

ACADEMIC INTERNAL MEDICINE INSIGHT

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A Light in the Darkness: How Can AAIM Find Resources in Trying Times?

Even as the current economic challenges force AAIM and its constituent organizations to streamline operations and activities, the alliance continues its effective participation in the controversies that will influence the future of academic internal medicine. AAIM, like all organizations in these turbulent times, is facing challenges and opportunities. Today, we are all forced to take a ruthlessly hard look at budgets. In the past, AAIM and the individual associations' efforts have been supported by earnings from reserves, which have since shrunk. Current net earnings are negligible. Therefore, we are highly motivated to scrutinize our finances to focus on what is most important to be as efficient as possible.

This need for efficiency becomes even more important as we consider the imminent issues and the opportunities to be a significant voice. For example, the Institute of Medicine report on duty hours and sleep hygiene of residents has prompted the Accreditation Council for Graduate Medical Education (ACGME) to solicit input from different disciplines as part of a process to formally examine the issue and decide if accreditation guidelines for residencies will change. ACGME specifically invited AAIM to present its views and participate

in a June 2009 congress. To prepare for this extraordinary opportunity for AAIM to "be at the table" for these important discussions, all the constituent organizations have agreed that a single response from AAIM will have a greater impact. Second, the AAIM Executive Committee, which includes the presidents of the five AAIM organizations, has worked diligently with our outstanding staff to produce a thoughtful document to submit to ACGME (Figure 1).

To ensure that AAIM can be a major participant in these discussions, AAIM leaders and staff are taking a very hard look at how to streamline the operations of AAIM to make sure as many resources as possible are directed to important issues.

FIGURE 1: AAIM Recommendations to ACGME About Duty Hours

Base any new or revised accreditation requirements concerning duty hours, schedules, and fatigue on evidence that supports interventions that yield positive results on addressing fatigue, work compression, and quality of patient care in the complex systems in which residents, fellows, and medical students are trained.

Ensure flexibility in the design and implementation of any new requirements that might emerge to reflect the variations among institutions and training programs. This recommendation can be accomplished, in part, by providing the Residency Review Committees a leading role in developing and implementing any new requirements that might emerge from this process.

Take every possible action, in conjunction with the training community, to oppose an end to professional self-regulation of medical education.

AAIM has also compared notes with the American College of Physicians (ACP), one of our vitally important partners, to find that the tone and conclusions of the two organizations are in harmony, meaning that the internal medicine community will truly speak with one voice. Everyone will agree that duty hours and sleep hygiene are a perfect example of an issue in which AAIM must be involved. However, we must do what is necessary to have the capacity to respond in a timely fashion to these types of issues, now and in the future.

Our voice must also be heard about competency-based education and training (CBET). AAIM, ACP, ACGME, and others have begun working with the American Board of Internal Medicine (ABIM) to address this admittedly complex issue. CBET will be a major focus of the AAIM Education Redesign Task Force; the alliance sincerely thanks Lee R. Berkowitz, MD, for his selfless dedication and commitment in leading this task force.

But these are only two examples of issues that are vital to academic internal medicine as well as the profession of medicine. We must do whatever is necessary for AAIM to be a major participant in such discussions. To ensure we can, AAIM leaders and staff are taking a very hard look at how to streamline the operations of AAIM to make sure as many resources as possible are directed to important issues. We want to be able to act in a proactive manner, rather than a reactive scramble for time and resources when an issue arises. Part of what we are examining is how to consolidate the "back office" activities of the five different associations to utilize

Academic Internal Medicine Insight

Owned and published by the Alliance for Academic Internal Medicine (AAIM)

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Alliance for Academic Internal Medicine

2501 M Street, NW, Suite 550

Washington, DC 20037-1325

Telephone: (202) 861-9351

Fax: (202) 861-9731

Email: AAIM@im.org

Website: www.im.org

AAIM is a consortium of five academically focused specialty organizations representing departments of internal medicine at medical schools and teaching hospitals in the United States and Canada. AAIM consists of the Association of Professors of Medicine (APM), the Association of Program Directors in Internal Medicine (APDIM), the Association of Specialty Professors (ASP), the Clerkship Directors in Internal Medicine (CDIM), and the Administrators of Internal Medicine (AIM). Through these organizations, AAIM represents department chairs and chiefs; clerkship, residency, and fellowship program directors; division chiefs; and academic and business administrators as well as other faculty and staff in departments of internal medicine.

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economies of scale. Currently, the five separately incorporated entities require five separate sets of books, bylaws, audits, budgets, and other operational structures; managing all these redundant functions takes significant staff time and effort, leaving fewer resources to work with members to address issues important to the discipline. As we consolidate these operations, at the same time we must focus energy on meeting members' needs, retaining the unique culture and personality of each of the constituent organizations, and adding value for their investment. This work effort analysis to determine the most effective way to allocate and utilize resources is the right thing to do. The current economic climate simply brings the need to do so to the forefront now as opposed to some time down the road.

What you can expect to see in the future is a more streamlined AAIM behind the scenes that is addressing issues important to you, the members. Rest assured AAIM is in the thick of issues facing the discipline and we will do what is needed to make certain that continues to be the case. 

Sincerely,



D. Craig Brater, MD

President

Alliance for Academic Internal Medicine

Improving the Transition of Care Process for Patients Discharged to Extended Care Facilities

Introduction

The Accreditation Council for Graduate Medical Education (ACGME) has advocated for improvement in information exchange among health care providers; the Joint Commission has made the standardization of handoff communications a key focus of the 2009 National Patient Safety Goals. Indeed, poor communication and an inadequate transition process when discharging patients from the hospital to extended-care facilities (ECFs) can result in adverse outcomes, such as medication errors or increased readmission rates. Multidisciplinary programmatic and educational initiatives designed to foster effective communication among all parties involved are essential to produce improvements in hospital-to-post-hospital transitions of care. Accordingly, a residency quality improvement project at Allegheny General Hospital sought to improve the quality and safety of the transition process for patients being discharged from the hospital to ECFs. The project goals were to identify deficiencies in the current transition of care (TOC) process for patients being discharged from medicine housestaff services to ECFs and perform a needs assessment for a TOC curriculum by evaluating medicine housestaff on knowledge of and comfort with the discharge process.

Methods

The assessment of the current TOC process began with a focus group meeting with representatives (n=6) from the three ECFs to which patients are most commonly discharged.

Those representatives answered a series of open-ended questions regarding problems with the transition process to their facilities from the hospital, adequacy of information provided to accepting ECF, and timeliness of receipt of patient information. The group triangulated and validated

Multidisciplinary programmatic and educational initiatives designed to foster effective communication among all parties involved are essential to produce improvements in hospital-to-post-hospital transitions of care.

the data with ECF-accepting physicians and nurses at each particular ECF site. Finally, the group obtained consensus from the representatives that were identified as the most salient deficiencies in the TOC process.

