MEDICAL EDUCATION

Building a Training Pathway that Prepares Residents for Future Careers in Medical Education

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Beginning July 2016, the UCLA Internal Medicine Residency Training Program launched the Medical Education Pathway—a two-year longitudinal experience for residents that promotes the development of knowledge, attitudes, and skills necessary for future careers as clinician-educators. The pathway is designed to help fill the gap in training and practice opportunities for residents interested in future careers in medical education. The curriculum for the pathway is inspired by the published works of others and modeled after established medical education and clinician-educator training pathways at UCLA and other institutions. The curriculum is also guided by conceptual frameworks in education. In this article, I discuss the rationale for developing an advanced medical education training pathway for residents, describe the foundation for building a curriculum, and describe details for our pathway at UCLA.

Identifying the Value and Need for a Medical Education Training Pathway for Residents

There is value in training residents to become effective teachers. Resident teaching can impact a variety of learners. Residents spend a significant amount of time teaching medical students, interns, and junior residents in the clinical environment and also teaching and educating patients and their families. They may choose careers that involve medical student, resident, and other trainee education (i.e., clinician-educators). In addition, they may be responsible for educating their colleagues or the public (e.g., in the clinical setting, at research conferences, hospital committees, community workshops, and health fairs). The act of teaching can also impact residents themselves. Studies have shown that teaching leads to better knowledge acquisition and improved job satisfaction for residents. Furthermore, learning practical pedagogical skills and having gratifying interactions with students and mentors during residency can further inspire residents to adopt a greater role in medical education in their future careers.

Indeed, a growing number of residents are interested in becoming more involved in medical education and the role of the clinician-educator has created a unique and diversified career pathway for them to consider. Clinician-educators have established an important function in both the clinical operation and the educational mission of many academic medical centers.
As editor in chief, I am always on the lookout for the next great article for *Forum*. I have developed an unbridled enthusiasm for the task, and will unapologetically request articles from anyone and everyone I meet. You can see it coming. I often ask who you are and what you are working on. Then I get to the point. “That’s very interesting—would you write it for *Forum*?” If you are a SGIM member, it’s become impossible to know me professionally without having been solicited by me at some time for an article about your work. (If you don’t believe me, ask the Council members—I may have taken the word chutzpah to new heights!) New writers often ask where to begin: What should the topic be? How long should the article be? What am I, as editor, looking for? The following are some reflections on getting started as a writer for *Forum* or for any other project you choose:

1. **Write what you know (…not what you think I need).**
   Who are you? What is your experience? Ask yourself what unique perspective you bring to the topic. Then show us. You may also consider collaborating with another author who shares your interests and adds a different perspective to the work.

2. **Get the 411 on what is expected.** The Web site for most publications including *Forum* ([http://www.sgim.org/publications/sgim-forum](http://www.sgim.org/publications/sgim-forum)) contains a section entitled “Information for Authors.” Here, you will find answers to frequently asked questions. It also contains an annotated list of *Forum* departments (section headings) and links to writing and editing tutorials.

3. **Decide what type of article you are writing.** Most *Forum* articles are informational, although we occasionally present creative writing and reflection pieces. If you are providing information, start with a list of topics you want to include and informational points you wish to convey to the reader.

4. **Focus on the take home message.** If you are writing a meeting preview or an “after meeting” summary article, ask yourself what made the meeting unique? What are you proud to have included in the program? What are the themes and learning points that you want readers to understand? What would make the reader want to attend this meeting? Be specific. Avoid superlatives and generalizations. Highlighting special programs or guest speakers is also encouraged. If you wish to acknowledge an array of speakers or collaborators, consider listing them in a table instead of as plain text within the narrative.

5. **Pay close attention to form and grammar.** If you haven’t written in a long time, go back to basics. Review the structure of a continued on page 14
I’m here to share the secrets of a categorical program director—about why you should want to train in a primary care residency program.

Dear Internal Medicine Residency Applicant,

You are currently applying for an internal medicine residency position. You have probably applied to 10-12 programs and scheduled to interview through early January. In February, you must submit your rank list, and by March you will know where you will be spending the next three (3) years in training. This is both an exciting and a terrifying time. For some reason, trying to put down your choice of programs in exact order can be daunting. You are thinking about the reputation, the call schedule, the research time, maybe the quality improvement training. You wonder how supportive is the environment, whether the program director plans to stick around, and whether the chairperson is engaged in and supportive of education. Have you considered whether primary care training in a defined primary care program might be right for you?

I’m here to share the secrets of a categorical program director—about why you should want to train in a primary care residency program.

1. No matter what field of internal medicine you specialize in, you will (almost) all practice outpatient medicine. From endocrinology to hematology/oncology and even to interventional cardiology, you will spend many hours each week seeing outpatients. A traditional categorical residency program simply doesn’t give you enough “dwell” time in an outpatient practice to learn the skills necessary to manage an outpatient clinic’s microsystem or to hone the office-based efficiency that you need for your future. Think about what percent of your clinical time will be spent in the outpatient setting if you become, let’s say, an oncologist. Depending on your practice site, you will definitely spend more than half your clinical week seeing outpatients, and you may spend up to 100% of your clinical time in the outpatient, longitudinal management of your cohort of patients. What percent of categorical training is spent focusing on that practice setting? Not enough.

