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ACGME Bulletin

Accreditation Council for Graduate Medical Education

EDITOR'S INTRODUCTION

The Accreditation Council for Graduate Medical Education publishes the **ACGME Bulletin** four times a year. The Bulletin is distributed free of charge to more than 12,000 individuals involved in residency education, and is also available on the ACGME's Web site (www.acgme.org) for viewing and printing. The ACGME receives and publishes letters to the editor in the interest of furthering dialogue about accreditation, program quality and matters of general interest in residency education. Inquiries, comments or letters should be addressed to the editor.

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Innovation in Accreditation

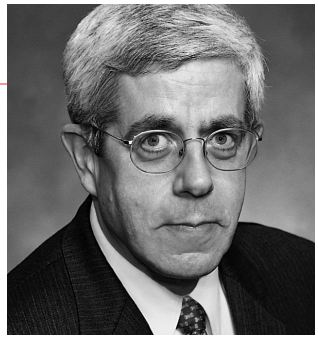
Next year will mark the ACGME's 25th anniversary. Formed in 1981 to replace the Liaison Committee on Graduate Medical Education (LCGME), it now has a quarter century of experience in accrediting residency education, and many of its Review Committees have performed their role for more than twice that time. In 2003, the ACGME began a comprehensive self-assessment of its effectiveness as an accrediting organization. One of the key themes that emerged was a need for continuous improvement and innovation in accreditation. This issue of the ACGME Bulletin, devoted to innovation in accreditation, offers selective answers to the questions, "What are stakeholder expectations for the accreditation process in 2005?;" "How does the ACGME's accreditation process keep pace with the changes in health care and education?;" and "What is new and innovative in education and accreditation?"

Frequently, readiness for newness and innovation requires relinquishing time-honored traditions, and the Executive Director's Column in this issue is devoted to the topic of unlearning. Several short articles describe pilots testing innovative approaches to accreditation by individual RRCs. In one article in this issue, Rosemary Gibson of the Robert Wood Johnson Foundation explores competence as a property of institutions, and an attribute of the environment in which patient care and resident learning occur. Everett Rogers[1] taught us that innovation requires a few individuals who are willing early on to adopt new concepts. He noted that "the process by which innovations are adopted by individuals is essentially a limited example of how any type of learning takes place."[1] In the spirit of Rogers' statement, Rosalie Phillips and Ralph Halpern of the Tufts Health Care Institute discuss faculty development as a vehicle for change. Randall Cork uses a presentation on complexity science, given by Brenda Zimmerman of York University at the recent 2005 ACGME Educational Conference, to illustrate how knowledge science could be applied to the activities of the ACGME and its Institutional and Residency Review Committees. ACGME seeks to share with these stakeholders how the past 25 years have seen momentous change in health care and education, and at the ACGME. With this issue, the ACGME seeks to begin the process of sharing with our stakeholders how accreditation responds to and keeps pace with change. ■

[1] Rogers, Everett M. Diffusion of Innovations, New York: Free Press, 1962; page 67.

Unlearning: It Is Time

David C. Leach, MD



"A renowned professor once visited master Nan-in to learn about Zen. The master politely poured him some tea, but didn't stop pouring. The cup overflowed all over his guest. The professor shouted in distress for him to stop. The master replied, 'The cup is full of tea and can contain no more unless I first empty it. In the same way your mind is full of ideas and there is no room for my teachings, unless you empty it.'"[1]

"It has taken me all of my life to learn what not to play." ~Dizzy Gillespie

Our cups are overflowing. The time has come to empty them so we can accommodate needed innovations. We need to unlearn in order to learn; we need to change the way we do our work, to redesign the medical education system, probably the whole system, but certainly the piece called residency, and most certainly the piece called accreditation. Three questions emerge: what changes should we make?; what are we doing now that is so good that we want to make sure that we carry it into the future?; and how will we know that a given change is an improvement?[2]

Some sample changes. The ACGME just approved an Internal Medicine RRC pilot in which 40% of the program requirements have been removed. Annual outcome measures will be submitted and, if the outcome measures are acceptable to the RRC, site visits may be extended out to as much as ten years. A neurosurgery program adapts to duty hour regulations by having residents take calls every seventh night. It has redesigned the way inpatient care is provided. An intensive care unit in a teaching hospital changes a form used for resident self-evaluation at the beginning of the rotation. The previous form had a Likert Scale numbered from 1–5. No one ever evaluated themselves as a "1". The scale now reads, "Novice, Advanced Beginner, Competent, Proficient, Expert, and Master," with descriptions of each category. Thirty percent of entering residents check "Novice."

"At a deep level we all not only want to get the work done, but to do it in a way that is both creative and, in a sense, beautiful. Likewise, ACGME has constraints on its vision, constraints that are almost entirely internal, and those can be lifted by creating space to reflect on our work and to tap into the wisdom of our communities."

Each of these interventions required creativity, trying something new, and each also required unlearning some previously held set of beliefs and behaviors. The cup is a little emptier of program requirements, of hours in the week, and of self-evaluation forms that mask rather than describe the truth. There is now room for outcome measures, for attention to safe systems, and for more accurate assessments of progress.

What are we now doing that we should carry into the future? Clarity of purpose is needed to answer this question. Once it is clear that improving patient care and resident education are the things that matter, smart people are free to be smart again. Talent that has been paralyzed by dysfunctional systems is now available for the work of medicine and education. ACGME is going through a process of clarifying its purpose. We are pruning our mission statement to make it clear that through accreditation we are focused on improving patient care and resident education. Pruning our mission will help us nourish what remains.

A clear vision of what might be helps distinguish substance from form, what should be preserved from what may be modified. Lacking that distinction we defend form and let substance dribble away unnoticed. While vision is essential this is really an operational issue. What work contributes and what does not to the achievement of purpose? Residency program directors and their faculty are burdened with many constraints, but no constraints are more damaging than constraints on the imagination. At a deep level we all not only want to get the work done, but to do it in a way that is both creative and, in a sense, beautiful. Likewise, ACGME has constraints on its vision, constraints that are almost entirely internal, and those can be lifted by creating space to reflect on our work and to tap into the wisdom of our communities. We have been engaged in an assessment of ACGME's effectiveness for the past 18 months and have received more than 140 pages of single-spaced comments. This rich data source is being used to inform us as ACGME moves on its path forward and to create a clear vision of what accreditation will look like in the future. It is our belief that we will have to unlearn much and create a simpler, less burdensome system that is reliable, relevant, accountable, accessible, and marked by deep integrity and excellence.

Three Japanese expressions are relevant to the operational issues associated with accreditation: *muda; muri; and mura.*[3] All should be eliminated. Eliminating muda (work without a product or wasted effort) is at the heart of unlearning. Muri refers to an overburdened system and mura to unevenness in the flow of work. Exemplary accreditation is free of efforts that do not add value, is less burdensome on people and systems,

and smoothes out unevenness in its associated activities. Filling out a PIF under a deadline is an example of mura; asking PIF questions that don't help is an example of muda; and exhausting all involved is an example of muri. ACGME's own internal processes need to be simplified, but more importantly what we ask of programs has to be justified or pruned. As we shift to outcome measures we are able to both enhance accreditation and reduce process measures. We can be faithful to our mission of ensuring and improving GME, while modifying the method by which we do that. The internal

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medicine pilot described in this issue of the Bulletin offers a good example. Clarity of purpose, vision, and distinguishing form and substance were all involved.

How will we know if this is an improvement? We will ask. We now have a baseline of comments from focus groups of program directors, DIOs, residents, member organizations, the 39 appointing organizations to the RRCs, RRC members and the ACGME Board and its employees. These comments will help us develop several strategic indicators to be used in monitoring our progress.

The only *real* things in any organization are the people and the relationships they have. This is true for institutions, for residency programs, and for the ACGME itself. What types of relationships facilitate the unlearning that is necessary for change? ACGME has undergone several changes in its nearly 25 year history. Institutional review, incorporation, competencies, outcome-based accreditation, data-based decisions – what have we learned? Conversations help. The wisdom of the many is greater than the wisdom of the few. Unlearning requires permission – from oneself and also from colleagues – and clarity of purpose.

Philosophers tell us that humans come equipped with three faculties: the intellect, the will, and the imagination. The intellect has as its object truth; the will, goodness; and the imagination, beauty. When we encounter a residency program or a sponsoring institution we seek to discern and tell the truth about what is going on; we try to make good judgments about the quality of the education; however, we also would like to do so in ways that are creative and innovative, in ways that are, in a sense, beautiful. ACGME has given permission for the RRCs and programs to experiment; the next few years will change the accreditation model in ways that require both unlearning and new learning. We will be faithful to our mission. Who knows? We may end up beautiful. ■

[1] Freke, Timothy. Zen Wisdom. Sterling Publishing, New York, 1997.

[2] Batalden, P. personal communication, 1997.

[3] Liker, JK. The Toyota Way. McGraw-Hill, 2004; 114-115.

A Deep Interest in Teaching and Learning

An Interview with Emmanuel Cassimatis, MD, Chairman of the ACGME

Can you tell us a few things about your background and how it has prepared you to chair the ACGME for the coming two years?

Dr. Cassimatis: A thread that runs through my professional life is an interest in teaching. It was sparked by wonderful teachers I had early in my early education. My interest expanded as I became more involved in teaching during my residency and, especially, my year as chief resident in psychiatry at the Massachusetts Mental Health Center. A broader interest in medical education developed during my tours as residency director and service chief at Walter Reed Army Medical Center, and during the early 1990's, when I was afforded a unique opportunity to serve as chief of medical education for the US Army. This interest continues to be nurtured in my current role as professor and associate dean at the Uniformed Services University of the Health Sciences (USUHS).

"My interactions with the board, members of the Residency Review Committees (RRCs), program directors and DIOs, I believe, have given me a good understanding of the ACGME's unique role in medical education."

Another important influence has been my work with two major organizations in medical education – the American Medical Association (AMA) and the ACGME. My time as a member and chair of the AMA's Council on Medical Education has provided me with opportunities for interactions with student, resident, and practicing colleagues. This has provided me with a broad perspective that encompasses undergraduate, graduate and continuing medical education. My five years on the Board of the Directors of the ACGME have included service on the Executive Committee, the Monitoring Committee, the Institutional Review Committee and the Work Group on Resident Duty Hours. My interactions with the board, members of the Residency Review Committees (RRCs), program directors and DIOs, I believe, have given me a good understanding of the ACGME's unique role in medical education. Working with the ACGME's and the AMA Council's superb staffs has also enhanced my awareness of key issues and current trends in graduate medical education. I expect these experiences will be helpful during the coming two years while I serve as chair of the ACGME. My three predecessors, Dr. Rice, Mr. Howell and Dr. Friedmann, have provided rich examples of leadership, and remain available as resources to the board and to me.

How do you and the members of the ACGME Board of Directors seek input from the resident education community?

Dr. Cassimatis: Input comes through multiple formal and informal mechanisms. Important sources include the five ACGME member organizations and the 39 certifying boards and specialty organizations that appoint to the RRCs, as well as a range of groups and individuals with a stake in the education of residents.

"In recent years, ACGME has sought to enhance feedback from stakeholders in a variety of ways, including meeting with its member organizations at each board meeting, having the residents on its RRC Resident Council meet with its Executive Committee, and collecting input from the education community during its ongoing self-assessment of its effectiveness."

Personally, I feel fortunate to have access to a great deal of thoughtful input from the medical students and residents, and the program and clerkship directors I interact with at USUHS, at our Defense Medical Centers, and through the National Capital Consortium, which serves as the sponsoring institution for Department of Defense residencies in the DC Metropolitan Area. Helpful input also comes through the AMA Section on Medical Schools and House of Delegates. Invaluable input from learners is provided by the ACGME's RRC Resident Council, the AMA Resident and Fellow Section, and the AMA Medical Student Section.

