinternship in an effort to enhance the transition from medical school to residency. This joint committee defined the minimum expectations of what constitutes an IM subinternship rotation, proposed recommended skills for IM subinterns, and discussed challenges and future directions for this crucial course.

J Gen Intern Med 30(9):1369–75
DOI: 10.1007/s11606-015-3261-2
© Society of General Internal Medicine 2015

The internal medicine (IM) subinternship is a longstanding pillar in undergraduate medical education (UME) that arose out of necessity in response to intern shortages during World War II, rather than a perceived educational need. This rotation for senior medical students to serve as acting interns was a logical extension of the “progressive graded

responsibility” concept already in place for residency programs, and became widely adopted after the war.¹ Since then, medical specialization evolved and changed residency education, which in turn gave rise to subinternships in other specialties.^{2,3} Although the IM subinternship has remained an integral component of medical education and is offered at most medical schools, it has largely been an experiential rotation without clearly defined curricular goals.² In 1992, Federman was the first to specifically address the IM subinternship's role in the continuum of IM education.⁴ Subsequently, Fagan and colleagues outlined more specific recommendations regarding the IM subinternship structure and experience.³

In 2002, the Clerkship Directors in Internal Medicine (CDIM) Subinternship Task Force published its core curriculum for the IM subinternship.^{5–7} This curriculum's specific objectives were based upon a needs assessment from IM residency program directors, subinternship directors, and interns.⁵ Since that publication, graduate medical education (GME) and medical practice have changed significantly with the Accreditation Council for Graduate Medical Education (ACGME) regulations on duty hours and supervision; development of competency-based education, training, and evaluation; increased emphasis on transitions of care, patient safety, and quality improvement; and the widespread adoption of electronic health records (EHR). These changes have impacted clinical teaching and learning at the UME level. Duty-hour regulations have resulted in faculty and residents perceiving less time to teach students, reduced continuity of patient care, and decreased volume and variety of patient exposures for students.^{8–13} Billing and medico-legal concerns have resulted in many institutions prohibiting students from using EHRs.¹⁴

EDUCATIONAL ORGANIZATIONS RESPOND

Recognizing the changes to GME and their effects on UME, in 2010 the Association of Program Directors in Internal

Medicine (APDIM) surveyed its members about the IM subinternship. The survey items were developed with input from the CDIM Subinternship Task Force and included skills across several domains reflecting the current CDIM subinternship curriculum⁶ and primer.¹⁵ Program directors ranked the skills, knowledge, and behaviors they believed were most important for new interns to possess. Those results¹⁶ prompted a re-examination of the IM subinternship, particularly in the context of internship preparation. In July 2012, the Alliance for Academic Internal Medicine (AAIM) formed the joint CDIM-APDIM Committee on Transitions to Internship (CACTI), whose charge included updating the goals and objectives of the IM subinternship. More recently, the Association of American Medical Colleges (AAMC) has turned its attention to residency preparation with the publication of 13 core entrustable professional activities for entering residency (CEPAER) that define a core set of behaviors and skills expected of all medical school graduates.¹⁷ Capitalizing on the timely formation of CACTI and the AAMC's CEPAER, this paper aims to update the goals and objectives of the IM subinternship, mapping them to specific core EPAs to reflect the many changes to GME, while promoting a standardized language that bridges the transition between UME and GME.

MINIMUM EXPECTATIONS OF WHAT CONSTITUTES AN INTERNAL MEDICINE SUBINTERNSHIP ROTATION

Building on earlier work and the previously published CDIM subinternship curriculum,^{3,5-7} the new subinternship curriculum should:

- be competency-based
- be developmental, consolidating and refining the knowledge and skills acquired during third-year clerkships
- insure increased responsibility in the evaluation and management of acutely ill, hospitalized medical patients in directly supervised patient-care settings
- promote development of effective interprofessional teamwork and communication skills.

To achieve these goals, the subinternship must contain rigorous expectations that define:

- the setting and length of the clinical rotation
- level of supervision
- duty-hour regulations and clinical workload
- care transitions and cross-coverage responsibilities
- access to EHRs
- opportunity for evidence-based, high value care practice.