2. Even if you don’t practice outpatient medicine at all in your future career (so you become a hospitalist, or far less likely, a critical care attending), you will still benefit from primary care training. First, your friends and family will, all their lives, expect you to be able to give them advice and counsel (and often antibiotics) for their common medical problems. I’m only half-joking about that. But the real reason future hospitalists need to learn more outpatient medicine is that they will be discharging patients back to primary care providers (PCPs); I believe that the most effective hospitalists understand the extraordinary capabilities of most primary care doctors and practices. The best inpatient doctors need to have great communication skills with PCPs, respect for the patient centered medical home and their continued on page 10
SIGN OF THE TIMES

Taking Exception to the Primary Care Exception Rule
Daniel G. Tobin, MD, FACP

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There are many milestones in the medical profession. For some, the white coat ceremony during medical school represents the first time when trainees envision themselves as a “real doctor.” This common ritual offers a symbolic start to a clinical career, but few would suggest that students are ready for independent practice. Immense growth occurs in the years after graduation, and lifelong learning remains a cornerstone of our vocation. Yet, somewhere along the way, trainees must learn to practice independently in order to successfully enter the workforce. For many young doctors across the country, the transition to semi-independent practice occurs after completing the first six months of internship.

For many interns, the six-month mark is of little significance. Some thrive as they become more confident in their clinical skills, but other trainees struggle around this time of year. The days get shorter, the nights colder, and, for some learners, sleep deprivation, exhaustion, and the beginnings of burnout may start to take hold. On the other hand, most interns by this time become familiar with their clinical workflows and learn how to function as an essential junior member of the care team. Depending on the structure of the training program, the six-month intern may become increasingly familiar with the patients in his/her ambulatory practice and start to develop clinical efficiency in that setting. To be sure, some exceptional six-month interns may have already achieved “aspirational” competence more consistent with a senior colleague, but others will perform far lower on the bell curve. Everyone has his/her unique strengths, weaknesses, and interests; seasoned faculty will recognize that competence is an evolutionary process that inconsistently develops among trainees and varies for an individual from task to task. And yet, the Centers for Medicare and Medicaid Services (CMS) billing rule, commonly known as the Primary Care Exception Rule (PCER), allows the six-month intern in some training programs to practice under only indirect supervision in his/her ambulatory clinic. Colleagues and I explore this apparent quandary in a recent article published in Academic Medicine.1

Traditionally, CMS requires teaching physicians to be physically present in the examination room for the portion of the care for which they invoice. The “physical presence” requirement has long been the gold standard of outpatient care delivery, and it arguably best meets both the billing and educational needs of the visit; CMS only pays for care from a “real” doctor in practice (the teaching attending), and preceptors can directly supervise and provide real-time feedback to their trainees. However, it can be inefficient in busy primary care teaching clinics where residents form long lines to wait for the next available preceptor. Recruiting additional teaching physicians to ensure adequate staffing is expensive, and residency programs historically argued that the physical presence requirement also stymied residents’ progress toward independent practice. Under protest from residency programs in family medicine, internal medicine, obstetrics-gynecology, and psychiatry, CMS ultimately yielded and created the PCER.2

The PCER allows certain qualifying programs to bill for indirect teaching services as long as the trainee has completed six months or more of his/her residency training.3 In addition to the time requirement, faculty may not supervise more than four residents at a time, must be immediately available if needed, and may not have other concurrent responsibilities. Other requirements include ensuring that services are appropriate, assuming primary responsibility for the care provided by the resident, reviewing the case with the resident during or immediately after each visit, and documenting the extent of his/her involvement in the care. Under the PCER, billable evaluation and management services are limited—teaching physicians can use only low to midlevel codes for both new and established patients (i.e., 99201–99203 and 99211–99213).

Conspicuously absent, however, is a mandate to evaluate residents for minimal competence before utilizing the PCER. Appropriately, CMS makes no mention of what specific knowledge, skills, or attitudes a trainee must master—this is a responsibility of the graduate medical education (GME) community, as the PCER is merely a billing rule. However, CMS does not require training programs to evaluate their residents.

... trainees must learn to practice independently in order to successfully enter the workforce.
Reflections from a LEAD Scholar
Shanu Gupta, MD

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After working for only a few months, I applied for the position of director of education for the division of hospital medicine at Rush University in Chicago, Illinois. Having had some prior experience in medical education and faculty development, I felt that I would be a good fit for the job. My passion for teaching and sincere interest in promoting professional development towards excellence would bolster my application. In preparation for my interview, I studied the data from previous faculty reviews and developed a professional development plan for the group to address the gaps identified by the faculty. I presented my vision during my interview to various leaders within our division, and I was offered the position.

I soon discovered that there were many challenges with implementing my vision. Not being familiar with the culture of the workplace, and without a foundation of historical perspective, my plans for the division were not always in congruence with those of the faculty. The division had undergone recent strategic development, and, as I joined after those changes occurred, it was unclear what was considered a success and what needed to be improved. Additionally, I was unfamiliar with faculty successes and motivations. As I set about meeting with faculty members individually, it was clear that we were supporting a rich group of highly performing individuals with varied interests and expertise. I needed to find my place within the group in order to best serve its interests and needs. I needed therefore a more deliberate understanding of my role in leadership.

It has been suggested that strategies for dealing with groups—knowledge of finance, budgets, regulations, organizational priorities, networking, and planning skills—are competencies required to make a good leader, and that these are teachable. When I saw the ACLGIM LEAD Scholars program advertised through SGIM late last year, it immediately sparked my interest as the vehicle for me to learn those competencies that will enable me to develop as a leader. As I began the application process, I learned how the program met my specific needs. The LEAD scholars program provides training in aspects of leadership that are most pertinent to us in academic medicine—be it clinical, research, or education—taught by leaders in academic internal medicine. Training is multimodality, with in-person learning, asynchronous online learning, and regular discussion boards. There is a personal coach to support you through the year, and provide directed feedback for a longitudinal project pertinent to your leadership role at your home institution. Needless to say, I applied and received support from senior leadership in participating in this program without hesitation!

The first meeting of the new class of LEAD Scholars was held the day prior to the annual SGIM meeting in conjunction with the ACLGIM Hess Management Training and Leadership Institute meeting. Experienced leaders welcomed us warmly as we began a full day:

- from Dr. Michele Cyr, we learned how to utilize our innate skills during negotiations;
- from Richard Nuttall, we learned about funding sources for medical centers;
- from Dr. Wiswha Kapoor, we learned what a successful career looks like and what it takes to get there; and
- from Drs. Cynthia Chuang, Dan Hunt, Eric Rosenberg, and Andrea Sikon, we learned how to address the challenges of moving from peer to boss.

