

# WORKING P A P E R

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## How Are Residency Programs Preparing Our 21st Century Internists?

### A Review of Internal Medicine Residency Programs' Teaching on Selected Topics

KRISTINA M. CORDASCO, MARIANA HORTA,  
NICOLE LURIE, CHLOE E. BIRD, BARBARA O. WYNN

WR-686-MEDPAC

July 2009

Prepared for the Medicare Payment Advisory Commission

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## SUMMARY

Over the past 50 years, the practice of medicine in the United States has changed dramatically. Successful medical innovations have increased the complexity of delivering care while, at the same time, the U.S. population is aging and becoming increasingly diverse and the prevalence of chronic diseases is on the rise. In 2003, an Institute of Medicine (IOM) report on these changes noted that "clinical education has not kept pace with, or been responsive enough to, shifting patient demographics and desires, changing health system expectations, evolving practice requirements and staffing arrangements, new information, a focus on improving quality, or new technologies." The Medicare Payment Advisory Commission (MedPAC), an independent Congressional agency that advises the U.S. Congress on issues affecting the Medicare program, asked the RAND Corporation to conduct an exploratory study of how residency programs are adapting their teaching to prepare physicians to practice within the current health care delivery system, based on interviews with Internal Medicine (IM) program directors.

We conducted semi-structured telephone interviews with a randomly-selected and representative sample of 26 allopathic and osteopathic IM residency program directors. RAND worked with MedPAC to identify priority topics to be included in the interviews. Topics fall into the domains of three of the American Council on Graduate Medical Education (ACGME) common program requirements: practice-based learning and improvement; systems-based care; and interpersonal and communication skills. See Table 1ES for definitions of these program requirements and a listing of included topics by requirement. In addition, we assessed two aspects of the infrastructure that supports teaching in these competencies: the care settings through which the residents rotate and the information technology (IT) being used in these settings.

For each topic, we asked directors if his or her program teaches its residents about this topic, through either formal or informal (experiential) curricula. If the program did teach its residents about that topic, we then asked the director to describe his/her program's training. Probes were used to elicit details. After asking about the topics in each of the three core competencies, the director was asked about facilitators and barriers to education in that competency. At the end of the interview, we asked if the director perceived of any additional facilitators or barriers to improving graduate medical education.

**Table 1: ACGME Common Program Requirement Definitions and Topics Included in Interviews**

<b>ACGME Common Program Requirement</b>	<b>Definition</b>	<b>Topics included in interviews</b>
Practice-Based Learning and Improvement	The practice of investigating and evaluating the care of patients, appraising and assimilating scientific evidence, and continuously improving patient care based on constant self-evaluation and life-long learning	<ul style="list-style-type: none"> <li>• Using Evidence-based medicine</li> <li>• Using Quality Improvement Methods</li> <li>• Using Clinical decision aids</li> </ul>
Systems-Based Practice	The practice of investigating and evaluating the care of patients, appraising and assimilating scientific evidence, and continuously improving patient care based on constant self-evaluation and life-long learning	<ul style="list-style-type: none"> <li>• Coordinating patient care during hospitalization, across hospital discharge, and in outpatient care settings</li> <li>• Using methods for improving patient safety</li> </ul>
Interpersonal and Communication Skills	The effective exchange of information and collaboration with patients, their families, and health professionals	<ul style="list-style-type: none"> <li>• Communicating with other health care providers</li> <li>• Communicating with patients, including special populations and about end-of-life care</li> </ul>

**KEY FINDINGS**

In the competency of **practice-based learning and improvement**, we asked about programs' curriculum in evidence-based medicine (EBM), using decision aids, and quality improvement methods. We found that all programs are teaching their residents to use EBM through conferences at which residents present articles from the literature; the majority of programs also have formal training in searching the medical literature. Most, but not all programs are teaching residents quality improvement methods, but the curriculum varies widely; specifically, some programs have residents collect, analyze, and act on their own data, while other programs present the data to the residents

and have residents informally participate in system changes. As for the topic of clinical decision aids, although all but one program teaches residents about clinical prediction rules and most hospitals use clinical pathways or pre-printed orders prompting the physician in standard or guideline-specific care, this education is informal at most hospitals.

In the competency of **systems-based practice**, we asked about programs' education in patient care coordination, working in multidisciplinary teams, awareness of absolute and relative costs, and patient safety. We found that although residents in all programs gain ample experience coordinating patient care, the programs vary in the amount of, and approach to, any formalized training and IT support in this topic. Similarly, all the programs interviewed provide some experience working with multidisciplinary care providers, but while a few programs have formal multidisciplinary teams, more often the teams are semi-formal or informal. All but one director indicated residents are taught to be aware of the absolute and relative costs of diagnostic tests and therapeutic agents, but most commonly this teaching is informal. Two-thirds of directors indicated that their residents receive instruction, most commonly informal, in patients' share of medical charges. Finally, all programs educate their residents in patient safety issues.