From an educational standpoint, the improvement group also conducted a formal needs assessment of housestaff to identify particular learning needs regarding TOC. Based on a review of the TOC literature and the results of the focus group, a 27-item test was designed with open-ended and multiple-choice questions to assess knowledge of key factors in the TOC process (Table 1). Housestaff comfort with various aspects of the transition process was assessed using a Likert scale (Table 2).

Results

The focus group identified several key problems with the TOC process at both the systems and housestaff levels. At the systems level, timely receipt of pertinent patient care information was lacking. Medication reconciliation was inconsistent, pending results were not indicated as such, and discharge summaries were arriving within 30 days, which was generally too late to be helpful. While entire charts were sent with patients, ECF caregivers felt that a more focused discharge progress note with key information vital to the care of the patient, if received at ECF admission, would be most beneficial. They also identified that receipt of discharge medication orders at least two hours prior to discharge would be helpful in ensuring a smoother transition. It was also identified that housestaff often complicated the TOC process

TABLE 1: Resident Knowledge about Transition of Care

| Questions Related to: | % Residents who Answered Correctly |
|---|------------------------------------|
| Definition of skilled nurse facility and long term acute care | 79 |
| Criteria for admission to ECFs | 8 |
| Factors that could delay transfer to ECFs | 24 |
| Components of adequate discharge summary | 55 |
| Members of interdisciplinary team | 69 |
| Functional assessment | 47 |
| Skilled needs | 15 |
| Side effects of a poor transition | 42 |
| Medicare reimbursement | 48 |
| Roles of occupational therapist | 48 |

TABLE 2: Resident Comfort with Transition of Care

| Resident Comfort with: | Average Resident Comfort (Likert Scale 1-5) |
|---|---|
| Management of discharge process | 2.9 |
| Provision of patient education regarding discharge medications | 3.3 |
| Performance of functional assessment | 2.7 |
| Knowledge of physical therapy role in discharge | 2.9 |
| Knowledge of occupational therapy role in discharge | 2.8 |
| Knowledge of nursing role in discharge | 3.0 |
| Knowledge of social work role in discharge | 3.0 |
| Knowledge of medical resident role in discharge | 3.3 |
| Understanding Medicare and Medicaid reimbursement | 1.8 |
| Knowledge of home health care | 2.3 |
| Knowledge of community resources | 2.0 |
| Knowledge of admission criteria to various ECFs | 2.2 |
| Knowledge of potential barriers to admission to ECFs | 2.2 |
| Comfort in explaining to patient/family about why certain ECF admission is needed | 2.7 |
| 1=least comfortable; 5=most comfortable | |

by creating false expectations for patients and families because of misrepresenting or misunderstanding the differences between ECF levels of care. Focus group participants created a “top 10” list of vital TOC information that residents should know that will be incorporated into the curriculum.

The needs assessment also identified several areas of deficiency and discomfort with the TOC process among housestaff (Tables 1 and 2). Fifty of 53 (94%) residents completed the pre-curricular test. Overall test scores were quite low: postgraduate-year one (PGY-1)=46% correct, PGY-2= 44%, and PGY-3=47%.

Conclusion

The study revealed multiple deficiencies in the current TOC system and identified content and timeliness of transfer documentation as specific areas for improvement. This approach to improving the TOC process involves several of the core

competencies of residency education including systems-based practice, professionalism, patient care, and interpersonal communication skills. At the systems level, a multidisciplinary team of nurses and case-managers coordinated with the study group to develop an improved standardized discharge template that will facilitate better communication between the hospital and ECFs. The template also facilitates better communication between housestaff, nurses, patients, and their families. The TOC curriculum stemmed directly from focus group responses including the “top 10 list” for a safe TOC, and the pre-curricular needs assessment. The curriculum emphasizes both the content and process necessary for a safe transfer and includes didactics, experiential learning, and multidisciplinary case conferences with nursing and case management. The next phase of the quality improvement project will be to implement a targeted needs assessment of nursing to facilitate expansion of the curriculum to meet nursing needs. These multidisciplinary educational and procedural interventions will continue to improve the safety of the transition process for the increasingly larger number of patients that are transferred to ECFs. 

AUTHORS

Harish Manyam, MD

Chief Medical Resident
Department of Internal Medicine
Allegheny General Hospital

James J. Reilly, MD

Program Director
Department of Internal Medicine
Allegheny General Hospital

Anastasios Kapetanios, MD

Internal Medicine Resident
Department of Internal Medicine
Allegheny General Hospital

Ariella Reinherz, MD

Internal Medicine Resident
Department of Internal Medicine
Allegheny General Hospital

Abby L Spencer, MD

Associate Program Director
Department of Internal Medicine
Allegheny General Hospital

GME Enhancement: Expansion and Educational Innovation in VA Residency Programs

The Department of Veterans Affairs (VA) Office of Academic Affiliations (OAA) completed the first three years of its planned five-year, 2,000-position expansion of graduate medical education (GME). Beginning in 2006 and based on the findings of a federally-chartered external commission to review VA GME programs and the deployment of physician residents in the VA system, VA launched GME Enhancement with the following goals:

- Address physician workforce shortages by expanding resident positions in specialties of greatest need to US veterans and the nation.
- Address the uneven geographic distribution of residents to improve access to care.
- Foster innovative models of education, while enhancing VA's leadership role in GME.

As the second largest funder of GME (after Medicare and Medicaid), VA is the only federal agency that is expanding physician residency training positions. Of note, internal medicine and its subspecialties have been the largest recipients of the added positions. Internal medicine positions increased by 146 (15% of all positions awarded to date), which was the highest increase seen in any single specialty, while an even more striking increase was seen in internal medicine subspecialties—a combined increase of 279 (29% of awarded positions). Moreover, although VA funds about 15% of all US internal medicine positions, about 55% of internal medicine residents rotate through VA medical centers (VAMC) each year. Nevertheless, the total internal medicine positions funded by VA have declined overall from 3,483 in academic year 2000-2001 to 3,302 in 2008-2009. Thus, while the enhancement initiative has been successful in reversing the downward trend in VA-funded internal medicine positions, reallocations of internal medicine positions to other specialties have been observed over the past eight years.

VA's concern, however, is not merely with expanding the numbers of residents trained in VA facilities, but with the need for innovation and reform of resident education. As noted in the recently published 19th Council on General Medical Education Report, *Enhancing Flexibility in Graduate Medical Education* (available at: www.cogme.gov/pubs.htm), increasing the number of GME resident positions will be insufficient to address the problems that plague the US health care delivery system; instead the structure, content, methodology, and venues in which residents are trained need to be re-evaluated.