We were also afforded several opportunities to meet with distinguished leaders as well as our personal coach. I was able to discuss my personal challenges and plans for my project with various individuals with experience in academic medicine. What I valued the most was meeting my class of LEAD scholars—leaders in general medicine in various roles, creative thinkers, passionate educators, altruists, and achievers. Since that first meeting, they have become my teachers through engaging online conversations based on our study of leadership competencies. They have become a primal resource for inviting solutions to challenging situations and providing references for self-study. They have become a network for me to access for my own professional development.

In the months to come, I look forward to developing my role as a leader in the work that I do for my division. I also look forward to flourishing relationships with my fellow LEAD scholars as well as my coach. I look forward to a lifetime of learning, knowing that I will always have access to opportunities for growth through SGIM, my professional home.

References
LEADERSHIP EDUCATION: PART II

What I Learned from the LEAD Program

Michele Fang, MD

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In 2015, I had the opportunity to participate in the Association of Chiefs and Leaders of General Internal Medicine (ACLGIM) LEAD program after being recommended by my mentors Lauris Kaldjian, MD, PhD, and Scott Wilson, DO. The LEAD program was started in 2014 by Deb Burnet, MD, from the University of Chicago and April Fitzgerald, MD, of John Hopkins University—it was designed for junior- to mid-career faculty members to develop their leadership skills. Each participant is paired with a coach to engage and interact with via monthly telephone or Skype conferences and networking at the annual meeting. In addition, the core educational modalities for LEAD participants are monthly independent readings/assignments with online discussions in order to gain the fundamentals of the principles of leadership. The mission of the LEAD program is to train medical leaders in the area of service to others, place the needs of others before self needs, to place honesty and honor before individual gain, facilitate compassionate quality care, and to focus on the health outcomes of the entire medical community.

My coach was Joseph Li, MD, SFHM, FACP Section Chief of Hospital Medicine at Beth Israel Deaconess Medical Center and Associate Professor of Medicine at Harvard Medical School. From the beginning, Dr. Li provided great advice on a wide variety of issues, such as how to negotiate contracts, how to work with the C-suite to make the case for expanding a service line, and how to complete the hospitalist schedule on time. He shared his network of colleagues with me to help ease my transition to the University of Pennsylvania in January 2016.

I also learned a lot from the monthly readings. As physicians, we were not trained in medical school or residency to be leaders. We were taught basic knowledge and how to take care of patients. However, especially in academic medicine, the ability to be an effective leader is a very important part of our job description. In addition, there was a lot of self-reflection to determine one’s own weaknesses, strengths, and what we felt like were important aspects of leadership. I found it most comforting that many parts of leadership can be learned.

I was able to apply many of the LEAD readings during my Midwest SGIM presidency this year. For example, we made changes based on feedback and personal experiences—some were easy, such as reducing the number of workshops, while others were more challenging, such as designing a meeting to meet the needs of trainees, junior faculty, and senior faculty while conforming to budgets, timelines, and staffing changes. In addition, we followed tradition with successful practices, such as Updates in General Medicine and mentorship opportunities, and learned from other regions with innovations, including a second poster session, Updates in Hospital Medicine, an ultrasound workshop, and adding a midwest scholarship. Despite making some mistakes in scheduling and having some delays in the process, we hope to have a very productive meeting this year.

The LEAD program was also invaluable as a tool to help me network with leaders in GIM, seek out volunteers to help out with the meeting, and, most of all, to assist me in my own research project on how to develop a national curriculum and assessment tool for perioperative medicine. Lastly, the program enabled me to reach out to Kurt Pfeifer, MD, a leader of the SGIM Perioperative Medicine Interest Group, to solicit feedback on an electronic survey and then present its findings to leaders at the National SGIM. This opportunity opened up the process of finding collaborators nationally to help develop and test the curriculum. These experiences also gave me the confidence to ask other national leaders for guidance and collaboration.

In short, the LEAD program helped me and my 14 classmates to learn the tools and gain the confidence to become leaders in GIM. The LEAD program hopes to further involve LEAD alumni from 2014 and 2015 via both online and at future ACLGIM and SGIM meetings. We hope that this will help LEAD alumni stay active in SGIM and ACLGIM and develop networks and opportunities for leadership in SGIM and ACLGIM, career networking, educational and academic collaborations, reunions at annual meetings and regional meetings, and serve as a sounding board for difficult problems and questions that arise in our work as leaders in GIM. Please contact us if you have any questions about the LEAD program and how you can get involved.
The Midwest is home to SGIM’s second largest region, spanning 13 states with approximately 70,000 members. The Midwest SGIM Annual Meeting was held this year at the Cleveland Convention Center in downtown Cleveland, OH, on September 22-23, 2016. With 200 attendees and more than 250 submissions, our theme was “The New Generalists’ World: Promoting Patient and Provider Experience in an Era of Population Health.” The meeting focused on understanding how population health management impacts clinical patient care and how practitioners can improve their provider satisfaction and create a high functioning practice.

Each plenary speaker addressed a component of the meeting’s theme with four main objectives:

1. identify strategies to implement population health management in general internal medicine inpatient and outpatient clinical practices, teaching, research, advocacy, and leadership;
2. share approaches used by “high-functioning primary care practices” and ways to implement them in your own practice;
3. learn and execute strategies to improve provider satisfaction and enhance the provider experience; and
4. explore best practices to help patients and their caregivers receive high-quality medical care and improve the patient experience.