The IM subinternship must be an inpatient rotation that gives the subintern primary responsibility for providing care to medical patients. This experience may occur on the general medicine wards, medical intensive care unit (ICU), or a medicine sub-specialty service (e.g., cardiology, oncology, etc.), as long as the subintern is part of a team bearing *primary* responsibility

for the care of its patients. To enable adequate and meaningful clinical exposure as well as optimal contact time with clinician-educators, the duration of an IM subinternship rotation should be a minimum of 4 weeks in length, mirroring the typical length of most residency program rotations.

Direct supervision throughout the rotation is essential, and the design of the medicine inpatient units and the nature of the hospital (e.g., academic or community-based) will determine the specific model. Teams may incorporate senior residents or involve direct supervision only by hospitalists or specialty attendings without any house staff. Ultimately, whichever model is used, an attending physician will have overarching responsibility for the supervised education of the subintern. Direct observation and feedback are the primary means for evaluating the subintern's clinical performance and his/her ability to integrate feedback into subsequent performance.

While strict duty-hour regulations do not exist for subinterns, it is expected that clinical workload and duty-hour limitations appropriate for resident-led teams be adhered to by the subintern. The number of continuous duty hours for a subintern can mirror that of an intern or that of an upper-level resident, depending on the specific nature of the rotation and team structure and the discretion of the subinternship course director. Whereas ACGME program requirements state that an IM intern must not be responsible for the ongoing care of more than ten patients,¹⁸ there are no similar guidelines to inform decisions about the appropriate number of patients for whom a subintern assumes the primary caregiver role; the consensus of the CACTI Group is that providing ongoing care for three to five patients is ideal, with adjustments made based on the level of competence demonstrated by the subintern.

Important care transitions for hospitalized patients include admission, transfer between services, sign-outs between physicians, and discharge from the hospital. These care transitions leave patients especially vulnerable, and subinterns must actively participate in these critically important care transition activities to learn common patient safety principles and develop effective communication skills. In particular, discharge management provides rich opportunities for subinterns to work in multidisciplinary teams and learn to engage community resources during the discharge process. Likewise, subinterns should participate in cross-coverage roles similar to those of interns; this can include night and/or weekend work. The goal is to have subinterns develop skills in acute diagnostic and management strategies, and enhance their ability to recognize sick patients requiring higher levels of care. These cross-cover responsibilities, which may be assessed during the day or on night call depending upon the structure of the rotation, should be deliberately built into the clinical responsibility profile. It may be logistically unfeasible to build night-float roles for subinterns into a predominantly daytime subinternship rotation, so some institutions may need to create a separate required fourth-year night-float experience.

To fully engage as the principal patient caregiver, subinterns must be allowed full access to patients' medical records and be given the ability to document in these records and to write

Table 1. Recommended Skills for Subinterns with Corresponding IM Milestones and Core EPAs for Entering Residency (CEPAER)