To that end, VA launched an educational innovation request for proposals as part of the enhancement initiative that is now entering its third year. To date, 10 sites and 28 resident positions have been funded. Approved innovation

sites focus on patient centered care, patient safety, inter-professional care, continuity of care, and greater ambulatory training exposure. Internal medicine programs are at the forefront of these innovations; two VA programs are part of the Residency Review Committee for Internal Medicine (RRC-IM) Educational Innovations Project (EIP): Richard L. Roudebush VA Medical Center (affiliated with Indiana University School of Medicine) and the San Francisco VA Medical Center (affiliated with University of California, San Francisco, School of Medicine).

Building on prior experience and a desire to foster faculty development as well as inter-professional training models, VA will allow applications in the current cycle for additional types of positions.

Chief residents in quality and patient safety: These positions, funded for a non-accredited training year, are for sites that can demonstrate a robust curriculum and significant involvement of the chief resident in both the practice and teaching of quality improvement and patient safety (unlike the more administrative focus of many chief resident years). Additionally, the site must have at least eight other VA-funded internal medicine residents in the program.

Associated health training positions: This funding is intended for health-related positions in such areas as nursing, psychology, and audiology in an inter-professional training program where a collaborative, team-based model of care is planned.

As in the past, applicants for the educational innovation funding will be asked to demonstrate how their proposed innovations will transform both medical education and outcomes of care, how the innovations will be amplified throughout the training program, and whether the host VA facility is willing to commit operating resources toward additional program support. All specialties may apply, but the application must be submitted by the local VA facility in collaboration with its affiliate. One of the expressed goals of the educational innovation initiative is the development of a community of scholars through activities designed to foster faculty development and educational research.

Other subsets of GME Enhancement include critical needs and emerging specialties positions, which target facility-identified specialty training needs, and new affiliations and new sites of VA care positions, which seek expansion of training in under-represented sites, such as community-based outpatient clinics (CBOCs) or smaller training facilities. Further information on the application process for the GME Enhancement initiative may be found at www.va.gov/oa/GME_enhancement.asp.

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EIP: An Update

In 2005, the Residency Review Committee for Internal Medicine (RRC-IM) developed the Educational Innovations Project (EIP) to reform internal medicine accreditation and foster residency training innovation (1). EIP accreditation focuses less on process measures, placing emphasis instead on improving educational and patient care outcomes. The accreditation cycle entails one site visit every 10 years; programs must share their work at an annual meeting and submit an annual program information form (PIF). In the first year of the project, 17 programs were chosen (eight university, eight community-based, one municipal) with four more accepted in the second year. The innovations created and tested by these programs are varied but fall under five main themes: learning environment innovations, patient safety enhancements, performance improvement, curricular changes, and evaluation tools (2).

The EIP group meets twice per year in conjunction with the Association of Program Directors in Internal Medicine (APDIM) meetings. Initially, RRC-IM organized these meetings, but the group has since become self-organizing and self-governing. The leadership structure includes a chair (currently Eric Warm, MD, Associate Program Director in the Department of Internal Medicine at University of Cincinnati College of Medicine) and a chair-elect (currently Lia Logio, MD, Program Director in the Department of Medicine at Indiana University School of Medicine). Each EIP program contributes to provide partial salary support for a national EIP program manager on the Alliance of Academic Internal Medicine staff (currently Nicole Baptista). To share tools and information more effectively, the group has adopted epsilen®, an academic networking site, (www.epsilen.com/grp/81049).

At the 2008 APDIM Fall Meeting in Orlando, FL, several EIP working groups formed to set a course for collaboration and dissemination of educational and patient care innovations. Groups communicate between meetings via conference calls, email, and the epsilen website with the assistance of the EIP national program manager. The ambulatory work group is currently creating novel milestone-based competency evaluation tools and continuity of care measurement tools as well as promoting the use of shared medical appointments. The leadership and influence work group is focusing on a faculty development toolbox and identifying ways to foster and sustain innovation in academic settings. The inpatient work group is working to improve clinical microsystems.

During the 2009 APDIM Spring Meeting in Dallas, TX, EIP programs presented their overall progress during a poster session. At the EIP meeting, 13 programs presented their work on:

- Continuous healing relationship in ambulatory care: How can a continuous healing relationship within ambulatory centers be defined? How is this relationship measured? What innovative models of care currently support a continuous healing relationship?

- Work hours and work flow: In what innovative ways are groups addressing the current duty hour regulations as well as the upcoming changes and the new Institute of Medicine recommendations? What are the realized benefits and burdens of shorter work hours? How are groups addressing the quality of the resident work experience as hours are reduced?

Continued on Page 13

TABLE 1: Published EIP Presentations

| |
|---|
| Baskin C, Seetharamu N, Mazure B, Vassallo L, et al. Effect of a CD ROM-based educational intervention on resident knowledge and adherence to deep venous thrombosis prophylaxis guidelines. <i>J Hosp Med.</i> 2008;3:42-47. |
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ASP Contributes to New NIH Policy on Part-Time Careers

Acknowledging faculty needs for more flexible work schedules, the National Institutes of Health (NIH) has expanded its policy on Research Career Development Awards (K awards) to extend eligibility to full-time faculty who choose to work part-time during the award. Prior to this expansion of eligibility, K award recipients could request a leave of absence or reduction in percent effort for what NIH described as “pressing family circumstances or disability,” including parental leave, child care, elder care, or personal medical conditions. NIH modified this policy to eliminate the “pressing circumstances” language that may have inadvertently discouraged some recipients from seeking modifications to their awards. The policy was expanded to also allow K award recipients to request part-time appointments under similar circumstances.

In 2006, the Association of Specialty Professors (ASP) created its task force on part-time careers to help address research that showed many faculty were not choosing careers in internal medicine due to their interest in creating work-life balance. The task force heard of junior faculty who wished

to work part-time while their children were young, but were discouraged from pursuing research careers because of a lack of access to K awards. As the nation continues to ponder how to rejuvenate the physician-scientist pipeline, steering away potential researchers who could only work part-time seemed an incongruous policy. The task force was charged with mapping the horizon for part-time careers in academic departments of internal medicine. One aspect of that mapping was developing part-time opportunities for research careers, which included consulting with NIH to expand eligibility for K awards to part-time faculty.

In March 2007, the task force—which included representatives from other Alliance for Academic Internal Medicine member organizations—sent a letter to then-NIH Director Elias A. Zerhouni, MD, requesting modifications to part-time eligibility rules for K awards. Dr. Zerhouni directed ASP into conversation with Acting NIH Research Training Officer Henry Khachaturian, PhD, which led to a series of discussions between NIH training leaders and task force members to identify reasons for changing policy and what the

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policy change might look like. The task force sought to address the need of part-time faculty to access K awards (to develop research careers and maintain work-life balance) and whether research and research training could be accomplished on a part-time basis (since there was no evidence otherwise).

