

# Graduate Medical Education at the Medical College of Wisconsin: New Initiatives to Respond to the Changing Residency Training Environment

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## ABSTRACT

Nationally, Graduate Medical Education (GME) is facing a series of challenges. These include cutbacks in Medicare funding, major changes in accreditation standards requiring education in and assessment of "general (core) competencies," and reduction in housestaff work hours. GME at the Medical College of Wisconsin (MCW) is managed by a consortium called the Medical College of Wisconsin Affiliated Hospitals, Inc. (MCWAH), which is comprised of 13 health care institutions in Southeastern Wisconsin.

The general competencies required by the Accreditation Council for Graduate Medical Education (ACGME) include six focal areas: (1) patient care; (2) medical knowledge; (3) professionalism; (4) interpersonal and communication skills; (5) practice-based learning and improvement; and (6) systems-based practice. Traditionally, the GME programs have focused on training and assessment specific to patient care and medical knowledge, but have limited emphasis on the other four. To address this gap, MCWAH has launched several initiatives to enhance teaching and assessment of the other four competencies.

An on-line residency management system marketed by New Innovations of Toledo, Ohio is being used to provide a web-based residency management system, allowing the faculty and residents to evaluate one another at the end of each rotation. Faculty development programs for residency program directors have been initiated to ensure they have the knowledge and skills associated with teaching and assessing the core competencies. We are now piloting a 360-degree evaluation system to include evaluations of residents and faculty by co-workers and patients.

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The ACGME is in the process of mandating reduced duty hours for the housestaff. As a result, residents will have less time for direct patient care responsibilities with more intensive use of other education and training strategies to ensure that they become independent specialists.

GME is undergoing a major paradigm change, and MCWAH remains on the cutting edge in responding to the challenges.

## INTRODUCTION

Graduate Medical Education (GME) is facing a series of challenges<sup>1</sup> including uncertainties due to reliance on Medicare GME support,<sup>2</sup> changes in accreditation standards for all residency programs,<sup>3,4</sup> and maximum work hour mandates.<sup>5,6</sup> Each of these challenges is occurring in the context of a highly competitive health care marketplace, which is changing the practice of medicine. These changes require new strategies for the management, training, and assessment of our residency program graduates. This article will briefly describe how GME at the Medical College of Wisconsin (MCW) has responded to these changes and present preliminary evidence of our success.

## GME MANAGEMENT

Graduate Medical Education at MCW is managed via a consortium called the Medical College of Wisconsin Affiliated Hospitals, Inc. (MCWAH). MCWAH is comprised of 13 health care institutions located in southeastern Wisconsin:

- All Saints Health Care System, Racine
- Aurora Health Care
- Blood Center of Southeastern Wisconsin
- Children's Hospital of Wisconsin
- Columbia/St. Marys Hospital
- Froedtert Hospital
- Medical College of Wisconsin

- Milwaukee County Behavioral Health Division
- St. Francis Hospital
- St. Joseph's Regional Medical Center
- St. Michael Hospital
- Zablocki Veterans Affairs Medical Center
- Waukesha Memorial Hospital

There are currently 685 residents and fellows in 84 programs, 64 of which are accredited by the Accreditation Council for Graduate Medical Education (ACGME). For the rest there is no ACGME accreditation available. Each program is headed by a full-time faculty member at MCW.

MCWAH was founded in 1980 as a 501(c)3 not-for-profit corporation to streamline the employment of the housestaff and sponsor the residency and fellowship programs for accreditation by the ACGME. The MCWAH agreement was approved by each hospital's medical staff and its governing board. Each member institution appoints two senior managers to MCWAH's Board of Directors. MCWAH is headed by a physician executive director, who is also the Senior Associate Dean for Graduate Medical Education at MCW. MCWAH pays the housestaff a monthly stipend and provides fringe benefits. Each hospital reimburses MCWAH for the housestaff positions it sponsors. The Professional Liability Insurance (PLI) for the MCWAH housestaff is provided through the Physicians Insurance Company of Wisconsin.

The education of residents and fellows is the responsibility of the MCW faculty based at the various affiliated hospitals, with oversight provided by the residency program directors and MCW's department chairs. All professional activities are performed under the supervision of attending physicians who are full-time or clinical faculty members of MCW. A committee called the Graduate Medical Education Council (GMEC), composed primarily of the residency program directors, meets monthly. The GMEC oversees all the programs and advises the executive director on programmatic matters including institution-wide response to new accreditation standards.