The Thursday plenary session was devoted to top vignettes, innovations, and scientific research. Dr. Nicole Smith from the University of Illinois College of Medicine at Peoria presented “Adult Onset Acute Rheumatic Fever,” a case that reminded us to keep rheumatic fever in differential diagnosis for unexplained fever. Wei Wei Lee, MD, from the University of Chicago described efforts to integrate a patient-centered Electronic Health Record (EHR) based curricula into required EHR training. Finally, Dr. Michael Rothberg from the Cleveland Clinic presented fascinating data on how the ACC/AHA cholesterol guidelines and the U.S. Preventive Services Task Force recommendations impact a primary care population.

Meeting highlights included updates on the national SGIM by SGIM immediate past president Marshall Chin, MD, of the University of Chicago, a health policy presentation by Health Policy Committee member and national SGIM award winner Mark Liebow, MD, of the Mayo Clinic, highly informative updates in SGIM for Primary Care by Amber Pincavage, MD, from the University of Chicago, and updates in SGIM for Hospital Medicine by Beth Liston, MD, PhD, and Eric Schumacher, DO, MBA, SFHM, FACP, both from The Ohio State University. Networking opportunities included two small group networking round tables, one-to-one mentoring sessions, and an informal happy hour. Innovations included two poster sessions and the first annual Midwest Young Scholars Scholarship.

Ann Nattinger, MD, Senior Associate Dean for Research, Director, Center for Patient Care and Outcomes Research, and Professor of Medicine at the Medical College of Wisconsin delivered an inspirational speech on “Proud to Be GIM.” She gave nine reasons why she was proud to be a general internist, reminding us why we went into internal medicine:

1. you like solving diagnostic puzzles;
2. you want options for clinical care;
3. you enjoy teaching;
4. you want colleagues who value a well-rounded lifestyle;
5. you want to attend your kids’ school plays, not just hear about them later;
6. patient care is great, but there are other meaningful career pathways for us;
7. you want to create a better health care system;
8. you like the idea of leading a team; and
9. you can pay off school loans and still have nice vacations.

Ann certainly is an inspiration to all of us.

Gary Rosenthal, MD, Tinsley R. Harrison Professor and chair, department of internal medicine, Wake Forest School of Medicine, enlightened the audience about population health. He encouraged us to think beyond the “buzzword” of population health and try to understand what it is and why it is so important to get to the root of the problem of health care in the United States. Population health is most typically defined as the health outcomes of a group of individuals, including the distribution of such outcomes within a group. It is more than just treating medical problems—that is the easy part; social factors, personal behaviors, environmental exposures, and genetic factors also affect the health...
The study of inpatient handoffs has been widespread, and the concept that a good inpatient handoff between hospital providers is critical is now ingrained in medical education and residency programs. In contrast, handoffs in the ambulatory setting are less well studied and have received less attention. While outpatients do not have the same acuity as inpatients, there are crucial patient-safety problems that arise from handoffs in the outpatient setting. Additionally, these handoffs have unique features that require different approaches and solutions.

Academic general internal medicine programs are an ideal venue to develop best practices. There are multiple ambulatory handoffs with different characteristics; the largest and most predictable is the year-end handoff that occurs when senior residents graduate and handoff their continuity clinic patients. This period of time can be a source of anxiety for patients, physicians, and clinic staff. Additionally, with the advent of “block” schedules such as 3+1 or 4+1, where residents spend 3-4 weeks on inpatient rotations followed by a week of ambulatory medicine, there are even more opportunities for handoffs in the outpatient clinics as residents “sign out” to each other throughout the year. Furthermore, handoffs occur when attending physicians retire or change jobs.

The Ambulatory Handoffs Interest Group formed in 2012 as an offshoot of the Transfers, Handoffs, and Signout Interest Group, as ambulatory handoffs started to receive more consideration by educators and interest in this topic increased among SGIM members. We seek to share current and best practices, develop new ideas for collaboration, and provide support for quality improvement and education efforts. Members have developed a year-end clinic handoff toolkit that the interest group discusses and disseminates. They have also collaborated on a national survey of Internal Medicine program directors regarding ambulatory handoff practices through the Association of Program Directors of Internal Medicine (APDIM). Members of the interest group lead workshops on ambulatory handoffs as well.

The Engineering Patient-Oriented Clinic Handoffs (EPOCH) toolkit includes the following:

- teaching videos and exercises;
- patient engagement tools;
- a patient comic;
- practice audit tools;
- sample sign outs; and
- tools to organize quality improvement efforts.

It is evidence-based and derived from patients’ experiences and suggestions elicited during patient interviews. The toolkit was implemented first at the University of Chicago in 2011 using standard clinic infrastructure and required long-term planning and staged implementation. After several years of scaling up efforts, it has successfully improved patient outcomes at the University of Chicago residency continuity clinic. Numerous interest group participants adopted these best practices at their own institutions and adjusted tools to fit their needs. Interest group meetings served as an ideal venue to troubleshoot quality improvement efforts and share strategies for overcoming barriers unique to certain settings or models.

Currently, we are working on a multi-institutional collaboration for a multi-center year-end clinic handoff quality improvement study, creating milestone-based direct observation tools to assess resident competency in year-end handoff activities, and enhancing efforts to study and improve resident block schedule handoffs. Anyone may participate—from trainees to clinic or program directors—and we look forward to seeing you at the national meeting in 2017.

Kindly e-mail me at apincava@bsd.uchicago.edu if you have any questions.

References

The patient, a 66-year-old African-American Vietnam War veteran, presented to the outpatient clinic with loss of appetite and an unintentional weight loss of three pounds. He has a history of hypertension, hyperlipidemia, alcoholism, tobacco use, and old, treated pulmonary tuberculosis. While in the army he was treated for pulmonary tuberculosis with isoniazid. To our knowledge, this was his only prescribed medication while in the army. His daily medications include atorvastatin (10 mg), Lisinopril (40 mg), and fluticasone nasal spray. The patient’s family history is notable only for diabetes. He is single and has no children.

On review of systems, he reported post-nasal drainage, but denied fevers, chills, cough, or abdominal pain. He felt his appetite was improving since he had cut back on alcohol.

