

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 website (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.

Ingrid Philibert
Editor

515 North State Street
Suite 2000
Chicago, Illinois 60610-4322

Phone 312.755.5003
Fax 312.755.7498
Web www.acgme.org

The Environment for Resident Professional Development

That the environment affects the professional development or "formation" of residents is clear to all who have read and appreciated the differences between Becker's "Boys in White," a study of medical students in the 1960s and Samuel Shem's 1977 "The House of God." The environment for residents' development is the realm ACGME seeks to influence through accreditation, and the one which responds to ACGME mandates, from limits on resident hours to formalizing competencies. In his farewell column, David C. Leach, MD, discusses ideas about the formation of residents, and the individuals and environment that optimize this process, gathered over ten years of leading the ACGME. Many articles in this issue discuss this

environment, including efforts to incorporate use of appreciative inquiry (AI) to promote better understanding and graduate medical education program improvement at the University of Virginia (Margaret Plews-Ogan, MD et al., enhance patient safety at the University

of Michigan through better preparation of incoming first-year residents (Lypson et al.) and promote continuity and coordination of care at the University of Cincinnati (Filak et al.). Domen and Simons discuss quality improvement training for residents at Milton S. Hershey Medical Center, incorporating input from program directors, department chairs, faculty and other educators, and Nuovo et al. summarize work to improve the patient hand-off at the University of California at Davis. Patow's synopsis of the efforts to use residency education to improve patient care at the member institutions of the Alliance of Independent Academic Medical Centers shares some similarities with the work of the ACGME Committee on Innovation in the Learning Environment (CILE).

The inclusion of the article by Baldwin and Daugherty resulted from discussion of this information by CILE. While the data were gathered before the common duty hour standards were instituted, the results offer a unique look at the learning process during residency training from the perspective of the residents themselves. The study was both national and multi-specialty in scope, with a sizable sample and response rate, and suggests the ways residents learn vary by specialty, year of training, and between USMGs and IMGs. The data merits attention by educators and program directors, and suggest areas for future study of curricula, learning modalities and the environment critical to the formation of the next generation of physicians. ■

"In his farewell column, David C. Leach, MD, discusses ideas about the formation of residents, and the individuals and environment that optimize this process, gathered over ten years of leading the ACGME."



ACGME and the Formation of Residents: A Journey to Authenticity or “Ten Things I have Learned in Ten Years”

David C. Leach, MD

“The first responsibility of a leader is to define reality. The last is to say thank you. In between the two, the leader must become a servant and a debtor.”¹

Unlike the leader in DePree’s quotation, I have to begin and end by saying thank you – thank you for the way I was received and supported and thank you for the thousands of conversations about improving patient care and advancing the formation of residents. People who take resident formation seriously are themselves changed. Residents, their faculty, and even those who accredit their programs become companions on the journey – a journey to authenticity as doctors and as a profession. In this my last column for the Bulletin, I would like to leave you with a sampling of the lessons I have learned in the past ten years. I think the lessons are true, but they may need refinement – refinement based on your experience and observations. Don’t hesitate to modify them and to make them your own.

Lesson 1

Substance is enduring; form is ephemeral. Preserve substance; modify form; know the difference.²

I first encountered Dee Hock in a 1996 issue of Fast Company. Since then I have met with him several times and consider him a mentor. This aphorism seems particularly apt for medicine in the modern age. The task before us is to be clear about and faithful to the substance of medicine and to adapt intelligently to the various forms our profession assumes in the modern age. Lacking such clarity we tend to defend form and let substance dribble away unnoticed.

“...patients have the right to expect a healthy, alert, responsible and responsive physician dedicated to delivering effective and appropriate care.”

An example: duty hours. My favorite duty hour requirements remain the General Surgery Requirements from 1999; requirements that were in effect before the “reform” of duty hours. They read in part: “...patients have the right to expect a healthy, alert, responsible and responsive physician dedicated to delivering effective and appropriate care.” In 1999, before duty hour reforms, the surgery RRC cited 36% of programs as being in violation of these requirements. Why? The “form” of medicine had changed. DRGs had compressed time, technology had enabled medicine to do more, and

financial pressures had resulted in reductions in support staff such that residents were doing more in less time and with less help. Together these changes threatened the “substance” of medicine, i.e. “...patients have the right to expect...” In response we changed the “form” of the duty hour requirements.

While attempting to preserve substance some would argue that we have violated substance by impairing continuity. Of course, physician availability is more than simply physical presence, it requires that one be “...healthy, alert, responsible and responsive.” We don’t have it right yet, hence new pilots are underway to refine the approach and preserve the patients’ rights and expectations.

“Residents model behaviors and values; they especially value faculty who ‘live divided no more,’ i.e., whose external behavior is always aligned with deeply held inner truths.”

Lesson 2

We teach who we are.

Parker Palmer has become a good friend. I saw a video of his speech: “A Movement Model of Social Change” given at an IHI forum and I knew that I had to meet him. I called him up and asked if I could steal his name and the title of his book to establish the “Parker J. Palmer Courage to Teach Award” for program directors. He has been part of our community ever since.

Residency is about character development; it is an intense experience. The difference between first year and chief residents is profound. While residents discover clinical wisdom they also discover themselves. Parker has taught me that although their journey is full of external drama – it actually proceeds from the inside out and is about character development. During residency, the habits of a lifetime develop. He also taught me about the importance of teaching who we are and not just what we know. Residents model behaviors and values; they especially value faculty who “live divided no more,” i.e., whose external behavior is always aligned with deeply held inner truths.

Lesson 3

It’s best to work with rather than against human nature.

Residency calls on three human faculties: the intellect; the will; and the imagination and their respective objects: truth; goodness; and beauty. Good doctors learn to discern and tell

the truth, to put what is good for the patient before what is good for the doctor, and to integrate the particular needs of the patient with the generalizable scientific knowledge at hand in ways that are harmonious and sometimes even beautiful. The task of residency is to develop and test integrity, altruism, and practical wisdom.

“We can help them by paying attention to the architecture of our own inner life, our own inner landscape. Have we discovered and do we demonstrate a new way of being in the world, or have we abandoned vocation for a trade?”

This construct invites a new frame (or rather a very old frame) for organizing experiences: how good a job did I do in discerning and telling the truth, in putting the patient’s interest first, in accommodating the particular realities of the patient’s situation in my clinical judgments? It aligns the work with the natural capacities of being human.

Lesson 4

Medicine is more than knowledge and skill; it is a new way of being in the world.

Integrity, altruism and practical wisdom are not techniques, they are ways of being. Residents, in addition to learning the science and art of medicine, must also learn a new way of being in the world in order to become fully developed professionals. Their journey is an inner journey. We have a heavy obligation to help them. We can help them by paying attention to the architecture of our own inner life, our own inner landscape. Have we discovered and do we demonstrate a new way of being in the world, or have we abandoned vocation for a trade? The trade is in jeopardy; the vocation is in great demand. Knowledge and skill can be bought; a way of being in the world that is both healing and responsive to man’s greatest aspirations is priceless. Medicine is a vocation.

Lesson 5

The alternative to competence is not necessarily incompetence.

The Dreyfus brothers² have it right. The development of competence proceeds along a continuum from novice through advanced beginner, competent, proficient, expert and master. The first task is to learn the rules; the tasks that follow apply those rules in ever more complex contexts until behavior is largely driven by context. The last stage integrates skill into one’s own style and character. This is a helpful way to organize skills – it offers a map for lifelong learning.

Their model also provides reassurance that medicine can never be fully expressed on the internet. Some readers of this Bulletin will be old enough to remember when no grand rounds were ever conducted without bringing a real patient into the room. I yearn for those days.

We lost much when we replaced patients with abstract formulations about disease. How do we gain generalizable knowledge? We do randomized control trials. Why do we randomize? To eliminate the influence of the particular attributes of patients. What distinguishes the master clinician from the advanced beginner? The ability to appreciate the particulars of the patient. Grand rounds are now designed to create novices and advanced beginners and to make it really hard to progress to the skill level of a master. Likewise the internet (and I am a big fan of the internet) will never allow us to progress to master clinicians because it extracts the infinite detail of a real patient and presents instead a photograph or an abstracted description.

Lesson 6

Context is important.

Although the journey to competence is a deeply personal and inner journey, it is heavily influenced by context. For example, both institutional and social contexts influence the development of professionalism. Is it possible to model and teach professionalism in institutions that do not demonstrate professional values? Is it possible to model and teach professionalism in a society that does not demonstrate social justice, a society that accepts limited access to health care for the uninsured and tolerates demonstrably worse health care outcomes for the poor?

The current context in which health care and resident formation occurs does not make the task of fostering professionalism easy. Relentless pressures of time and economics, fragmentation of care and the relationships supporting care, increasing external regulation (including regulations from ACGME), exciting but disruptive new

“Is it possible to model and teach professionalism in a society that does not demonstrate social justice, a society that accepts limited access to health care for the uninsured and tolerates demonstrably worse health care outcomes for the poor?”

knowledge and technologies, and above all the broken and outmoded systems of care dominate conversations and characterize the external environmental context.

The internal context of the system of care is also daunting. We lie regularly. Justifiable lack of trust pervades the system. Hospital websites proudly announce that the hospitals they promote provide the best care with the best doctors and the best technology, yet, Beth McGlynn⁴ reminds us that only 54% of the time do patients receive care that is known to be best, a number that falls to 2–3% when evidence-based guidelines are bundled.

Some hospital web sites have so distanced themselves from human suffering that they make it seem that a hospital might be a fun place to stop by for a visit. By turning the messaging over to public relation’s departments we have

“By turning the messaging over to public relation’s departments we have forgotten Hannah Arendt’s adage⁵ that every time we make a promise we should plan for the forgiveness we will need when the promise is broken.”

forgotten Hannah Arendt’s adage⁵ that every time we make a promise we should plan for the forgiveness we will need when the promise is broken.

Transparency and truth telling are important attributes of the institutions in which residents are being formed. If we expect it of our residents we should model it ourselves.

Lesson 7

We are our institutions.

We must debunk the myth that our institutions are external to ourselves. Parker Palmer states that: “...professionals, who by any standard are among the most powerful people on the planet, have the bad habit of telling victim stories to excuse behavior.”⁶ Institutions are neither external to us nor constraining, neither separate from us nor alien. Institutions are us. The shadows that institutions cast over our ethical lives are external manifestations of our own inner shadows, individual and collective. In Parker’s words: “If institutions are rigid, it is because we fear change... if institutions are heedless of human need, it is because something in us is heedless as well.” We tend to accuse each other of our own sins; we tend to blame the nebulous “they” for violations of standards that we, alone and together, must defend. The only things real in our institutions are the people in them and the relationships they have with one another – relationships that can either facilitate or inhibit purpose. We can improve our institutions – we don’t need permission.

Lesson 8

Honor both arms of all paradoxes.

We deconstruct things in order to measure and improve them. For example, physician competence can be deconstructed into the six competencies. It is important to measure and improve them. Yet, it is equally important to remember that the whole (competence) is greater than the sum of the parts (competencies). It is not a question of one or the other, we have to do both.

Residency education does not begin with goals and objectives; it begins with experience. The skill needed is that of making sense out of uncertainty, of finding and ordering the truth of what is going on with a particular patient. It is foolish to say: “Today I will learn this and that.” It is equally foolish to not reflect at the end of the day on what went well and what could be improved, on lessons learned. At that point deconstructing experience is helpful.

Lesson 9

Good reflection requires both solitude and community.

It is important to talk to yourself. Psychiatric jokes aside, carrying on a solo conversation in which experiences and

patterns of experiences are discerned and catalogued is very helpful. Journaling invites growth and documents previous thinking and habits. It is also important, however, once one’s thoughts are organized, to share them in community, to see if they hold up under scrutiny. This can be done in writing, in presentations, or in simple, honest, clarifying conversation with friends and colleagues. Residents know this intuitively. They are constantly sharing experiences and inquiring into the thinking of each other.

Lesson 10

Once one commits, providence moves as well. (Goethe)

In the end, for each of us, it boils down to two questions: who am I and what is my purpose? I have found that once you commit to a noble purpose, for example, trying to improve patient care or resident formation or both (it turns out that they are inseparable), providence sends all kinds of angels to help you. Paul Batalden, MD, is an angel. He brings his whole person to the task and helped me immeasurably with monthly coaching sessions at no charge – other than some wonderful dinners. Paul Friedmann, MD, surgeon, Renaissance man and angel whose presence reminds me of the dignity of the work.

“Numerous volunteers (mostly angels) in all specialties who devoted months of time doing the work.”

David Nahrwold, MD, another surgeon and another angel who broadened the conversations to include ABMS and the Joint Commission.

Likewise, ACGME employees (mostly angels) are attracted to the work and know no boundaries. They have engaged fully in the work. The numerous volunteers (mostly angels) in all specialties who devoted months of time doing the work. Residents who work long and hard (even in the new world) and who gladly trade the prime of their young adult life in order to become competent at the work are angels for the patients, getting things done when the system fails them. Patients who write thoughtful and poignant letters about their experiences with health care and who really want to help us get it right are also angels.

We are at our best when we help each other in our weaknesses. We become authentic by helping each other. Good people, good communities, I have discovered who I am through your good efforts and by my response to you. Thank you. ■

¹ DePree, M. *Leadership is an Art*. Currency Doubleday, 2004.

² Hock, Dee. *Birth of the Chaordic Age*; Berrett-Koehler; 1999.

³ Dreyfus, Hubert. *On the internet*. Routledge Press, 2002.

⁴ McGlynn, Beth. *Evaluating physician performance, effectiveness and efficiency metrics*, ABMS/ACGME Symposium, November 3, 2006. Chicago, Illinois.

⁵ Arendt, Hannah. *The Portable Hannah Arendt* (Penguin Classics), July, 2003.

⁶ Palmer, Parker. *Education for the new professional*; Marvin Dunn Memorial Lecture, ACGME Educational Workshop, Orlando, Florida, March 4, 2006.

Feeding the Good Wolf: Appreciative Inquiry and Graduate Medical Education

Margaret Plews-Ogan, MD, Natalie May, PhD, John B. Schorling, MD, MPH, Daniel Becker, MD, Richard Frankel, PhD, Elizabeth Graham, Julie Haizlip, MD, Sharon Hostler, MD, Susan Pollart, MD, and R. Edward Howell

There is a story of a Cherokee elder sitting with his grandchildren. He says to them, “In every life there is a terrible fight – a fight between two wolves. One is evil: he is fear, anger, envy, greed, arrogance, self-pity, resentment, and deceit. The other is good: joy, serenity, humility, confidence, generosity, truth, gentleness, and compassion.” And one of the children asks, “Grandfather, which wolf will win?” The elder looks him in the eye and says, “The one you feed.”