The ASP Council also engaged in vigorous discussions about the best mechanisms to modify K awards for part-time faculty. The council discussed changing the length of the award, changing the time devoted to research, and even proposed a new award series that would be open to part-time faculty only. ASP was concerned that part-time faculty, if eligible to apply for K awards, could not compete with full-time applicants; the council also voiced concerns about new faculty members' ability to perform research part-time.

Parallel discussions also took place within the NIH Training Advisory Committee (TAC), that advises the NIH Research Training Officer on all issues related to NIH's training and career development programs. Similar to the discussions within ASP, NIH was concerned about whether part-time faculty could devote sufficient time to research and career development activities to fully benefit from K awards and become successful independent investigators.

In January 2009, NIH released a notice (<http://grants1.nih.gov/grants/guide/notice-files/NOT-OD-09-036.html>) reiterating existing NIH policies for K awards with respect to leave and percent effort as well as announcing a new policy for part-time appointments. The new policy allows K award recipients to request a reduction of their appointment to less than full-time (but not less than three-quarters time) for a period not to exceed 12 continuous months. The policy change is a slight modification to prior policy, making it clearer that the option to decrease to part-time is available. Future changes to or the continuation of the policy will be subject to careful review of applicants and how well they are able to proceed with their research careers. Recent discussions with NIH indicate that part-time careers will continue to remain of interest to TAC.

The task force sought to address the need of part-time faculty to access K awards (to develop research careers and maintain work-life balance) and whether research and research training could be accomplished on a part-time basis.

This policy change indicates that medical institutions can adapt to changing values and needs. The willingness of NIH to recognize the need for flexibility for researchers addresses the all-too-often unspoken conflicts between personal and professional lives and the conflicts between altruism and sustainability that frequently arise in medical careers. This policy is an exciting first step toward creating a more humane and compassionate work environment for future generations of physicians.

ASP will follow up with NIH to evaluate the outcomes of the policy change and will continue to advocate for the possibility that a part-time faculty member may apply for a K award. For the moment, progress has been made in seeing the words "part-time" at <http://grants.nih.gov>. The chance to allow scientists-in-training to maintain work-life balance is a major step forward in growing and nurturing the physician-scientist pipeline. 

AUTHORS

Mark Linzer, MD

Professor and Chief

Division of General Internal Medicine Scholars Section
Department of Medicine

University of Wisconsin School of Medicine and Public Health

Carole Warde, MD

Associate Program Director

Department of Graduate Medical Education
Long Beach Memorial Medical Center

Paul A. Volberding, MD

Professor and Vice Chair

Department of Internal Medicine
San Francisco VA Medical Center

Eve Kerr, MD

Director

VA Center for Clinical Management Research

Jessica L. O'Hara

Policy Associate

Alliance for Academic Internal Medicine

The Current State of Health Information Technology in the United States in a Global Context

Health information technology (HIT) received a significant amount of press after the American Recovery and Reinvestment Act (PL 111-5) designated \$1.5 billion for the “construction, renovation and equipment, and for the acquisition of health information technology systems, for health centers” as a preliminary step toward health care reform (1). According to the White House Office of Health Reform, President Barack H. Obama believes this appropriation was important to ensure all hospitals develop HIT systems to increase the efficiency of health care delivery by reducing

medical errors and implementing a cost-effective solution (2). Appropriating funds is the first step toward integrating technology into medical records; HIT in US hospitals, excluding hospitals in the Department of Veterans Affairs (VA), is still in its infancy of integration. VA medical centers use a standardized program across all hospitals to ensure seamless transfer of medical information (3). Several hospitals not affiliated with VA have attempted similar systems to integrate electronic medical records (EMRs) with their other IT systems, but the process has been slow.

TABLE 1: Selected Electronic Functionalities and Their Level of Implementation in US Hospitals

| Electronic Functionality | Fully Implemented in All Units | Fully Implemented in at Least One Unit | Implementation Begun or Resources Identified | No Implementation, with No Specific Plans |
|--|--------------------------------|--|--|---|
| Clinical documentation | Percent of hospitals | | | |
| Medication lists | 45 | 17 | 18 | 20 |
| Nursing assessments | 36 | 21 | 18 | 24 |
| Physicians' notes | 12 | 15 | 29 | 44 |
| Problem lists | 27 | 17 | 23 | 34 |
| Test and imaging results | | | | |
| Diagnostic-test images (e.g., electrocardiographic tracing) | 37 | 11 | 19 | 32 |
| Diagnostic test results (e.g. echocardiographic report) | 52 | 10 | 15 | 23 |
| Laboratory reports | 77 | 7 | 7 | 9 |
| Radiologic images | 69 | 10 | 10 | 10 |
| Radiologic reports | 78 | 7 | 7 | 8 |
| Computerized provider-order entry | | | | |
| Laboratory tests | 20 | 12 | 25 | 42 |
| Medications | 17 | 11 | 27 | 45 |
| Decision support | | | | |
| Clinical guidelines (e.g., beta-blockers after myocardial infarction) | 17 | 10 | 25 | 47 |
| Clinical reminders (e.g. pneumococcal vaccine) | 23 | 11 | 24 | 42 |
| Drug allergy alerts | 46 | 15 | 16 | 22 |
| Drug-drug interaction alerts | 45 | 16 | 17 | 17 |
| Drug-laboratory interaction alerts (e.g. digoxin and low level of serum potassium) | 34 | 14 | 31 | 21 |
| Drug dose support (e.g. renal dose guidance) | 31 | 15 | 21 | 33 |

These hospitals reported that they were either beginning to implement the specified functionality in at least one unit or had identified the resources required for implementation the next year.

TABLE 2: Relationship Between IT Functionality and Caring for Chronically Ill Patients

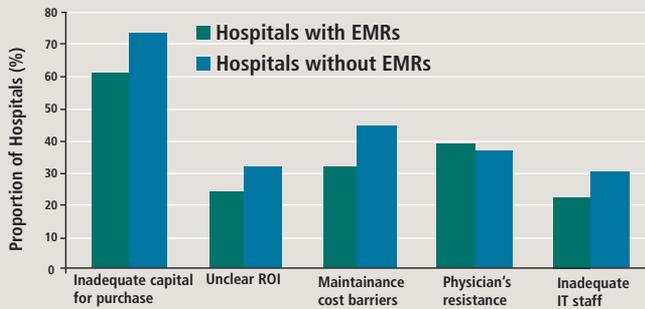
| | Practice clinical information functions | | | |
|--|---|-----------|--------------|-------------|
| | Total | Low (0-2) | Medium (3-6) | High (7-14) |
| Care for chronically ill patients | (Unadjusted) | | | |
| Practice is “well prepared” to provide optimal care for the following types of patients: | | | | |
| Patients with multiple chronic diseases | 74% | 66% | 71% | 78% |
| Patients with mental health problems including depression | 54% | 45% | 50% | 57% |
| Practice “often” uses “evidence-based” treatment guidelines (issued by government, medical societies, or other groups) in the care of patients with complex or multiple chronic diseases | 56% | 48% | 52% | 50% |
| Practice “routinely” gives patients with chronic diseases written instructions about how to manage themselves at home | 31% | 26% | 29% | 35% |
| Safety | | | | |
| Does your practice have a documented process for follow-up and analysis of adverse events? | | | | |
| Yes for adverse events | 38% | 27% | 36% | 43% |
| Yes for adverse drug reactions only | 17% | 22% | 17% | 15% |
| No | 45% | 50% | 47% | 41% |
| Responsiveness to patients | | | | |
| Routinely receive data on surveys of patient satisfaction and experiences with care | 40% | 32% | 37% | 46% |
| Physician satisfaction | | | | |
| Your ability to provide quality medical care to your patients has improved over past five years | 30% | 22% | 28% | 31% |
| Very satisfied/satisfied with overall experience with practicing medicine | 83% | 80% | 84% | 84% |