Similar opportunities to get feedback from stakeholders exist for all members of the ACGME Board of Directors as they interact with multiple key organizations in medicine and medical education, and with representatives from various interest groups and the public. In recent years, ACGME has sought to enhance feedback from stakeholders in a variety of ways, including meeting with its member organizations at each board meeting, having the residents on its RRC Resident Council meet with its Executive Committee, and collecting input from the education community during its ongoing self-assessment of its effectiveness.

In the different venues in which you participate in discussions about resident education, how are ACGME and its accreditation system perceived?

Dr. Cassimatis: The members of the education community have respect for the ACGME's goals. At the same time, they experience frustration with the lengthy standards and onerous documentation requirements that have become fixtures of accreditation. There is a healthy skepticism about the considerable effort that is required for accreditation, and whether this results in better education or detracts from other important activities.

As you assume the chairmanship, what are critical priorities for the ACGME?

Dr. Cassimatis: I believe that we – the ACGME, its member organizations, accredited programs and sponsoring institutions – need to continue to focus on outcomes. We must deepen our understanding of outcomes, and our ability to teach and evaluate the competencies, and support the RRCs in their effort to interpret the competencies for their disciplines, but guard against an explosion of added specialty-specific standards.

More broadly, ACGME needs to consolidate standards and streamline documentation requirements. The Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) has, over several years, accomplished this without losing sight of its goal to promote high-quality health care. This is a model ACGME should consider emulating. I understand that there are differences between the processes used by JCAHO and those of the ACGME, but aspects of JCAHO's approach could be adapted and adopted.

We also need to enhance our focus on the learning environment for residents. This begins with viewing duty hour compliance as one of a host of factors that collectively make up a high-quality learning environment. Other important factors include educational curricula, supervision, evaluation, and a focus on quality and safety of patient care. The ACGME's newly established Committee on Innovation in the Learning Environment (CILE) has been charged with addressing this important agenda. I look forward with great expectation to their findings and recommendations.

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How will these priorities change resident education, and how will they change accreditation?

Dr. Cassimatis: I hope that they will make accreditation more collaborative, more outcomes-focused and less work-intensive for programs and sponsoring institutions. We need to find ways to encourage, or at least not interfere with, opportunities for meaningful interaction between residents and their teachers; and we need to foster, and not stifle program and institutional creativity. This suggests that the ACGME should endeavor to streamline accreditation requirements, while maintaining appropriate safeguards for educational program quality and patient safety. ■

The Competent Institution

Rosemary Gibson

What are the attributes of sponsoring institutions where residents have the best opportunity to acquire clinical competence? What are characteristics of the places where faculty can best teach residents to become competent? Since the institutional context affects both learning and teaching, how might we begin to think about the attributes of institutions that are optimal for good learning and good teaching?

"People in the healing professions dedicate their lives to the care of patients. But the endeavor of healing is often torn asunder by events out of the control of the clinician."

A doctor's tale

Here is a true story. A physician at a prestigious teaching hospital described a study he conducted where he works that documented the number of patients who suffered cardiac arrests as a result of suboptimal responses to clinical signs and symptoms. He and his colleagues submitted a paper for publication to a well-known medical journal and also sent it to the chair of medicine of the department. The chair of medicine was furious and said the paper with the findings describing the problems at the hospital could not be submitted, and the study had to be done all over again. A second study was conducted and the same findings were obtained. Finally, the paper was published. The physician said, "I cannot prove it, but I suspect my appointment to full professor was delayed for several years as a result of this paper."

What is emphasized in this doctor's tale? The reputation of the hospital is of paramount importance, as is conducting a repeat study and having the paper published. What is missing? No one asked, "How can we improve our practice?" "What opportunities did we miss to teach residents that some of the cardiac arrests might have been prevented?" "Did any of our residents fall through the cracks and bring their patients down with them?"

"I question how much residents can learn in a place like this."

One of the cases where clinical signs and symptoms were missed could have been the following. A healthy fifteen year-old patient was admitted to a sponsoring institution (different from where the above study was conducted) for elective surgery. He died 96 hours after admission from a perforated ulcer whose classic signs were missed by the residents and nurses who were caring for him over a weekend. His mother's repeated calls for an attending physician were ignored, and she watched as her son's condition deteriorated to the point of death. An astute observer of the activities in the hospital, she noted afterward, "I question how much residents can learn in a place like this."

People in the healing professions dedicate their lives to the care of patients. But the endeavor of healing is often torn asunder by events out of the control of the clinician. Why does this happen? The 1913 Nobel Prize Winner in literature, the Bengali poet and mystic, Rabindranath Tagore, offers some insight. In *Gitanjali,* he describes how "the clear stream of reason has lost its way...into the dreary desert sand of dead habit."

As in any institution comprised of human beings, sponsoring institutions have dead habits. In health care, the consequences of dead habits in organizations can be the difference between life and death. Dead habits exist because institutional leaders may not see them, perhaps because they haven't looked. Others may see the dead habits and keep them out of sight because they don't know how to unlearn them. Knowledge and skill in how to replace dead habits with good habits are scarce. Many institutions are at the novice stage in unlearning dead habits.

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The good news is that a growing number of institutions are developing healthy habits that benefit patients, learners and faculty. At the institutional level, they are attaining the important competencies that allow them to be places for good learning and good healthcare.

Can the six competencies be a starting point to describe places for good learning?

If residents are being asked to acquire competence in the six domains, shouldn't the institutions where they are learning be competent in them, too? If so, places for good learning would have attributes that are aligned with the six competencies.

Let's retell "The Doctor's Tale" as if it took place in an institution that is faithful – as an institution – to the six competencies. If a study had been conducted that documented cases where patients suffered cardiac arrests because of suboptimal responses to clinical signs, the question would be asked, "How can we improve our practice?" A rapid response team, or pre-code team, might be established to intervene prior to an arrest. If a culture prevails where it is safe for residents and nurses to ask for help, fewer codes, arrests and deaths might occur.

As improvements in patient outcomes are tracked, residents will be learning and providing better patient care as their medical knowledge increases. They will learn systems-based practice and be engaged in practice-based learning. Like a rising tide that lifts all boats, systems-based practice improvements, such as rapid response teams, can lift all the competency boats. And they can create more joy in the workplace as needless deaths are prevented.

Residents are more likely to become competent in communication if the institution discloses errors to the patient and family. Good communication under the most difficult circumstances, in this instance, a case of missed clinical signs that resulted in preventable death, will yield positive benefits for all physician-patient communication. Policies and practices that support and sustain such communication are evidence of an institution that is on the path to becoming competent.

Finally, professionalism can manifest itself in many ways. In this example, it would be demonstrated by the institution building its reputation in the public eye based on facts rather than aspirations.

If residents are more likely to become competent in institutions that are competent themselves, the institutional requirements for GME can evolve to reflect the six domains. Where to start this evolution?

One place to start is implementing the six interventions identified by the Institute for Health Care Improvement's 100,000 Lives Campaign launched in December 2004 and measuring results.[1]

These six interventions can significantly improve outcomes of hospitalized patients: 1) rapid response teams; 2) delivery of evidence-based care for patients hospitalized for acute myocardial infarction; 3) medical reconciliation to prevent adverse drug events; 4) evidence-based practices to prevent central venous catheter-related blood stream infections; 5) evidence-based practices to prevent surgical site infections; and 6) evidence-based practices to prevent ventilator-associated pneumonia.

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As institutions implement these interventions, residents will learn how to discard old habits in systems of care and embed good habits into patient care processes. Over time, institutions will move along the path from novice to mastery in the degree of systematic and sustained fact-based improvement as demonstrated by rigorous measurement. This would mark the emergence of the competent institution.

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Competence is a habit for institutions, too

If competence is a habit for people, perhaps it can be said that competence is a habit for institutions. Habitual competence for an institution would be manifested in the governing body of sponsoring institutions – the CEO, trustees, and other senior leaders – being accountable for creating a place where performance excellence permeates all levels of the organization.

Vanguard institutions are on the path to becoming competent institutions. But becoming a competent institution cannot be optional, just as it is not an option for physicians-in-training to become competent in the six domains. Millions of patients are cared for each year in sponsoring institutions, and 100,000 residents have their formation shaped within their walls. All deserve to be in places of good learning and good healthcare.

Two noble professions – medicine and teaching – are an extraordinary life's work. Institutions that provide a hospitable home for learning the art and science of healing are privileged to do so. As part of that privilege, the institutions themselves must be what they are asking their learners to become. ■

Rosemary Gibson is the Senior Program Officer at the Robert Wood Johnson Foundation. With Janardan Prasad Singh, she co-authored the book Wall of Silence, which describes errors and systems deficiencies in the United States' health care system and the stories of individuals who have been affected by them. She also is active in improving quality of care at the end of life.

[1] Institute for Healthcare Improvement, 2004, www.ihi.org.

ACGME Technology Initiatives

John Nylen

Over the last few years the ACGME has steadily been relying on the use of the internet for collecting and disseminating accreditation information data. The case log system has proven to be extremely successful. The Accreditation Data System (ADS) continues to be enhanced in both the areas of collecting data and producing information back to programs, institutions, and the general public on varying levels of accreditation data.

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The ACGME is embarking on a technology strategy, which we named EVE/ADAM (Effective, Very Efficient Accreditation Management). When it is fully implemented, most, if not all data required for accreditation will be collected via the internet. The plan is to have this information available to the designated institutional official, program director, site visitor, and the RRC, all using the internet. This means ADS data, PIF data, case log reports, resident survey results, notification letters, etc., are available for collecting or viewing. Also a concerted effort to create common data elements across all specialties for common requirements will be undertaken.

This project is expected to take three to five years to complete, but will be implemented as components are completed over that time frame. Progress reports and updates regarding this project will be provided via the *ACGME Bulletin* and the ACGME website. ■

John Nylen, MBA, is the ACGME's Chief Operating Officer and also oversees the ACGME information systems.

The Complicated and the Complex

Randall C. Cork, MD, PhD

At the recent ACGME Educational Conference in Kissimmee, Florida, possibly the best talk was the Marvin Dunn Memorial lecture delivered by Brenda Zimmerman, PhD. While other lectures dealt with what the ACGME is and does, Dr. Zimmerman's talk addressed what the ACGME should be and, more importantly, what it should do. She lectured about complex systems, and how knowledge about them can be applied to the activities of the ACGME and its associated Institutional and Residency Review Committees. Her application metaphor was the genetic algorithm, developed by Holland.[1] Genetic algorithms – the way in which genes adapt optimally to changing environment – were used to illustrate a new approach to address complex problems.

Analysis of complex systems is the most exciting new development in analysis since classical statistical analysis. Detailed information can be found in John Holland's excellent book, *Hidden Order: How Adaptation Builds Complexity*.[1] While classical statistics demand the assumption of linearity, complex analysis deals with the way many things more commonly tend to operate – in a very nonlinear fashion. In linear systems, outputs are in some linear relationship to inputs. In non-linear systems, the same inputs can produce different outputs. Dr. Zimmerman cited *The Tipping Point*[2] in which Malcolm Gladwell describes how the effect of a small change in system inputs, even inputs that historically have not amounted to much, can suddenly cause a "sea change" in output.

In fact, the ACGME could be considered to be at a tipping point. Whether the ACGME tips to complexity or back to what Zimmerman describes as "the merely complicated" will be determined by how effective it is in dragging some of its more reluctant Review Committees into the era of complexity. For instance, one of the characteristics

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of complicated systems (e.g., building a rocket or delivering an anesthetic) is the utilization of fixed rules for analysis. With complex undertakings (e.g., raising a child or teaching a resident) formulae have limited applicability. Delivery of an anesthetic is a complicated endeavor, which will be conducted exactly the same in West Texas as it would be in Boston.