Appreciative Inquiry (AI) “is about the co-evolutionary search for the best in people, their organizations, and the relevant world around them. In its broadest focus, it involves systematic discovery of what gives ‘life’ to a living system when it is most alive, most effective, and most constructively capable in economic, ecological, and human terms.”¹ Based on the theory that we create the future through our active images of what it can be, AI can stimulate positive change limited only by the collective conversation and imagination of the group.

Last year, the University of Virginia embarked on an organizational change to improve our graduate medical education programs and assure that they are among the best in the country. We believed AI was an ideal technique to help achieve this, and this article describes our journey thus far.

Background

AI was originally developed in the 1980s by David Cooperrider at Case Western Reserve University Weatherhead School of Management. It has been used in many organizations, including a large AI initiative involving medical students at Indiana University.²

“By contrast, AI locates the positive as the focus for inquiry, uses stories of success, identifies themes in these stories, selects topics for further inquiry, creates images of the preferred future, and finds innovative ways to create that future.”

Traditional approaches to addressing organizational concerns are based on identifying the problem, conducting a root cause analysis, brainstorming solutions, and developing a plan. The metaphor for this approach is that at the heart of the matter is a “problem” to be solved. By contrast, AI locates the positive as the focus for inquiry, uses stories of success, identifies themes in these stories, selects topics for further inquiry, creates images of the preferred future, and finds innovative ways to create that future. The metaphor for AI is that organizations are full of solutions – a mystery to be embraced and celebrated.

Figure 1

Themes in appreciative Inquiry GME stories at the University of Virginia

At Our Best, We Embody...



Methods

The AI process has four stages: *Discovery* of what gives life to an organization, *Dreaming* what might be, *Designing* what should be, and *Destiny*, or sustaining change. At UVA the *Discovery* process began with recruiting a leadership team and selecting an experienced AI consultant. We held a workshop to introduce the process to medical school and medical center leaders. The key question that this group put forward to pursue with AI was, “How do we create an environment of optimism, collective intellect, inspiration, and teamwork to develop leaders and mentors in medicine?”

The Discovery process continued with the recruitment of an AI team – more than 20 UVA faculty, residents, and students – who attended a two-day retreat and began collecting appreciative inquiry stories from their colleagues. After the retreat, each team member was asked to conduct 10 interviews that focused on the following question.

People do their best work when they are doing things that they find personally meaningful, and when they feel that their work makes a difference. During your time at UVA, there have no doubt been high points and low, peaks and valleys.

For now, I'd invite you to think of a time that stands out for you as being particularly meaningful; a time that brought out the best of who you are, in which you felt connected to your values and your sense of calling and purpose. Please tell the story of that time.

Outcomes

To date the effort at the University of Virginia has collected 103 AI interviews. They comprise stories from faculty, students, residents, nurses, librarians, and lab technicians. Everyone has had a story to tell. Each story reflected a powerful moment when work was meaningful, even transformative. Some were very simple – a public thank you from a fellow to his mentor – and others were extremely moving, such as the story of a young boy whose hands had to be amputated.

All interviews were transcribed, and the leadership team coded them to generate a list of themes. The team linked the themes in a logical framework to answer the question, *"When we are at our best, we..."* as shown in **Figure 1**.

When we are at our best: Themes

The stories demonstrate poignant moments when teaching and learning, working and healing come together in ways that reflect what is best about academic medicine and the individuals who make it happen. We have developed these stories into thematic clusters that aggregate the multiple themes identified across these accounts.

"Many stories were powerful examples of when colleagues, teachers, learners, and health care teams worked together within what we labeled 'community'."

Working together as community. Many stories were powerful examples of when colleagues, teachers, learners, and health care teams worked together within what we labeled "community." This community element exemplified teamwork, collaboration, bonding, appreciation, trust, respect, honesty, and support. This sense of community flourished in a nonhierarchical, supportive environment with "win-win" as the overarching goal, whether that goal was saving a life or establishing a new training program. Working in true communities allowed team members to each create and pursue shared goals. Each member was able to do meaningful work. Team members felt like equals, which fostered learning and made it fun.

We found that within a collaborative environment there were no limits on who was teaching whom. Patients, or patients' family members, taught powerful lessons to physicians and nurses. Students taught residents, and residents taught attending physicians. In one story, a medical student stepped into the role of patient advocate, requesting a delay in a child's surgery to reduce the stress on the parents, despite the wishes of the

"Other stories captured the excitement of helping a resident "get it" or performing a difficult procedure or successfully interacting with a difficult patient, the thrill of a job well done."

surgical team. In another, a surgical scrub technician came in on her day off to teach residents how to assemble instruments. Teachers were found everywhere in the organization.

Self-Awareness and Reflection. At our best, we are reflective and self-aware. Stories within this theme demonstrated examples of remaining centered in the moment, taking time to enjoy the process, recognizing the needs of the patient and the learner, and being nonjudgmental and forgiving not only others but also ourselves. This cluster encompasses idealism, humility, compassion, as well as high standards and personal responsibility.

In one story, an attending physician realized that his resident, who was frustrated dealing with a patient with many complaints, was as much in need of empathy as the patient. He listened quietly to the resident's concerns, and then by "staying centered and not feeling overwhelmed" he was able to model that same compassion with the patient. The patient felt better having someone listen to her story, and the resident learned that it was okay to accept the limitations of medicine: that sometimes we cannot fix everything. A surgeon told how he constantly reminded himself that his patients are important to others, just as "my brothers, sister, mother, father, wife, daughters are all so important to me."

Human Connection and Empathy. We called this the "goose bump" category with its stories of extraordinary moments of connection, between students and teachers and patients and healers. Powerful learning occurred in these moments. A resident "stepped into his role as healer" after apologizing to a patient for a difficult interaction between them. His attending observed, "it may not always be a pill, or an IV fluid...sometimes it is just a matter of how we interact with people. It can change a very negative experience into a positive one, and the resident has mentioned that [incident] many times since then. He is very good with patients because he has come to understand his role and his power." Human connection requires vulnerability, faith, a sense of family, loyalty, a sense of investment in what we are creating, seeing patients and learners in their entirety, and loving and honoring others.

Excitement, Joy, and Innovation. This category exemplifies what gets us out of bed in the morning, that joy and excitement of going to work each day. When the other elements – community, reflection and self-awareness, human connection and empathy – are in place, then excitement, joy, and ultimately innovation flourish. Professionals desire to be good at what they do. They want to be able to fulfill their personal and professional goals, sharing the excitement of what

we do with others. This theme reflects delight, enthusiasm, courage, optimism, humor, awe, and wonder. One story told of a surgeon who trusted his fellow enough to say, “You learn how to do this procedure that’s never been done here before, and we’ll do it together.” Other stories captured the excitement of helping a resident “get it” or performing a difficult procedure or successfully interacting with a difficult patient, the thrill of a job well done.

Common Threads: Reframing and Values

Woven throughout the stories is a common thread that we labeled “reframing.” When things go well, it is often a case of taking something negative and reframing it in a beneficial way. In the previous story about the frustrated resident, the attending turned a potentially negative situation into a powerful lesson in empathy by showing compassion toward his resident and modeling listening skills with her patient. In another story, a mother helped her young son (and his physicians) stay focused on the positive when his hands had to be amputated. Most of the narratives had some element of reframing, transforming what could have been a negative experience into a memorably positive one.

We also identified numerous *values* that underlie the themes and activities depicted in these stories. Without these core values, perhaps none of the teaching and healing would be possible. When a colleague talks about someone being a “stand-up guy” or tells stories of times when someone went “above and beyond the call of duty”: these are values that we would like to celebrate. Values in our stories were demonstrated through acts of appreciation, trust, faith, loyalty, generosity, courage, tenacity, respect, pride, compassion, leadership, and responsibility. These values are so pervasive that they do not fit well in a separate theme or category. Rather, they are the foundation on which all others are built.

“We are just beginning this part of the journey, but we believe that in a time when we are so often surrounded by deficit thinking – concerns about too little time, too little money, too little appreciation – AI helps us reclaim the joy in our work and bring out the best in each other.”

Appreciative Inquiry – What It Means for GM. A key question is, how do we see appreciative inquiry creating positive change in graduate medical education? We are just beginning this part of the journey, but we believe that in a time when we are so often surrounded by deficit thinking – concerns about too little time, too little money, too little appreciation – AI helps us reclaim the joy in our work and bring out the best in each other. Teaching is frequently focused on our learners’ deficits, what they cannot do, what they need to learn. Appreciative inquiry and the narratives we uncovered

allowed us to focus on their strengths, inspiring them to do what they do best. The same is true of our patients. So much of what we do with and for patients is oriented toward what is *wrong* with them. Appreciative inquiry allows us to shift our attention, so that rather than focusing on their limitations, we can celebrate and leverage their strengths and inspire them to embrace healthier behaviors.

Applying What We Have Learned. We have identified themes and values representing “who we are when we are at our best.” How do we now get “more of that” in our GME program? How do we as an institution reflect these principles in everything we do? There are many concrete ways we can examine and, if necessary, change key processes in resident education to better reflect what we say we value as a community of teachers and learners. For example, do our residency selection, promotion and tenure, and resident and faculty evaluation processes reflect our values of reflection, empathy, and innovation and working together in community? If not, processes can be changed, ensuring that we select for and reward the qualities, activities, and behaviors that make our training programs the best they can be.

The Ripple Effect. A core principle of appreciative inquiry is that unleashing the positive imagination in a community is itself a means of transformation. Positive storytelling draws a community’s attention to the good within it. It also helps the organization change from deficit-model thinking to positive, imaginative thinking. Appreciative inquiry at UVA is having a ripple effect, and we intend to nurture the AI process in all aspects of the organization. Evidence of this ripple effect includes:

- A collection of medical student narratives, entitled “*I even held his heart in my hand...*,” that captures experiences medical students found meaningful and transformative during their training. The stories, assembled by a student AI team member, are found in a pocket notebook given to each first-year student at their White Coat Ceremony.
- Appreciative Check-in involves opening meetings with brief, appreciative stories from the participants. We now use appreciative check-in in gatherings of division members, advisory councils, and leadership groups.
- Appreciative Inquiry is now part of the curriculum of our Leadership in Academic Medicine course, a three-month program for emerging institutional leaders.
- Appreciative Gossip is a concept proposed at our first retreat. It is the process of spreading the good news we hear about our colleagues, our students, and our patient care. Appreciative gossip is now slowly infiltrating our institution, transforming how we talk about one another.

- Patient Safety Leadership Rounds have become appreciative-focused, with the systematic introduction, by leaders of the rounding team, of the question, “What went right today to keep patients safe at UVA?” Information from responses is used to identify and foster successes in patient safety.

We Plan to Nurture The Ripple Effect by:

- Holding appreciative-focused, cross-disciplinary clinical conferences that highlight examples of “seamless care” and determine how to systematize this kind of excellence.
- Forming new AI teams and initiatives through Appreciative Approach Awards, a mini-grant program funded by the Medical Center.
- Establishing a resource center and website for Appreciative Inquiry at UVA to support the AI process, disseminate ideas and stories, and provide resources to the community.

“Academic medicine currently struggles under a deficit model, bound by a seemingly unsolvable lack of time, money, respect, and purpose.”

Conclusion

Appreciative inquiry is an organizational change process that derives its power from the positive imagination of a community. Academic medicine currently struggles under a deficit model, bound by a seemingly unsolvable lack of time, money, respect, and purpose. Our experience shows that appreciative inquiry brings to light what we value in teaching and patient care and then allows it to shape our future. Through this process, we have begun to reclaim the joy in our work as teachers, clinicians, and researchers. ■

Margaret Plews-Ogan, MD, Natalie May, PhD, John B. Schorling, MD, MPH, Daniel Becker, MD, Elizabeth Graham, Julie Haizlip, MD, Sharon Hostler, MD, Susan Pollart, MD serve on the AI Leadership Team at the University of Virginia. R. Edward Howell is vice president and chief executive officer of the University of Virginia Medical Center. Richard Frankel, PhD is a Research Scientist at the Regenstrief Center at Indiana University School of Medicine, Indianapolis, IN.

¹ Cooperrider DL, Whitney D. *Appreciative Inquiry: A Positive Revolution in Change*. San Francisco, CA: Berrett-Koehler Publishers, 2005.

² Suchman AL, Williamson PR, Litzelman DK, Frankel RM, Mossbarger DL, Inui TS. Relationship-Centered Care Initiative Discovery Team. Toward an informal curriculum that teaches professionalism: Transforming the social environment of a medical school. *J Gen Intern Med*. 2004;19(5 Pt 2):501-4.

The Institutional Response to Patient Safety

Monica L. Lybson, MD, Stanley J. Hamstra, PhD, Paul G. Gauger, MD, John Del Valle, MD, John Gosbee, MD, Lisa Colletti, MD

In the summer of 2002, the University of Michigan Health System (UMHS) developed an Objective Standardized Clinical Examination (OSCE) to be administered during orientation for incoming trainees. This OSCE has been used to determine baseline competency for incoming first-year residents, regardless of specialty. The examination has grown from eight to ten stations over the past six years. In previous reports,^{1,2} we have discussed the logistics and the outcome of the exam. An important focus of the OSCE always has been formative feedback and ensuring patient safety. Competency-based assessment strategies are one component of a patient safety system that ensures that our most junior trainees are capable of handling the complexities of patient care in today’s environment.

During the development of this examination, the Graduate Medical Education Committee (GMEC) and primary specialty program directors focused on baseline competencies for incoming interns, along with skills and patient assessments that are commonly performed in unsupervised settings. During 2001 and 2002, the GMEC at the University of Michigan developed this assessment tool in the context of the Institute of Medicine’s (IOM) report “To Err is Human.” This report documented that between 44,000 and 98,000³ deaths per year are due to medical errors. It is not clear to what extent our learning environment contributes to these potentially preventable incidents. In this context, we felt that it was

“It is not clear to what extent our learning environment contributes to these potentially preventable incidents.”

important to measure the skills of our incoming first-year residents and to assist program directors with their initial evaluation of clinical skills with the hope of improving overall patient safety.