Recommended Skill Set	APDIM Survey High Priority Skills	Curricular Milestone	Example Skill and Corresponding AAMC CEPAER
Recognizing sick vs. non-sick patients	Information management (prioritizing skills)	Acquire accurate and relevant histories from patients in an efficiently customized, prioritized, and hypothesis-driven fashion (PC)	Effectively and efficiently collects relevant historical data (EPA-1)
		Perform accurate physical examinations that are appropriately targeted to the patient's complaints and medical conditions.	Able to perform an appropriately targeted physical exam (EPA-1)
		Identify pertinent abnormalities (PC)	Immediately seeks enhanced medical care for deteriorating patients (EPA-10)
Time management skills	Coordinating care with other health care workers	Recognize situations which need urgent or emergent medical care, including life threatening conditions (PC)	Able to interpret changes in vital signs, signs and symptoms of potential cardiovascular or respiratory collapse (EPA-10)
		Understand the relevant pathophysiology and basic science for common medical conditions (MK)	Conveys a sense of urgency; asks questions of senior team members and other team members (EPA-6)
		Deliver appropriate, succinct, hypothesis-driven oral presentations (ICS)	Notifies all team members of changes in patient's condition; involves ancillary staff in care of patient (EPA-9)
Time management skills	Knowing when to seek assistance	Work effectively as a member within the interprofessional team to ensure safe patient care (SBP)	Knows when higher level of care is needed; recognizes when situations are beyond his/her own capabilities (EPA-10)
		Recognize when to seek additional guidance (PC)	
		Recognize when it is necessary to advocate for individual patient needs (P)	
Time management skills	Organization, Prioritization, and Time management	Respond promptly and appropriately to clinical responsibilities, including but not limited to calls and pages (P)	Answers phone calls and pages promptly (EPA-9)
		Ensure prompt completion of clinical, administrative, and curricular tasks (P)	Maintains organized checklists of daily patient care tasks (EPA-4 and EPA-5)
		Carry out timely interactions with colleagues, patients and their designated caregivers (P)	Maintains organized schedule of rounding times, clinic start times, and conferences
Knowing when to ask for assistance (and from whom)	Knowing when to seek assistance	Recognize and address personal, psychological, and physical limitations that may affect professional performance (P)	Maintains open channels of communication with peers and supervisors to enable optimal receptiveness to feedback about effective teamwork (EPA-9)
		Recognize the scope of his/her abilities and ask for supervision and assistance appropriately (P)	
		Appreciate the variety of health care provider roles, including, but not limited to, consultants, therapists, nurses, home care workers, pharmacists, and social workers (SBP)	Appropriately enlists timely assistance from team's social worker to facilitate discharge planning process (EPA-9)
Knowing when to ask for assistance (and from whom)	Knowing when to seek assistance	Recognize when to seek additional guidance (PC)	Immediately call senior resident to come assist if patient clinically deteriorating (EPA-10)
			Asks colleague (intern, resident, attending, nurse, etc.) for help with completing an unfamiliar task (e.g., placing an IV, drawing labs, completing discharge paperwork, getting informed consent, etc.) (EPA-9)
			Enlists the help of senior resident or attending in cases where patient and/or family becomes upset about their care (EPA-9)
		Seeks oversight from a senior resident or attending for discussions about end-of-life, DNR, or withdrawal of care (EPA-9)	

(continued on next page)

Table 1. (continued)

Recommended Skill Set	APDIM Survey High Priority Skills	Curricular Milestone	Example Skill and Corresponding AAMC CEPAER
Communicating effectively within healthcare teams	Transition periods: Writing discharge/ transfer summaries	Provide legible, accurate, complete and timely written communication that is congruent with medical standards (ICS)	Generates a thorough discharge summary that effectively communicates the hospital course, the current plans, and follow-up for the patient (EPA-8) Communicates with past and future care providers to insure continuity of care (EPA-8)
	Providing a prioritized and organized verbal and written sign-out	Manage and coordinate care and care transitions across multiple delivery systems, including ambulatory, subacute, acute, rehabilitation and skilled nursing (SBP)	Delivers accurate and focused bedside presentations (EPA-6)
	Oral presentations	Deliver appropriate, succinct, hypothesis-driven oral presentations (ICS)	Asks meaningful clinical questions that guide the input of consultants (EPA-9) Weighs consultant recommendations in order to effectively manage patient care
	Requesting a specialty consultation	Request and provide consultative care (PC) Request consultative services in an effective manner (ICS)	Quickly establishes therapeutic relationships with patients and caregivers from all different socioeconomic and cultural backgrounds (EPA-9)
	Communicating in a culturally sensitive manner	Actively seek to understand patient differences and views and reflects this in respectful communication and shared decision-making with the patient and the healthcare team (ICS)	Engages in collaborative communication with all members of the team (EPA-9) Acts to facilitate collaboration with the team to enhance patient care (EPA-9)
	Coordinating care with other health care workers including nurses and triage	Effectively communicate plan of care to all members of the health care team (ICS)	

Legend:

PC = Patient Care

MK = Medical Knowledge

P = Professionalism

SBP = Systems-Based Practice

ICS = Interpersonal Skills and Communication

EPA-1: Gather a history and perform a physical examination

EPA-2: Prioritize a differential diagnosis following a clinical encounter

EPA-3: Recommend and interpret common diagnostic and screening tests

EPA-4: Enter and discuss orders/prescriptions

EPA-5: Document a clinical encounter in the patient record

EPA-6: Provide an oral presentation of a clinical encounter

EPA-7: Form clinical questions and retrieve evidence to advance patient care

EPA-8: Give or receive a patient handover to transition care responsibility

EPA-9: Collaborate as a member of an interprofessional team

EPA-10: Recognize a patient requiring urgent or emergent care and initiate evaluation and management

EPA-11: Obtain informed consent for tests and/or procedures

EPA-12: Perform general procedures of a physician

EPA-13: Identify system failures and contribute to a culture of safety and improvement

orders with built-in mechanisms for physician co-signature before orders are implemented by the nursing staff. This level of engagement enables subinterns to demonstrate patient care ownership and provides them with valuable hands-on practice experience.

The IM subinternship provides ideal grounds for practical application of a medical school's evidence-based medicine curriculum, and this should be an objective of the subinternship with clearly defined opportunities for assessment. The IM subinternship curriculum should also incorporate education on quality and safety measures and understanding of high value care.¹⁹

RECOMMENDED SKILLS FOR INTERNAL MEDICINE SUBINTERNS

Previous work showed that students from different schools do not enter internship with a 'standard' set of skills and that gaps

exist between the skills new interns can perform and what is expected of them by program directors.²⁰ The IM subinternship is a well-suited rotation that can address many of the core skills that IM program directors would like their new interns to possess. Results from the 2010 survey of APDI M members provide the most recent core skills program directors expect from new medical school graduates. There was high uniformity among program directors' responses to this survey, which served as the starting point for the recommended set of skills that all students completing an IM subinternship should possess. The survey responses broadly defined four major skill sets: patient evaluation skills (e.g., recognizing sick patients), time management skills, knowing when to ask for assistance, and communicating effectively within healthcare teams.¹⁶ Each of these broad skills and the associated items from the APDIM questionnaire can be linked to the published IM milestones²¹, most of the ACGME clinical competencies, and the AAMC's core EPAs for entering residency (CEPAER) (see Table 1). Additionally, example

behaviors or skills that would allow the subintern to demonstrate achievement of competence in each milestone are included to help operationalize the milestones. Many of these behaviors could be developed through caring for patients as a subintern, while others could potentially be accomplished through selective use of the training problems contained within the CDIM subinternship curriculum, which include common inpatient scenarios and cross-coverage situations. Using the IM milestones as a framework for competencies in the medicine subinternship facilitates bridging of the educational continuum from UME to GME and establishes greater uniformity in the education and evaluation of students.

CHALLENGES AND FUTURE DIRECTIONS

The IM subinternship's brief yet pivotal role highlights some educational challenges of preparing 4th-year students for postgraduate training. Although academically and clinically rigorous, a typical subinternship is only 4 weeks in length and is usually taken early in the academic year to "audition" for residency programs, leaving the remainder of the year vulnerable to potential "decay" in knowledge and skills. These two issues argue strongly for medical schools to require more than one subinternship. Yet, increasing class sizes present logistical challenges to this proposal, both in terms of available training sites and numbers of prepared faculty, potentially decreasing the value of these subinternships.

Likewise, as health care systems move toward adopting EHRs, medical students' ability to document and write orders are at risk of becoming diminished, which may further lessen the rotation's educational value.¹⁴ The Alliance for Clinical Education has published a statement providing guidance to medical educators on expectations for medical students documenting in EHRs.²²

As the economic climate has prompted re-evaluation of the cost and duration of medical education,^{23,24} IM faculty should strive to offer flexibility and adapt the subinternship curriculum to current and future changes in medical education. While these new guidelines aim for closer alignment of subinternship and residency expectations, we recognize that any curricular reform may limit flexibility, and thus, we have left many suggested requirements adaptable to specific institutions and situations.