Should resident education in West Texas be expected to be exactly the same as resident education in Boston? Hardly. Resident education is a complex endeavor. Perhaps there are environmental characteristics in each location that select for different traits in successful residency programs.

A key factor in the application of the genetic algorithm is crossover. In the context of resident education, this would refer to applying survival characteristics which have been proved successful in one area to a different area. Developing tools to measure resident performance in the General Competences has been successful. What we measure we do improve. The same approach could be used to measure the performance of a site surveyor, a Residency Review Committee, the Institutional Review Committee, or the ACGME. Key competencies could be defined, and measurement tools identified. Program knowledge, professionalism, an understanding of the system, and communication, for example, are measurable activities that are not confined to resident education.

With reference to the ACGME site surveyors, complex systems are characterized not only by variability in adaptation, but by diffusion of innovation as well. Site surveyors could play a significant role in this by pointing out to the associated Residency Review Committee not only program problem areas, but also program developments of innovative solutions to complex problems. For instance, if a program has been more successful than others at dealing with problem residents, or if a program has developed an innovative approach to measuring one of the competencies, the site surveyor could play a role in disseminating this information. In addition, the Residency Review Committee could play a role in disseminating innovative adaptations to other Residency Review Committees.

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The chair of one of the Residency Review Committees recently announced that the committee has developed specific criteria that are to be applied uniformly to all training programs in that specialty. As could be expected, this particular committee has no active program directors on it, but is rather composed of political appointments from the professional societies. Some of these criteria, e.g., faculty qualifications, appropriate journals, and appropriate media for scholarly activity, go beyond what is specified in the Program Requirements. From what we have learned from the study of complex systems, a more successful approach would be to keep the standards general, and evaluate how each program meets them. When a program excels, the reasons it did so should be assessed and disseminated. When another program falters, the reasons should be analyzed. This approach results in more successful adaptation to a difficult environment.

The variability that complexity permits is an advantage, not a hindrance, to advancement. It is not the same variability allowed with a post-modernistic approach of "whatever feels good is okay." On the contrary, there is feedback and measurement of success, and if an organism does not adapt to its environment, it will die. Adaptation is change, but not all change is adaptation. The key to an approach based on complexity science, however, is to permit variability, evaluate the results, and then if the variable trait is not successful, facilitate change, perhaps using an innovation developed elsewhere.

Dr. Zimmerman presented the accompanying Table 1 as a comparison of Complicated vs. Complex Approaches. Many of the Residency Review Committees continue to be stuck on the complicated. True advancement in quality will take place when the ACGME can convince its Committees to shun the complicated and embrace the complex approach to graduate medical education. ■

Table 1
Complicated vs. Complex

Complicated	**Complex**
Machine metaphor	Biological metaphor –complex adaptive system
Eliminate contradictions – questions for solutions	Work with paradox – use of inquiry to see differences
Limit actions – best practice	Multiple actions – local solutions
Specify paths/policies	Minimum Specifications/Simple rules

Dr. Cork is Professor and Chair and Director of Pain Medicine, in the Department of Anesthesiology at LSU Health Sciences Center, Shreveport, LA.

[1] Holland J: Hidden Order. How Adaptation Builds Complexity. Helix, New York, 1995.

[2] Gladwell M: The Tipping Point – How Little Things Can Make a Big Difference. Little, Brown and Company, New York, 2000.

The Internal Medicine Program Requirements – Too Many Laws?

Roger W. Bush, MD; Thomas J. Nasca, MD; William E. Rodak, PhD; Henry J Schultz, MD. The Residency Review Committee for Internal Medicine

"Where you find the laws most numerous, there you will also find the greatest injustice." *Arcesilaus*

The RRC-IM struggles to protect patients and residents, while improving measurable competency-based educational outcomes through a series of nearly 300 Program Requirements (PRs). This strategy has resulted in significant improvements in those programs with structural or resource deficiencies, and those with low pass rates on the ABIM certification exam.

"However, highly proscriptive PRs may inhibit innovation in high-performing programs by imposing on them "too many laws."

Many core internal medicine residency programs achieve consistently excellent accreditation compliance and ABIM-CE pass rates by attending carefully to both the "spirit and the letter of the law." However, highly proscriptive PRs may inhibit innovation in high-performing programs by imposing on them "too many laws."

These high-performing programs will be given the option of entering a new, alternative pathway to accreditation – the Educational Innovations Project (EIP). Programs participating in the EIP will be in a national experimental group with a smaller number and less restrictive accreditation standards. In return, participating programs will partner with the RRC-IM to design and test innovations in competency-based education and evaluation, in settings of outstanding patient care. The ACGME Executive Committee approved the EIP PRs on February 13, 2005.

Specifics of the EIP

Participating programs must advance both the patient care "Quality Agenda" by inextricably linking medical education to quality improvement in patient care, and the "Outcomes Agenda" by innovating in competency-based education and outcomes-based assessment. They will enter into an alternative (10-year) accreditation cycle. Examples of potential innovations span a broad range, including changes in educational venues, methods of curricular delivery, novel approaches of achieving and assessing physician competence, and improved integration of residency education and patient safety. Any and all innovations that advance the quality and outcomes agendas – and are in compliance with the guidelines of the ABIM and the pilot project requirements – are encouraged.

"To enter, Core Internal Medicine programs must demonstrate institutional commitment to improve the quality of patient care by its close linkage to the educational program (and share these data). In addition, they will have two most recent accreditation cycles totaling at least eight years, with no less than four years in the last cycle, an experienced program director, and a current rolling ABIM pass rate greater than 80%."

The innovations and outcomes of this pilot project will be disseminated to the GME community and will inform future accreditation requirements in internal medicine, and potentially other specialties.

The major objectives of this project are:

- Creating innovations in residency training programs directed toward advancing safe, high-quality patient-centered care and competency-based residency education.
- Facilitating change in the environment of residency training to clinical care systems that foster high-quality care and competency-based education.
- Facilitating development of educational and evaluative tools that can be disseminated and utilized broadly in GME.
- Developing training models that better serve the professional needs and ultimate career goals of trainees.

To enter, Core Internal Medicine programs must demonstrate institutional commitment to improve the quality of patient care by its close linkage to the educational program (and share these data). In addition, they will have two most recent accreditation cycles totaling at least eight years, with no less than four years in the last cycle, an experienced program director, and a current rolling ABIM pass rate greater than 80%.

Annual Reporting will be required, both to the RRC-IM, and in educational venues such as APDIM meetings.

This project will be presented at the Spring 2005 APDIM Meeting, with documents posted on the ACGME website in March. Questions and comments can be directed to Roger Bush, MD, EIP Subcommittee Chairman, and to William Rodak, PhD, RRC-IM Executive Director, at EIP@acgme.org.

Through the EIP and other activities of the RRC-IM, we look forward to breakthrough innovations in an "age of reason" rather than an "age of authority" for Internal Medicine accreditation. ■

Reducing Burden on Stable Programs: The Pilot in Plastic Surgery

Doris Stoll, PhD

The project to abbreviate the program information form (PIF) for the accreditation of programs in Plastic Surgery was initiated in the late 1990s following a series of invitational meetings. The instigation for the meetings was multiple, but from the perspective of the program directors was dissatisfaction and a cry for administrative relief from the burdens of the accreditation process. The RRC responded to two major criticisms: the Program Requirements were too cumbersome, and the focus of accreditation was on insignificant criteria or on minor data insufficiencies that did not reflect the *real* quality of resident education. The finalized RRC resulted in the development of a PIF that was shorter, easier to read, reference and use, and which made the preparation for a site visit less onerous for both program directors and institutions.

Plastic surgery programs that meet all the following criteria are eligible to use the abbreviated form: a four or five year continued full accreditation status; an absence of major changes in the sponsoring institution since the last site visit (e.g., an adverse institutional review); and continuity of program director leadership since the last site visit.

The following items were deleted from the form: faculty vitae, lengthy narratives, multiple questions of varying quality, copies of superfluous lists and procedures, and lengthy data collections. This resulted in a form that included the common demographic information required of all programs and to this was later added the common competency addendum and comments regarding duty hours.

"Plastic surgery programs that meet all the following criteria are eligible to use the abbreviated form: a four or five year continued full accreditation status; an absence of major changes in the sponsoring institution since the last site visit (e.g., an adverse institutional review); and continuity of program director leadership since the last site visit."

"Recent surveys reflect that program directors report a significant decrease in preparation time of the PIF averaging about 25 hours."

The core section of the form includes: a brief narrative addressing citations from the previous site visit, major program changes such as participating institutions, faculty members, conference and clinical assignments and to this was appended the operative data, goals and objectives for new assignments, and scholarly activities of faculty and residents. The administrative aspects of the program are evaluated simply by a document/procedure checklist reviewed onsite. No appendices are required except for the program director's vitae and the graduates' operative data. This change has decreased the size of the PIF from 40 pages plus appendices to less than ten pages at present, even with recent additions.

Recent surveys reflect that program directors report a significant decrease in preparation time of the PIF averaging about 25 hours. Additionally, we can report that the RRC is still able to identify areas of noncompliance with the submission, as both adverse actions and warnings have been generated from the abbreviated form. At this time, the RRC is discussing better ways to evaluate the quality of the didactic curriculum and mechanisms to incorporate outcomes results into the accreditation process. ■

Innovation and Experimentation: An Example from the Residency Review Committee for Emergency Medicine (RRC)

Arthur Sanders, MD and Larry D. Sulton, PhD

An important aspect of the mission of the ACGME is to improve the quality of health care in the United States by ensuring and improving the quality of graduate medical education experiences for residents. In support of this mission Residency Review Committees function with delegated authority to accredit training programs and to develop and maintain residency training standards (program requirements). Programs are judged by peers (program directors and physicians in practice) using a consensus model to evaluate whether there is substantial compliance in meeting program requirements. Many programs in emergency medicine generally meet the program requirements and undergo a major review every four to five years. Other programs require closer and more frequent review during intervals that range from one to three years.

Based on a review of survey cycles and other measures (e.g., board certification results) most residency programs in emergency medicine do a good job in educating residents and producing physicians capable of practicing competently and independently. Partly as a result of self-assessment to improve its work to accredit programs, the RRC posed the following questions:

1. How can the accreditation model and program review process be improved to best serve the needs of residents and program directors to further the mission of the ACGME?
2. Can the accreditation model for many programs with four or five year survey cycles be shifted to a yearly assessment based on principles of continuous quality improvement?
3. Can the requirement for a comprehensive set of program information forms coupled with a site visit be transformed into a more efficient process with equally effective outcomes?
4. Can the RRC and programs reliably identify issues for program improvement, and monitor performance with annual reports to the RRC based on quality indicators?

To probe these questions, the RRC implemented a pilot project to evaluate whether the ACGME's accreditation model can shift from one that is often perceived as regulatory and punitive to a system that encourages and empowers program directors to focus on internal improvement processes.

Background

The RRC is a member of a "community" that includes program directors, core faculty, residency coordinators and others. This community has been strengthened over recent years and enhanced through highly attended educational seminars such as "The RRC: Opening the Black Box." Maintaining past tradition, the committee meets with program directors twice annually to review a range of accreditation issues, such as interpretation of program requirements, discussion of guidelines to facilitate compliance, and review of requirements, and frequently cited areas of noncompliance. Interactions with other stakeholders are equally as strong, such as collaborating with the American Board of Emergency Medicine and the American College of Emergency Physicians, among others, to produce the *Model of Clinical Practice of Emergency Medicine*. In short, the ACGME/RRC is respected as an accrediting organization within the specialty and simultaneously integrated as a partner and stakeholder dedicated to improving graduate medical education.

There is a community of mutual trust and high expectations; program directors are committed to providing high-quality education and to being advocates for doing the right thing. Likewise, there is recognition of the RRC for its work to maintain high standards and quality. With this exceptional level of community interaction and commitment, the RRC framed a pilot study to extend survey cycles from five to eight years based on internal program monitoring and annual submission of a quality indicator report.