Concurrent with the IOM’s report on Safety and Quality and the Joint Commission’s National Patient Safety Goals, in 2004, the World Health Organization (WHO) developed the World Alliance for Patient Safety and in 2005 the WHO joined forces with the Joint Commission and Joint Commission International to officially create the WHO Collaborating Center for Patient Safety Solutions.⁴ The most recent administration of our orientation OSCE in June, 2007 parallels many of the patient safety issues highlighted by the WHO. The examination focuses on specific aspects of patient safety amongst our most junior physicians and helps to ensure

patient safety through assessing communication skills, properly written orders, responding to critical values, reading X-ray images, ability to evaluate the medical literature, fire safety, and pain assessment. (shown in **Tables 1 and 2**)

Case Development

Order Writing for Respiratory Distress

This is a pen/paper case scenario station. An asthmatic patient (pediatric or adult) presents in increasing respiratory distress. The residents are asked to write initial and follow up orders for the patient, specifying type of medication, and basic life support interventions. The exercise also inquires as to the correct disposition of the patient and possible next course of action such as choosing between performing a literature review vs. asking for assistance.

“Medical students have fewer opportunities to write orders, in part due to changes in billing and documentation from Centers for Medicare and Medicaid Services.”

Medical students have fewer opportunities to write orders, in part due to changes in billing and documentation from Centers for Medicare and Medicaid Services. Until the University of Michigan fully adopts electronic order entry (EOE) will be implemented in May 2008, this station has been important in reiterating the need to avoid abbreviations, write clearly, and sign, date, and time orders. Despite multiple clues on the order form, most first-year residents fail to properly document time, date, and sign their orders. Even after full implementation of EOE, delineating how well residents “write” orders is a key component in today’s environment. This is a

clear example of assessing competency in systems-based practice and communication.

This particular station also covers issues related to impending respiratory failure. In this artificial environment, we want the first-year residents to identify the need to call for assistance early and often. We have found reluctance even in this artificial setting on the part of new residents to ask for help. This reluctance has led us to emphasize supervision protocols to all house staff at hospital orientation and periodically throughout the academic year.

Standardized Patient Stations

- **Health Beliefs (Cross Cultural Communication)**

Description: This station utilizes either a male or female patient with diabetes; the resident must take a patient-centered approach to understanding potential barriers to the patient’s willingness to take their medications, in addition to exploring the patient’s explanatory model of the illness.

- **Geriatric Assessment**

Description: This station involves either a male or female patient who was recently hospitalized; the family is concerned that the patient can no longer live independently. The resident is expected to briefly assess the patient’s functional status.

- **Informed Consent**

Description: This station centers on either a male or female patient who is in need of a blood transfusion for acute bleeding. In this setting, the resident must clearly explain to the patient the risks and benefits of the procedure, answer any questions that the patient may have, and deal with any fear and anxiety the patient might have regarding the treatment.

Table 1

World Health Organization Patient Safety Solutions

WHO – International Steering Committee Patient Safety Solutions	Addressed in UMHS Orientation OSCE Stations
Look-Alike, Sound~-Alike Medication Names	Pen/Paper: Order writing and Respiratory Distress Case – Use of Abbreviations
Patient Identification	Standardized Patient Stations: Informed Consent
Communication During Patient Hand-Overs	Not addressed
Performance of Correct Procedure at Correct Body Site	Standardized Patient Stations: Aseptic Technique
Control of Concentrated Electrolyte Solutions	Multiple Choice Examination: Critical Values
Assuring Medication Accuracy at Transitions in Care	Not addressed
Avoiding Catheter and Tubing Mis-Connections	Not addressed
Single Use of Injection Devices	Not addressed
Improved Hand Hygiene to Prevent Health Care-Associated Infections	Standardized Patient Stations: Aseptic Technique

Table 2

WHO Patient Safety Recommendations

WHO- International Steering Committee Patient Safety Priority Areas for Further Development	Addressed in UMHS Orientation OSCE Stations
Follow-up on Critical Test Results	Multiple Choice Examination: Critical Values
Patient Falls	Standardized Patient Stations: Geriatric Functional Assessment
Health care Associated Infections – Central Lines	Standardized Patient Stations: Aseptic Technique – central lines not addressed specifically
Pressure Ulcers	Not addressed
Response to the Deteriorating Patient Patient and Family Involvement	Pen/Paper: Order writing and Respiratory Distress Case Standardized Patient Stations: Geriatric Functional Assessment Health Beliefs (Cultural Communication) Informed Consent
Apology and Disclosure	Partially addressed in Informed Consent
Look-alike Sound-alike Medication Packaging	Pen/Paper: Order writing and Respiratory Distress Case – Use of Abbreviations

• Aseptic Technique

Description: In this station, either a male or female patient presents with a large abscess on their upper extremity. In this exercise, the resident must verify the patient's identity and proposed site for the incision and drainage procedure. The mock procedure must be performed under aseptic technique which includes hand washing, donning sterile gloves, disinfecting/prepping the involved area and dressing the wound appropriately following the procedure.

Each station utilizes standardized patients and emphasizes the importance of interpersonal communication skills. Our hope is that the formative feedback provided via the standardized patient stations described above ensures competence or highlights areas of specific patient safety concerns regarding patient identification, correct body site in the context of performing a procedure, and proper hand washing. The

“The residents are also expected to address issues of prevention of nosocomial infections such as proper donning of sterile gloves and sterile draping.”

residents are also expected to address issues of prevention of nosocomial infections such as proper donning of sterile gloves and sterile draping. In addition, we hope to investigate each first-year resident's skill level with respect to full disclosure when obtaining informed consent, family involvement and appreciation of the patient's perspective.

Multiple Choice Examination – Critical Values

The Critical Values station uses traditional multiple choice question (MCQ) testing to measure knowledge of critical laboratory values that first-year residents are frequently called about. The exam covers electrolyte abnormalities, enzyme elevations and proper read-back technique and uses a format similar to that found in the United States Medical Licensing Examination – Step 3.

Global Patient Safety Solutions

In April 2007, the International Steering Committee of the Collaborating Center was convened and approved nine patient safety solutions. Nine inaugural patient safety solutions developed for use by World Health Organization (WHO) Member States in May 2007 are shown in **Table 1**, along with the components of the University of Michigan's orientation OSCE that addressed the particular recommendation. **Table 2** shows additional patient safety priorities identified by WHO Patient Safety Solutions, prioritized for further development and implementation, and how these are covered in the OSCE stations.

One of the primary goals of our Orientation OSCE is to document baseline competency for incoming residents at UMHS. Another mission is to provide relatively immediate (2 weeks) feedback to residents on their performance in areas that often are not directly supervised by attending physicians. In this context, our OSCE has become a useful tool to not only educate residents about global issues of patient safety, but also to detect critical areas of deficiency in their knowledge base and/or skill set prior to beginning their patient care duties.

UMHS Institutional Innovation Grants

In addition to the Orientation OSCE, there are several other program- or specialty-level initiatives occurring across the institution in the area of patient safety. In 2005, the University of Michigan Medical School encouraged GME Innovation Grant submissions from our training programs to further develop our resident educational environment and serve as scholarly platforms for curricular enhancements. The Surgery Program received an Innovation Grant and has begun to develop a competency-based curriculum. Their initial pilot study created a curriculum that ensured proficiency at basic laparoscopic skills in our Clinical Simulation Center. Surgical novices (residents in years 1 and 2 in general and plastic surgery) were trained to achieve or master proficiency targets for minimally invasive surgical skills. The results were evaluated in a blinded fashion by attending surgeons in the operating room during the performance of a laparoscopic cholecystectomy.

“Surgical novices (residents in years 1 and 2 in general and plastic surgery) were trained to achieve or master proficiency targets for minimally invasive surgical skills. The results were evaluated in a blinded fashion by attending surgeons in the operating room during the performance of a laparoscopic cholecystectomy.”

While this initial pilot study was slightly underpowered, effect size data indicate that participants who achieved criterion level mastery of skills in the simulation center tended to outperform those who had not. Given the concern for patient well-being, all surgical first-year residents at the University of Michigan are now required to meet these stringent proficiency-targets for basic laparoscopic skills prior to participating in any laparoscopic procedures in the operating room. The work adds evidence to the assumption that practiced simulations assist in protecting patient safety and enhances education for our newest physicians. Additional work is underway to add knowledge and judgment components to the assessment to more fully investigate the more complicated aspects of surgical competency.

The UMHS Internal Medicine Residency Program also was awarded an Innovation Grant to implement a multifaceted, longitudinal curriculum specifically in the area of patient safety. This new aspect of the curriculum provides trainees with skills to apply the core principles of patient safety to their own practice and to the system in which they work, directly involving these trainees in the departmental and institutional patient safety improvement processes. The approach in internal medicine has been to use local faculty

“The approach in Internal Medicine has been to use local faculty and institutional patient safety mentors, faculty experts in adverse event analysis and education, and web-based electronic portfolio tools to implement a project-based patient safety and quality improvement curriculum for all internal medicine and medicine-pediatrics residents.”

and institutional patient safety mentors, faculty experts in adverse event analysis and education, and web-based electronic portfolio tools to implement a project-based patient safety and quality improvement curriculum for all internal medicine and medicine-pediatrics residents. Initiated in June 2006, the curriculum has a conceptual framework for adverse event analysis, and teaches a process whereby residents reflect and analyze adverse events. Residents present cases at a monthly Patient Safety Conference, and participate in and lead team-centered Patient Safety Improvement Projects (PSIP) based on adverse event cases. Faculty development has been an important part of effort; this has led to the development of an Academy of Patient Safety Mentors who facilitate key educational experiences and the team-based PSIP. The educational experiences balance learning methods (brief lectures, web-based self-directed study, small group seminars, mentored one-on-one reflective discussions, and team projects) and integrate residents within quality-improvement initiatives that address important internal medicine problems that have institutional relevance. In addition, in the attempt to standardize the curricular experience for residents and provide evidence of their competency in Practice-Based Learning and Improvement and Systems-Based Practice, the program developed an electronic portfolio to facilitate storage, reflection, and curricular delivery of the educational and project materials.

Most recently the University of Michigan Office of Clinical Affairs and the Internal Medicine Residency Program have developed a Patient Safety Certification program for first year residents. The goals of certification are to assess baseline skills and knowledge related to ACGME competencies, as well as patient safety principles important to our organization.⁵ The assessment “stations” have their conceptual basis in human factors and safety engineering and are derived from several years of curriculum development.⁶ The certification is based on direct observation and allows testing of cognitive skills and higher order medical problem solving. Assessment tools were created in conjunction with the Department of Medical Education. The testing stations have been designed to be easily adapted to other trainee levels. Stations include: detect and fix patient safety hazards; critical communication and handoffs; central venous catheter insertion and teamwork; misdiagnosis;

and video-based and paper quizzes. In the summer of 2007, the Clinical Simulation Center pilot tested the certification program with three groups of Internal Medicine residents. Testing resulted in major changes in format, instructor scoring tools, and content. Further pilot testing and successive involvement of other resident groups (e.g., Family Medicine, Surgery) is planned over the coming months. Plans call for rolling out the certification program to many of the incoming residency class of 2008.

“Plans call for rolling out the certification program to many of the incoming residency class of 2008.”

Our experience shows that an institution can use clinical, centralized and program-specific initiatives to capitalize on resources to address issues of assessment in GME programs. These efforts can lead to improvements in the learning environment and in the assessment of resident competence, as well as patient safety. ■

Monica L. Lybson, MD is the Assistant Dean of Graduate Medical Education, Stanley J. Hamstra, PhD is Associate Professor, Department of Medical Education, Paul G. Gauger, MD is Associate Program Director for the General Surgery Residency and Associate Chair for Education in the Department of Surgery, John Del Valle, MD is the Internal Medicine Residency Program Director and Senior Associate Chair of Medicine for Graduate Medical Education, John Gosbee, MD is a Safety Process Consultant in the Office of Clinical Affairs, and Lisa Colletti, MD is the Associate Dean of Graduate Medical Education and the Designated Institutional Official. All are at the University of Michigan Medical School in Ann Arbor, MI.

Correspondence and questions about the article should be addressed to Monica Lybson, MD at mlybson@umich.edu.

¹ Lybson ML, Frohna JG, Gruppen LD, Woolliscroft JO. Assessing residents' competencies at baseline: identifying the gaps. *Academic Medicine*. 79(6):564-70, 2004 Jun.

² Janus JC, Hamstra SJ, Colletti L, Lybson, ML. "A Postgraduate Orientation Assessment at the University of Michigan." *Accreditation Council of Graduate Medical Education Bulletin*, April, 2006. P-13-15. Online at www.acgme.org/acWebsite/bulletin/bulletin04_06.pdf, accessed September 10, 2007.

³ Linda T. Kohn, Janet M. Corrigan, and Molla S. Donaldson, Editors; Committee on Quality of Health Care in America, *To Err is Human*. Institute of Medicine, 1999.

⁴ World Health Organization - Patient Safety Solutions: Accessed on September 10, 2007, <http://www.who.int/patientsafety/solutions/patientsafety/en/index.html>.

⁵ Moskowitz EJ, Nash DB. Accreditation council for graduate medical education competencies: practice-based learning and systems-based practice. *Am J Med Qual*. 2007 Sep-Oct;22(5):351-82.

⁶ Gosbee JW, Williams L, Dunn E. Teaching the teachers of patient safety: A progress report. *ACGME Bulletin*. Sept. 2006. Pp.15-19. Online at www.acgme.org/acWebsite/bulletin/bulletin09_06.pdf.

Participation in Care Coordination Reaps Multiple Benefits for Physicians and Hospitals

Andrew Filak, MD, Arthur Ollendorff, MD, Shelly Anderson and Shaila Toro

Exceeding expectations, adding value, and creating a win-win experience for participants are all desirable goals for any performance improvement process. It is one thing to achieve these objectives within the original scope of an initiative; it is even better to achieve benefits beyond those originally anticipated and that result in added performance gains. That is what happened when The University Hospital (TUH) of The Health Alliance of Greater Cincinnati showed its medical residents how participation

“...linking participation in Care Coordination activities with fulfillment of ACGME competencies was one way to engage residents in improving patient care while providing them with meaningful learning opportunities that could help meet their ongoing education requirements.”

in patient flow improvement processes could help them demonstrate compliance with the Accreditation Council for Graduate Medical Education (ACGME) core competencies. The competencies are the foundation for the lifelong learning and practice improvement activities required of physicians as part of their continuing education and certification processes.