In the competency of **interpersonal and communication skills**—defined as “the effective exchange of information and collaboration with patients”—we asked about programs' teaching in communicating with other healthcare providers, communicating with patients, communicating with special populations, and communicating about end-of-life issues and advanced directives. Several program directors emphasized that although they have formal sessions on interpersonal and communication skills, the main, and most effective, way that residents build these skills is through experiences and faculty modeling, mentoring, and informal feedback. Additionally, we found that two-thirds of the interviewed program directors have formal teaching in communicating with other healthcare providers and all the programs have formal teaching in communicating with patients. Most, but not all of the programs formally instruct their residents in cultural competency. Half of the programs give formal teaching in health literacy, but less than one-third provide formal teaching in using interpreters. Most of the programs provide formal teaching in communicating about end-of-life issues and advanced directives, and all directors indicated that their residents get ample experience in this topic.

We found significant variation among the programs in residents' experiences with **diverse care settings and models**. Of the seven university hospital-based programs, four have required rotations in community-based hospitals. Residents in six programs rotate through Veterans' Affairs (VA) hospitals. Eighteen of the programs have a required rotation with hospice or a palliative care service. Twenty-one of the programs have required ambulatory experiences in community settings; however, for most programs this experience is minimal in time and scope. Fourteen programs have residents perform home visits and 21 programs have a required rotation in which they experience or provide care in a nursing home or rehabilitation unit. Twenty directors reported that their residents have some experience with managed care settings and/or populations, but seven volunteered that it was a very small segment of their overall patient population. No directors reported that their residents have experience in designated medical homes.

We also found wide variation in the use of electronic medical records (EMR) and computer order entry (COE). Although all programs provide residents with some experience in using EMRs, only one program has a comprehensive EMR in both inpatient and outpatient settings and two programs have no electronic system in their primary outpatient settings.

Directors reported multiple factors acting as facilitators and barriers to improvement, including:

- (1) **Information Technology:** Having a comprehensive, or nearly comprehensive, EMR system was cited as not only key in giving residents experience in using such systems, but was also referred to as sources of data for quality improvement projects, tools for reinforcing the use of decision-support and prediction tools, methods to coordinate patient care in both the hospital and outpatient settings, and sometimes links to patient education materials. This was the most commonly-cited facilitator and barrier.
- (2) **Faculty Expertise and Time:** Almost uniformly, a "faculty champion" who spearheaded the development and implementation of a curricula was central in areas in which programs have well-developed formal curriculum. Additionally, general faculty competency, or lack thereof, was a common explanation for informal teaching being either strong or weak in various areas.
- (3) **Characteristics and resources of the program's setting:** Directors described how the settings in which the programs are based can be both assets and limiting factors in their residents' education.

- (4) **Institutional support:** Program directors varied widely in their perceptions of the support that hospital administration and other institutional leaders provide. Several directors described areas where hospital priorities aligned with educational needs but in areas where there was not this alignment, less support was evident. Overall directors viewed ACGME's leadership in, and regulation about, these competencies to be helpful in getting institutional support. Some program directors spontaneously expressed concerns about GME funding, worrying that if funds for GME were decreased, their institution may be unwilling to continue its support of residency programs.
- (5) **Competing priorities for resident time and residents' baseline knowledge and interest in these topics:** Time to teach these competencies competes with both education in other competencies and with the institution's clinical service needs, especially given increasing knowledge and skills an internal medicine resident needs to master. Further, work-hour restrictions have decreased the time by which residents have to gain these knowledge and skills. Several program directors expressed concern that if, as recent reports have recommended, work hours become even more restricted, the residency environment may become even less amenable to instruction in these competencies. Furthermore, resident baseline knowledge, skill, and interest in, these competencies facilitate or impede their educational program in these topics.
- (6) **Scarcity of research in educational and evaluation strategies for these topics:** Several directors mentioned that there is a dearth of educational methods or tools that have been validated as effective for teaching residents these competencies. Furthermore, several directors explicitly cautioned against automatically valuing formally-delivered curriculum (lectures, projects, web-based modules) over informal curriculum, as much of these topics are best taught through the experience of patient care, with skilled faculty mentoring.

In summary, although IM residency programs are adapting their curricula to prepare physicians-in-training to practice in a demographically shifting patient population and evolving health care system, there is substantial variation in programs' approaches to, and implementation of, instruction in the topics of interest. For many topics, informal teaching through faculty role-modeling and patient-focused feedback and discussions is predominant.

In general, teaching in these topics remains inconsistent and far short from that needed compared to what is recommended by various expert reports.<sup>4-9</sup> Although directors varied in their enthusiasm for, and awareness of teaching methods in, these topics, they were, in general, supportive of improving curricula. However, as several program directors warned, these policy changes must be formulated so that teaching in other areas, particularly medical knowledge and patient care, are not negatively impacted. Also, heterogeneity in health care systems, settings, and residents also revealed the need for flexibility in graduate medical education policies.

In conclusion, these findings suggest that changes in graduate medical education funding policies, accreditation standards, certification exam topics, undergraduate medical education and investment in research of educational and evaluation strategies could have a significant positive impact on how well IM programs are preparing our nation's physicians to care for our 21<sup>st</sup> century population.