The plan

Programs invited to participate in the pilot must demonstrate a strong accreditation history (no adverse actions) and a record of successfully responding to issues identified by the RRC. Participation is voluntary and selected programs will be asked to submit responses to quality indicators in a web-based format annually. As a secondary measure, residents must annually complete the ACGME questionnaire – a measure to validate program self-reports – that contains questions specifically developed by the RRC. Examples of quality indicator data include the final number of required procedures and resuscitations that must have been performed by graduating residents, faculty supervision ratio, changes in core faculty, conference attendance data, pass rates of written and oral Board certification exams and progress in correcting citations from the last RRC review. The summary data from the program coupled with the results of the anonymous resident surveys will be reviewed by the RRC annually with the following decision options:

- Acknowledge the program's satisfactory performance with no change in the scheduled site visit date.
- Request a progress report to address identified concern(s) – revise site visit date as needed based on the program response.
- Schedule an immediate site visit to address major concerns (e.g., loss of faculty, unstable program leadership, catastrophic loss of patient volume).

Expected outcomes and evaluation

The RRC is in the first year of this pilot. A formal assessment of the program will be done after three years, although a full evaluation may take eight to ten years. Questions that will be addressed by the RRC in its assessment phase include:

1. Will the program directors agree to participate in the pilot? Will they continue to participate after a few years of annual reporting?
2. Can the RRC develop reliable quality indicators for residency programs?
3. Can the RRC reliably monitor the yearly indicators and resident surveys to assess the status of the program?
4. Will programs in the pilot be more responsive in correcting citations and concerns?
5. Will the monitoring system give the RRC enough information to assess substantial compliance with the program requirements?

An expected outcome is an opportunity for programs to shift certain resources to internal program planning and development driven primarily by the compilation of annual indicator data. Instead of analyzing and trying to correct problems when preparing for a site visit every five years, the program and RRC will assess data and receive resident survey results yearly. The assumption is that program directors will work to correct problems quickly to answer the concerns and citations from the RRC. This model is largely dependent upon self-reporting and local commitment to continuous improvement of graduate medical education. The RRC will evaluate results annually and assess the usefulness of the quality indicator set as a proxy for data needed to judge overall compliance with the program requirements. This pilot, if successful, should simplify the accreditation process by allowing programs to commit internal resources to ongoing improvement, as opposed to what may be labeled as a "just in time" preparation for ACGME site visits. ■

Arthur Sanders, MD, is the Immediate Past Chair of the Residency Review Committee for Emergency Medicine; Larry D. Sulton, PhD, is the Executive Director of the RRC for Emergency Medicine.

Editor's Note: The ACGME acknowledges the many contributions of Dr. Sanders to graduate medical education. As Chair of the Residency Review Committee for Emergency Medicine Dr. Sanders successfully coordinated a major revision of the emergency medicine program requirements, represented the committee before the ACGME Monitoring Committee earning the maximum five-year period of delegated accreditation authority. He initiated the development of "guidelines" that have been acknowledged as a best practice, and organized the committee's efforts to develop major educational course offerings with the Council of Emergency Medicine Residency Directors.

Conducting Faculty Development Workshops on Systems-based Practice and Practice-Based Learning and Improvement as Vehicles for Change

Rosalie Phillips, MPH and Ralph Halpern, MSW

Faculty is the key to training residents. They transmit knowledge, teach skills, and model behaviors and attitudes. Faculty's own comfort with the curriculum content and principles allows the educational experience to be spontaneous and genuine, having the greatest impact for learners. Conversely, a faculty member's resistance to and unease with elements of the curriculum – such as care management and quality improvement – will negatively influence residents and the adequacy of their preparation for practice.[1]

"Faculty's own comfort with the curriculum content and principles allows the educational experience to be spontaneous and genuine, having the greatest impact for learners."

As academic health centers and teaching hospitals take steps to address the ACGME's six general competencies, the greatest challenge for many faculty members is understanding, accepting, and teaching systems-based practice (SBP) and practice-based learning and improvement (PBLI). Providing these teachers and role models with fundamental knowledge of these competencies and tools with which to impart this knowledge is key to the effective incorporation of SBP and PBLI into the curriculum.

In 2003 and 2004, Tufts Health Care Institute, a non-profit affiliate of Tufts University School of Medicine and Tufts Health Plan, conducted 15 faculty development workshops on these two competencies, in collaboration with academic institutions in different locations around the country. Funding for these workshops came from a combination of the Health Resources and Services Administration (HRSA), local Area Health Education Centers (AHECs), and local institutional support.

Workshop goals and design

The overall goal of the faculty development workshops was to engage program directors and faculty in planning and implementing changes pertaining to training in SBP and PBLI. More specifically, we aimed to impart practical tools and techniques, and secure participants' buy-in to the changes. THCI and the local workshop sponsors were consulted in advance of the program to determine the institutional leaders' particular goals and priorities.

"The overall goal of the faculty development workshops was to engage program directors and faculty in planning and implementing changes pertaining to training in SBP and PBLI."

At some institutions and programs there had been considerable progress in planning and implementing curriculum changes, but the assessment tools were not well developed. Elsewhere, the planning process was just beginning and faculty themselves were still learning about the competencies. More commonly, individual faculty within an institution or even in the same program were at different levels of need. Short surveys to attendees prior to the programs helped us to gauge faculty comfort with the SBP and PBLI content and assessment.

The session design was flexible and collaborative. Workshops typically lasted for six hours as stand-alone events. In some settings they were dedicated components of a larger faculty retreat addressing additional local institutional needs. Attendance ranged from 25 to 50 people, including a multi-specialty mix of GME administrators, program directors and faculty. Depending on the local arrangements, attendees may have been from one or multiple institutions.

The workshop agenda included plenary sessions and breakout groups. The first plenary presentation set the context for curriculum reform, described competency-based education, and defined SBP and PBLI in concrete, recognizable terms. A second plenary session, at the end of the workshop, reviewed assessment techniques most applicable to these competencies.

The intervening breakout exercises took two forms. One was a discussion of cases illustrating teachable moments during residency. For example, scenarios were presented in which a resident fails to comply with guidelines, or discharges a patient without adequate follow-up planning. Participants considered how these situations relate to components of SBP and PBLI and the other competencies, and how faculty can use these occasions to teach their residents in the normal course of training. The other breakout session introduced a model of curricular change in which faculty identifies discrete, measurable objectives, instructional interventions, assessment measures, barriers to change, and strategies for success. The intent was that these be "bite-size," relevant changes that faculty could implement successfully in their programs.

Teaching points for faculty

Major themes and teaching points emphasized in the workshops included the following:

1. ACGME's required changes in physician training are one component of a larger movement to improve quality in health care. Moreover, competency-based education (CBE) holds the promise of producing better doctors. CBE links instruction and assessment in ways that will continuously improve the learning experience and capabilities of residents. It also clearly positions GME as one stage in lifelong learning.
2. Systems-based practice (SBP) and practice-based learning and improvement (PBLI) are recognizable aspects of physician practice. When translated into practical terms and discrete elements, faculty can see the relevance of these competencies to clinical care and the daily lives of physicians. Furthermore, participants realize that they are already teaching components of these competencies (e.g., lessons and projects in "evidence-based medicine," "quality improvement," and "care management"), although perhaps without labeling them as such.
3. Much of SBP and PBLI can be incorporated into residents' current rotations and activities. Existing activities like rounds, journal club, and M&M conferences offer opportunities to address these competencies within the clinical context. Programs can complement reviews and discussions in these settings with new instructional activities, such as chart reviews, quality improvement projects, or discussions and projects relating to the larger health care system.
4. Assessing residents on their grasp of these competencies is a multi-faceted endeavor. Selected assessment techniques and tools, such as 360º evaluations and portfolios, are especially useful methods. In addition to faculty, non-physicians who have contact with the residents can be asked to provide assessments. Ongoing formative assessment and feedback are vital components of curriculum planning and resident-centered training.

Post-workshop evaluation

Two forms of evaluation were conducted. First, attendees filled out evaluation forms immediately after the workshop. Second, key contacts such as directors of medical education at ten workshops sponsored by HRSA were sent an online questionnaire some months after their programs. Feedback from both sets of evaluations is presented below.

Evaluations by attendees

Based on a compilation of all standardized evaluation forms submitted to THCI by program attendees across multiple workshops (N=214), the average overall participant rating was

4.5 out of 5 (5=excellent, 4=good, 3=average, 2=fair, 1=2 poor). A textual analysis of the responses to questions and comments in these evaluation forms revealed a range of benefits to attendees, as summarized below.

1. The most frequently cited benefit was the practical information imparted on how to integrate and teach the elements of SBP and PBLI. This included both specific instructional activities, like having residents engage in QI projects or meet with case managers, as well as ways to plan for and implement specific new training experiences.
2. The second most frequently cited benefit was information on assessment of residents' performance, including specific tools and insights on the assessment process. This reflected a heightened recognition among faculty of the importance of assessment in competency-based education. They were looking for ways to assess these competencies beyond traditional patient care evaluations.
3. The third topic of importance for many attendees was the definitions of the competencies of SBP and PBLI. Many participants were still learning what is meant by these competencies and making sense of how they relate to practice and clinical care.
4. Some attendees found value in hearing about the ACGME Outcome Project overall and how it is part of the larger initiative to improve health care quality. Through the workshop they became better informed about the Outcome Project timeline and expectations. The information was beneficial for attendees' own knowledge, and it provided teaching points that they could subsequently use with colleagues and residents.
5. Finally, participants cited other benefits beyond the core content presented. First, many felt reassured to learn that they were not alone in struggling to understand and integrate these competencies. In addition, their networking with colleagues in other specialties and departments led many to understand that the SBP and PBLI curriculum can be addressed in an inter-disciplinary fashion. This awareness led a few to develop collaborative projects (e.g., related to inter-departmental hand-offs or referrals) to address curriculum changes in SBP and PBLI.

To reinforce the learning attained by attendees, the evaluation form also asked participants to reflect on and record specific action steps they could take following the workshop. Intended steps ranged from launching a planning process, to orienting colleagues and residents to the competencies, to implementing specific instructional or assessment activities, to seeking additional resources and help from their institutional GME offices.

Follow-up evaluations by GME leaders

Six out of ten GME leaders who hosted the faculty development workshops returned a survey reflecting on the experience several months after attending the program. As a group they rated the workshops highly and stated that they would recommend this approach to others. Respondents rated the workshops as being most helpful in:

- Educating a cross-section of GME faculty in the content of SBP and PBLI competencies.
- Securing buy-in from faculty.
- Helping faculty to identify opportunities to teach about SBP and PBLI within the existing curriculum.
- Identifying SBP/PBLI resources from other sources for faculty to use.

Respondents were also asked about communication following the workshop at their institutions. Most workshop sites held follow-up meetings with attendees to build on the momentum of the THCI program. Also, attendees frequently shared materials from the workshop and discussed the contents with colleagues and residents who were unable to attend. Thus, the faculty development effort appears to have had an impact beyond the event itself.

GME leaders further commented that the THCI program supported their effectiveness in addressing the competency requirements. Specifically, the workshops promoted more positive attitudes, increased attendees' comfort level with the changes, and fostered inter-specialty collaboration among programs at the institution.

Conclusion

THCI's experience indicates the value of faculty development workshops as a key element of GME reform. The workshops are a means of reinforcing the significance of the ACGME Outcome Project, highlighting the content of the new competencies, and aiding faculty in planning initial steps to teach and assess residents in these important areas of practice. While faculty development workshops are designed as a one-day event, they appear to have an impact beyond that day and beyond the individuals who were able to attend. ■

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[1] Simon S, Pan R, et al. Views of managed care: a survey of students, residents, faculty, and deans at medical schools in the United States. NEJM. 1999;340:928-936.