From June 2006 – May 2007, TUH engaged in an inpatient flow improvement initiative called Patient Progression[®] that involved conducting multidisciplinary, unit-based Care Coordination meetings. The purpose of these meetings is to bring together the patient care team – nurses, physicians, mid-level providers, case managers, social workers – once daily to review each patient's needs and plan of care to determine the appropriate steps necessary to effectively transition the patient to the next level of care in a timely manner.

Involving physicians in Care Coordination meetings is critical. In teaching hospitals, where residents are deeply involved in day-to-day patient care, the resident role is especially important to the Care Coordination process. As the patient flow improvement initiative got underway, it soon became clear that linking participation in Care Coordination activities with fulfillment of ACGME competencies was

Selected ACGME Competencies and Required Skills

Patient Care

- Caring and respectful behaviors
- Interviewing
- Informed decision-making
- Developing and carrying out patient management plans
- Counseling and educating patients and families
- Performing routine physical exams and medical procedures
- Preventive health services
- Working within a team

Interpersonal and Communication Skills

- Creating therapeutic relationships with patients
- Listening skills

Systems-Based Practice

- Understanding the interaction of physician practices with the larger system
- Knowledge of practice and delivery systems
- Practicing cost-effective care
- Advocating for patients within the health system

one way to engage residents in improving patient care while providing them with meaningful learning opportunities that could help meet their ongoing education requirements.

In the spring of 2007, TUH established a pilot process to determine how to assess the link between Care Coordination and meeting three specific ACGME competencies: Patient Care, Interpersonal and Communication Skills and Systems-Based Practice (see the sidebar describing the required skills for each of these competencies).

“Nurse managers and case managers also were oriented to their roles in both helping educate residents on providing interdisciplinary care as well as evaluating how well residents participated in the Care Coordination process.”

Before participating in Care Coordination activities, five teams of Internal Medicine residents were given a brief pre-survey including objective questions designed to determine their baseline understanding of the Care Coordination process. The teams then went through a brief orientation to Care Coordination, its goals, how it helps TUH and how it assists residents in demonstrating specific ACGME competencies. Nurse managers and case managers also were oriented

to their roles in both helping educate residents on providing interdisciplinary care as well as evaluating how well residents participated in the Care Coordination process.

Residents then attended daily Care Coordination meetings for a month where they interacted with the care team and applied the skills required to demonstrate the competencies. At the end of the month, residents completed a post-survey which included the same objective pre-survey questions as well as a series of behavioral questions that asked how participating in Care Coordination helped meet specific

“Discussion among physicians nationwide about how to meet the competencies is still evolving and a variety of tools and approaches, such as testing, journaling about learning experiences or participating in simulated learning, are still being tested.”

ACGME competencies. Nurse managers and case managers also completed brief assessments of each resident’s involvement in Care Coordination. Sample questions for the resident survey and the nurse manager and case manager assessments are included in the sidebar below. The pilot process began in May and was repeated again in June and July.

Analysis of the surveys and assessments completed during the pilot process suggests that physicians see the importance of participating in Care Coordination and its value as a learning tool for residents. As a next step, to continue to strengthen the link between Care Coordination and ACGME competencies, TUH will modify the resident survey, and refine the program for educating residents about how Care Coordination activities contribute to meeting the ACGME competencies and the approach to resident participation in Care Coordination processes. This second pilot is scheduled to begin in October to test these modifications. The second pilot will involve the same five teams that participated in the first, along with added participation by Cardiology and Hematology Oncology residents. Learning from the second pilot will be incorporated before rolling out the process to remaining medicine and surgical resident teams beginning later this year and into early 2008.

While the effort is still in its final pilot stages, the benefits of linking resident participation in Care Coordination with demonstrating the ACGME competencies are clear. Discussion among physicians nationwide about how to meet the competencies is still evolving and a variety of tools and approaches, such as testing, journaling about learning experiences or participating in simulated learning, are still being tested. Obstacles to implementing various approaches typically include difficulty in measuring and documenting how the competencies are actually being met.

To our knowledge, the approach outlined in this article is new and, when further refined, could provide a model for other academic institutions charged with the three-part mission of patient care, education and research. Educating residents about the skills required to meet the competencies and then asking them through the survey and assessment process to reflect on how they are practicing these skills by participating in daily Care Coordination activities makes the link and the value of that connection more explicit for them. It also fully integrates learners into the care delivery process, and provides them with a better understanding of the importance of processes such as Care Coordination. ACGME accredited residency programs also acquire a new way to demonstrate that they are both offering required learning opportunities for their residents to demonstrate the ACGME competencies as well as measuring and evaluating their progress.

“On a practical level, involving resident physicians in Care Coordination helps them define their role in interdisciplinary care, understand the range of resources available for care delivery, readily identify other team members, increase communication with them, and break down silos and misconceptions that often persist in less collaborative environments.”

On a practical level, involving resident physicians in Care Coordination helps them define their role in interdisciplinary care, understand the range of resources available for care delivery, readily identify other team members, increase communication with them, and break down silos and misconceptions that often persist in less collaborative environments. Everyone is working toward the same goals, getting better information about patients more quickly, problem-solving together and learning from each other. As a result, care plans are implemented in a timely way; physicians no longer perform tasks that can be done more expertly and efficiently by other team members; and nurses report significant improvements in job satisfaction. Because patients are receiving needed care and education more efficiently, their overall satisfaction with their care experience improves as well. We also hope that by being exposed to care delivery in this way, our residents will help stimulate team-based care in other settings in which they will work.

Our residents view participation in Care Coordination as a very positive experience that helps them be more effective in team-based care delivery. Attending physicians, even those initially skeptical about their residents participating in Care Coordination activities, also reported benefits, such as patients receiving care faster and being ready to go when the discharge order was written.

Hospitals are focused on making their operations more efficient and cost-effective and on how to best use existing resources. This focus leads many hospitals to look at improving key processes such as patient flow. When physicians are integral to effectively accomplishing performance improvement, involving them early on and demonstrating the direct value for them, such as helping to meet ACGME competencies, as well as the value for patients and the hospital, will overcome skepticism and resistance and achieve the support important to ongoing success of the effort.

Behavioral Assessment Questions

Based on your participation in the Care Coordination Meetings, rate your agreement with the statements below related to the ACGME competencies as follows: (1=Disagree; 2=Agree; 3=Strongly Agree).

ACGME Systems-Based Practice Competency Items

1. I better understand how the patient care and professional practices I deliver affect other health care professionals, the health care organization, and the larger society. I can see how these elements of the system will affect my own practice in the future.
2. I am enabled to partner with health care managers and health care providers to assess, coordinate and improve health care and know how these activities can affect system performance.
3. I am able to better educate patients and their families and request additional support from the care team as necessary.

ACGME Patient Care Competency Items

1. I communicate effectively and demonstrate caring/respectful behaviors when interacting with patients/families.
2. I am able to work with the multidisciplinary care team to develop and carry out goal-oriented patient management plans.
3. I am able to make informed decisions about diagnostic and therapeutic interventions based on up-to-date scientific evidence and clinical judgment. In Care Coordination discussions, I was better able to access patient information and preferences.

ACGME Interpersonal and Communication Items

1. In Care Coordination meetings, I have worked effectively with others as a member of a health care team.

Nurse Manager Assessment

1. The resident effectively collaborated with the care team on the patient's plan of care, making the team aware of social needs as well as criteria/barriers related to transition to the next appropriate level of care.
2. The resident improved his/her communication skills over the course of the month.

Sample Questions for Resident Surveys and Nurse Manager and Case Manager Assessments

Resident Survey Objective Questions

- What is Care Coordination?
 - a. A process to coordinate patient satisfaction efforts through the hospital
 - b. A process in which daily meetings take place with care team members to discuss patients' needs and plans of care
 - c. A process to coordinate communication among physicians from transferring facilities
- What is the Nurse Case Manager's primary role within the care team?
 - a. Arrangement of family transportation for discharge
 - b. Psychosocial assessment and management
 - c. Complex clinical transition planning
 - d. Coordination of post-acute care at home
- What do all these items have in common (Interventional Radiology, Counsel of Aging, OR Scheduling, Physical Therapy/Occupational Therapy, Discharge Prescriptions)?
 - a. Part of the Interdisciplinary Plan of Care form
 - b. Requires Case Manager
 - c. Can extend patient length of stay
 - d. Requires Nurse Manager

Case Manager Assessment

1. The resident was open to suggestions from Case Management and worked collaboratively with the case manager to resolve barriers/concerns.
2. The resident has increased his/her understanding of the Core Measures (Congestive Heart Failure, Acute Myocardial Infarction and PNA) and appropriately practices clinical pathway management with these and other clinical pathways. ■

Andrew T. Filak, M.D., Senior Associate Dean for Academic Affairs, University of Cincinnati College of Medicine is the survey sponsor. Arthur T. Ollendorff, MD, Associate Professor of Obstetrics and Gynecology and Medical Educator for Graduate Medical Education is the survey champion. Both physicians are affiliated with The University Hospital of The Health Alliance of Greater Cincinnati. Shelly Anderson is a Director and Shaila Toro is an Associate at Stockamp & Associates, a firm based in Portland, OR that provides comprehensive patient flow improvement solutions for health care organizations.

Please direct comments or requests for added information to FILAKAT@UCMAIL.UC.EDU or SAnderson@stockamp.com.

Engaging Residents in Quality Improvement

Ronald E. Domen, MD, Richard J. Simons, MD

Quality improvement (QI) activities in health care seek to reduce medical errors, provide safe and efficient patient care, and generally improve the practice of medicine. Effective QI programs take a “systems” approach to identifying, assessing, and addressing opportunities for improvement. The new Common Program Requirements that became effective July 1, 2007 make it very clear that residents and fellows are a critical component of the QI process. Both the *System-based Practice* and the *Practice-based Learning and Improvement* competencies address the role of residents in QI. Active promotion by institutional leadership utilizing a team approach, in addition to education in the basics of QI, is essential to creating an effective QI culture.

In April 2007, the Milton S. Hershey Medical Center/Penn State University held a half-day workshop for its education leadership (program directors, chairs, interested and involved faculty, and other educators) in order to discuss the importance of QI and to explore ways to further integrate our residents and fellows into QI activities. A general, preliminary survey by the GME Office prior to the workshop found that

“The workshop emphasized the important concept that successful engagement of residents and fellows into the QI process requires that their leaders and mentors champion the importance of QI initiatives to their trainees.”

approximately half of training programs involved their residents or fellows in various QI activities; but many did not or did so only minimally. The first workshop included an outside speaker well versed in QI, several best practice presentations by our faculty, and a small group break-out session to brainstorm ideas for engaging residents in QI activities. The workshop emphasized the important concept that successful engagement of residents and fellows into the QI process requires that their leaders and mentors champion the importance of QI initiatives to their trainees.

Our next step was to perform an in-depth survey of our 50 residency and fellowship programs to, not only provide more comprehensive baseline information, but to also identify additional best practices that could be shared across programs. The data that is collected from this survey will also help the GME Office to identify and plan areas where institutional resources might help our programs and program directors. In addition, the survey will provide readily available QI

information for ACGME documentation requirements, PIF completion, and site visits as mandated by the new Common Program Requirements.

The next steps in this process will be to hold another half-day QI workshop with invited outside experts in order to present the more detailed survey data, to further educate our faculty and program directors in QI, and to identify additional ways to engage residents and fellows in QI activities and projects. In addition, educational lectures directed towards residents are planned as part of our institutional monthly “ACGME Core Competency Lecture Series.” QI will become a more significant part of our yearly orientation program for new residents and fellows. Throughout this process the GME Office will continue to assist program directors in collecting data, assessing resource needs, and sharing ideas. One of our ultimate goals is to have the GME Office (in concert with our Chief Quality Officer) serve as a QI resource for our programs

and program directors as well as a centralized repository for data related to QI activities/projects by residents and fellows.

Exhibit 1 shows the form that was developed to survey our programs and to collect in-depth data related to QI (the boxes automatically expand as needed). Our approach acknowledges that QI skills can be obtained in several ways and programs should assess how they fit into the larger health care system and then identify opportunities for residents and fellows to actively participate. ■

Ronald E. Domen, MD is a Professor of Pathology, Medicine, and Humanities and Associate Dean for Graduate Medical Education, and Richard J. Simons, MD, is the Vice Dean for Educational Affairs and the Designated Institutional Official, at the Milton S. Hershey Medical Center of Penn State University College of Medicine, Hershey, PA.

For additional information or comments, contact Dr. Domen at rdomen@psu.edu.

Exhibit 1

Quality Improvement (and Patient Safety) Activities Involving Residents and Fellows at Penn State – Milton S. Hershey Medical Center

Program: _____

1. In the space below, please describe how residents and fellows in your department/ division/program are, or recently have been, involved in Quality Improvement/Patient Safety activities (and the number of residents/fellows). For example, “Residents rotate presenting at biweekly M & M conferences where quality improvement is part of the discussion for each case presented (12 of 16 residents in the past 12 months).” Or, “Two residents were part of the team to design order sets in CPOE for patients admitted to the cardiology service.” Or, “Each of our 3 fellows is required to complete a QI project of their choosing during their fellowship.”

2. In the space below please give specific details of the QI/patient safety projects completed by your residents or fellows in the past 12 months. For example, monthly M & M conferences; development of “QI cards” for reporting observations to improve the system; development of an elective QI rotation for senior residents; etc.

3. Describe any QI/patient safety projects or activities that are in development (with a proposed implementation date, if possible).

4. What resources for QI/patient safety education do you need, or anticipate needing?

5. Any additional comments or suggestions?

Improving Patient Care through GME

Carl Patow, MD

Earlier this year, the Alliance of Independent Academic Medical Centers (AIAMC) launched *Improving Patient Care through GME: A National Initiative of Independent Academic Medical Centers*. The *National Initiative* features four meetings over the course of one year. It serves as a touchstone for the ongoing quality improvement efforts in AIAMC participating organizations. The meetings, and the monthly collaborative calls held in-between, provide structure, discussion and networking opportunities around quality improvement initiatives in three specific areas: patient hand-offs, infection control and medication safety (**Exhibit 1**). The *National Initiative* is supported through funding provided by AIAMC-member Heath Partners Institute for Medical Education located in Minneapolis, MN.

Exhibit 1

Project Work Groups

Hand-Offs:

to focus on electronic medical record, inpatient to outpatient and shift-to-shift transition teams;

Infection Control:

to focus on IHI interventions of preventing central line infections and reducing MRSA infection;

Medication Safety:

to focus on IHI interventions of preventing adverse drug events (ADEs), preventing

Why A National Initiative?