Difference from practice with low IT capacity is statistically significant: *p < 0.05; **p < 0.01; ***p < 0.001

Count of 14 includes: EMR; EMR access—other doctors, outside office, patient access to records; routine electronic—ordering of tests, prescriptions, access test results; access hospital records; computer for patient reminders, RX alerts, prompt tests results; “easy” to generate diagnosis, medications, patients due for test or preventive care. Significant differences between countries are indicated for distribution of summary variable rather than individual responses.

Note: Regression models control for country practice size, and physician’s age and gender. Total percentage remains unadjusted.

FIGURE 1: Major Perceived Barriers to Adoption of EMRs among Hospitals with Electronic Record Systems as Compared with Hospitals without Systems



The *New England Journal of Medicine* published a survey of US hospitals evaluating the national use of EMRs (4). The survey results included responses from 2,952 hospitals, excluding federal hospitals. Of responding hospitals, only 1.5% have a comprehensive electronic records system (present in all clinical units) and an additional 7.6% have a basic system (i.e., present in at least one clinical unit). According to the survey, most hospitals (77%) already have an electronic system in place for laboratory reports but 44% have no implementation of or plans to implement electronic functionality for physician notes (Table 1).

While multiple barriers to implementing EMRs exist, the most prominent for hospitals is inadequate funds to purchase new systems (4). Figure 1 shows the barriers as determined by both hospitals with EMRs and hospitals without IT systems. The funds allocated from the economic stimulus bill and distributed by the US Department of Health and Human Services (HHS) address the maintenance costs and inadequate capital that keep 30% and 60%, respectively, of hospitals without EMRs from developing these systems. Despite the availability of these funds, physician resistance also remains a challenge for the future of HIT.

In an international study published by Health Affairs, the biggest factors contributing to physician resistance to EMRs include difficulties with the utility of the technology, changes associated with the implementation of HIT, and ability to integrate with other IT systems already in place (5).

The United States lags behind other countries in implementing HIT systems (6). Figure 2 shows the percentage of physicians who use EMRs in the Netherlands, New Zealand, Australia, Germany, Canada, and the United States. As shown, Dutch, New Zealander, and Australian physicians are far more likely to use EMRs than American physicians. At 98%, the Netherlands leads the study in EMR use. However, the United States has shown increased usage from 17% of physicians using EMRs in 2001 to 28% in 2006.

FIGURE 2: Physicians' Use of Electronic Medical Records

Percent of physicians using electronic medical records



AUS=Australia; CAN=Canada; GER=Germany; NETH=Netherlands; NZ=New Zealand; UK=United Kingdom; US=United States; Data: 2001 and 2006 Commonwealth Fund International Health Policy Surveys
Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2008.

The same study found that, after controlling differences in countries and practice size, 78% of primary care physicians with high IT capacity felt well prepared to care for patients with multiple chronic diseases, compared with only 66% of physicians with low IT capacity (Table 2). Additionally, the study suggests HIT has the ability to help improve the quality of health care; 31% of primary care physicians with high IT capacity and 28% with medium IT capacity reported their ability to provide high quality medical care had improved during the past five years. In contrast, just 22% of those physicians with low IT capacity reported similar views. While the United States still faces several challenges in the process to implement EMRs, the first steps are under way to overcome the financial barriers. The disbursement of funds from HHS has not yet begun, as the offices of oversight are currently being staffed. HHS welcomes public suggestions for the implementation process during HIT Standards Committee meetings that began in May (7).

AUTHOR

Caitlin M. Simpson

Communications Associate

Alliance for Academic Internal Medicine

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GME Enhancement: Expansion and Educational Innovation in VA Residency Programs

Continued from Page 6

Another unique training opportunity VA is offering this spring is the Rural Health Training Initiative, which allows VA facilities to apply for resident positions plus associated health positions, when the VA training venue is in designated rural or highly-rural locations (using US Census Bureau definitions). However, VA facilities in urban areas may apply if they have CBOCs in rural or highly-rural areas. Unlike GME Enhancement, the Rural Health Training Initiative allows sites to apply for up to \$250,000 per year for three years in funds that can be used to develop the educational infrastructure or to remove logistic barriers to getting physicians-in-training into rural sites (e.g., providing funding for travel or lodging to rural venues). Normally, OAA can only provide funding for residency positions, but this unique opportunity to provide significant infrastructure and operational support is made possible by a collaborative effort with the VA Office of Rural Health. For more information, see www.va.gov/oaa/rural_health.asp. Collaboration with an appropriately-situated area health education center is encouraged, whenever possible. Training venues in rural areas must be in VA clinics or facilities.

As VA enters the last two application cycles, internal medicine program directors, VA site directors, and members of the Alliance for Academic Internal Medicine are strongly urged to consider developing proposals for application in the 2009 or 2010 cycle of GME Enhancement and the Rural Health Training Initiative. The application deadline for the 2009 cycle is July 2, 2009, for resident positions to begin July 1, 2010. The following RFP cycle will begin in March 2010. ☺

AUTHOR

Barbara K. Chang, MD

Director, Medical and Dental Education
Office of Academic Affiliations
Veterans Health Administration Central Office
Department of Veterans Affairs

EIP: An Update

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- Financing innovation: What is the cost of innovation? How is this cost measured? How can the value of innovations be demonstrated to obtain funding? What are the financial barriers to change? What plans are in place to safeguard innovation during the current economic recession?
- EIP programs have presented their work in multiple venues, including local, regional, and national meetings. A selection of publications is listed in **Table 1**. As this body of knowledge grows, the hope is that new models of training emerge that will shape the modern internist. ☺

AUTHOR

Eric J. Warm, MD

Associate Program Director
Department of Internal Medicine
University of Cincinnati College of Medicine

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10 Tunes

That Make You Think... AAIM Staff

If you would like to suggest a theme or a list for Ten Tunes, please email *Insight* Editor Sheila T. Costa at scosta@im.org.