Competencies in the Press

Patricia M. Surdyk, PhD

An important factor in how adults learn is the ability to reflect on their experience. For most veteran teachers who have become experts in their respective specialties, reflection is second nature. It is somewhat difficult, therefore, to take a step back from this seemingly intuitive process in order to teach residents, as novices and advanced beginners, how to engage in reflection that promotes learning.

Reflective practice is the term often used to name the use of reflection as a skill that underlies development of competence, especially apparent in Practice-based Learning and Improvement, Professionalism, and Patient Care. It is an interesting coincidence that among the six general competencies, experience to date shows that both Practice-based Learning and Professionalism also seem to present a special challenge both for teaching and assessment. To provide some assistance in developing this important skill and habit, therefore, the theme of this installment of "Competencies in the Press" is *"Reflective practice as an essential component of teaching and assessing the competencies."*

The following articles chosen for this brief compendium describe the theory of reflective practice (Epstein), several means of teaching reflective practice (Epstein and Charon), and a tool that incorporates reflective practice in assessment (Pitts et. al.) In addition, each includes a comprehensive bibliography to guide further study.

Epstein R. Mindful practice in action (I): technical competence, evidence-based medicine, and relationship-centered care. Families, Systems and Health 2003; 21(1):1-9.

Epstein R. Mindful practice in action (II): cultivating habits of mind. Families, Systems & Health 2003; 21(1):11-17.

In his two-part series of articles, Epstein[1] provides a comprehensive overview of 1) the meaning and role of mindful practice and, 2) suggestions to teach and promote mindful practice in medicine. In the first article he develops the concept that mindful practice, or what Schön[2,3] and others have referred to as reflective-in-action or reflective practice, involves cultivating habits that depend on "maintaining moment-to-moment awareness, and the ability and willingness to regard oneself as an object for study and reflection." This definition aligns mindful practice with the broad definition of Practice-based Learning and Improvement, i.e., "involv[ing] investigation and evaluation of…patient care, appraisal and assimilation of scientific evidence, and improvements in patient care."[4] In other words, physicians develop competence and improve their practice habits by reflecting on their own experience and subsequently incorporating those insights or insights about clinically relevant evidence into daily practice.

Mindful practice is second nature to expert teachers. But how does one teach these skills to residents who are novices and/or advanced beginners? The first article outlines habits that must be developed in order to become mindful practitioners including attentive observation of oneself; critical curiosity; "beginner's mind;" and presence. The second article in the series expands on these habits and provides details for a teaching method to foster mindful practice. The steps involve: 1) priming; 2) availability; 3) asking reflective questions; 4) active engagement; 5) modeling while "thinking out loud; 6) practice; 7) praxis; and, 8) assessment and confirmation.

[1] Epstein R. Mindful practice in action (I): technical competence, evidence-based medicine, and relationship-centered care. Families, Systems & Health 2003; 21(1):1-9.

[2] Schön D. The reflective practitioner. New York: Basic Books; 1983.

[3] Schön D. Educating the reflective practitioner. San Francisco: Jossey-Bass; 1987.

[4] Accreditation Council for Graduate Medical Education (ACGME). The General Competencies. Available from URL: http://www.acgme.org/outcome/comp/compHome.asp.

Charon R. Narrative medicine: a model for empathy, reflection, profession, and trust. JAMA 2001 Oct 17;286(15):1897-1902. Narrative medicine: form, function, and ethics. Annals of Internal Medicine 2001 Jan 2;134(1):83-87.

Dr. Charon provides a rich and thorough analysis of how narrative medicine is more than a technique; it represents a body of knowledge that enhances development of competence.[5] Many of the tasks in which physicians regularly engage are largely narrative: they listen to patients' stories, witnessing constantly to the chaotic effects of illness on patients' lives and those of their families; they narrate diagnoses whether in case conferences or on charts or in bedside rounds; they interpret findings to colleagues, to learners, to other health professionals, and to patients; they pose difficult questions and often must answer them.

Research in narrative medicine over the years has examined how doctors and patients talk to one another, what happens when doctors permit themselves to write about

"Many of the tasks in which physicians regularly engage are largely narrative: they listen to patients' stories, witnessing constantly to the chaotic effects of illness on patients' lives and those of their families; they narrate diagnoses whether in case conferences or on charts or in bedside rounds; they interpret findings to colleagues, to learners, to other health professionals, and to patients; they pose difficult questions and often must answer them."

patients, and how narrative competence can increase the effectiveness of medical care. A number of writing and literature-in-medicine programs have built on this research by incorporating narrative work into many aspects of medical education and of physician practice. As a component of reflective practice, understanding narrative medicine and using it deliberately helps provide insight into medical reasoning, clinical relationships, empathy, and medical ethics.[6] In the second article, Dr. Charon describes the various genres of narrative medicine and the ethics underlying its use. Her discussion offers a useful outline for program directors and faculty who might be planning to incorporate aspects of medical writing into systematic teaching and assessment of the competencies.

[5] Charon R. Narrative medicine: a model for empathy, reflection, profession, and trust. JAMA 2001 Oct 17;286(15):1897-1902.

[6] Charon R. Narrative medicine: form, function, and ethics. Annals of Internal Medicine 2001 Jan 2; 134(1):83-87.

Pitts J, Coles C, Thomas P. Enhancing reliability in portfolio assessment: 'shaping' the portfolio. Medical Teacher 2001; 23(4):351-355.

Increased attention to the portfolio as a teaching and assessment tool[7,8] underscores its usefulness in identifying learning needs and accomplishments. This awareness, however, also points to problems that could result when using reflective practice and narrative medicine techniques in the context of summative assessment, e.g., high-stakes evaluations. The article by Pitts and colleagues describes the difficulties in establishing validity and reliability measures for portfolios. But the value of this article is to bring attention to the authors' conclusion that *"the greatest value of a portfolio to the individual is as a reflective tool,* a personal account of professional practice that identifies and acknowledges both strengths and weaknesses." Study participants did not immediately appreciate the value of the portfolio, a situation not uncommon in residencies as some faculty have found when attempting to introduce portfolios. Such a reaction underscores the fact that the introduction of a qualitative tool such as a portfolio requires reflective practice as much in the planning and introduction, as in using this tool to support the formation of residents. The results of this particular study show an increase in participants' confidence regarding the development of their portfolios. Most importantly, the use of the portfolio can be seen as a model of reflective behavior in helping residents to apply reflective practice as they investigate and seek insight into their own work. ■

[7] Hays R. Reflecting on learning portfolios. Medical Education. August 2004; 38(8):801-3.

[8] Ziegelstein R and Fiebach N. "The Mirror" and "The Village": A New Method for Teaching Practice-Based Learning and Improvement and Systems-Based Practice Academic Medicine. January 2004; 79(1): 83-88.

Teaching Residents to Implement Best Practices at the Front Lines of Care

Greg Ogrinc, MD, MS, Jonathan Jones, MD and Michael Gilbert, MD

Resident physicians learn in complex organizations but are not routinely taught how to evaluate, analyze, or improve the systems in which they play a role. Improving systems requires a solid foundation of medical knowledge, but medical knowledge must be coupled with knowledge of systems-based practice and the skills needed to improve care (practice-based learning and improvement). Improving health care is a skill-based professional activity that requires a combination of theory and practice.

The ACGME competencies have provided a new focus for graduate medical education, and systems-based practice and practice-based learning and improvement (PBLI) are often seen as the most challenging. Some have described opportunities to learn about PBLI by incorporating mandatory opportunities into an ambulatory block[1], creating an independent study projects[2], and using computer modeling[3]. These examples show how various programs have created opportunities for residents to achieve these competencies.

In an earlier article, we described our own elective rotation in practice-based learning and improvement (PBLI)[4]. In brief, residents enroll in the PBLI elective and spend four weeks completing the curriculum. The primary goal of our curriculum is for each participant to gain hands-on experience with PBLI at the front lines of care. The curriculum is a combination of didactics about the theories and methods of improvement with a hands-on project to improve healthcare in the local setting. As residents have rotated through the elective, we recognized that the elective teaches more than just the basics of PBLI. It provides an opportunity for residents to synthesize medical knowledge, explore the systems where they work, and recommend changes to improve patient care. In this article we present two examples of how residents learned to apply medical knowledge by 1) understanding the system in which they work and 2) measuring local outcomes.

Example #1

One resident was interested in improving the amount and quality of patient education materials that were available in the general medicine clinic. He decided to focus on patients who presented with low back pain for an acute care visit. He hypothesized – from his clinical experience – that there was significant variability in the type and amount of educational materials given to patients.

He reviewed the literature to identify the "best practices" for patient education regarding low back pain. The BMJ Clinical Evidence Concise[5] provided the best guidance. This source is an easy to use, widely available resource for

evidence-based medicine. For acute presentation of low back pain, "advice to stay active" is listed in the "beneficial" category on a scale of categories ranging from "beneficial" to "unknown effectiveness" to "likely to be ineffective" (pp. 286–287). If this is considered an effective component of best practice, then what was occurring locally in our clinic?

"He found that most patients had no documented education material for their acute low back pain."

The resident then reviewed three months of charts of patients with acute, uncomplicated low back pain. He reviewed each note to determine what type of patient education was provided. He found that most patients had no documented education material for their acute low back pain. The material that was distributed consisted primarily of photocopied sheets from individual physicians' personal files and a few preprinted pamphlets. There was considerable variability in the amount and quality of patient education material. This three-month snapshot strongly correlated with his personal clinical experience.

He next decided to standardize the education material. He reviewed several pamphlets, booklets, and printouts that contained information about staying active with low back pain. The booklet used by the spine center at his institution offered excellent information in an easy-to-read format. His initial notion was to put these booklets into each exam room. However, he realized that not all the exam rooms, and not all providers, are used for acute care visits. Finding a stable locus for patient education in the acute care system would help get the education material to the right patient at the right time.

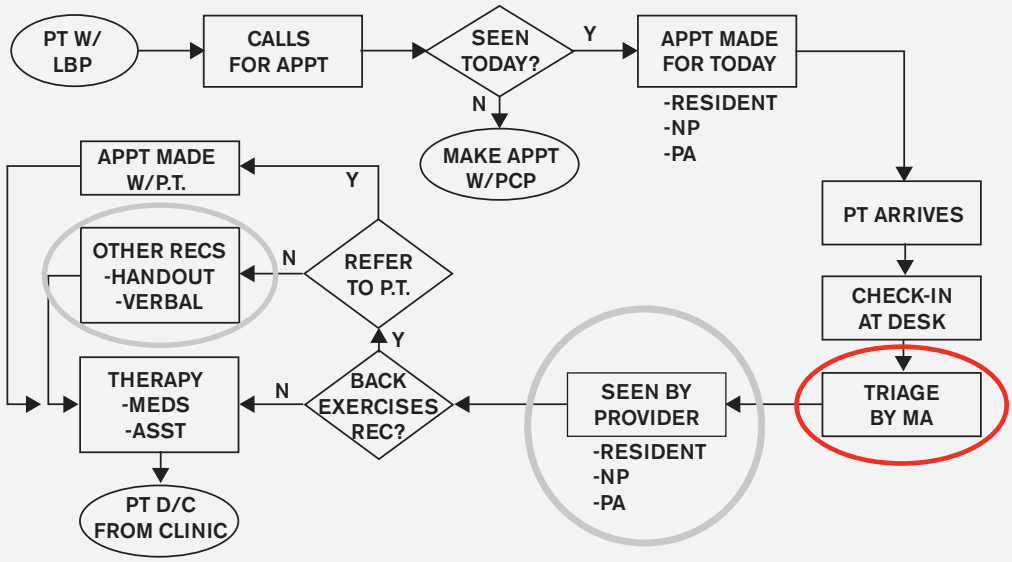
In order to understand the system of care for patients with acute low back pain, he constructed a flow diagram (Figure 1). A flow diagram is a tool that creates a useful model of a system but is never perfect. In this case, the resident learned that there was considerable variability in the clinicians who evaluate and treat patients with acute low back pain (grey circle in Figure 1). Trying to educate and influence all these clinicians would be difficult. Instead, the flow diagram helped him identify that the medical assistants are the constant in this process (red circle in Figure 1). They are present each day in clinic and triage each patient. Perhaps the medical assistants could serve as the link between the patients with acute low back pain and the education information?