Carl A. Patow, MD, MPH, MBA, Co-Chairman of the *National Initiative*, explains the rationale behind this major undertaking as multi-faceted. “Both the public and our profession acknowledge that quality and safety efforts are falling short, and many hospitals and health care systems are seeking rapid improvements in patient care. Those of us in academic medicine realize that residents play an important role in patient care at teaching institutions; however, residents are generally not visible in safety and quality efforts.” The AIAMC recognized that resident quality improvement efforts – shared across multiple programs and systems – had the potential to improve care much more quickly and effectively.

The Role of the AIAMC

The Alliance of Independent Academic Medical Centers was founded in 1989 as a national network of large academic medical centers. Membership in the association is unique, in that AIAMC members are affiliated with medical schools but are independent of medical school ownership or governance. Nearly 60 major medical centers across the United States are members, representing more than 280 senior academic

“Nearly 60 major medical centers across the United States are members, representing more than 280 senior academic leaders including Vice Presidents of Academic Affairs/Medical Education, Vice Presidents of Research Chief Medical Officers, Chief Executive Officers and others.”

leaders including Vice Presidents of Academic Affairs/Medical Education, Vice Presidents of Research Chief Medical Officers, Chief Executive Officers and others.

In late 2006, Alliance members were invited to apply for participation in the National Initiative. Thirty-four participants from 21 AIAMC-member teaching hospitals were selected to participate based upon their demonstrated leadership in utilizing graduate medical education as a key driver to improve quality, patient safety, and the cost-effectiveness of care.

Supporting Partners

Since the *National Initiative* focuses upon GME as a driver for improved quality and safety, Alliance leaders realized that collaboration with both education and clinical leaders was needed. “Having served on the ACGME CILE Committee and ACGME Board of Directors, it was clear to me and the Alliance Board that we must include the ACGME in the work of the *Initiative*”, stated Dr. Patow. Paul Gardent, MBA, Instructor in Community and Family Medicine at Dartmouth Medical School and Vice-Chair of the ACGME Committee on Innovation in the Learning Environment (CILE), participated and was a valuable resource in linking the goals of the Initiative to the ACGME competencies.

On the clinical side, the Institute for Health care Improvement (IHI) was quickly identified as an influential leader in new process improvements. Mark C. Shields, MD, MBA, Vice President of Medical Management and Co-Chairman of the *National Initiative* explained, “The *Initiative* uses the IHI ‘5-Million Lives’ campaign as the backbone for linking residents with improvements in patient care.” By doing so, the residency programs, the hospital administration and the hospital Boards of Directors are aligned in a mutual effort to improve patient care. “This approach is markedly different from previous residency quality improvement initiatives that have often been peripheral and disconnected with the priorities of the hospital leadership,” stated Dr. Shields. Jim Conway, MD, Sr. Vice President, IHI, was invited to participate and has provided key leadership in linking the *Initiative* to the 5 Million Lives campaign.

Two of Four Meetings Held to Date

To date, two meetings have been held. The first meeting took place in late March immediately following the AIAMC Annual Meeting in Austin, Texas. Participants discussed and agreed upon outcomes that would make the work of the Initiative successful. These expectations were articulated as follows: “The *National*

“This approach is markedly different from previous residency quality improvement initiatives that have often been peripheral and disconnected with the priorities of the hospital leadership.”

Initiative will conduct research and develop sound data, identify best practices among member institutions, document state-of-the-art integration of GME into quality and patient safety improvement and involve Chief Quality Officers and CEOs.”

Another expectation is that the effort will result in several publications. Small working groups, composed of 6 to 8 members, began to meet via monthly conference calls starting in April. Project assignments included participant interviews of their Chief Quality Officer, completion of an IHI interventions inventory and identification of one *Initiative* project per member/participant institution.

The second meeting was held August 3rd and 4th in Minneapolis, Minnesota. Following presentations of successful GME-Quality integration, participants agreed to strengthen the Initiative’s emphasis on improving GME. Participants concluded that bridges are needed between the educational infrastructure that integrates quality and safety into GME

“Participants concluded that bridges are needed between the educational infrastructure that integrates quality and safety into GME programs.”

programs. Through this infrastructure, GME will become more relevant to organizational quality and safety initiatives and will play an important part in the operating plans of other functions and departments. Participants also focused their work by forming the three project work groups. For the remainder of the National Initiative, these work groups will meet in monthly conference calls designed to guide progress in implementing their individual projects within their home institutions.

Meetings three and four will be held on November 2–3 in Washington, DC (immediately preceding the AAMC Annual Meeting) and March 29–30 in Amelia Island, Florida (immediately following the AIAMC Annual Meeting).

Anticipated Outcomes

Initial data on the impact of integrating GME into patient safety and quality improvement initiatives will be presented at the 4th meeting in March 2008. For more information on the AIAMC National Initiative, visit www.aiamc.org. ■

Carl A. Patow, MD, MPH, MBA is the Executive Director of the Health Partners Institute, and Co-Chairman of the National Initiative. He also is a member of the ACGME Board of Directors and the Committee on Innovation in the Learning Environment.

The UC Davis Health System’s 6-Year Experience With A Web-Based Patient Sign-out System (PASS)

James Nuovo, MD, Thomas Balsbaugh, MD, Martin Lee, MD, Jocelyn Isidro

One of the effects of resident work-hour limitations has been a restructuring of inpatient services. It is now commonplace to have multiple “teams” caring for patients on a particular service, resulting in numerous hand-offs. The number of hand-offs can be substantial. In a study at the University of California at San Francisco each intern was involved in more than 300 hand-offs during the average month-long rotation.¹ Due to concerns that these transitions in patient care are a source of potential error, the Joint Commission has made a “standardized approach to hand-off communications” a National Patient Safety Goal.² In 2001, we developed a universal online system named PASS (Physician Automated Sign-out System) for resident to resident hand-offs. A similar commercially available system can be found at www.medsoos.com. PASS is a web-based system that is accessible from any computer located on the UC Davis Health System network. The login is resident team specific and HIPAA compliant for passwords and auditing. The template is structured into four categories for each patient: Patient Identifiers; Problem List, Medication List, and To Do List. An example of a PASS report is shown in **Figure 1**, following page.

Based on feedback from residents, at UC Davis we chose a free-form text input to allow users to adapt the template to their particular service needs. The system allows simple web-based entry, editing, and deleting of patient data. The “To Do” field of the system is typically used to organize the team’s daily

“The ‘To Do’ field of the system is typically used to organize the team’s daily plan and specific tasks for the new resident receiving the hand-off. When a patient is removed from the team list (after discharge), it is saved in a database to allow easy recovery of the data, should the patient be readmitted.”

plan and specific tasks for the new resident receiving the hand-off. When a patient is removed from the team list (after discharge), it is saved in a database to allow easy recovery of the data, should the patient be readmitted. PASS is used on the Internal Medicine, Family Medicine, Pediatrics, Obstetrics and Gynecology, Psychiatry, Physical Medicine and Rehabilitation,

and Surgical services both at our hospital and affiliated sites. Resident feedback has been solicited on the impact of PASS on patient safety and team efficiency. Our surveys have demonstrated over 90% positive ratings in these areas. We have documented substantial use of this system with over 40,000 separate logins to date. The system's hardware requirements include a server to store the code (we use a Win NT server); software requirements comprise the following. a

Cold Fusion Programming Language/Application Server, an Internet Server (our Win NT Server uses Microsoft IIS), and a database server (we use Microsoft's SQL server). ■

¹ Vidyarthi AR, et al. Managing discontinuity in academic medical centers: strategies for a safe and effective resident sign-out. J Hosp Med 2006;1:257-66.

² Arora V, Johnson J. A model for building a standardized hand-off protocol. Jt Comm Qual Patient Saf 2006;32:646-55.

Figure 1

Patient Automated Sign-out System (PASS) – Internal Medicine

Sunday, 9/5/2007 12:50		Res: Lasslo Pager:0170		Service: Demo		Team List: Demo Medical Ward Team, Doctor Kildare x2320, MacIntire x2211, Frankenstein x4311	
Add Patient	View Old Patients	Print	Logout	Help	Edit Team List		
Patient ID	Problem List	Med List	To Do List				
ICU_Doe, John, Adult MR#: Room: DOA: Code: Full Allergy: lovastatin CC: 65 yo with SOB and AMS BIBA to ED, Patient had run out of some of his medicines a week ago. Edit ProgressNt Delete	CHF DM CVA HTN PNA NSTEMI Failed extub X2 s/p trach sinusitis	ASA EF 15 lopressor 37.5 bid enapril nph 3 hep sq albuterol MDI pepcid 20 bid vanco ceftazidime	<input type="checkbox"/> check CXR tonight <input type="checkbox"/> check Card recs trying to wean down PS. goal to keep pH 7.35-7.4 RR<35, Vt300s pt refused OGT				
Infection, Michael, Adult MR#: Room: DOA: Code: DNR Allergy: vanco, dilantin, phenol CC: 43yo with AMS, fever, brought in by family because the patient stopped responding Edit ProgressNt Delete	MRSA PNA AMS chronic hypercapnia:CO2-65 sz do OSA Hypoventilation Hx of aortic valve repair s/p code blue: desat, brady	coumadin 5 linezolid lasix 40 iv 1/2NS @50cc/hr lisinipril metoprolol 5 mg q4 pm klonopin 3 tid depakote 500 tid clinda ceftaz	NTD If temp spike, pan culture possibly comfort care Contact: Wife-Sally 555-2232				
Night, Good, Adult MR#: Room: DOA: Code: DNR/DNI Allergy: codeine CC: 50 yo with NSTEMI presented to ED with left sided CP for 2 weeks Edit ProgressNt Delete	NSTEMI chronic shoulder pain DM	lovastatin 20 hep gtt metoprolol 12.5 lisinipril 20 asa nph 12u bid reg ins 6u qac	NTD possible cath tomorrow pt has chronic shoulder pain, Demerol 25mg IM helped				

Review Committee Update

ACGME Approves Revisions to the Requirements in Neurotology and Numerous Orthopaedic Surgery Subspecialties

At its September 2007 meeting, the ACGME approved revisions to the Program Requirements for neurotology (otolaryngology) to become effective November 9, 2007. The ACGME also approved revisions to the orthopaedic surgery subspecialties of adult reconstructive orthopaedic surgery, foot and ankle orthopaedic surgery, hand surgery (as a subspecialty of orthopaedic surgery), pediatric orthopaedic surgery, orthopaedic surgery of the spine, orthopaedic sports medicine, orthopaedic trauma, and musculoskeletal oncology. The revised program requirements for these orthopaedic surgery subspecialties will become effective July 1, 2008.

Other News from the ACGME Meeting

ACGME Honors Outgoing Directors and CEO, Confirms Board and Review Committee Members

ACGME endorsed Susan Day, MD as chair-elect of the ACGME, to assume the position of chair at the conclusion of Dr. Hartmann's term in September 2008. The Council also confirmed Mr. Roger Plummer's reappointment as treasurer of the ACGME and appointed Mr. David Jaffe and Dr. Richard Pan to the executive committee. The Council appointed four new directors: Timothy Goldfarb, CEO, Shands Health care, Gainesville, FL; James Mandell, MD, President and CEO, Children's Hospital Boston, MA; Kenneth B. Simons, MD, Senior Associate Dean for Academic Affairs, Medical College of Wisconsin, Milwaukee, WI; and Debra Weinstein, MD, Vice President/Director of GME, Partners Health care System, Boston, MA.

Dr. Leach and the Board recognized the service of four outgoing directors: Steven Altschuler, MD; Mark Laret; Bennett L. Johnson, MD; and Melissa Thomas, MD, PhD, and also recognized Seenu Reddy, MD on completing his term as chair of the Council of Review Committee Residents (CRCR). The incoming chair of the CRCR is Karen Blatman, MD.

The ACGME confirmed John Weinerth, MD, Associate Dean, Graduate Medical Education and Designated Institutional Official, Duke University Medical Center to the Institutional Review Committee, effective October 1, 2007.

The Board endorsed Thomas J. Nasca, MD, Dean at Thomas Jefferson Medical College of Philadelphia as the new ACGME chief executive officer. Dr. Leach's ten years of service with the ACGME were recognized with a special dinner. Speakers included Paul Batalden, MD and Paul Friedmann, MD. Dr. Hartmann, ACGME chair, announced the Board had designated a new "Renewing the Spirit in Medicine Award" in honor of Dr. Leach.

Committee on Innovation in the Learning Environment Submits First Report

Mr. Paul Gardent, member of the Executive Committee and vice chair of the Committee on the Innovation in the Learning Environment (CILE) provided the Committee's first report. CILE was established in the fall of 2004, to expand the focus from resident duty hours to the many attributes that collectively contribute to a high quality learning environment. The report focused on five areas: 1. describing and replicating innovation and improvement in the learning environment; 2. using accreditation to stimulate and reinforce program and institutional innovation; 3. integrating care delivery and clinical education; 4. collecting and disseminating information on "innovative practices" in the learning environment; and 5. broadening input into the redesign of the learning environment through collaboration.

"The report focused on five areas:

1. describing and replicating innovation and improvement in the learning environment;
2. using accreditation to stimulate and reinforce program and institutional innovation;
3. integrating care delivery and clinical education;
4. collecting and disseminating information on 'innovative practices' in the learning environment; and
5. broadening input into the redesign of the learning environment through collaboration."

The report recommended implementation of ACGME-supported accreditation pilots to refine the common duty hour standards and to advance teaching an assessment of the general competencies (**Table 1**). Six pilots seek to refine elements of the common duty hour requirements; five aim to enhance teaching and assessment of the general competencies (one pilot related to the competencies was abandoned). During the coming weeks, review committees are considering the pilots at their fall and winter meetings, to select those of interest and greatest relevance to programs in their specialty. The overarching goal of the CILE pilots is to partner with the review committees advancing innovation in the learning environment, and seeking ways to refine the accreditation standards using evidence about their effect on programs and resident learning. Review committees may select up to two pilots in each area, but are not obligated to participate in the pilots. It is expected that the pilots will commence starting July 2008. More information about the pilots, including details of each pilot and the process for programs to participate will be shared in the coming months.