Despite these challenges, we must prepare graduating students to transition into GME. While other 4th-year courses, such as capstone courses, can contribute,²⁵ we believe that the subinternship, as defined in these guidelines, provides the most realistic preparation for patient care. We suggest that medical schools critically review their subinternship curriculum and construct "subintern milestones" that align with the AAMC's published CEPAER and program director expectations as outlined in Table 1. Likewise, the content of each school's subinternship curriculum and each student's attainment of competency in

each curricular element should be communicated to program directors, perhaps as part of the department chair's letter.²⁶ This would allow program directors to anticipate experiential gaps and develop appropriate orientation activities for new interns accordingly.

CONCLUSION

The medicine subinternship is a cornerstone of the final year in medical school. GME has changed in terms of duty-hour regulations, milestones, EPAs, and competency-based education, with increasing emphasis on team work, quality improvement, and patient safety. Thus, the subinternship experience also must evolve to align with the new learning environment. Program director expectations of new interns provided a logical framework for these updated subinternship goals and objectives. Adopting clearly articulated curriculum guidelines across schools may help insure that starting residency, graduates possess the knowledge, skills, and attitudes necessary for success in the next phase of their medical training.

Acknowledgements: This paper was commissioned by the Councils of both CDIM and APDIM and was reviewed prior to publication.
Contributors: The authors would like to acknowledge the support of the Alliance for Academic Internal Medicine staff members (Ms. Sainabou Jobe, Ms. Consuelo Nelson, Ms. Margaret Breida) and Ms. Amy Chmielewski in conducting this project.
Funding: This project did not receive any external or internal funding.
Prior presentations: This paper has not been presented at any conference.
 A full listing of the CACTI Group Membership is available electronically (see Appendix).

Conflict of Interest: The authors declare that they do not have a conflict of interest.

Corresponding Author: T. Robert Vu, MD; Indiana University School of Medicine, Indianapolis, IN, USA (e-mail: tvu@iu.edu).

REFERENCES

1. **Ludmerer K.** Time to Heal: American Medical Education from the Turn of the Century to the Era of Managed Care. New York: Oxford University Press; 1999.
2. **Sidlow R.** The structure and content of the medical subinternship: a national survey. *J Gen Intern Med.* 2001;16(8):550-3.
3. **Fagan MJ, Curry RH, Gallagher SJ.** The evolving role of the acting internship in the medical school curriculum. *Am J Med.* 1998;104:409-12.
4. **Federman DD.** Relation of the internal medicine residency and the medical school curriculum. *Ann Intern Med.* 1992;116:1061-1064.
5. **Sidlow R, Mechaber AJ, Reddy S, et al.** The internal medicine subinternship: a curriculum needs assessment. *J Gen Intern Med.* 2002;17:561-564.
6. CDIM Subinternship Curriculum and Training Problems. Available from: <http://www.im.org/p/cm/ld/fid=373>. Accessed 12 Feb 2015.
7. **Green EH, Fagan MJ, Reddy S, et al.** Advances in the internal medicine subinternship. *Am J Med.* 2002;113:769-773.
8. **Arora VM, Seiden SC, Higa JT, et al.** Effect of student duty hours policy on teaching and satisfaction of 3rd year medical students. *Am J Med.* 2006;119(12):1089-1095.
9. **Kogan JR, Pinto-Powell R, Brown LA, Hemmer P, Bellini LM, Peltier D.** The impact of resident duty hours reform on the internal medicine core