One Call Away by Chingy
Extraordinary by Better Than Ezra
She Works Hard For The Money by Donna Summer
T-R-O-U-B-L-E by Travis Tritt
Love Will Keep Us Together by Captain and Tennille
We Rule the School by Belle and Sebastian
Working for a Living by Huey Lewis and the News
Never Tear Us Apart by INXS
Young Hearts Run Free by Kym Mazelle
Swagga Like Us by T.I. featuring Kanye West, Jay-Z, and Lil Wayne

Team-Based Learning in an Internal Medicine M3 Clerkship

Team-based learning (TBL) is a unique adult-learner centered teaching strategy that allows a teacher to draw on the benefits of small group learning while using a single facilitator. The method was developed “to nurture the development of high levels of group cohesiveness that can develop within teams of learners while teaching course content” (1). Virginia Commonwealth University (VCU) Medical College of Virginia introduced TBL into the internal medicine clerkship in 2006 as a novel teaching strategy with the goal of enhancing knowledge acquisition, encouraging active learner in-class participation, and fostering personal and group accountability through preparation and teamwork.

In a TBL-based seminar, the student becomes an educational partner with the teacher (2). The student is expected to prepare for class, mastering the content prior to

exercises and by including i-RAT and t-RAT scores as “low stakes” components in student grades.

In searching for a more adult-learner centered teaching method for the clerkship, VCU found TBL attractive for several reasons: it promotes individual accountability and sets expectations for learner readiness; is easily integrated with the in-class clinical application exercises; and focuses on the need for clear and effective communication and team-building skills that are transferable and applicable to clinical practice. The team building and communication qualities of TBL are highly important for the training of physicians and should be formally fostered by integration into the curriculum (5).

VCU’s internal medicine clerkship curriculum was redesigned to include TBL as a method for delivering one-third (eight sessions) of the core material. The implementation of

TBL into a course or clerkship is a multi-step process. Excellent resources provide detailed information on TBL training and material preparation (6). At VCU, the clerkship chose eight core topics for TBL sessions: chest pain, dyspnea, anemia, acid-base disorders, abdominal pain, dysuria, altered mental status, and back pain. Learning objectives were developed for each topic based on the CDIM clerkship objectives. Reading

assignments were selected from required textbooks, although high-quality review articles were an alternative. In an effort to promote accountability, i-RAT and t-RAT scores for the eight sessions made up 15% of the clerkship grade, thus incentivizing preparation and participation.

Prior to the development of teaching materials, the clerkship faculty trained a core group of TBL facilitators in an initial two-day workshop run by an invited TBL expert. To continue the training process, institutional TBL-experts were

More students attended TBL-formatted sessions versus formal lectures, though both were mandatory (mean attendance 36.8 students at TBL sessions vs. 19.1 at traditional lectures).

the teaching session through assigned readings or preparatory work. Class time is dedicated to reinforcing the educational objectives and applying the content in application exercises. Each TBL session begins with an individual readiness assurance test (i-RAT), which serves as a method to ensure content acquisition by students before application work. Students then work together to complete the team readiness assurance test (t-RAT) using a “scratch-and-win” type testing card that provides immediate feedback. As the students answer the questions together, they become both the “teacher” and the “learner” as they solve common problems in mastering the content. The participants then spend considerable session time devoted to a team application exercise which is followed by inter-group discussion facilitated by the TBL faculty facilitator.

Feedback, a key component for learning, is provided at multiple levels in TBL. Participants receive immediate feedback on responses to RAT questions in the sessions as well as feedback from facilitators in the clinical exercises. Peer feedback, important for team development and accountability, is provided through the use of peer assessment evaluations (3-4).

Student accountability, in the form of pre-class preparation and in-class team participation, is another important feature of TBL. Accountability is fostered by immediate feedback during the t-RATs and application

TABLE 1: Learning Experience and Level of Engagement in a Subset of Core Lecture

| Variable | TBL Mean Score | Non-TBL Mean Score | p value |
|-----------------------|----------------|--------------------|---------|
| Student preparedness | 4.37 | 2.78 | <0.05 |
| Student involvement | 4.34 | 3.29 | <0.05 |
| Student contribution | 4.01 | 3.10 | <0.05 |
| Student participation | 4.13 | 3.32 | <0.05 |

identified to train faculty annually. VCU currently employs the chief residents as facilitators for the clerkship sessions. Ongoing development of facilitators occurs through periodic teaching observation and feedback sessions. Session materials, including readiness assurance tests and clinical exercises, were developed by the initial TBL-trained facilitators, including the chief residents. The materials were reviewed and edited by the institution's TBL-trained working group and then were reviewed by external TBL experts. Materials are revised and updated annually. Developed TBL materials are available to educators through the TBL collaborative and the Association of American Medical Colleges MedEdPORTAL. The effectiveness of curriculum changes were measured in several ways. More students attended TBL-formatted sessions versus formal lectures, though both were mandatory (mean attendance 36.8 students at TBL sessions vs. 19.1 at traditional lectures). During the 2006-2007 year, students completed an anonymous survey evaluating their learning experience and level of engagement in traditional lectures and in TBL sessions. The survey included a previously validated classroom engagement survey and questions assessing learner satisfaction and attainment of learning objectives for the topic (7). Responses were based on a Likert scale. In the sessions surveyed, a statistically significant difference was observed between mean student ratings of TBL versus non-TBL sessions on several items of learner engagement and satisfaction, including student preparedness, student involvement, student contribution to the session, and student attentiveness (Table 1).

The impact of TBL on knowledge acquisition in academic year 2006-2007 was assessed by comparing the percent correct items on TBL-related topics with the percent correct items on non-TBL related topics (as classified by two investigators, differences reconciled by a third investigator). Twenty six percent of the 400 National Board of Medical Examiners medicine shelf examination questions were coded as content covered in TBL sessions in the clerkship. There was no statistically significant difference in the mean percent correct on TBL versus non-TBL content questions (71.21% vs. 72.09%, respectively). TBL did not appear inferior to conventional lecture as a means of knowledge acquisition.

Conclusion

TBL is a successful teaching strategy at the clerkship level. In the TBL format, the development of lifelong independent learning skills is encouraged and personal accountability is fostered. As both the assurance tests and application exercises are team based, TBL requires the student to develop essential interpersonal and communication skills (8). The clinical application exercises promote critical thinking and diagnostic

reasoning. In VCU's IM clerkship, TBL has led to a greater sense of engagement, preparation, and in-class participation while promoting self-directed learning, collaboration, communication, and both individual and team accountability. 