Table 1

CILE Pilots Offered to Review Committees

The Duty Hour Pilots

1. Mandatory sleep or nap period through pager sign out;
2. Extend duty hours for surgical chief residents to 88 hours weekly to reflect practice after completion of residency;
3. Achieving continuity of care and education with 14-hour shifts;
4. Enhancing the educational value of night float through added debriefing and didactic activities;
5. Changing the rest requirement between duty shifts to "must be 8 hours;"
6. Placing limits on the number of admissions and total patients for each resident (modeled after requirements for Internal Medicine).

The Competency Pilots

1. Using a multi-disciplinary team care approach with team training;
2. Analysis and improvement of care using Practice Improvement Modules (PIMS);
3. Enhancing communication with patients about discharge from the inpatient setting;
4. Teaching and assessing a comprehensive patient safety curriculum;
5. "Basic Training" for incoming first-year residents.

ACGME endorsed the CILE report and its recommendation. More information will soon be available from a CILE web page within the ACGME's website.

Farewell to Dr. Leach

In September 1997, David Leach, MD, assumed the position of Executive Director of the ACGME. He retires after ten years of service in the fall of 2007. Below are a few farewell messages from his colleagues at the ACGME and in the medical education community.

I will forever be grateful to Dr. Leach as the source of three major concepts he shared during ACGME meetings. Two are tied to a video of Parker Palmer discussing teaching and leadership. In the first, Parker talks about Rosa Parks and her decision that she could no longer live not being true to herself. Tied to this comment is the notion of leading from the middle, and the recognition that being a leader and having a position of leadership are not the same. The second deals with the attributes of a good teacher, with Parker noting that it is easy to recognize a bad teacher – an individual where the words spoken seem to rise out of the speaker's mouth like a bubble of words above a cartoon character. How many times have I sat in a talk and seen such a bubble!

The third concept relates to the work of Glouberman and Zimmerman's categorization of problems as simple, complicated and complex.¹ I have adopted this notion almost as a mantra and thank Dr. Leach for helping me reframe how we as a nation view access to health care. Redefining problems and leading from the middle are for me cornerstones of child advocacy. Thanks, David.

**Carol Berkowitz, MD, Former Member,
ACGME Board of Directors**

To my esteemed colleague and friend, what a great run we have had. Your passion, energy and wisdom contributed mightily to promoting and implementing measures to promote and improve quality patient care. Thanks for the many opportunities to collaborate.

Steve Miller, MD, Executive Director, ABMS

"Your vision of competency, replacing 'time and grade' or repetitive tasks, now seems so intuitively simple and obvious, your leadership created the space for us to recognize this and allow it to" happen."

David, your contribution to graduate medical education has been profound. You helped us to become comfortable with the discomfort of change, guiding us through our own creative (tension). It contributed to the revamping and revitalization of graduate, undergraduate education and continuing education for physicians. Your vision of competency, replacing "time and grade" or repetitive tasks, now seems so intuitively simple and obvious, your leadership created the space for us to recognize this and allow it to happen.

History will judge your tenure to be the most significant in medical education since residency programs were formalized over 70 years ago. We wish you all the best in the next phase of your illustrious career.

**David Glass, MD, Former Member, ACGME Board of
Directors and 2007 John Gienapp Award Winner**

¹ Glouberman S, Zimmerman B. Complicated and complex systems: what would successful reform of Medicare look like? Discussion paper No 8. Commission on the Future of Health Care in Canada, 2002.

Find joy in the work place, seek the truth, reduce resident work hours, measure physician competence, and do it all within the confines of a chaotic organization. These were some of Dr. Leach's goals ten years ago when he joined the ACGME. He wasn't kidding. He accomplished all these with great aplomb, and I learned the meaning of chaotic. He also introduced me to Aristotle's concept of phronesis (practical wisdom or prudence); Parker Palmer's concept of living divided no more, and his own concept of trying to make friends of our enemies.

Dr. Leach had this notion of Good Learning for Good Health care – that accreditation had something to do with good patient care. Some thought that was none of our business. I am glad Dr. Leach and our Board changed our mission statement to say that we do improve health care, because we set educational standards for programs that train residents who care for patients. That is practical wisdom.

He decided that program directors and designated institutional officials should be recognized for their contribution. First came the Parker Palmer Courage to Teach Award for program directors. Next Dr. Leach created the Courage to Lead Program to honor institutional officials. There are few people who positively influence one's life, and Dr. Leach is one of them. He made doctoring a better profession and me a better person, by showing us the road to authenticity.

Marsha Miller, Special Assistant to Dr. Leach

David, Margaret Meade said, "Sooner or later I'm going to die but I'm not going to retire." I suspect that you and Margaret may have a lot in common. While you may be retiring from the ACGME, I'm confident that this will only give you time to pursue life in a different way.

It has been my pleasure to get to know you over these past couple of years. I must say you were gracious when the Bears lost to the Colts in the 2007 Super Bowl (though I could sense your true disappointment). I have appreciated your guidance and wisdom as I have assumed my role in graduate medical education. We all share common goals as we each have the opportunity to be stewards, albeit limited ones, of the education of the next generation of physicians. Your insight, calm, and sense of community will stay with me in my future.

I wish you all the best in the years ahead. I will close with a brief poem by James Thomson.

*An elegant sufficiency, content,
Retirement, real quiet, friendship, books,
Ease and alternative labour, useful life,
Progressive virtue and approving heaven!*

Louis B. Cantor, MD, Chair, Council of Review Committee Chairs

ACGME Honors of Program Directors and DIOs with Courage to Teach and Courage to Lead Awards

At its September meeting, the Accreditation Council for Graduate Medical Education announced it honored 10 program directors for their dedication to resident education. The award has been given annually since 2001 to recognize outstanding program directors nominated by faculty and residents.

The award is named after Parker J. Palmer, PhD, a senior adviser at the Fetzer Institute and the author of *The Courage to Teach: Exploring the Inner Landscape of a Teacher's Life*.

David Leach noted that "Parker Palmer noted that we do not teach what we are, but who we are. It is especially important at this time that the teachers of medicine live the values of medicine."

The ACGME recognizes the 2008 Parker J. Palmer Courage to Teach Awardees

Robert Brown, MD, nephrology, Beth Israel Deaconess Medical Center, Boston, MA

Steve Galetta, MD, neurology, University of Pennsylvania, Philadelphia, PA

Kalpalatha Guntupalli, MD, pulmonary/critical care, Baylor College of Medicine, Houston, TX

Karen Horvath, MD, general surgery, University of Washington, Seattle, WA

Richard Lackman, MD, orthopaedic surgery, University of Pennsylvania, Philadelphia, Pennsylvania

John Jane, MD, neurosurgery, University of Virginia, Charlottesville, VA

Mukta Panda, MD, transitional year, University of Tennessee College of Medicine, Chattanooga, TN

Susan Promes, MD, emergency medicine, Duke University, Durham, NC

Richard Shugarman, MD, pediatrics, University of Washington, Seattle, WA

William Sonis, MD, child and adolescent psychiatry, Drexel University College of Medicine, Friends Hospital, Philadelphia, PA

The ACGME also honored three graduate medical education officials with its 2008 Courage to Lead Award. This award honors distinguished designated institutional officials (DIOs) for their leadership in creating an exemplary learning environment for residents, fostering the professional and ethical development of residents, and championing safe and appropriate care for patients.

The recipients of the 2008 Courage to Lead Award are:

Linda R. Archer, PhD, associate dean for graduate medical education, Eastern Virginia Medical School, Norfolk, VA

Carolyn Bekes, MD, senior vice president of academic affairs, Cooper Hospital-University Medical Center, Camden, NJ

Douglas Dorner, MD, senior vice president of medical education and research, Central Iowa Health System, Des Moines, IA

The awardees will be formally recognized during a dinner at the February 2008 Board of Directors meeting. ■

National and International News of Interest

Jossey-Bass releases the Tenth Anniversary Edition of *The Courage to Teach: Exploring the Inner Landscape of A Teacher's Life*

Parker J. Palmer, PhD is the individual who has inspired the Parker J. Palmer "Courage to Teach" and "Courage to Lead" awards given annually by the ACGME. Dr. Parker Palmer is a writer, teacher and activist, and the founder and senior partner of the Center for Courage and Renewal and a senior advisor to the Fetzer Institute in Kalamazoo, MI.

His bestselling book *The Courage to Teach: Exploring the Inner Landscape of a Teacher's Life* that has just been released in a special Tenth Anniversary Edition (Jossey-Bass, 2007).

"...good teaching cannot be reduced to technique, but is rooted in the identity and integrity of the teacher."

Two key messages of the book are equally relevant to graduate medical education. The first is that good teaching cannot be reduced to technique, but is rooted in the identity and integrity of the teacher. This is recognized and celebrated in the ACGME's awards named for him. The second message is that reform and improvement are needed in public and medical education, but will fail in both venues if they ignore the source of all good work: the engaged human heart.

Other books by Dr. Palmer include include *A Hidden Wholeness, Let Your Life Speak, The Active Life, The Company of Strangers, The Promise of Paradox, and To Know as We Are Known*.

DeWitt Baldwin, MD

Honored with Named Award

A special supplement to the *Journal on Interprofessional Care* published this fall commemorates the contributions to the field of interprofessional health education made by DeWitt (Bud) Baldwin, MD, ACGME Scholar in Residence. Informa Publishers has established an annual "Baldwin Award" in his honor. The award will recognize the best paper on interprofessional matters published in the *Journal of Interprofessional Care* for the preceding year. ■

How Residents Say They Learn: A National, Multi-Specialty Survey of First and Second Year Residents

Steven R. Daugherty, PhD, DeWitt C. Baldwin, Jr., MD

Relatively little is known about how, from whom, and under what conditions residents say they most effectively learn. We examined the relationships between residents' self-reported ratings of 11 different sources of learning and a number of empirical variables, using a national, random sample of PGY1 and PGY2 residents in the 1998-1999 training year. Residents were surveyed by mail. Completed surveys were received from 64.2% of 5,616 residents contacted. The most often reported sources of learning were other residents and attending physicians. Ratings varied by specialty, level of training, and US (USMGs) vs. International medical graduates (IMGs). Factor analysis identified three primary modes of learning: Faculty-organized, Peer-oriented, and Self-directed. Residents in different specialties varied in their use of these three sources of learning. IMG residents reported significantly less learning from peers and more self-directed learning. Increased resident duty hours were associated with a decrease in Faculty-organized and Self-directed learning, and an increase in Peer-oriented learning.

"Factor analysis identified three primary modes of learning: Faculty-organized, Peer-oriented, and Self-directed. Residents in different specialties varied in their use of the three sources of learning."

Introduction

Formal instruction is only one part of the resident's total education. Along side this formal curriculum are a host of parallel learning experiences that have become known as the informal or hidden curriculum, within which are embedded the values and norms of the profession.¹⁻³ These values are communicated in a number of subtle and not so subtle ways by peers and faculty.^{4,5} Little is known about these less structured aspects of education for residents. This report seeks to provide unique data on how residents say they learn, gleaned from a large, random, multi-specialty survey of first- and second- year residents, conducted in 1999, prior to the 2003 Accreditation Council for Graduate Medical Education (ACGME) work hour limits.⁶ As such, it provides historical information on how residents assess their own learning modes, as well as a baseline for examining possible changes under the new work hour standards.

National multi-specialty surveys conducted by the American Medical Association (AMA) in 1983 and 1987, found that instruction to residents averaged 6.8 hours per week, ranging from 7.3 hours per week for first year residents to 5.2 hours after their fourth year of training.⁷ International medical graduates (IMGs) reported receiving significantly more instructional time than did U.S. medical graduates (USMGs).

“Among all residents, higher satisfaction with training has usually been associated with more formal instruction, such as frequent contact with attending physicians, lectures and grand rounds.”

Among all residents, higher satisfaction with training has usually been associated with more formal instruction, such as frequent contact with attending physicians, lectures and grand rounds.^{7,8} Phy and associates reported resident satisfaction was positively associated with increased faculty presence in the afternoon or evening.⁹ However, faculty and residents’ perceptions sometimes differ about what constitutes effective learning activities.¹⁰⁻¹² Stress, fatigue, sleep deprivation, and “burnout” have been found to impair learning and performance,^{13,14} and only about half of residents attend didactic teaching conferences, with fewer still reporting they remain alert throughout.^{15,16}

Our own previous 1989 national, multispecialty survey found that, although quantity and quality of time with attending

physicians was most valued by residents, they also ranked “other residents” and “special patients” as additional important sources of learning.⁸ Positive factors contributing to satisfaction with their internship year were, in order, attending physicians, other residents, patient rounds, seminars, and time with attending physicians.

Methods

In 1999, using the random selection feature of SPSSPC, a 15% sample was drawn from the AMA’s Graduate Medical Education Database.¹⁷ Target respondents were all residents in PGY-1 and PGY-2 positions, who had no prior training, and were scheduled to complete their current year of training in the summer of 1999. Completed surveys were received from 3,604 of the 5,616 residents contacted, a 64.2% response rate. The sample included both USMGs and IMGs, and respondents’ demographic profile paralleled national distributions.^{14,18}

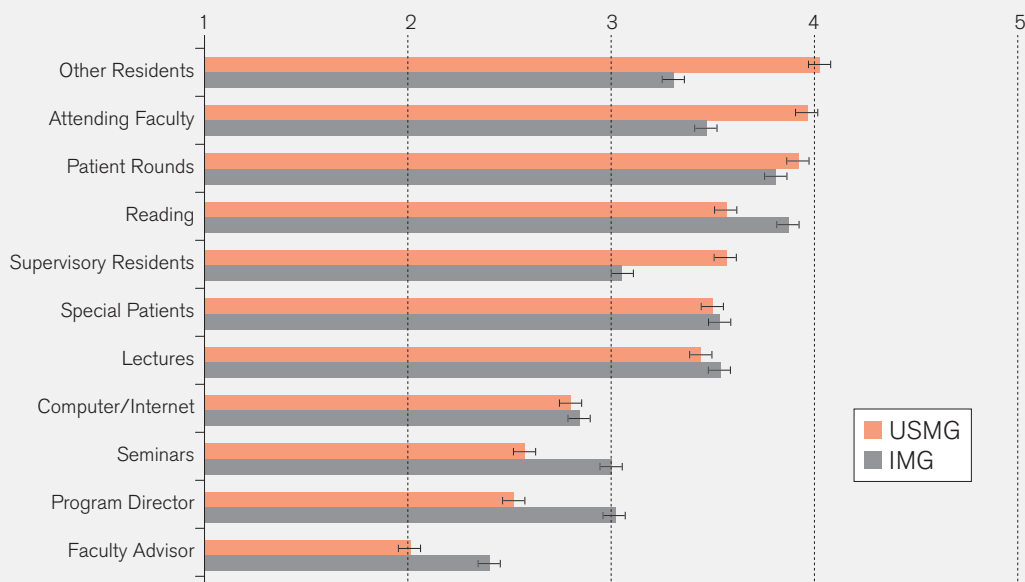
The questionnaire focused on the broad residency experience, including work hours, sleep, supervision, stress, learning, behavioral change, and impairment, as well as on reported incidents of belittlement/humiliation, and sexual and racial harassment or discrimination. The final instrument consisted of 44 items.