"...applying the right educational information to the right patients required insight into the system of acute care in this clinic; the flow diagram of the process made this insight possible."

There are several lessons from this resident's experience. First, it was important to understand the current local practice of patient education in order to establish the need for an intervention. Second, it was evident that the patient-clinician interaction was not the proper place to make this intervention. The clinicians are numerous, and variable, in this process. Third, the medical assistants are a vital, and stable, part of

Figure 1

Flow diagram of acute care appointments in general medicine clinic.



Variable steps in process noted in grey circles (provider seen and patient education material). Constant part of process noted in red circle (medical assistant (MA) triage).

Figures 2a and 2b. **Proportion-type control charts of anticoagulation control by month.**

Figure 2a **Proportion of Patients per Month with Average PTT between 60-80**

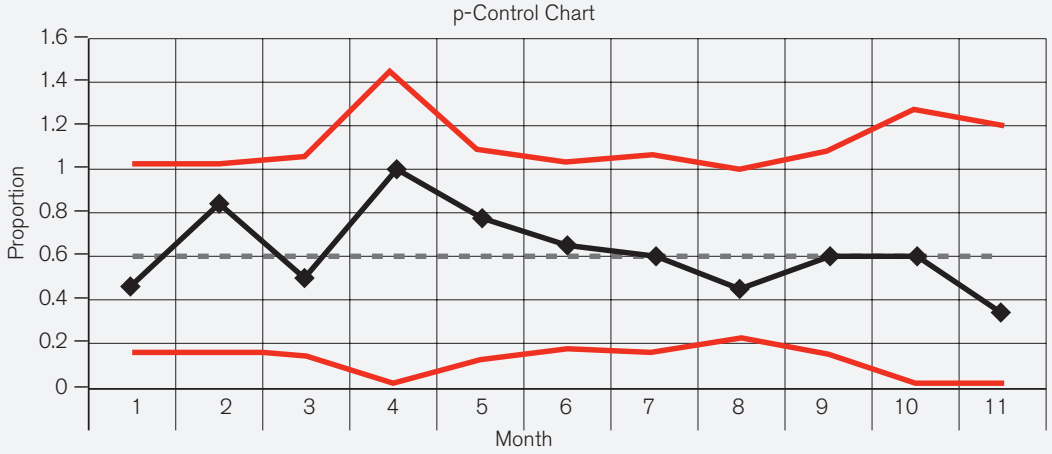
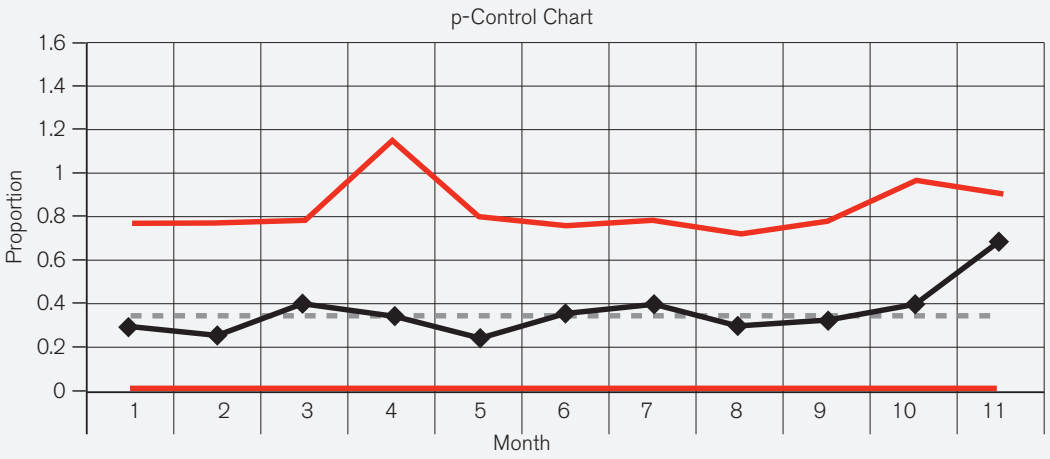


Figure 2b **Proportion of Patients per Month with More than Two PTT>120**



(Key: Red lines – upper and lower control limits; Dotted line – average of all data points)

this system. Finally, applying the right educational information to the right patients required insight into the system of acute care in this clinic; the flow diagram of the process made this insight possible.

Example #2

Our second resident was interested in the use of unfractionated heparin in hospitalized patients. One of the institutions he rotated through used a weight-based protocol and one of the institutions did not. He decided to focus his PBLI project on the institution that did not currently have a heparin protocol. He started by considering implementation of a protocol at this hospital.

While this may be a proper intervention, understanding the evidence behind unfractionated heparin and understanding the local system of care was a vital first step. His literature review showed that weight-based protocols provide tighter anticoagulation control with fewer sub- and super-therapeutic levels[6]. If this is best practice, why isn't it employed at all institutions? Next, he interviewed nursing, pharmacy, laboratory, and physician staff to determine the processes associated with the use of unfractionated heparin. He gained significant insight into the processes at work on the medicine ward and in the intensive care unit. But this is not an example about understanding the process; this is an example about measurement.

He conducted a chart review of all hospitalized patients who received unfractionated heparin during a 14-month period (three months had no patients who met the inclusion criteria). He determined the proportion of patients who had a mean activated partial thromboplastin time (PTT) between 60-80 (the therapeutic range) as well as the proportion of patients who had at least two PTTs greater than 120 (super therapeutic). He created two proportion type control charts (p-charts) to evaluate these measures over the 14 months (Figures 2a and 2b). The three months with no patients were not included, so each chart has 11 data points. Control charts are a statistical tool that assesses the variability in a system over time7. In this system, the mean proportion with an

average PTT between 60-80 is 0.59 (dotted line), but there is considerable variability month to month (Figure 2a on page 18). No month is outside the upper or lower control limits (red lines), so the system is considered to be in statistical control. Similar results are seen on the "percent super-therapeutic" chart, which shows a mean of 0.33 (red line) and also a variable, yet stable, system.

This resident's work has provided a wealth of insight into the system of care at this institution. He has identified best practices from the literature (heparin weight-based protocol), measured local practice (control charts), and now understands the system to recommend a trial of the weight-based protocol in the appropriate location (ICU). Simply knowing that a protocol is important is not enough. Being able to measure the local system of care and display that in a meaningful way are vital skills that will ensure meaningful and lasting changes to the system that will improve care for patients.

"Medical knowledge, systems-based practice, and practice-based learning and improvement are complementary competencies. These must be integrated for the benefit of patients and learners, but incorporating best practices into bedside care is challenging."

Conclusions

Medical knowledge, systems-based practice, and practice-based learning and improvement are complementary competencies. These must be integrated for the benefit of patients and learners, but incorporating best practices into bedside care is challenging. The recent announcement of the collaboration between the Journal of the American Medical Association (JAMA) and the Institute for Healthcare Improvement (IHI) is one effort to accelerate best practices from the literature to the bedside by connecting readers to the authors of articles[8].

"Residents work at the front lines of care, and they have a unique opportunity to evaluate, analyze, and improve care for patients by translating best practice into action."

Our elective in PBLI has provided a hands-on opportunity for residents to identify best practice, measure the local system, and make recommendations to bridge the gap between local and best practice. Residents work at the front lines of care, and they have a unique opportunity to evaluate, analyze, and improve care for patients by translating best practice into action. ■

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This article was prepared with support, resources, and the use of facilities at the White River Junction VA Medical Center in Vermont.

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Two Years of Surveying Residents for Accreditation

Kathleen Holt, PhD and Rebecca Miller, MS

This January through May, the ACGME is conducting its second Resident Survey. It will survey approximately 36,000 residents in 1,925 programs. This web-based survey is the second year of the ACGME's three-year plan to survey residents in all core and subspecialty programs having at least four active residents. Each year, the surveys reach roughly one-third of all residents in ACGME-accredited programs. The survey focuses on duty hours, general competencies, learning environment, supervision, and evaluation.

"This year programs must have at least four active residents to be eligible to participate."

This year programs must have at least four active residents to be eligible to participate. Also, two new specialty-specific surveys have been developed to accompany the standard survey. Residents in Pathology and in Emergency Medicine will answer specialty-specific questions as part of the online survey.

While information provided by residents is used to enhance the resident interviews at the program's site visit, programs are scheduled for the survey without a direct link to accreditation cycle length or site visit schedule. When a program's residents are required to complete the survey, program directors are notified directly (via mail and e-mail). They are given information about the survey, including specific instructions on how residents log in and the deadline for completion. Reminders are emailed at two-week intervals until the survey deadline.

"After data collection is complete (and at least 70% of their residents have completed the survey), program directors may see an aggregate report of the residents' responses by accessing them on the ADS system."

Designated Institutional Officials (DIOs) receive an e-mail outlining which of their sponsored programs are required to participate in the survey and are kept informed (also via e-mail) of their programs' participation rates.

Residents' initial login is their 10-digit program number; their password is their DOB (mmddyyyy) and the last two characters of their last name. Upon completion of the on-line survey, residents must change their usernames and passwords to protect their responses.

"Designated Institutional Officials (DIOs) receive an e-mail outlining which of their sponsored programs are required to participate in the survey and are kept informed of their programs' participation rates."

At least 70% of the residents in a program must complete the survey. Program directors may monitor the program compliance rate and may see a list (within their ACGME ADS login) of residents who have not yet completed the survey.

After data collection is complete (and at least 70% of the residents have completed the survey), program directors may access an aggregated report of the residents' responses on the ADS system. DIOs may also see these reports for each program within their institution via ADS.

Site visitors include a validation of the survey responses in their report to the Residency Review Committees (RRCs). RRC reviewers also receive a copy of the aggregate resident survey report, regardless of response rate. ■

View added information about the resident survey at: http://www.acgme.org/acWebsite/Resident_Survey/res_Index.asp

Educating Residents About Patient Safety

Julie Jacob

Educating residents about patient safety is an important part of graduate medical education. Program directors, coordinators, DIOs and others attending the ACGME's Annual Educational Conference, held March 3–5, 2005 in Orlando, received some tips on teaching patient safety to residents at a session on institutional and national initiatives in patient safety.

Ingrid Philibert, the ACGME's Director of Field Activities, began the session by noting that the ACGME promotes patient safety through a variety of means: the duty hour standards, requirements for minimum board exam pass rates, resident evaluations, and the six general competencies. The ACGME is also collaborating with the American College of Surgeons on a patient safety curriculum for surgical residents, she said.

William L. Rutherford, MD, a retired commercial airline pilot and faculty member of the Western Michigan University College of Aviation, and former Director of Simulation Science at the University of Miami's Center for Patient Safety, then gave a systems perspective on patient safety. He discussed how aviation safety principles could be applied to the health care field. Unlike the health care industry, errors in aviation are transparent, because every crash must be investigated. "We cannot hide our disasters," he said. The best practices in aviation safety that evolve from investigations of accidents and near-misses are then incorporated as standard operating procedure.

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John C. Russell, MD, the Associate Dean for Graduate Medical Education and Designated Institutional Official for the University of New Mexico School of Medicine, discussed the role of morbidity and mortality conferences in patient safety. If done well, they can be a useful tool for patient safety education, he said. Yet only 45 of 119 specialties and subspecialties mandate attendance at M & M conferences in their program requirements, he noted. Good M & M conferences, he said, identify errors and lead to open discussions about what can be learned from the cases and what can be done differently in the future.