The patient was a thin appearing man in no acute distress. He was afebrile, BP 125/84, pulse 106 and regular, respiratory rate 16, BMI 22. There was exudate and cobble-stoning in his posterior pharynx. Lungs were clear without wheezing. Heart exam was regular without a murmur. Abdomen was soft and nontender without hepatosplenomegaly. There was no peripheral edema or lymphadenopathy.

Basic labs were ordered, including a complete blood count, comprehensive metabolic panel, urinalysis, and sedimentation rate. The white blood cell count (WBC) was 6,800 cells/mL with a normal differential and the hemoglobin was slightly low at 11.9 g/dL. The basic metabolic panel and liver function tests were within normal limits. The sedimentation rate (ESR) was markedly elevated at 110 mm/hr (normal 0–10 mm/hr).

An elevated ESR should prompt a search for a serious underlying cause. In one large retrospective review, an ESR of more than 100 mm/hr was not sensitive but was highly specific for systemic illnesses: 96% for malignancies, 97% for infection, and more than 99% as a “sickness” index. The term sickness index suggests a simple mnemonic. When the sedimentation rate (S) is more than 100 mm/hr, consider infection and inflammatory conditions (I), cancer (C), kidney disease (K). With an elevated ESR, weight loss, and a history of smoking and of tuberculosis, I would order a chest X-ray.

A chest X-ray that was completed a few weeks after the clinic visit revealed a large, left pleural effusion, obscuring the left lower- and mid-lung zones. The right lung was clear. There was a curvilinear opacity with central lucency in the left lung apex.

A unilateral pleural effusion along with parenchymal opacities raise the possibility of empyema/complicated parapneumonic effusion, lung cancer, tuberculosis, or even congestive heart failure. The next step is to perform thoracentesis and pleural fluid analysis.

Thoracentesis was performed yielding pleural fluid that was slightly turbid; cell count 84 cells/μL with 60% neutrophils and 39% lymphocytes and no red blood cells. The pleural fluid glucose was 38 mg/dL, cholesterol 46 mg/dL, total protein 4.9 g/dL, and LDH 410 IU/L. Serum total protein was 7.6 g/dL and LDH was 176 IU/L (range: serum LDH<190 IU/L).

Light’s Criteria is used to categorize pleural fluid as exudative or transudative, an important distinction for diagnosis and management. An exudative pleural effusion requires one or more of the following: pleural fluid total protein/serum total protein>0.5, in this case 0.6, pleural fluid LDH/serum LDH>2/3, the upper limit of normal for serum LDH. The pleural fluid LDH of 410 IU/L is well above 2/3 of the upper of normal of the serum LDH. An alternative way to determine exudate includes pleural fluid total protein, LDH, and cholesterol (the three-test rule). A pleural fluid cholesterol>45 mg/dL suggests an exudate.

Despite the relatively low cell count, the neutrophilic predominance suggests an acute response, such as acute pneumonia or complicated effusion. A predominance of mononuclear cells, especially small lymphocytes, would favor cancer or tuberculosis. The presence of the low pleural fluid glucose concentration of less than 60 mg/dL suggests a complicated parapneumonic effusion, tuberculosis, or malignancy.

This patient’s pleural fluid is consistent with an exudate, and has features that are suggestive of malignancy, tuberculosis, or parapneumonic infection. Additional work-up is indicated. Fewer than 40% of patients with pleural tuberculosis have positive cultures, and therefore other clues, such as adenosine deaminase levels, could be sent. A pleural fluid adenosine deaminase level above 40 U/L is highly suggestive of tuberculosis pleural effusion.

Our patient’s pleural fluid adenosine deaminase level was only 4.8 U/L, well below the level suggestive of tuberculosis pleuritis. Pleural fluid cultures, microscopic stains for the tuberculosis bacteria, and cytology were all performed and all tested negative. A second thoracentesis yielded similar results; however, the second cell count was 90% lymphocyte predominant. Because of ongoing concern for underlying malignancy, the patient underwent a PET/CT scan that identified a PET avid left upper lobe nodule. A CT-guided transthoracic fine needle aspiration revealed granulomas. Given the concern for underlying tuberculosis, the county health department became involved, and the patient was continued on page 13.
role in it, and be able to put themselves (and their patients) in the mindset of the PCP.

3. The more inpatient time you do, the more time you spend on the same small number of total inpatient diagnoses that you encounter on the rotations the medical center needs you to staff. How many “rule-out MI” admissions are of value to you? The number of medical problems you encounter in a PC continuity practice, or in enhanced ambulatory specialty electives, will keep you on the steep part of your learning curve. For example, in 2010, more than 1.2 million diagnoses were seen in ambulatory settings! Your exposure to the range of internal medicine (and relevant non-medical specialty) diagnoses will be much broader in a PC program.

4. Primary care residents generally work fewer hours than categorical residents, when averaged over three years; they may also take fewer weekends of call. That’s not a good reason to choose a residency program, but it is true. However, fewer hours in the hospital does not translate into “easier.” In the primary care programs that I’ve been associated with, the PC residents have much more project-based work—whether quality improvement projects, teaching preparation, or clinical follow-up between visits with patients. Many have told me they were surprised at how “hard” their PC tracks were in terms of hours of work beyond patient care and conferences. This work mimics their future responsibilities (or yours) as citizens of a practice environment—and prepares them to work in any ambulatory setting.

5. Primary care practices are currently the locus of tremendous innovation in patient care delivery. Because of the market forces of quality-based payment contracts and new forms of capitation, because of efforts to provide high-value care and to improve efficiency, and because of the fundamental challenges, including burnout, faced in traditional PC practices, many have undertaken exciting transformation to patient-centered medical homes and beyond. You want to train in an academic center that practices “cutting edge” medicine? Well the “cutting edge” is now found in primary care. What you learn there about innovation will serve you well no matter where you practice or what career you choose. Check out the list of innovative practices at the Primary Care Progress website to see some examples or read SGIM member Chris Sinsky’s work on high-functioning primary care practices.