AUTHORS

Elizabeth Miller, MD

Associate Clerkship Director

Department of Internal Medicine

Virginia Commonwealth University Medical College of Virginia

Gonzalo Bearman, MD

Clerkship Director

Department of Internal Medicine

Virginia Commonwealth University Medical College of Virginia

Brieanne Dubinsky

Clerkship Coordinator

Department of Internal Medicine

Virginia Commonwealth University Medical College of Virginia

Gilda Harris-Howard

Clerkship Coordinator

Department of Internal Medicine

Virginia Commonwealth University Medical College of Virginia

Stephanie A. Call, MD

Residency Program Director

Department of Internal Medicine

Virginia Commonwealth University Medical College of Virginia

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Learning to Review Medical Education Abstracts

Introduction

One of a junior faculty's first forays into educational research outside of his or her institution is participation in abstract reviews for educational innovations, research, and workshop presentations. These review activities play an important role in building evidence of scholarship toward academic promotion. Unfortunately, there is little guidance on how to perform educational abstract reviews.

A recent workshop presented at Academic Internal Medicine Week 2008 in Lake Buena Vista, FL, included adapted materials originally developed by the Research in Medical Education Section Committee on Reviewer Training for Educational Research Manuscripts (1). While this material was developed to train reviewers of manuscripts, many principles were directly relevant to reviewers of quantitative educational research abstracts. The workshop emphasized the key elements of an abstract review, including the four content areas, rating forms and performance dimensions, frame of reference training, and the critical role of descriptive comments for feedback to authors and meeting program planners.

Discussion

As with every abstract, the author's principal challenge is to convey meaning within a restricted word limit. By definition, the author must omit important material. Reviewers must be cognizant of this reality when judging an abstract and have reasonable expectations for the content. There are usually four content areas to evaluate: the problem statement or introduction, the methods and design section, the results section, and the discussion sections.

The problem statement will usually be one to two sentences in length, but the problem statement or purpose of the research should be clear, relevant, and set forth whether the purpose is hypothesis testing (quantitative research) or hypothesis generating (qualitative research).

The design and methods section should include a description of the study type and design (e.g., case-control or cohort, prospective or retrospective), instruments and methods, setting (academic, community, or practice-based), and the population sampled for the study; it should also make explicit the plan for analysis with a description of the statistical methods used. Reviewers must judge whether the study design, data collection, and analysis were appropriate (e.g., were control groups missing? Were the statistical tests correctly used?) and should consult with a statistician or other experts if the methods are complex or seem inappropriate.

For the results section, abstracts should present the actual data and not simply the results of the analysis. Description of response and participation rates (e.g., a 70% survey response rate is usually sufficient) and basic demographic data should also be provided. All of the important results should be noted, the math should be accurate, and results should be congruent with the methods. Common errors in the results section include failure to present the data, inappropriate analysis, and reporting results not specified in the methods section.

Additionally, perhaps the most common problem with reporting results is an overreliance on statistical significance, with the educational or practical significance often overlooked. Significance is more than just a *p*-value. Statistical significance may exist in the absence of educational importance, and smaller *p*-values do not translate to greater importance. Authors need to emphasize measures of the effect for statistically significant findings. For example, one measure of effect size is Cohen's *d*, which is the difference between means in the intervention and control group divided by the pooled standard deviation; this measures the degree of difference that was uncovered (2). Reporting the proportion of the variance explained in the outcome also helps to clarify the magnitude of the effect. For example, a correlation coefficient of 0.2 might be statistically significant, but it only explains 4% ($R^2 = 0.2 \times 0.2$) of the variance in the dependent variable and thus may not be

The workshop emphasized the key elements of an abstract review, including content areas, rating forms and performance dimensions, frame of reference training, and the critical role of descriptive comments for feedback.

educationally significant (3). Feedback to authors on reporting the measures of the effect of their study is a critical part of the narrative comments to authors.

In the discussion or conclusions section, reviewers should ask whether conclusions were clearly stated and reasonable. Does the interpretation follow from the design and data? Do the authors address practical applications of their findings? Given the word restrictions for abstracts, study limitations may be missing from the abstract, and the reviewer must decide whether this omission is important.

Overall considerations may include clarity of writing (including grammar and spelling), conformance with abstract guidelines, the ability to generalize the results, relevance of the topic to the organization, and the future potential of the

research. If the topic is important, relevance may trump other shortcomings in the abstract and lead to a recommendation for inclusion.

Reviewers will be asked for a recommendation. While presentations at meetings are an important way to help colleagues improve their scholarship, if flaws cannot be resolved without redoing the study, the abstract should be rejected. The reviewer should ask whether lesser problems can be addressed in the full poster or podium presentation.

Rating forms are usually provided to educational abstract reviewers. Often the categories on the scale lack definition or anchoring (e.g., "Outstanding"). Anchors should explicitly describe unacceptable, minimally acceptable, and outstanding elements in each content area. Anchors for Likert scales used to review educational abstracts are performance dimensions used to improve rater accuracy and reduce unwanted variation by defining, in advance, what criteria should be used to assess different levels of performance. Performance dimensions should be developed by consensus of experts, easily understood and conveyed to others, and revised with input from users.

Conclusions

Medical education abstract reviewing is sometimes the first foray into educational research for novices. The standard four content areas for educational abstracts can be reviewed by using

a series of questions specific for each content area. Rating forms with descriptive anchors and frame of reference training provide more inter-rater reliability for abstract reviews. More research is warranted into the effectiveness of performance dimensions in standardizing abstract reviews. 

AUTHORS

Gerald D. Denton, MD

Clerkship Director and Associate Professor

Department of Medicine

Uniformed Services University of the Health Sciences F. Edward Hébert School of Medicine

Paul A. Hemmer, MD

Vice Chair for Educational Programs

Department of Medicine

Uniformed Services University of the Health Sciences F. Edward Hébert School of Medicine

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Developing an HIV and Aging Research Agenda

Building on the recommendations from an Association of Specialty Professors (ASP) workshop, the National Institute on Aging (NIA), the National Institute of Allergy and Infectious Diseases (NIAID), and the National Institute of Mental Health (NIMH) released three program announcements entitled, "Medical Management of Older Patients with HIV/AIDS." The program announcements will support awards at the level of an R01 (also supported by the National Institute of Nursing Research), an R03, and an R21. The funding will be focused, but not limited to, the following aspects of the relationship between HIV infection and AIDS in aging or older adults:

- Immune function and host defenses
- Response to treatment
- Pharmacokinetics, pharmacodynamics, and pharmacogenomics
- Metabolic complications of HIV/AIDS
- Neurologic complications of HIV/AIDS
- Neuropsychiatric complications of HIV/AIDS
- HIV-related malignancies

- Frailty and functional status
- Complexity of care

NIA, NIAID, and NIMH are accepting applications for the three program announcements till January 7, 2012. To learn more about the program announcements please contact the scientific and research or the financial and grants management contact for each National Institutes of Health institute.