Kathleen Watson, MD, Vice Chair for Internal Medicine at the University of Minnesota School of Medicine, then discussed the school's Systems-Based Medical Practice and Learning (SYMPAL) program. The goals of the program are to increase resident involvement in patient safety and to improve communication between residents, program directors and hospital administrators regarding patient safety. Residents play a key role in the program by jotting down information about potential or actual errors as they do their rounds. The information is posted on the SYMPAL web site. These cases, along with pretests measuring patient safety knowledge, are then discussed by residents, faculty and administrators. A few cases are also e-mailed twice a month to chief residents and the hospital's patient safety officer.

"Residents play a key role in the program by jotting down information about potential or actual errors as they do their rounds. The information is posted on the SYMPAL web site."

The session ended with a joint presentation from two representatives from the Veteran Administration's National Center for Patient Safety. John Gosbee, MD, Director of the Patient Safety Curriculum and Linda Williams, RN, Manager of Patient Safety Information, discussed the Center's Patient Safety Curriculum Project and Toolkit. Dr. Gosbee provided an overview of the program. The program aims to teach residents about the basics of human factors engineering and the importance of discovering the root causes of errors and developing interventions to prevent them.

Ms. Williams ended the session with a discussion of the Center's Hands-on Museum. The museum includes examples of commonly used medical devices that have caused errors or near-errors due to poor design, said Ms. Williams. For example, line locks with locks all the same size can result in the wrong lines being locked together. AV cables for VCRs, in contrast, she said, only fit into the correct outlets. Ms. Williams' presentation emphasized the benefits of system-level solutions that make the safest approach the easiest approach. ■

RRC/IRC Column

ACGME revises program requirements for obstetrics and gynecology, approves new subspecialty of neuromuscular medicine

The ACGME approved the Program Requirements for Obstetrics-Gynecology with modifications, effective July 1, 2005. The Council approved the new subspecialty of Neuromuscular Medicine and recommended approval of the Program Requirements for Neuromuscular Medicine, with modifications, effective February 15, 2005.

The Program Requirements for Pediatrics and for Anesthesiology were referred to their respective RRCs for further revisions.

Appointments to institutional review and transitional year review committees

The Board of Directors approved the reappointments of Patricia M. G. Butler, MD, and H. Worth Parker, MD, to serve second terms on the Institutional Review Committee (IRC), ending June 2008. The Board also approved the reappointment of Andrew Thomas, MD, to serve a three-year term ending in September 2008. Dr. Thomas was appointed to fill the unexpired term of another committee member. The Board also approved the reappointment of Howard Pomeranz, MD, to serve an additional year as the Committee's Vice Chair, ending in June 2006.

The Board of Directors approved the appointment of Danny M. Takanishi, Jr., MD, FACS, to the Transitional Year Review Committee, to an initial term of three years ending July 2008, and approved the reappointments of Joseph T. Gilhooly, MD, and Jo Ellen Linder, MD, to serve second three-year terms.

Other News from the February 2005 ACGME Meeting

ACGME formalizes two committees

The Board of Directors approved the charge and membership of the newly formed Committee on Innovation in the Learning Environment (CILE). The first meeting of this committee will be held April 7, 2005. The Board also ratified the establishment of an Awards Committee, comprised of members of the Board of Directors, to review the nominations and select the individuals to receive the Parker J. Palmer Courage to Teach Award, the Courage to Lead Award, and the John C. Gienapp Award for Distinguished Service to the ACGME.

ACGME Considers Strategic Directions

Emanuel Cassimatis, MD, ACGME Chairman, presented the document summarizing the discussion at a November 2004 retreat of the Executive Committee about strategic directions for the ACGME. The discussion emphasized the three major initiatives the ACGME has undertaken in recent years in keeping with its mission to ensure high-quality education, safe and effective patient care and the well-being of residents: 1) teaching and assessment of the general competencies; 2) implementing the common program requirements related to resident duty hours; and 3) increasing collaboration with program directors, designated institutional officials, and other stakeholders with an interest in medical education.

Dr. Cassimatis indicated that the ACGME also plans to look at the accreditation process as a whole, including the number and clarity of requirements and increasing the use of technology, to reduce the burden of the accreditation process. Further discussion of the strategic directions document will occur at the June meeting of the Committee on Strategic Initiatives.

Field Staff News

New associate director and accreditation field representatives

James Cichon, MSW, joined the ACGME as Associate Director of Field Activities in February 2005. He is assuming the responsibilities of Jerry Vasilias, PhD, the former Associate Director who joined the staff of the Department of RRC Activities as Co-Executive Director for Family Medicine and Pediatrics.

In October 2004, Kirsten Raines, MD, and Michael Valdez, MD, joined the ACGME Accreditation Field Staff. Dr. Raines is board certified in Internal Medicine and sub-board certified in Endocrinology, and has held a number of teaching and administrative positions with the United States Army Medical Department. Dr. Valdez is board certified in Preventive Medicine, and will continue to serve on the Residency Review Committee for Preventive Medicine. Until the expiration of his term on the RRC, he will not review Preventive Medicine programs.

In April 2005, Judith Rubin, MD, MPH, and Laurence Russell, MD, will join the ACGME field staff. Dr. Rubin is board certified in Pediatrics and Preventive Medicine, and brings extensive experience as a residency program director and member of the Residency Review Committee for Preventive Medicine. Dr. Russell received his medical degree from Temple University School of Medicine in Philadelphia, and is board certified in Family Medicine.

Dr. Shanley Retires

James Shanley, DMD, who has served as an ACGME field representative since 1994, retired at the end of 2004. He will continue to serve the ACGME and resident education community as a field staff reservist, taking on occasional site visit assignments.

In Memoriam — Judith Jacobs, DrPH

Judith Jacobs, DrPH, a member of the ACGME field staff since 2001, passed away in February 2005 after a battle with leukemia. She will be missed by all of her ACGME colleagues.

Examining the ACGME's Mission, Vision and Values

Ingrid Philibert

In 2003, the ACGME embarked on assessing how effective it is as an accrediting organization, with the goal of developing a set of measures to facilitate ongoing measurement and to identify opportunities for improvement. A component of this project is a re-examination of the ACGME's mission and vision statements, formulated in 1997, before it became an independent accrediting organization, and formulating a set of values. This process uses concepts and thoughts originating from the self-assessment focus groups and constituent surveys. For example, the new ACGME values result directly from eight common themes that emerged from the 140 pages of comments ACGME received in response to its soliciting information in its self-assessment.

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At the February meeting of the ACGME Board of Directors, Mark Kelley, MD, Chair of the Strategic Initiatives Committee, led the group in an exercise to validate the proposed ACGME mission, vision and values statements. Subsequently, the Board approved a broader vetting of these statements, and they are presented in this issue of the ACGME Bulletin, with the goal of stimulating discussion and comments. Their importance is that the mission, vision and values will guide ACGME activities and ongoing self-assessment, using a dashboard of strategic indicators and supporting indicators that will be tracked by the ACGME and its functional departments on an ongoing basis.

"...the mission, vision and values will guide ACGME activities and ongoing self-assessment..."

Below we present the proposed ACGME mission, values and vision statements for your review and comment. The comments will be shared with the Strategic Initiatives Committee at its meeting in June 2005. Comments should be sent to Ingrid Philibert, Editor, ACGME Bulletin, at iphilibert@acgme.org. We welcome your input into this important ACGME process.

Proposed ACGME Mission Statement

Through accreditation, we improve health care by ensuring and improving the quality of resident physicians' educational experience.

Proposed ACGME Values and the Key Themes from the Self-Assessment Underlying these Values

Reliability

- Establish and use fair and relevant standards and an objective and reliable accreditation process

Relevance

- Base accreditation on outcomes
- Discern, acknowledge and facilitate good learning for good health care

Excellence

- Promote continuous improvement and innovation

Accountability

- Benefit residents, society and the health of the public through accreditation

Integrity

- Demonstrate organizational transparency and integrity

Efficiency

- Reduce burden and enhance joy in work and learning

Accessibility

- Inform and involve stakeholders and organizations in medical education

Proposed ACGME Vision Statement

- Exemplary Accreditation

National and International News of Interest

Continuous duty hours, patient safety and resident well-being

Data reported in three recent articles in the New England Journal of Medicine,[1,2,3] has produced calls to re-examine the continuous duty hour limits, currently set at 24 hours plus up to 6 added hours for transfer of care and didactics. Two of these (Lockley et al. and Landrigan et al.) studied a small number of first-year residents in an intensive care setting, comparing the continuous duty periods of a traditional night call to a night-float model. They found reduced resident attention and increased error in the traditional call model.

The article by Barger et al. reports the findings of a prospective national survey in which first-year residents reported their duty hours and provided information about documented motor vehicle crashes, near-miss incidents, and incidents involving nodding off at the wheel. It showed the odds ratios for reporting a motor vehicle crash and/or a near-miss incident after a traditional call shift, compared to a non-extended shift were 2.3 (95 percent confidence interval, 1.6 to 3.3) and 5.9 (95 percent confidence interval, 5.4 to 6.3), respectively. Every extended work shift in a month increased the risk of a motor vehicle crash by 9.1 percent (95 percent confidence interval, 3.4 to 14.7 percent).

"...the odds ratios for reporting a motor vehicle crash and/or a near-miss incident after a traditional call shift, compared to a non-extended shift were 2.3 and 5.9, respectively."

While some of these studies have small sizes and involved only first–year residents, and the data were collected prior to the institution of the Common Duty Hour standards in July 2003, the findings suggest a need to continue to examine the effect of the limits on patient safety, resident learning and resident well-being. At the February meeting of the ACGME Board of Directors, the Council of Review Committee Chairs discussed the common duty hour limits, and decided that the standards should be re-assessed on an ongoing basis, but should not be revised until more information about their effect becomes available.

1 Barger LK, Cade BE, Ayas NT, Cronin JW, Rosner B, Speizer FE, Czeisler CA; Harvard Work Hours, Health, and Safety Group.Extended work shifts and the risk of motor vehicle crashes among interns. N Engl J Med. 2005 Jan 13;352(2):125-34

2 Landrigan CP, Rothschild JM, Cronin JW, Kaushal R, Burdick E, Katz JT, Lilly CM, Stone PH, Lockley SW, Bates DW, Czeisler CA. Effect of reducing interns' work hours on serious medical errors in intensive care units. N Engl J Med. 2004 Oct 28;351(18):1838-48.

3 Lockley SW, Cronin JW, Evans EE, Cade BE, Lee CJ, Landrigan CP, Rothschild JM, Katz JT, Lilly CM, Stone PH, Aeschbach D, Czeisler CA; Harvard Work Hours, Health and Safety Group. Effect of reducing interns' weekly work hours on sleep and attentional failures. N Engl J Med. 2004 Oct 28;351(18):1829-37

Effect of duty hours on patient safety

A recent article in the Annals of Internal Medicine (Fletcher et al.[1]) aggregated information from studies that assessed the effect of system changes to address resident duty hours and provided outcome data related to the effect on patient safety. Interventions included float and cross-coverage systems, and other schedule changes; outcomes included mortality, adverse events, and medication errors. The results suggest that introducing an intervention to reduce resident hours has unclear effect on selected patient safety indicators. Some indicators did not change, some improved and others worsened.

It is important to note that six of the seven studies included in the analysis used data collected before the ACGME's instituted common duty hour limits. In addition, the analysis does not pertain to the duty hour limits themselves, but to the interventions, such as replacing conventional in-house call with night-float, that sought to allow the clinical teaching system to function under reduced resident hours. The authors highlight the need for future research on the effect of system-level interventions to respond to the duty hour limits. This should identify the approaches that best foster the dual goals of high-quality resident education and safe and effective patient care. ■

"The authors highlight the need for future research on the effect of system-level interventions to respond to the duty hour limits."