The index questions relating to resident learning included: “Please rate how much each of the following contributed to your learning experience this year.” Eleven sources of learning were listed alphabetically:

- a) Attending faculty,
- b) Computer/Internet,
- c) Faculty advisor,

Figure 1

Residents Ratings of Sources of Learning by Year of Residency Training (with 95% confidence intervals)



- d) Lecture/grand rounds,
- e) Other residents,
- f) Patient rounds,
- g) Reading,
- h) Residency Program director,
- i) Seminars/Small groups,
- j) Special patients, and
- k) Supervising residents.

Respondents were asked to rate each item on a scale of 1 (not at all) to 5 (a great deal), and to rate their current residency year in terms of a. Learning, b. Contact with attending physicians, c. Quality of time with attending physicians, and d. Overall, from 1 (poor) to 7 (excellent). In addition, residents reported their specialty, level of training, country and school of graduation, and ethnicity, as well as weekly work hours, sleep, medical errors, time spent with attending physicians, working while impaired, perceived adequacy of supervision, and level of stress.

Statistical analyses were conducted using SPSS-PC (version 12). Data were initially presented as mean ratings with corresponding confidence intervals. Residents' ratings of the 11 listed sources of learning were submitted to factor analysis, using Principal Component Extraction, Oblimin Rotation with Kaiser Normalization. Pearson correlation coefficients were used to examine the relationship of these derived factors to other data from the survey. Finally, variations in these derived factors across demographic categories and other variables were

“USMGs were significantly ($p<.01$) more likely than IMGs to rate other residents, attending faculty, patient rounds, and supervising residents as important sources of learning. IMGs gave higher ratings to formal lectures, seminars, and faculty, including program directors and faculty advisors ($p<.01$)!”

examined by comparing deviations from the grand mean for each factor. These deviations are presented as average variations from this overall grand mean in both tabular and graphic form.

Resident's Ratings of Eleven Learning Sources

Overall, residents rated peers as their most important source of learning, with attending physicians a close second, and supervising residents third. Faculty advisors were rated as least important, along with computer/internet, program directors, and seminars and small groups. For PGY-2 respondents, learning from both peers and supervising residents, and from formal patient rounds declined in importance ($p<.01$), while reading, the computer/internet, and faculty advisors increased ($p<.01$). USMGs were significantly ($p<.01$) more likely than IMGs to rate other residents, attending faculty, patient rounds, and supervising residents as important sources of learning. IMGs gave higher ratings to formal lectures, seminars, and faculty, including program directors and faculty advisors ($p<.01$).

Table 1

Factor Analysis of Items Rating Contributions to Learning Experience

		Factor 1	Factor 2	Factor 3
		Faculty-Organized	Peer-Oriented	Self-Directed
Correlations	Factor 1	1.00	+.27	+.29
	Factor 2		1.00	+.04
Variables				
	Attending Faculty	.68	.36	-.05
	Computer/Internet	.29	.08	.63
	Faculty Advisor	.68	.11	.36
	Lectures/Grand Rounds	.69	.21	.21
	Other Residents	.19	.79	-.11
	Patient Rounds	.35	.62	.14
	Reading	.20	-.12	.69
	Residency Program Director	.76	.13	.27
	Seminars/Small Groups	.62	.23	.49
	Special Patients	.23	.53	.55
	Supervising Residents	.17	.83	.00

Note: Principal Component Extraction, Oblimin Rotation with Kaiser Normalization Variables presented in the order they were presented in the survey questionnaire. Eigen values were 3.19, 1.66, and .98 for Factors 1, 2, and 3, respectively.

For USMGs, other residents were the highest rated source of learning; while independent reading and patient rounds were highest for IMGs ($p < .01$).

Factor Analysis of Sources of Learning

Factor analysis was used to identify the underlying dimensions linking the eleven sources of learning. Both orthogonal and non-orthogonal solutions were examined. The best fitting factor analytic solution was achieved by means of a Principal Component extraction, using an Oblimin rotation with a Kaiser normalization. This solution defined three primary dimensions from the sources of learning, labeled: “Faculty-organized”, “Peer-oriented”, and “Self-directed” (Table 1). Eigen values were strongest for the Faculty-organized and lowest for the Self-directed learning factors.

Factor 1 (Faculty-organized) showed the highest loadings for learning from residency program directors, lectures/grand rounds, attending faculty, and faculty advisors.

Factor 2 (Peer-oriented) demonstrated the highest loadings for learning from supervising residents, other residents, and patient rounds, while Factor 3 (Self-directed) showed the highest loadings for reading, computer/internet, special patients, and seminars/small groups. Factor 1 was correlated with the Factor 2 (+.27) and with the Factor 3 (+.29), suggesting that as Faculty-organized learning rose, Peer-oriented and Self-directed learning rose as well. Faculty-organized learning was strongly associated with residents’ positive ratings of both their overall residency and their

“This solution defined three primary dimensions from the sources of learning, labeled: ‘Faculty-organized,’ ‘Peer-oriented,’ and ‘Self-directed.’”

Table 2

Correlates of Three Derived Sources of Learning Factors

	Factor 1	Factor 2	Factor 3
	Faculty-Organized	Peer-Oriented	Self-Directed
Pearson Correlations			
Learning Rating	+54	+34	+16
Overall Rating	+60	+36	+12
Time with Attending	+22	+01	+03
W/out adequate supervision	-28	-12	+01
Stress Rating	-16	+06	-11
Weekly Sleep Hours	+14	-11	+07
Weekly Work Hours	-16	+15	-09
Time Teaching	+07	+14	+07
Number of Residents in Program	-07	+07	+01
Number of Residents in Institution	-13	+04	-08
Sleep Deprivation	-23	+06	-13
Impaired Condition (Self)	-18	+01	-11
Belittle/Humiliate	-18	-01	-00
No time off for Illness	-15	-06	+02
Conflicts w/ Prof. Staff	-17	+03	-06
Respondent's Age	-01	-23	+10
Medical School Preparation	+11	+10	+10
Behavioral Change Score	-16	-02	-07
Stressful Life Events Score	-10	-03	+00
Observed:			
Falsifying Pt. Records	-13	-08	+03
Patient Mistreatment	-13	-04	+04
Impaired condition (Others)	-13	-05	-00

Note: correlations over +03 are significant at the level of $p < .05$, and correlations over +06 are significant at the level of $p < .01$.

“Faculty-organized learning was strongly associated with residents’ positive ratings of both their overall residency and their learning experiences.”

learning experiences (Table 2). Weaker, but significant positive correlations were also found with “time with attending physicians” and average weekly sleep hours. In addition, significant negative correlations were found with working without adequate supervision, sleep deprivation, stress ratings, weekly work hours, working while in an impaired condition, conflicts with professional staff, belittlement and humiliation, and negative behavioral changes.

Peer-oriented learning showed lower magnitude positive correlations with overall ratings of the residency and the learning experience, and a weaker positive relationship with average work hours per week and time spent teaching. Self-directed learning presented the weakest correlations with ratings of both learning and the overall residency, and a weak negative relationship with reports of sleep deprivation.

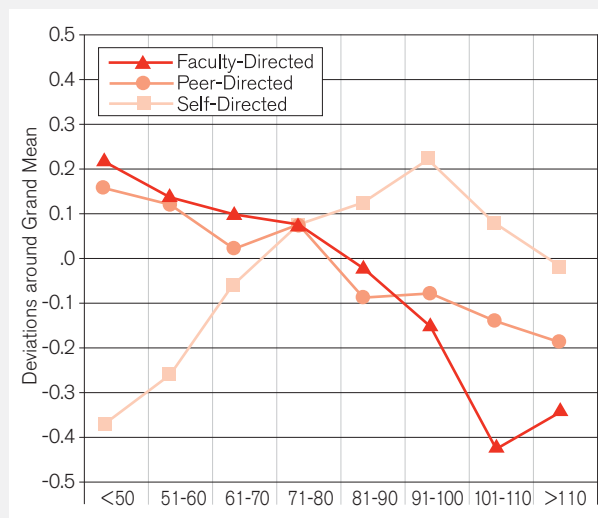
Variations in Sources of Learning

Using the derived factor scores, we compared the relative contributions of the three sources of learning across a number of variables (Table 3). These scores were interpreted as the percentage of a standard deviation above (positive sign) or below (negative sign) the grand mean for the sample. Using this metric, residents who reported a “significant medical error”, also rated Faculty-organized learning as less important.

Moreover, those who said their error resulted in an “adverse patient outcome,” rated Peer-oriented learning lower as well. Conflict with medical staff also was associated with lower ratings for Faculty-organized learning. Reports of alcohol usage, taking medications to stay awake, sleep, or cope, or feeling pressured to do something unethical were all associated with lower values for Faculty-organized learning, and modest declines in Self-directed learning.

Figure 2

Changes in Variations Around the Grand Mean for the three Sources of Learning



Note: each +.10 change represents 10% of a standard deviation.

Table 3

Average Factor Scores for Three Sources of Learning by Selected Variables

	N	Factor 1	Factor 2	Factor 3
		Faculty-Organized	Peer-Oriented	Self-Directed
Sleep Related Errors				
None	2,338	+08	+02	+02
Error	721	-21	.00	-.07
Adverse event	152	-30	-.33	+01
Conflict with attending	263	-.34	-.27	+10
Conflict with residents	319	-.31	-.10	-.04
Conflict with nurses	280	-.34	-.05	-.12
Alcohol use	196	-.49	-.02	-.13
Meds to stay awake	157	-.42	-.19	-.10
Meds to sleep	317	-.18	-.08	-.12
Meds to cope	193	-.34	-.10	-.12
Required to do Unethical Tasks	371	-.41	.00	-.07

Note: Values indicate standard deviation units above or below the grand mean (sum of all ratings divided by the number of ratings).

Table 4
Factors Contributing to Learning by Specialty (PGY1 and PGY2 Combined)¹

Specialty	N	Factor 1	Factor 2	Factor 3	Overall
		Faculty-Organized	Peer-Oriented	Self-Directed	Learning Rating
Anesthesiology	106	+0.08	-0.59	+0.36	5.1
Dermatology	29	+0.24	-0.39	+0.39	5.4
Emergency Medicine	155	+0.10	-0.10	-0.20	5.4
Family Practice	570	+0.27	+0.10	+0.08	5.2
Internal Medicine	1,051	-0.07	-0.01	+0.11	5.0
IM/Pediatrics	99	-0.10	+0.38	.00	5.1
Neurological Surgery	18	-0.33	+0.30	-0.97	4.3
Neurology	37	+0.21	-0.03	.00	5.0
Obstetrics/Gynecology	186	-0.22	+0.33	-0.47	5.0
Ophthalmology	39	-0.34	-0.39	-0.19	5.3
Orthopedic Surgery	70	-0.02	+0.07	-0.15	5.4
Otolaryngology	28	+0.41	-0.01	+0.11	5.4
Pathology	77	+0.16	-1.05	+0.04	5.2
Pediatrics	444	+0.11	+0.29	-0.11	5.3
Phys. Med/Rehabilitation	22	+0.13	-0.63	+0.41	4.6
Psychiatry	211	+0.09	-0.49	+0.32	4.8
Radiation Oncology	11	-0.22	-1.18	+0.60	5.3
Radiology	50	+0.17	+0.17	-0.26	5.2
Surgery (General)	252	-0.54	+0.17	-0.27	4.6
Transitional	89	-0.19	-0.03	-0.11	4.6
Urology	6	-0.55	+0.40	-0.34	4.8
TOTALS	3,547	0.0	0.0	0.0	5.0

¹ Values indicate standard deviation units above or below the grand mean (sum of all ratings divided by the number of ratings).

The three factors showed noticeable associations with reported average work hours per week. (Figure 2) As work hours increased, both Faculty-organized and Self-directed learning declined. By contrast, Peer-oriented learning rose as work hours increased, peaking between 91 and 100 hours per week, and then declined.

Differences by Specialty

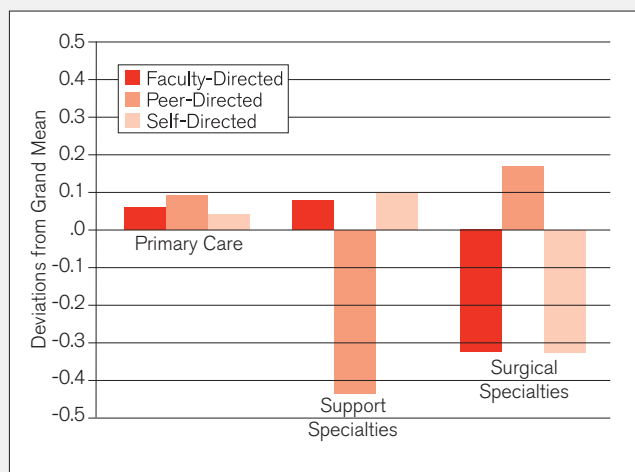
Internal medicine, the largest specialty in our sample, was closest to the grand mean in each of the three learning dimensions (Table 4). Anesthesiology residents reported more Self-directed and less Peer-oriented learning than average, while those in Obstetrics and Neurological Surgery reported higher levels of Peer-oriented learning, and lower levels of Faculty-organized and Self-directed learning. Of note, residents' overall ratings of their learning by specialty (last column, Table 4) were nearly always associated with higher ratings of Faculty-

“Of note, residents’ overall ratings of their learning by specialty (last column, Table 4) were nearly always associated with higher ratings of Faculty-organized teaching and Self-directed-learning.”

organized teaching and Self-directed-learning. As a group, the primary care specialties approximated the grand mean for all three factors. (Figure 3) By contrast, the support specialties (e.g., anesthesiology, pathology, etc.) presented noticeably lower levels of Peer-oriented learning. Surgical specialties demonstrated more peer-oriented learning, but levels for Faculty-organized and Self-directed learning were a third of a deviation below the grand mean.