- clerkship: results from the clerkship directors in internal medicine survey. *Acad Med.* 2006;81(12):1038–1044.
10. **Lindquist LA, Tschoe M, Neely D, Feinglass J, Martin GJ, Baker DW.** Medical student patient experiences before and after duty hour regulation and hospitalist support. *J Gen Intern Med.* 2010;25(3):207–210.
 11. **Nixon LJ, Benson BJ, Rogers TB, Sick BT, Miller WJ.** Effects of Accreditation Council for Graduate Medical Education work hour restrictions on medical student experience. *J Gen Intern Med.* 2007;22(7):937–941.
 12. **Reed DA, Levine RB, Miller RG, et al.** Impact of duty hour regulations on medical students' education: views of key clinical faculty. *J Gen Intern Med.* 2008;23(7):1084–1089.
 13. **Nixon LJ, Aiyer M, Durning S, et al.** Educating clerkship students in the era of resident duty hour restrictions. *Am J Med.* 2011;124(7):671–6.
 14. **Mintz M, Narvarte HJ, O'Brien KE, Papp KK, Thomas M, Durning SJ.** Use of electronic medical records by physicians and students in academic internal medicine settings. *Acad Med.* 2009;84(12):1698–704.
 15. Harrell H, Aiyer M, Appel J, Gliatto P, Sweet M. Primer to the Internal Medicine Subinternship. *MedEdPORTAL*; 2012. Available from: www.mededportal.org/publication/9277. Accessed 12 Feb 2015.
 16. **Angus S, Vu TR, Halvorsen AJ, et al.** What skills should new internal medicine interns have in July? A national survey of internal medicine residency program directors. *Acad Med.* 2014;89(3):432–435.
 17. Core Entrustable Professional Activities for Entering Residency. Available from: www.mededportal.org/icollaborative/resource/887. Accessed 12 Feb 2015.
 18. ACGME Program Requirements for Graduate Medical Education in Internal Medicine. Available from: https://www.acgme.org/acgmeweb/Portals/0/PFAssets/2013-PR-FAQ-PIF/140_internal_medicine_07012013.pdf. Accessed 12 Feb 2015.
 19. **Smith CD.** Teaching High-Value, Cost-Conscious Care to Residents: The Alliance for Academic Internal Medicine-American College of Physicians Curriculum. *Ann Intern Med.* 2012;157:284–286.
 20. **Lypson ML, Frohna JG, Gruppen LD, Woolliscroft JO.** Assessing residents' competencies at baseline: identifying the gaps. *Acad Med.* 2004;79(6):564–70.
 21. The Internal Medicine Milestone Project: A Joint Initiative of the Accreditation Council for Graduate Medical Education and the American Board of Internal Medicine. Available from: <http://acgme.org/acgmeweb/Portals/0/PDFs/Milestones/InternalMedicineMilestones.pdf>. Accessed 12 Feb 2015.
 22. Hammoud MM, Dalrymple JL, Christner JG, et al. Medical student documentation in electronic health records: a collaborative statement from the Alliance for Clinical Education. *Teach Learn Med.* 2012;24(3):257–66.
 23. Dzau VJ, Cho A, ELlaissi W, et al. Transforming academic health centers for an uncertain future. *N Engl J Med.* 2013;369:991–993.
 24. Abramson SB, Jacob D, Rosenfeld M, et al. A 3-Year M.D.—accelerating careers, diminishing debt. *N Engl J Med.* 2013;369(12):1085–1087.
 25. Teo AR, Harleman E, O'Sullivan PS, Maa J. The key role of a transition course in preparing medical students for internship. *Acad Med.* 2011;86:860–5.
 26. Lang VJ, Aboff BM, Bordley DR, et al. Guidelines for writing department of medicine summary letters. *Am J Med.* 2013;126(5):458–63.

APPENDIX

The CACTI* Group: Authors and Affiliations

Richard L. Alweis, MD
 Program Director
 Department of Medicine
 Reading Hospital
 Steven V. Angus, MD
 Program Director
 Department of Internal Medicine
 University of Connecticut School of Medicine
 Jonathan S. Appelbaum, MD
 Education Director and Core Faculty
 Department of Internal Medicine
 Florida State University College of Medicine
 Paul B. Aronowitz, MD, Ex Officio
 Clerkship Director
 Department of Internal Medicine