1 Fletcher KE, Davis SQ, Underwood W, Mangrulkar RS, McMahon LF Jr, Saint S. Systematic review: effects of resident work hours on patient safety. Ann Intern Med. 2004 Dec 7;141(11):851-7. Review.

Innovation as Learning

Ingrid Philibert

Let's assume, as Cesare Marchetti[1] did, that "society is a learning system," that learning is "random search with filters," and that it can result in lasting changes in behavior. This makes it possible to explore innovation in resident education or in accreditation as a learning process, and to use both the principles of innovation and learning to examine how new ideas and processes are taken up. Learning as random search suggests that innovations lie there to be discovered, and that residency programs and sponsoring institutions can take the lead in finding newer and better ways of doing things, and share these approaches and the learning that occurred in their development with others, including the accrediting organization.

"Learning as random search suggests that innovations lie there to be discovered, and that residency programs and sponsoring can take the lead in finding newer and better ways of doing things, and share these approaches and the learning that occurred in their development with others, including the accrediting organization."

Everett Rogers and others have written extensively about the process by which new innovations are disseminated. Rogers studied the dissemination of hybrid seed corn among Iowa farmers, and hypothesized that innovation follows a bell-shaped distribution, with a slim tail of early adopters, larger early and late majorities, who adopt a new process or product after they have seen others do it, and a small group of laggards, who seem to resist the new longer than most.[2] This pattern has been supported by later studies of the dissemination of innovation.

There has been remarkable innovation in medical care and in the institutions that serve as the sites for resident learning. Medical education also has undergone considerable changes, as has the ACGME, particularly in its relationship to its stakeholders in the resident education community. Questions raised by this include: What is the role of the accreditor in promoting innovation? When does an innovation become the standard of practice, and the subject of an accreditation requirement? How can an accrediting organization apply innovation to its own practices? A partial answer to the last question comes in this issue of the ACGME Bulletin, which his devoted to innovation in accreditation, and describes a number of efforts.

A suggested answer to the two other questions is that innovation must have a role in accreditation. Absent this, accreditation standards can become stale, and fail to reflect the current best practices. A lack of innovation in accreditation may also force the accrediting body to respond to a problem that has been framed by an external entity. An example is resident duty hours, in which the question was framed by a political environment, with the potential of a laser-like focus on hours, to the detriment of the many other factors that collectively make up a high-quality learning environment for residents. The formation of the ACGME's Committee on Innovation in the Learning Environment (CILE) seeks to incorporate resident hours within these other important attributes, and to promote innovation in the learning environment.

"A lack of innovation in accreditation may also force the accrediting body to respond to a problem that has been framed by an external entity."

The term "learning environment" seeks to encompass the setting in which clinical care and resident learning occur simultaneously. An aim of the Committee on Innovation in the Learning Environment is to explore how resident education can effectively adapt and respond to the wide-ranging changes in the clinical setting, as well as change in medical education. Changes go beyond limits on resident duty hours. They include new models of care that are being adopted in teaching institutions, including patient-centered and team approaches to care and other recommendations of the Institute of Medicine, the Institute for Healthcare Improvement, those of other expert bodies including those sponsored by some of the ACGME's member organizations.

Simultaneously, the work of the Committee is the logical continuation of the ACGME's effort to set duty hour limit, and to monitor their implementation. The experience from the first year of implementation showed that a laser-like focus on duty hours may result in reduced attention to other attributes of high quality residency programs, including educational curricula, faculty supervision and active teaching, monitoring of competence to perform procedure, and ongoing feedback and evaluation of the residents, faculty and educational program.

A potentially "ugly" truth about innovation is a statement appearing in another article in this issue of the Bulletin. "Not all change is innovation, but all innovation is change." For participants in a system that is highly constrained, this may make it more difficult for those most in need of change to muster the needed resources. This is true at the level of a residency program, a sponsoring institution and the accrediting body. It is also true for the individual resident, when the constraints of duty hour limits and the demands of clinical work leave no time or energy for the learning process, the primary objective of residency.

Rogers and others found that when the dissemination of innovations is plotted on a cumulative basis, the distribution takes on an S-shape, with a long lead time in which a few early adopters take up a new thing, and a flat line at the top of the scale, as the new innovation has taken the field. What this suggests is that everyone eventually "gets there." At the same time, proponents of institutional theory have suggested that what is taken up by early adopters may not be what is accepted by the "laggards" at the tail end of the innovation curve. Westphal et al.[3] studied the implementation of total quality management (TQM) in hospitals, finding that the institutions that first initiated TQM adapted the practices to their local circumstances, while the late adopters mostly sought to preserve the attributes of TQM exactly as they were

"They may have attempted to add legitimacy by adopting a "normative form" of TQM they saw working in successful institutions."

implemented at other well-known institutions. They may have attempted to add legitimacy by adopting a "normative form" of TQM they saw working in successful institutions. This contributed to TQM being less successful in late adopters.

An added difficulty for innovation in accreditation is that accreditation frequently is a dance upon a knife, where the accrediting organization must reconcile the widely differing views of key constituencies, and inform various constituents without appearing to "lobby" them. The current dual thrust of accreditation illustrates this phenomenon. The quest to protect society from "incompetent residents" pits the desire to report and address all resident errors to protect patients against the understanding that errors are a natural part of the learning process. An acceptable resolution, required by the accreditation standards, comes in the form of supervision and oversight of residents to ensure that the care in which they participate is safe and effective. Innovation can add simulation to move important aspects of learning away from patients, allowing residents to practice in a safe environment. A growing focus on outcomes may add other safeguards. Innovation thus firmly has a role in accreditation, with the understanding that the accrediting body needs to be sensitive to the capacity of programs and institutions to innovate and to the innovation dissemination curve.

Lastly, innovation on the part of the accreditor needs to be sensitive to the needs of its multiple constituents. All of this can be viewed as a learning process, and a search process, as suggested by Marchetti. ■

[1] Marchetti, Cesare (1980) "Society as a Learning System" Technological Forecasting and Social Change, Vol.18, December, pp. 267-282.

[2] Rogers, Everett M. (1962) Diffusion of Innovations, New York: Free Press.

[3] Westphal, James D., Gulati, Ranjay, Shortell Stephen M. Customization or Conformity? An institutional and network perspective on the content and consequences of TQM adoption. Administrative Science Quarterly 1997; 42; 366-94

Innovation in Residency Education – Winning Posters from the 2005 Marvin R. Dunn Poster Session

From March 2 to March 5, 2002, more than 900 program directors, designated institutional officials and coordinators attended the 2005 ACGME Educational Conference. The conference featured the Marvin R. Dunn Poster Session. This issue of the Bulletin includes the abstracts for the winning posters, honorable mentions and judges' award from the session. The abstracts highlight the variety of quality posters on topics related to residency education that were presented at the conference.

FIRST PLACE:

Objective Structured Video Examinations for Teaching and Assessing the ACGME Competencies

Diane Brown, BS, Deborah Simpson, PhD, Nancy Havas, MD et al., Medical College of Wisconsin and University of Wisconsin – Milwaukee Clinical Campus

Purpose: Per the ACGME Outcomes Project, residency programs must demonstrate competency-based curriculums and associated evaluation strategies to assess resident's performance using multiple measures. Limited information is available regarding competency based, simulations for teaching and/or assessment. Objective structured video examinations (OSVEs) may be a cost-effective alternative.

Methodology: A multi-specialty (e.g., geriatrics, family medicine, psychiatry) development group met monthly (e.g., 4 hours) to develop OSVE teaching/assessment tools. Each tool was explicitly designed to address at least 2 ACGME competencies beyond medical knowledge and patient care and includes an Instructor's Guide, a Q & A sheet, a Scoring Key, and an accompanying video trigger. Residents are asked questions about: 1) how to access records in a short period of time; and 2) exercise. Completed tools were piloted in a variety of settings (e.g., rounds, morning report, noon conference).

Summary of results: Faculty (N=8) volunteered and piloted the tools to 50 participants (40 residents; 10 medical students) during a 4-week period. Upon completion of the pilot, the average time required to administer/score each tool was < 25 minutes with 100% in agreement that they would use the tools within their programs. Residents who were involved in the pilot felt the tools were "an excellent way to learn".

Conclusions: OSVE tools provide faculty with practical, low-cost instructional resources for teaching and/or assessing the ACGME competencies.

SECOND PLACE:

Teaching to the Competenceis: Online Video on Demand Sessions

J. Hart, PhD, A. Thomas, MD, MBA, and E. Twersky, Ohio State University Medical Center

Purpose: The ACGME competencies are often taught by observation and require the trainee to be cognizant of when these teaching moments occur. Ohio State GME Office has joined with the Ohio State Medical Association to provide online, video on-demand one-hour long programs that reinforce what is being taught in the patient setting and didactic curriculums. The online series began fall 2003, and currently twenty-two sessions, categorized by competency are available. All residents are required to view at least ten sessions during their training program. Previously, an in-person lecture model was in place. The move to an online format provides housestaff and programs opportunities to view programs, which enhance their training and meet their personal time commitments.

Methodology: All sessions are assessed for content, usefulness, speaker knowledge and method of presentation. Once a session is viewed, a five-question quiz on content and a six-question evaluation is required before credit is granted. Evaluations were compared between the online sessions and those presented in the in-person lecture model.

Summary of results: As of January 2005, 1,210 online evaluations were completed with an average score of 7.5 out of 10 for overall presentation quality.

Conclusions: The online format has provided a means to increase the number of available presentations annually. Programs use the online lecture series to supplement their current conferences and housestaff can view sessions that are relevant to them throughout their training. All programs are reviewed annually for relevance and all sessions will be updated or removed after three years. Sessions on "Sleep Deprivation" have been incorporated into many program's curriculum as an additional means to educate physicians regarding fatigue and understanding the duty hour requirements.

THIRD PLACE:

Development of a Competency-Based Video Review Checklist

K. Hemesath, PhD et al. Department of Internal Medicine, University of Wisconsin Medical School, Milwaukee Clinical Campus and the Aurora Internal Medicine Residency program

Purpose: The purpose of this project was to develop a behavior-based video review checklist for use by the Internal Medicine Residency Competency committee members to assess resident performance in the competency areas of ambulatory patient care, communication skills, professionalism and medical knowledge in videotaped encounters. Existing, validated checklists are often limited in focus to psychosocial and communication skills and do not address behaviors in patient care and medical knowledge that we wish to assess.

Methodology: A list of behaviors that we wished to assess was generated from existing tools and clinical skill texts. They were compared with the communication skills curriculum offered to our PGY 1 residents to ensure they were congruent. This list was circulated to the program faculty and competency committee members for additions, modifications and deletions. The final version has been implemented in the competency committee reviews.

Summary of results: The 30 item checklist includes behaviors identified by the faculty as essential for an ambulatory visit and are referenced to specific competencies in patient care, medical knowledge, professionalism, and communication skills. Validation and reliability studies are being conducted.

Conclusions: The checklist has been developed and is in use for a first round of resident tape reviews. The competency committee members have endorsed its use and we find that it assists in providing specific, behaviorally based feedback to residents on their performance in continuity clinic visits.

HONORABLE MENTIONS:

Teaching Residents ACGME Competencies. A Curriculum Based on Chonic Illness Care, Patient Safety, and Health Economics

Voss JD et al. University of Virginia Health System

Neurology Training in an Internal Medicine Program. A Survey of Subjective Knowledge in 13 Common Neurology Entities

J. Gonzales, MD, R. Bilynsky, MD, William Beaumont Army Medical Center

Using Portfolios to Document Experience and Evaluate Competencies

S. Raty, MD, Department of Anesthesiology, Baylor College of Medicine

JUDGES' AWARD:

Using the ACGME Competencies and Critical Incident Methodology to Improve Clinical Teaching

D. Simpson, PhD et al., Medical College of Wisconsin

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