Figure 3

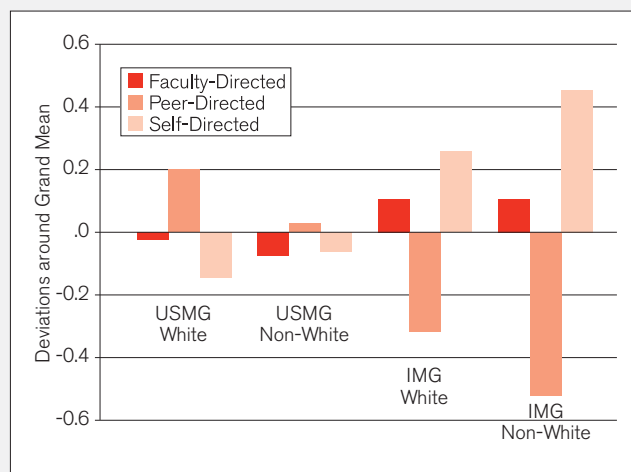
Variations Around the Grand Mean for the Three Sources of Learning Factors by Three Clusters of Medical Specialties.



Note: each +.10 change represents 10% of a standard deviation

Figure 4

Variations around the Grand Mean for the Three Sources of Learning Factors.



Differences by Graduation Origin

USMGs differed dramatically from IMGs in the relative importance of the three learning factors. Results were also affected by whether the respondents characterized themselves as White or Non-White (Figure 4). White USMGs reported greater Peer-oriented learning and less Self-directed learning, while Non-white USMGs appeared close to the base line in all three dimensions. By contrast, IMGs showed a slight elevation in Faculty-organized learning along with lower levels of Peer-oriented learning and higher levels of Self-directed learning. Moving from White IMGs to Non-white IMGs, Self-directed learning increased, while Peer-oriented learning declined.

A Model for Predicting Satisfaction with Learning

A series of step-wise regression models were run to select the best combination of variables for predicting residents’ ratings of their learning experience. The results of these analyses produced a model with an adjusted $R^2 = .52$, and included, in order, ratings of quality of time with attending physician, contact with attending physician, Faculty-organized learning, Peer-oriented learning, Self-directed learning, gender, and how often the residents said that they had worked while in an “impaired condition.” Residents’ ratings of their learning do not appear to be the result of any single factor, but of the convergence of all of the learning dimensions.

Limitations

The information is based on residents’ self-reports and it is impossible to know how accurately they applied themselves to rating their learning sources. The large national sample, the good response rate, and the fact that the findings generally confirm our previous work should serve to mitigate this concern. Second, we did not use the word “satisfaction” in our questions about learning, but based on our previous experience and the pilot testing of the survey instrument, we felt confident in asking for specific ratings along scales that called for perceptions of relative values. Third, in an effort to compare our findings with those of previous national surveys, we asked the residents to provide summary information for their current training year. Thus, our data reflect averages, and much remains to be learned concerning the important variations across time and service assignments and different residency programs. Finally, we were not able to secure data from residents who were more advanced in their training.

Discussion

Based on residents’ own ratings, we empirically identified three distinct sources of learning in residency: Faculty-organized, Peer-oriented, and Self-directed. The relative contribution of these sources was found to vary significantly by medical specialty, training year, and between USMGs and IMGs.

Differences in the three sources of learning were associated both positively and negatively with a number of empirical variables relevant to the residents' perception of their educational experience, including overall satisfaction with residency, conflicts with medical staff, reports of medical errors, and average weekly duty hours. We also documented the importance of resident peers as a key source of learning, especially during the first year of residency. Finally, we found that residents' ratings of their learning experience could be predicted by a model that incorporates the three learning factors, along with ratings of their time with attending physicians.

“Differences in the three sources of learning were associated both positively and negatively with a number of empirical variables relevant to the residents' perception of their educational experience.”

Faculty-organized learning showed the most robust correlations with a range of associated variables. As the importance of this factor increased, reports of negative behaviors such as significant medical errors, conflicts with medical staff, alcohol use, and unethical conduct decreased. Residents appear to regard faculty involvement as the key issue fostering both learning and a positive residency experience. This finding confirms our previous work demonstrating that contact with attending physicians was a strong predictor of satisfaction during residency.⁸

The identification of resident peers as an important source of learning suggests that the education of residents requires not just formal, faculty-organized activities, but also a forum in which trainees learn from and teach each other. The combination of faculty-organized education and peer-oriented experiences thus provides a mutually reinforcing structure that helps to ensure that essential learning takes place. Other residents also serve as a safety net to ensure that education occurs even when formal teaching may be flawed.

Self-directed learning, the third leg supporting the stool of residency education, shows the lowest correlation with reported satisfaction, and may be viewed as an amplifying or compensatory mechanism. Dinkevich and Ozuah recently

observed that pediatric residents average as much as 7.5 hours a week in self-directed learning; rising from 6 hours in the first year to 9.5 hours for third year residents.¹⁹ Consistent with our results, IMGs in this study also reported more self-study; 8.4 hours per week compared to 7 hours for USMGs.¹⁹ Provided Faculty-organized and Peer-oriented learning are maintained at satisfactory levels, growing use of the internet as a source of learning should not change the relative importance of Self-directed learning, but simply changes the form by which it occurs. Self-directed learning appears to be an especially important component of learning for IMGs. The pattern is striking, and suggests, at minimum, that the process by which learning in residency takes place for IMGs differs from that for USMGs. The relatively higher use of Self-directed learning by IMGs raises the question if this is a socio-cultural pattern or an attempt to compensate for gaps in Peer-oriented or Faculty-organized learning.

Although the traditional focus of undergraduate medical education is the formal curriculum, prior research has found the informal curriculum is an important second component.¹⁻⁵ The Faculty-organized and Peer-oriented factors can be seen as analogous to formal and informal curricula. Peer-oriented learning is largely informal, taking place on work rounds, at the bedside, or in hallway conversations with fellow residents, often occurring after hours or when attending physicians are not available. Informal learning provides critical opportunities for skills development, knowledge transfer, and sharing of values, largely outside the attention of faculty.³⁻⁵

The relative variations in the three learning factors across specialties is reminiscent of Hafferty's notions concerning the “hidden” curriculum.^{1,2} We have come to see the unique blend of Faculty, Peer, and Self-directed learning characterizing each specialty as the unspoken framework within which every resident learns. These unique combinations may convey covert messages or constitute a “hidden curriculum” for residents, telling them under what conditions to depend on faculty, look to peers, or take charge of their own learning.

The study was conducted prior to the ACGME establishing common duty hour limits. Although a clear sense of the effects of limiting resident hours on learning is still emerging, concerns linger that capping weekly hours might have an adverse effect on the educational opportunities available to residents.²⁰⁻²³ As clinical demands are compressed, educational time may be reduced. Tracking the changes in these three major sources of learning is one way to assess the effect of the duty hour limit on resident learning. We hope our

data will serve as a baseline by which to gauge the impact of the common duty hour limits on the process of, and residents' satisfaction with, their educational experience. Given the importance of faculty-organized learning, a particular concern may be reduced availability of attending physicians arising from a number of factors and pressures, including assumption of added clinical responsibilities formerly held by residents.

The findings emphasize the need to expand our knowledge of how learning takes place in residency. Educational programming must take each of these sources of

“As clinical demands are compressed, educational time may be reduced. Tracking the changes in these three major sources of learning is one way to assess the effect of the duty hour limit on resident learning.”

learning into account and adjust them to the particular needs of specialties and of individual residents. The optimal mix among these three sources of learning will vary by program and specialty. Educational messages, such as the mandated ACGME competencies may need to make use of all three learning modes. Finally, efforts must be made to determine if the different patterns seen for IMGs stem from preferences of the residents, or are signs that current education efforts may be inadequate and a different approach would benefit this group.¹² ■

Steven R. Daugherty, PhD is an Assistant Professor in the Department of Psychology, Rush Medical College, Chicago. DeWitt C. Baldwin, Jr., MD is Scholar-in-Residence at the Accreditation Council for Graduate Medical Education. The work was supported in part by a grant from the AMA Education and Research Foundation. Dr. Daugherty had full access to all of the data in this study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

- ¹ Hafferty FW, Franks R. The hidden curriculum, ethics teaching, and the structure of medical education. *Acad Med.* 1994;69:861-871.
- ² Hafferty FW. Beyond Curriculum Reform: Confronting Medicine's Hidden Curriculum. *Acad Med.* 1998;73:403-7.
- ³ Stern DT. In search of the informal curriculum: when and where professional values are taught. *Acad Med.* 1998;73:(Suppl)S28-S30.
- ⁴ Stern DT. Practicing what we preach? An analysis of the curriculum of values in medical education. *Am J Med* 1998;104:569-575.
- ⁵ Burack JH, Irby DM, Carline JD, Larson EB, Root RK. Teaching compassion and respect: attending physicians' responses to problematic behaviors. *J Gen Intern Med* 1999;14:49-55.
- ⁶ Accreditation Council for Graduate Medical Education, "Common Program Requirements-duty hour requirements." http://www.acgme.org/acWebsite/dutyHours/dh_dutyHoursCommonPR.pdf, accessed October 22, 2007.

- ⁷ Silberger AB, Thran SL, Marder WD. The changing environment of resident physicians. *Health Aff (Millwood).* 1988;7(suppl):121-134.
- ⁸ Daugherty SR, Baldwin DC Jr., Rowley BD. Learning, satisfaction, and mistreatment during medical internship: a national survey of working conditions. *JAMA.* 1998;279(15):1194-99.
- ⁹ Phy MP, Offord KP, Manning DM, Bundrick JB, Huddleston, JM. Increased faculty presence on inpatient teaching services. *Mayo Clin Proc.* 2004;79:332-36.
- ¹⁰ White JA, Anderson P. Learning by internal medicine residents: differences and similarities of perceptions by residents and faculty. *J Gen Intern Med.* 1995;10:126-132.
- ¹¹ Kosower E, Berman N. Comparison of pediatric resident and faculty learning styles: implications for medical education. *Am J Med Sci.* 1996;312:214-218.
- ¹² Chalasani K, Nettleman MD, Moore SS, MacArthur S, Fairbanks RJ, Goyal M. Faculty misperceptions about how residents spend their call nights. *JAMA* 2001;286:1024.
- ¹³ Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. *Ann Intern Med.* 2002;136:358-367
- ¹⁴ Baldwin DC Jr., Daugherty SR. Sleep deprivation and fatigue in residency training: results of a national survey of first and second year residents. *Sleep.* 27:217-23, 2004.
- ¹⁵ Boots RJ, Treloar C. Prediction of intern attendance at a seminar-based training programme: a behavioral intention model. *Med Educ* 2000;34:512-18.
- ¹⁶ FitzGerald JD, Wenger NS. Didactic teaching conferences for IM residents: who attends, and is attendance related to medical certifying examination scores. *Acad Med.* 2003;78:84-89.
- ¹⁷ Miller RS, Dunn MR, Richter T. Graduate Medical Education, 1998-1999. *JAMA* 1999;282:855-60.
- ¹⁸ Baldwin DC, Jr, Daugherty, SR, Tsai R, Scotti MJ, Jr. A national survey of residents' self-reported work hours: thinking beyond specialty. *Acad Med.* 2003;78:1154-63.
- ¹⁹ Dimkevich E, Ozuah PO. Self-directed learning activities of paediatric residents. *Medical Education* 2003;37:388-9.
- ²⁰ Mendoza KA, Britt LD. Resident operative experience during the transition to work-hour reform. *Arch Surg.* 2005;140:137-145.
- ²¹ Samuels RC, Chi GW, Rauch DA, Palfrey JS, Shelov SP. Lessons from pediatric residency program directors' experiences with work hour limitations in New York State. *Acad Med.* 2005;80:467-472.
- ²² Schenarts, PJ, Schenarts, KDA, Rotondo, MF. Myths and realities of the 80-hour work week. *Curr Surg.* 2006;63:269-274.
- ²³ Vidarthi, AR, Katz, PP, Wall, SD, Wachter, RM, Auerbach, AD Impact of reduced duty hours on residents' education satisfaction at the University of California, San Francisco. *Acad Med.* 2006;81(1):76-81.

Editor's Introduction

The Environment for Resident Professional Development

Ingrid Philibert, MHA, MBA

Chief Executive Officer's Column

ACGME and the Formation of Residents: A Journey to Authenticity or "Ten Things I Have Learned in Ten Years"

David C. Leach, MD

Feeding the Good Wolf: Appreciative Inquiry and Graduate Medical Education

Margaret Plews-Ogan, MD, Natalie May, PhD, John B. Schorling, MD, MPH, Daniel Becker, MD, Richard Frankel, PhD, Elizabeth Graham, Julie Haizlip, MD, Sharon Hostler, MD, Susan Pollart, MD, and R. Edward Howell

The Institutional Response to Patient Safety

Monica L. Lypson, MD, Stanley J. Hamstra, PhD, Paul G. Gauger, MD, John Del Valle, MD, John Gosbee, MD, Lisa Colletti, MD

Participation in Care Coordination Reaps Multiple Benefits for Physicians and Hospitals

Andrew Filak, MD, Arthur Ollendorff, MD, Shelly Anderson and Shaila Toro

Engaging Residents in Quality Improvement

Ronald E. Domen, MD, Richard J. Simons, MD

Improving Patient Care through GME

Carl Patow, MD

The UC Davis Health System's 6-Year Experience With a Web-Based Patient Sign-out System (PASS)

James Nuovo, MD, Thomas Balsbaugh, MD, Martin Lee, MD, Jocelyn Isidro

ACGME News

ACGME Approves Revisions to the Requirements in Neurotology and Numerous Orthopaedic Surgery Subspecialties

Other News from the ACGME Meeting

In Brief

Jossey-Bass Releases the Tenth Anniversary Edition of The Courage to Teach: Exploring the Inner Landscape of a Teacher's Life

DeWitt Baldwin, MD Honored with Named Award

How Residents Say They Learn: A National, Multi-Specialty Survey of First and Second Year Residents

Steven R. Daugherty, PhD, DeWitt C. Baldwin, Jr., MD



ACGME

Accreditation Council for Graduate Medical Education

515 North State Street
Suite 2000
Chicago, Illinois 60610

NON-PROFIT ORG.
U.S. POSTAGE
PAID
ACGME
PERMIT NO. 9451
CHICAGO, IL

Change of Address:

Requests for a change of address should be sent to the editor at the address given above. Please include a copy of the mailing label from the most recent copy of the ACGME Bulletin along with your new address.