6. Because more Americans have insurance, PC is now often more about health and less about dealing with financial challenges. The Affordable Care Act has dramatically reduced the number of uninsured patients in the United States. The difference is palpable in my teaching practice—because most of the patients have coverage now, we can spend more of our time thinking about medical care and less struggling with coverage issues.

7. Small programs are more nimble than big ones. A categorical program can be an order of magnitude larger than a typical PC program. PC programs have the size advantage with more focused faculty attention on fewer residents, the ability to change curricula or rotation schedules quickly, and small group learning opportunities that are educationally sounder than larger lecture format sessions.

8. Continuity clinic training in categorical programs has become quite discontinuous. In 2009, the ACLGME’s internal medicine program requirements were updated to require that “programs must develop models and schedules for ambulatory training that minimize conflicting inpatient and outpatient responsibilities.” That requirement led to the explosion of current “4+2” or “3+1” models that block out weeks specifically for inpatient-only (the bigger number) or outpatient-only rotations. While those models do fully avoid “conflicting inpatient and outpatient” schedules, they have made primary care learning very scattered, with many weeks possible between one practice session and the next. What can be lost is consistency, mentorship from a single preceptor, becoming embedded in the practice’s microsystem, and close follow-up of patients who need to be seen before the next scheduled session (think new diabetic, asthmatic with exacerbation or pneumonia, heart failure patient in need of diuresis). With continuity practice a fact of life in most of the medical specialties, the clinical care of outpatients across time is a critical piece of education that has been marginalized in our current models.

9. You will do just as well in the fellowship match from primary care training. This is probably the biggest secret about primary care training—not only is it potentially better preparation for fellowship but also, at least in my experience as a categorical program director, you are just as likely to get one of your top choices of fellowship from a primary care track (assuming you pursue specialty-based research and mentorship during residency). Primary care program directors don’t really want you to do a fellowship; they would prefer that their
centers.\textsuperscript{5,7} They can have a variety of responsibilities within the medical education system, including roles in clinical teaching, curriculum development, educational scholarship, and administration.\textsuperscript{8}

The Liaison Committee on Medical Education and the Accreditation Council for Graduate Medical Education require residents to be trained as teachers. Residents-as-teachers curricula have found a home in training programs across the country with many positive effects on resident teaching skills and behaviors, as well as attitudes and perceptions towards teaching.\textsuperscript{9,11} Most existing residents-as-teachers curricula, however, are limited in scope and focus predominantly on basic teaching skills in the clinical setting. There is a deficiency in training and practice opportunities for residents in most curricula in the domains of advanced clinical teaching, curriculum development, educational scholarship, and administration—key domains of responsibility within medical education for many clinician-educators. Residents interested in future careers as clinician-educators may benefit from additional training and practice opportunities in these domains.

**Building a Curriculum Based on the Works of Others and Guided by Conceptual Frameworks in Education**

In 2006, participants at the fall meeting of the Association of Program Directors in Internal Medicine (APDIM) sought to define the clinician-educator role and describe the basic elements for developing a clinician-educator training pathway for internal medicine residents.\textsuperscript{3} In addition to patient care, workshop participants identified clinician-educator roles in the domains of clinical teaching, curriculum development, educational scholarship, and administration. Furthermore, they outlined specific residency-level training goals, educational opportunities for knowledge and skill development, assessment methods, anticipated resource needs, and potential implementation barriers within each of these domains. The results of this workshop provided a valuable foundation to build our training program.

We also drew inspiration for our curricular activities from existing medical education and clinician-educator training pathways at UCLA and other institutions. For nearly 25 years, selected faculty members at the David Geffen School of Medicine (DGSOM) at UCLA have had the opportunity to participate in the Fellowship in Medical Education, a two-year faculty development program in medical education and educational research.\textsuperscript{12} The program includes a seminar series and formal mentorship in curriculum development, educational research, and program evaluation. Many faculty members who participated in this program have gone on to become leaders in medical education at our institution. In addition, several residency models, both within and outside the specialty of internal medicine, have been published in the literature.\textsuperscript{6,13} Many of these residency models demonstrate a curriculum that includes some variation of the following:

- didactics, workshops, or other structured instructional activities;
- opportunities to teach;
- opportunities to conduct educational scholarship/research; and
- mentorship.

We incorporated these four basic learning experiences in our curriculum.

Finally, two very important conceptual frameworks in education helped guide the design of our pathway experience. In 1984, David Kolb described learning as “a process whereby knowledge is created through the transformation of experience.”\textsuperscript{14} Central to Kolb’s model of experiential learning are concrete experiences and the learner’s transformation of those experiences into new knowledge or skill through reflection, conceptualization, and experimentation.\textsuperscript{14} In applying this learning model to our curriculum, we complemented traditional didactics with more active experiences—unique opportunities for residents to teach, lead projects and groups of learners, and conduct scholarly educational work. Furthermore, we set aside time during group instructional activities and one-on-one meetings with mentors to give residents the opportunity to reflect and analyze those experiences, thereby better facilitating the experiential learning process. In addition, by bringing residents and faculty members with a common interest in medical education together to share and discuss these experiences, we created a community of practice. Barab et al., defined community of practice as “a persistent, sustaining social network of individuals who share and develop an overlapping knowledge base, set of beliefs, values, history and experiences focused on a common practice and/or mutual enterprise.”\textsuperscript{15} In allowing residents to be more involved in clinical teaching and actively participate in educational research, we usher residents away from being passive, peripheral participants in medical education to active, core contributors in a community of practice.