**ACGME GENERAL (CORE) COMPETENCIES**  
Effective July 1, 2002, the Accreditation Council on Graduate Medical Education (ACGME) required that all residents in the accredited residency training programs be educated and evaluated in six core competencies areas:<sup>3</sup>

1. **Patient Care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

2. **Medical Knowledge** about established and evolving biomedical, clinical, and cognate (e.g., epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.
3. **Professionalism**, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
4. **Interpersonal and Communication Skills** that result in effective information exchange and teaming with patients, their families, and other health professionals.
5. **Practice-Based Learning and Improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
6. **Systems-Based Practice**, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Residency programs must demonstrate that they have explicit curriculum targeted to each of these competencies and two levels of evaluation: assessment of resident's performance using multiple measures and evaluation of the quality of the training program. In addition, there is an institutional requirement. In response to the institution-level requirements, MCWAH has developed a series of initiatives to ensure that its residency graduates are competent per ACGME requirements.

## NEEDS ASSESSMENT

Traditionally topics covering each of the General Competencies have been presented throughout the year in each program during the regularly held conferences and grand rounds. As a result, housestaff have been effectively trained in patient care and have acquired the necessary medical knowledge and skills to become experts in their chosen specialties. However, limited data was available to determine the needs across MCWAH programs specific to the new ACGME competencies. In response, MCWAH conducted a formal needs assessment survey from July 2002 to August 2002 asking each program the degree to which it taught and assessed each of the core competency areas.

Results confirmed the hypothesis that residencies were appropriately teaching and assessing patient care and medical knowledge competencies, but formal teaching and/or assessment strategies for professional-

**Table 1.** Needs assessment results specific to ACGME competencies

TEACHING AND ASSESSMENT METHODS (Used by > 40% of Program Respondents)	ACGME COMPETENCIES					
	Patient Care	Medical Knowledge	Practice-Based Learning and Improvement	Interpersonal & Communication Skills	Professionalism	Systems-Based Practice
<b>Teaching Methods</b>						
Case Conference	x	x				
Chairman's Rounds		x				
Chart/Record Audits						
Core Curriculum Lectures	x	x				
Journal Club						
Morning Report Focal Topic		x				
Professor's Rounds						
Staffing Resident/Work Rounds	x	x		x		
Web-Based Instruction						
<b>Assessment Methods</b>						
Faculty Clinical Performance Checklist	x	x		x	x	
Externally Developed "In-Service" Exam		x				
Formal Resident Self-Assessment						
Evaluations from Other Health Care Team Members						
360° Global Rating						

ism, interpersonal communication skills, practice-based learning and improvement, and systems-based practice varied by program (see Table 1).

## INITIATIVES

In response to this needs assessment data, several major MCWAH programmatic initiatives have been launched to enhance teaching and assessment specific to these competencies.

### *Orientation Session*

Each year at the orientation of the incoming housestaff, a 3-hour interactive session utilizing an audience response system is used to introduce residents to four of the six General Competencies: professionalism, interpersonal and communication skills, practice-based learning and improvement, and systems-based practice.

### *Lecture Series*

A monthly lecture series was initiated in January 2002 on topics pertaining to the general competencies and those normally not covered in departmental conferences and grand rounds such as conflict resolution, fundamentals of biostatistics, writing and publishing articles, and writing grant applications. Due to low

attendance, the monthly lectures have been discontinued. We intend to offer these topics in the form of an electronic/on-line curriculum that the housestaff can complete over a period of time.

### *On-Line Residency Program Management System*

Residency training programs include a combination of supervised clinical experiences, core curriculum lectures, morbidity and mortality conferences, morning reports, journal clubs, and grand rounds. Based on these learning opportunities, faculty must assess the degree to which residents' performance meets the established competencies for a specific rotation and/or educational experience. In addition, residency programs are required to evaluate the effectiveness of each training venue including the quality of the teaching, attendance, and core content coverage. The logistical permutations of this data management task are exacerbated by the fact that MCWAH residents do rotations at three to four hospitals, with different faculty, on variable schedules.

To address this issue, MCWAH has contracted with a vendor, New Innovations of Toledo, Ohio, to provide a web-based residency management system. It allows an efficient way for the faculty to complete the

monthly evaluation of residents on-line and for residents to complete the evaluation of faculty as teachers and their rotations. The system sends an e-mail asking the faculty to complete their resident evaluation at the end of the rotation. If the evaluation is not received within a prescribed time period, another evaluation reminder is sent. The faculty member clicks on the reminder and is directly linked to the evaluation form, completes the evaluation and submits the form on-line. Residents are also notified, using the same technology to complete evaluations on faculty or other curriculum activities. As the residency management system is used for scheduling of rotations and conferences, and tracking procedures performed by the housestaff, the system automatically knows to whom and for what to send evaluations.

Once evaluations are completed, residents are able to view the summary of their aggregated performance evaluations on-line. Due to the multiple report formats available, residents (and the residency program director) can review these evaluations for a single rotation at a single time period (e.g., trauma rotation), across time (e.g., continuity clinic), or overall performance across all rotations. This data management system allows the resident and the program director to easily track the performance of individuals or groups of residents (e.g., interns) and identify where additional training may be needed.