ASP—in partnership with the Infectious Diseases Society of America, the HIV Medical Association, the National Institute on Aging, and the National Institute of Allergy and Infectious Diseases—hosted the workshop on HIV and aging in October 2007. Funded by a generous grant from The John A. Hartford Foundation to support ASP's "Integrating Geriatrics into the Specialties of Internal Medicine: Moving Forward from Awareness to Action" project, the workshop focused on multiple aspects, including effects of HIV and aging on immunity, immunologic responses to highly active antiretroviral therapy (HAART), functional and metabolic

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ASP Honors Kevin P. High, MD, with Eric G. Neilson, MD, Distinguished Professor Award

The Association of Specialty Professors (ASP) awarded Kevin P. High, MD, the 2009 ASP Eric G. Neilson, MD, Distinguished Professor Award during the American Geriatrics Society (AGS) 2009 Annual Scientific Meeting, held April 29-May 3, 2009, in Chicago, IL.

Named for the association's founder, the Neilson Award is presented annually to a leader who has shaped the specialty



internal medicine landscape. The award acknowledges and promotes the work of outstanding leaders who bring about change for specialty medicine and the internal medicine community. This year's award was presented to Dr. High by Cheryl Phillips, MD, President of AGS.

Dr. High was recognized for his impact across multiple specialties of internal medicine through his leadership in geriatrics-related initiatives implemented by ASP. Dr. High assumed leadership of the ASP T. Franklin Williams Scholars Program, which is supported by Atlantic Philanthropies (USA) Inc., and The John A. Hartford Foundation. The program has provided \$9,556,393 million in grants over the past seven years to junior faculty interested in the geriatric aspects of their specialties. In addition, through the continued support of the Hartford Foundation, Dr. High has worked with the National Institutes of Health and internal medicine specialty societies to further integrate geriatrics into the specialties of internal medicine.

According to Dr. High's nominators, "His contributions to ASP have made ASP a stronger, more stable, and highly visible organization and thus have strengthened all of academic specialty medicine...He is recognized for being among the most respected national leaders and mentors of numerous new faculty who are themselves developing careers in geriatric aspects of their specialties."

Dr. High is currently Professor and Chief of the Section on Infectious Diseases in the Department of Internal Medicine at Wake Forest University School of Medicine. A former ASP president, Dr. High has served as Chair of the ASP Geriatrics Steering Committee since 2000. He earned his undergraduate degree at Bucknell University and his MD at University of Virginia School of Medicine. Dr. High completed an internal medicine residency at University of Virginia Hospital and a fellowship in infectious diseases at Yale University School of Medicine.

For more information about the ASP Eric G. Neilson, MD, Distinguished Professor Award or to view a list of previous recipients of this award, please visit the ASP website at www.im.org/About/AllianceSites/ASP/Membership. 

AUTHOR

Dane C. Secor

Member Services Associate

Alliance for Academic Internal Medicine

Developing an HIV and Aging Research Agenda

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complications of aging with HIV infection, considerations for caring for this population, and available cohorts and resources for research in aging and HIV infection. The workshop manuscript can be found in the August 15, 2008, issue of *Clinical Infectious Diseases*.

To learn more about ASP's Integrating Geriatrics project or the Workshop on HIV and Aging, please contact ASP Project Administrator Erika D. Tarver at etarver@im.org or (202) 861-9351. 

Judith L. Bowen, MD, Named 2009 Recipient of Dema C. Daley Founders Award

The Association of Program Directors in Internal Medicine (APDIM) awarded Judith L. Bowen, MD, the 2009 APDIM Dema C. Daley Founders Award during the 2009 APDIM Spring Meeting. The Founders Award honors a member of the internal medicine community recognized nationally as



an educator, innovator, and leader. Thomas G. Cooney, MD, Vice Chair of Education and Residency Program Director at Oregon Health & Science University School of Medicine, presented the award.

Dr. Bowen was recognized for her influence on graduate medical education programs and her substantial contribution to educational advancement. Dr. Bowen's nominators emphasized her scholarship in

education and her productivity in research, educational theory, and reports on educational innovation as examples of her national impact on medical education.

According to Dr. Bowen's nominators, "She has exemplary leadership skills, combining intuition, decisiveness, innovation, and listening skills that allow for everyone working with her to excel at what they do. Her energy and enthusiasm are contagious, encouraging others to imagine new and creative ways of advancing medical education and chronic illness care." In addition, Dr. Bowen's nominators noted that her innovations "have led and influenced both institutions across the country and the innumerable mentees and learners she has worked with over the years."

Dr. Bowen is currently Associate Residency Program Director for Primary Care at the Oregon Health & Science

University School of Medicine. Prior to joining the Oregon Health & Science University School of Medicine, she served as Transitional Year Residency Director and Internal Medicine Residency Program Director at Virginia Mason Medical Center in Seattle, WA.

In addition to serving as past Chair of the APDIM Education and Precourse Planning Committees, Dr. Bowen served as the principal educational consultant on the General Internal Medicine Faculty Development Project, funded by the US Department of Health and Human Services Health Resources and Services Administration between 1997 and 2002. Dr. Bowen was also elected to serve as Chair of the Association of American Medical Colleges' Research in Medical Education Committee, served as Senior Deputy Editor of *Journal of General Internal Medicine*, and was appointed Education Director to the national Academic Chronic Care Collaborative.

Dr. Bowen earned her undergraduate degree in biochemistry from Williams College and her MD from Dartmouth Medical School. She completed an internship in pediatrics at University of Utah Affiliated Hospitals, followed by a residency in internal medicine at Virginia Mason Medical Center.

For more information about the APDIM Dema C. Daley Founders Award, please visit the APDIM website at www.im.org.

AUTHOR

Dane C. Secor

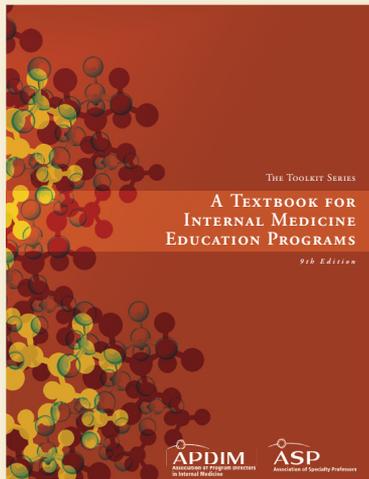
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Essentials Website Includes New Neurology Tutorial

The recently enhanced *Internal Medicine Essentials for Clerkship Students'* website has a teaching and learning resource developed by the American Academy of Neurology and the American College of Physicians. *Approach to Common Neurological Problems in Internal Medicine* is an 11-chapter tutorial that presents a basic, rapid assessment methodology for common neurological problems such as headache, dizziness, weakness and numbness, and visual problems. Each chapter has content, tables, and figures; most chapters have demonstration videos. To access the content, go to the neurology section at the Essentials web enhancement page at http://www.acponline.org/acp_press/essentials.

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