**Overview of the UCLA Medical Education Pathway**

Curriculum activities for the UCLA Medical Education Pathway began July 2016 with 24 residents participating. The goal of our pathway is to develop physician leaders who will do the following:

- employ best practices in medical education in the areas of clinical teaching, curriculum development, educational scholarship, administration, and leadership;
- engage in educational opportunities within the medical education and healthcare systems;
- demonstrate scholarship and leadership in the design, implementation, administration, and evaluation of educational...
at all, and individual residency programs may—at their sole discretion—choose to implement the PCER without any standards of quality or resident competence. Undoubtedly, the vast majority of programs do their utmost to promote high-quality medical education and patient care, but some residency programs report using the PCER “always,” including 31% of respondents to the 2016 SGIM Medical Resident Clinic Director Interest Group (MRC DIG) annual survey. It is unclear whether these programs all have an internal vetting system to evaluate residents for various areas of competence before allowing them to see patients with only indirect supervision in the clinic, but it is unlikely. Furthermore, even if every program did internally vet their trainees, the GME community has not agreed on a uniform set of standards, perhaps because this has never been required.

This type of assessment is important to ensure that we are providing the highest quality care to our patients. Without joining the resident in the exam room, the trainee becomes our eyes, ears, hands, and voice as he/she assesses patients and implements care plans on our behalf. We must trust that his/her history-taking is accurate and appropriately targeted, that physical findings are properly obtained, that synthesis, organization, and presentation of data are done effectively, and that our care plans are implemented with empathy and without error. As our proxies, we are responsible for their actions and must be confident that our trust in a trainee is deserved. To do so, the GME community needs to develop and insist on careful review of residents before we allow them to provide care using the PCER. Thankfully, an evaluation rubric based on earned trust already exists as part of the Accreditation Council for Graduate Medical Education (ACGME) Milestone Project where established Milestones and Entrustable Professional Activities (EPAs) provide guidance. These resources represent a good starting point to address this challenge, however, I believe that a new standard should be developed in a systematic way with consistent metrics across training programs.

To be clear, the PCER is a billing tool that is a great benefit to our busy workflows and—when used properly—can help to guide our trainees toward independent practice. But, we must also protect our patients by ensuring that a given resident can safely function in the clinic under indirect supervision. To this end, I recommend that CMS modify the PCER to require programs to perform a standardized assessment prior to allowing interns to practice under PCER. However, CMS must not dictate how or when that assessment occurs; those standards must come from the GME community. It is also important that CMS refrain from developing a cumbersome reporting system for tracking these assessments; this would negate many of the efficiencies gained by the PCER. Instead, teaching programs could be required to maintain internal documentation, in a fashion similar to other record keeping requirements from the ACGME.

As is often the case, financial pressures are powerful motivators for change and a modification of the CMS billing rule would undoubtedly inspire action by the GME community. Until then, the SGIM brain trust should collaborate with the Alliance for Academic Internal Medicine (AAIM) and the ACGME to address this challenge and proactively engage with CMS to influence change rather than remain the passive recipient of regulations with which we may not agree. Many member SGIM residency programs are already leading the way in this effort and the rest of us can learn from their labors. Perhaps this collaborative effort should be our next milestone.

References

2. Medicare program; revisions to payment policies and adjustments to the relative value units under the physician fee schedule for calendar year 1996—HCFA. Fed Regist 1995; 60(236):63124-357.
educational resources go toward future generalists. But if you are considering a specialty fellowship, a primary care program will not limit you.

10. You might become a general internist—a primary care doctor or a hospitalist, a research-based, education-based, health-policy-based or QI-based leader. The range of career options is incredibly wide in general internal medicine. Check it out through SGIM’s Career Center and the ProudToBeGIM videos: www.proudtobeGIM.org.

Through a PC residency program, you will be exposed to fantastic mentors doing a host of important, exciting, and innovative work. Maybe, just maybe, you will decide to put the PC track training to its intended use: to become a general internist.

If you do decide to apply to PC programs, be aware that they have become a pretty tough match over the past few years. Last year, there were 210 primary care internal medicine slots available through the match (up from 156 in 2010). The National Resident Matching Program (NRMP) reports that 99.3% of primary care spots were filled last year, with 60% filled by U.S. senior students compared to 98.8% and 46.9% for categorical internal medicine slots. I hope I have shown you a few of the reasons why there is increasing interest in primary care training.

Good luck with your interviews, rankings, and decisions. Talk with your trusted advisors—and ask about whether a primary care track might be best for you. I think it is!

Sincerely,
Eileen E. Reynolds, MD
President, Society of General Internal Medicine

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directly admitted to the hospital for bronchoscopy with bronchoalveolar lavage (BAL). Acid fast stain and MTB complex probe of the BAL sample were positive for tuberculosis. He was started on a four (4) drug regimen with Isoniazid 300mg, Rifampin 600mg, Pyrazinamide 1500mg, Ethisambutol 1200mg, and pyridoxine.

Tuberculous pleural effusions can occur in the setting of primary or re-activation tuberculosis. These are usually unilateral, lymphocytic predominant exudative effusions, seen in concert with lung opacities. Common presenting symptoms are fever and malaise. Diagnosis begins with a thoracentesis and may require a pleural biopsy or a bronchoscopy, as AFB cultures are rarely positive. Treatment is the same as for active pulmonary tuberculosis.

Important points to remember include the following:

- think of ordering a sedimentation rate if concerned about a serious infection or malignancy. If the ESR is more than 100 mm/hr, you will very likely find a serious etiology;
- a unilateral pleural effusion should always prompt further evaluation, usually with thoracentesis;
- determine whether the fluid is an exudate or transudate. If exudative, check cell count, glucose levels, cytology, and cultures; consider markers for tuberculosis; and
- realize that tuberculosis can be difficult to diagnose and that more advanced techniques including bronchoscopy, bronchoalveolar lavage, or pleural biopsy may be required.

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of a population. Population health can only be advanced by embracing this broader view of health and establishing health systems, health care reimbursements, and health care metrics to recognize these social determinants.