#### *Faculty Development for Resident Program Directors in Learner Assessment*

The ACGME outcome project states, "The residency program must demonstrate that it has an effective plan for assessing resident performance throughout the program and for utilizing assessment results to improve resident performance."<sup>3</sup> Residency program directors are often knowledgeable about curriculum and teaching, but have limited expertise in the systematic design, implementation, and interpretation of psychometric data associated with performance assessment instruments. To meet this need, a 4-hour workshop is offered to residency program directors and key residency faculty/staff. It provides an introduction to key measurement principles (e.g., reliability, validity) and teaches a systematic approach to assessing learner performance. The workshop emphasizes the identification of threats to the quality of assessment tools (e.g., instrument design, instrument administration, rater variability, and learner fatigue) and strategies for controlling these threats. At the completion of the workshop, each participant leaves with a program-specific action plan to assess the six ACGME competencies.

#### *Assessment of Competencies Using Multiple Raters*

The ACGME encourages residency programs to use multiple individuals to evaluate resident's performance. Our needs assessment data revealed that less than 20% of the programs used raters who were non-physicians. We have developed an assessment tool to conduct a 360-degree evaluation for use by an array of individuals who interact with the resident (e.g., nurses, other residents, patients, medical students) to evaluate their performance. The resident also completes the form as part of a self-assessment activity consistent with the practice-based learning competency. The 1-page form contains three to five items per competency. Two programs are currently piloting a 360-degree evaluation form, one emphasizing the assessment of faculty by multiple raters (e.g., nurses, supervisor, self) and the other an assessment of residents by faculty, other residents, nurses, program administrative staff, and patients.

The critical step in developing a 360-degree evaluation tool is identification of items to be rated. To date, each specialty has articulated the competencies with examples of items to be assessed within their respective training programs as part of their residency review committee requirements. However, there are no published documents identifying common elements across specialties to guide the development of a resident assessment tool that can be used by multiple raters. We undertook a systematic analysis using the RRC guidelines for MCWAH's 13 largest residency programs to identify component elements within each of the 6 ACGME outcomes for inclusion on a 360-degree evaluation tool. Archival data sources were used, including specialty-specific RRC requirements and web-based resources from specific programs<sup>7</sup> and the ACGME resources page.

Specific competencies within each outcome were coded and then content analysis performed to collapse items into common themes/component competencies. A cut-off of > 45% (5/11) specialties listing the competency was established for inclusion on the form.

#### NEW CHALLENGES AND NEXT STEPS

Effective July 1, 2003, the ACGME will impose strict rules on housestaff work hours.<sup>5,6</sup>

These rules specify that:

- Duty hours including all in-house call activities must be limited to 80 hours per week, averaged over a 4-week period.
- Residents may remain on duty for up to 6 additional hours after 24 consecutive hours of duty to participate in didactic activities, maintain continuity of

medical and surgical care, transfer care of patients or conduct outpatient continuity clinics.

- No new patients may be accepted after 24 hours of continuous duty except in outpatient continuity clinics.
- Residents must be provided with 1 day (24 hours) in 7, free from all educational and clinical responsibilities, averaged over a 4-week period.
- A 10-hour period for rest and personal activities must be provided between all daily duty periods and after in-house call.
- In-house calls must occur no more frequently than every third night, averaged over a 4-week period.
- The frequency of at-home call is not subject to the every third night limitation. However, at home call must not be so frequent as to preclude rest and reasonable personal time for each resident. When residents are called into the hospital from home, the hours residents spent in-house are counted toward the 80-hour limit.
- The program director must ensure that moonlighting does not interfere with the ability of the resident to achieve the goals and objectives of the educational programs. In-house moonlighting is counted toward the 80-hour weekly limit on duty hours.

For some of the surgical programs, due to the limitation on the number of residents that can be trained, it will be difficult to meet the above requirements without hiring allied health care professionals such as physician assistants to do some of the work currently being performed by the housestaff. Lack of funding and shortage of personnel to fill the positions will be barriers that may be difficult to overcome. Internal Medicine programs across the nation are hiring hospitalists to do some of the work traditionally performed by the housestaff. In spite of these measures, there remains a concern that the programs may not be able to meet the work hour requirements. To ensure that MCWAH

programs are meeting this standard, resident duty hours will be tracked by the on-line residency management system, providing a systematic and continuous source of data to evaluate compliance with this new standard.

## CONCLUSION

MCW's residency training programs are systematically redesigning the teaching and assessment strategies used to provide graduate medical education in response to challenges associated with today's competitive health care marketplace and new accreditation requirements associated with core competencies and work hours. Ongoing residency curriculum restructuring and revising, supported by faculty development efforts and the use of on-line technologies for teaching and assessment, complement the traditional roles of clinical experience and faculty observation of resident's performance.

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