University of California, Davis, School of Medicine
 Alexander Carbo, MD
 Assistant Professor
 Department of Medicine
 Harvard Medical School
 Beth Israel Deaconess Medical Center
 Hospital Medicine Program
 Allison Ferris, MD
 Assistant Professor of Medicine
 Medicine Sub-Internship Director
 Department of Internal Medicine Drexel University College
 of Medicine
 Eric Goren, MD
 Hospitalist
 Department of Medicine
 Raymond and Ruth Perelman School of Medicine at the
 University of Pennsylvania
 Laurence C. Hood, MD
 Assistant Professor of Medicine
 Division of General Internal Medicine
 Department of Medicine
 University of Florida College of Medicine
 Michelle Horn, MD
 Assistant Professor; Director, Medical Education
 Departments of Internal Medicine and Pediatrics
 University of Mississippi Medical Center
 Nadia J. Ismail, MD
 Clerkship Director
 Department of Medicine
 Baylor College of Medicine
 Ben Taub General Hospital
 David F. Jacobson, MD
 On-site Clerkship Director
 Department of Internal Medicine
 California Pacific Medical Center
 Mark A. Levine, MD, Committee Vice Chair
 Associate Chair for Education and Residency Program
 Director
 Department of Medicine
 University of Vermont College of Medicine
 Diana B. McNeill, MD, Ex Officio
 Assistant Program Director
 Department of Internal Medicine
 Duke University School of Medicine
 Neha Mittal, MD
 4th Year Clerkship Director, Assistant Professor
 Department of Internal Medicine
 Texas Tech University Health Sciences Center
 Heather Tarantino, MD
 Clerkship Director
 Department of Internal Medicine
 West Virginia University (Charleston Division)
 T. Robert Vu, MD, Committee Chair
 Associate Clerkship Director
 Department of Medicine

Indiana University School of Medicine
 Sean Whelton, MD
 Associate Professor of Medicine
 Division of Rheumatology
 Department of Internal Medicine
 Georgetown University School of Medicine
 Meenakshy K. Aiyer, MD, Ex Officio
 Associate Dean for Academic Affairs
 Department of Internal Medicine
 University of Illinois College of Medicine at Peoria
 Maria L. Cannarozzi, MD
 Associate Professor, Clerkship Director
 Department of Medicine
 University of Central Florida College of Medicine
 Saumil M. Chudgar, MD, MSED
 Associate Director, Undergraduate Medical Education
 Division of General Internal Medicine
 Department of Medicine
 Duke University School of Medicine
 D. Michael Elnicki, MD
 Director, Ambulatory Medicine Clerkship
 Division of General Internal Medicine
 Department of Medicine
 University of Pittsburgh School of Medicine
 Susan J. Gallagher, MD
 Associate Professor
 Department of Medicine
 State University of New York at Buffalo School of Medicine and Biomedical Sciences
 Heather E. Harrell, MD, Ex Officio
 Clerkship Director
 Department of Medicine
 University of Florida College of Medicine
 Dan A. Henry, MD
 Clerkship Director

Department of Medicine
 University of Connecticut School of Medicine
 Gregory C. Kane, MD, Ex Officio
 Division of Pulmonary and Critical Care
 Interim Chair, Department of Internal Medicine
 Thomas Jefferson University Hospital
 Chad Stephen Miller, MD
 Clerkship Director
 Department of Internal Medicine
 Tulane University School of Medicine
 Marty D. Muntz, MD
 Clerkship Director, Associate Professor
 Department of Internal Medicine
 Medical College of Wisconsin
 Cori Salvit, MD
 Director of Medical Student Education
 Department of Internal Medicine
 Memorial Sloan-Kettering Cancer Center
 Alwin F. Steinmann, MD
 Chief of Academic Medicine
 Department of Graduate Medical Education
 Exempla St. Joseph Hospital
 Emily Stewart, MD
 Assistant Program Director
 Department of Medicine
 Jefferson Medical College of Thomas Jefferson University
 Laura Rees Willett, MD
 Associate Program Director
 Department of Medicine
 Rutgers Robert Wood Johnson Medical School
 * The CACTI Group is the CDIM-APDIM Committee on Transitions to Internship.
 CDIM is the Clerkship Directors in Internal Medicine, while APDIM is the Association of Program Directors in Internal Medicine.