We were also honored to have Dr. Marie Brown, associate professor in the department of internal medicine, Rush University, and senior physician advisor, American Medical Association, talk to us about practicing wisely and focusing on physician well-being and resilience. Through her 20 years of practicing medicine, she reminded us that the reason physicians have joy in their practice is the ability to deliver quality patient care. Physicians are able to feel pride in their work when they are able to make some decisions without micromanagement, especially on their daily patient appointment schedule. She said the average physician works more than 60 hours per week, more than any other profession. However, a study in 2016 found that 50% of a physician’s time is spent on desk or EHR work while only 27% of time is with direct patient contact. 1 In addition, physicians spend an unknown but significant amount of “pajama time” responding to e-mails, in baskets, and completing notes at home. Dr. Brown suggested resources to be more efficient with our time located at www.stepsforward.org and gave helpful tips, such as refilling meds for 12 months at a time and previsit planning, to help maximize time that is spent with each patient. 2

Our meeting was a huge success—we both learned and collaborated and were rejuvenated by inspirational stories and talks—and participants generated 72 tweets to #SGIMMW16. The Midwest Planning Committee expresses its thanks to our member volunteers who contributed to our success by serving as abstract reviewers, poster judges, moderators, meeting participants, committee chairs, and institutional champions. We look forward to building on the success of this conference in 2017.

References


activities and educational research; and
• adopt strategies for successful careers in academic medicine.

Specific educational objectives and resident-level competencies addressed during the pathway experience are derived from the 2006 APDIM workshop.3

The pathway’s curriculum activities include a seminar series, teaching activities, an educational scholarship project, mentorship, and career planning activities. The monthly seminar series consists of a mixture of didactics, small-group discussion, and other interactive activities. These seminars focus on best practices in medical education and the development of core clinician-educator competencies in the domains of clinical teaching, curriculum design, educational scholarship, administration, and leadership. Teaching activities include opportunities to participate in the instruction of medical students and residents at the DGSOM and its affiliated clinical training sites. Teaching activities include a mixture of single-session and longitudinal teaching opportunities, including problem-based learning courses, simulation sessions, and physical examination workshops. Residents are also required to identify, design, implement, and evaluate an educational research project or educational activity over the course of their two-year period in the pathway. The resident must also make plans to share his/her work with educational and professional communities through abstract/poster presentations or publication. Finally, residents in the pathway will work closely with medical education mentors—both clinician-educators and medical education researchers—to develop a personal learning plan for the pathway, develop early career goals, construct an educational portfolio, and complete the educational scholarship project requirement.

Evaluation and feedback are integral to resident development in the pathway. Residents will receive evaluations from their learners following participation in teaching activities. In addition, each resident will have at least two of their teaching activities observed by an experienced faculty member each year in order to provide structured, one-on-one feedback to residents on their teaching performance. Program evaluation will include pre- and post-participation surveys assessing interest and confidence in the various clinician-educator roles. We will also compare teaching evaluations, teaching activities, scholarship productivity, and post-residency career activities with resident cohorts who do not participate in the pathway.

Conclusion
A growing number of residents tell us that they are interested in pursuing a career in medical education as clinician-educators, but many receive minimal training and practice opportunities in important domains of the clinician-educator role. Certainly on-the-job training will eventually fill the gaps, but a formalized curriculum during residency may aid residents in their transition to junior faculty and give them a better foundation to become potential leaders in medical education in the future.

References
It will certainly come as no surprise to SGIM members that they and their colleagues in general internal medicine are well represented in the halls of the federal government. SGIM members and many other leaders of general internal medicine have traditionally been prominent in a wide variety of departments, offices, and agencies in and around the Washington, DC, area.

For example, Dr. Karen DeSalvo is currently the acting assistant secretary of health at the department of health and human services. Dr. Eliseo J. Perez-Stable is the director of the National Institute of Minority Health and Health Disparities (NIMHD), one of the 27 institutes and centers that comprise the National Institutes of Health.

Most recently, Dr. Andy Bindman, a general internist and health services researcher who has been on the faculty at UCSF for 30 years, was appointed as the director of the Agency for Healthcare Research and Quality (AHRQ) by HHS Secretary Sylvia Mathews Burwell. At the SGIM’s annual meeting in Florida, Dr. Bindman was actively engaged in meeting both formally and informally with SGIM members from the Society’s leadership to the Research Subcommittee of the Health Policy Committee to the general membership in a well-attended session that featured a wide-ranging discussion.

The discussions at the annual meeting were productive and forward-looking. Dr. Bindman was most generous in sharing his vision for a vibrant and impactful AHRQ, and very direct about articulating both its strengths and areas of anticipated future focus. His clear-eyed approach was a most welcome and refreshing one that portended good things to come for AHRQ and, therefore, for generalists, especially those SGIM members involved in health services research.

Beginning in mid-September, SGIM and AHRQ embarked on an experiment that we had not tried, in spite of a long history of members holding key positions. We initiated a series of Health Policy Committee conference calls to occur on a quarterly basis—either with the Research Subcommittee or the Health Policy Committee’s (HPC) Executive Committee—on which Dr. Bindman will participate. The goal is to share thoughts and plans as appropriate, strengthen SGIM’s input to AHRQ’s operations, and build a stronger cadre of advocates for general internal medicine.

On this first conference call, participants discussed important issues, including current and future funding, the relationships among AHRQ, the National Institutes of Health and the Patient-Centered Outcomes Research Institute, the need for clear educational materials about AHRQ’s programs and activities, and patient safety.

SGIM benefits greatly from having its outstanding members and other leaders in GIM in key positions. With this new initiative—one that can be replicated with others who are willing and able to do so—SGIM has moved to new level of collaboration with an agency with which many members interact and many more may in the future.

SGIM members who wish to participate in these discussions and to broaden the level of health services research may e-mail Francine Jetton (jettonf@sgim.org) and ask to be added to the HPC Research community on GIM Connect and to participate in its monthly conference calls.

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