

Keeping Granny Safe on July 1: A Consensus on Minimum Geriatrics Competencies for Graduating Medical Students

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Abstract

Competency-based education prepares trainees to perform tasks occurring within the context of practice. There are currently no geriatrics-specific, competency-based consensus performance standards for medical students.

The authors present the results of a systematic, multimethod process to identify and define the minimum geriatrics-specific competencies needed by a new intern to adequately care for older adults. An alpha draft was crafted by geriatricians, identifying measurable performance subtasks associated with accepted standards of evidence-based geriatric care, patient safety, and “do no harm” within the first-year resident’s expected scope of practice. The competencies were then assessed for

content validity by key stakeholders and informants. Of the 315 respondents, 26% were geriatricians, 21% family physicians, 24% general internists, 6% neurology program directors, 14% surgery program directors, and 9% other. Twenty-four were decanal appointees. Faculty from almost half (44%) of U.S. medical schools and representatives of several major medical education organizations were present at the working conference.

The final document consists of 26 competencies nested within eight content domains: Medication Management; Self-Care Capacity; Falls, Balance and Gait Disorders; Hospital Care for Elders; Cognitive and Behavioral Disorders; Atypical Presentation of Disease;

Health Care Planning and Promotion; and Palliative Care.

Setting minimum geriatric competency standards establishes the performance benchmarks for medical school graduates who as first-year residents will care for geriatric patients. Only half-facetiously, they are referred to as the “Don’t Kill Granny” competencies. Achievement of these minimum competencies by medical students, grounded in evidence-based principles of quality care for older adults, will assure that, each year, older patients are in safer hands on July 1.

Acad Med. 2009; 84:604–610.

Editor’s Note: A commentary on this article appears on page 542.

Competency-based education prepares trainees to perform tasks occurring within the context of practice. Teaching to competency differs from traditional instruction. It begins by stating the performance we expect of our graduates in the workplace and then designing the medical school curriculum to prepare our learners to achieve that performance through deliberate practice in applying the underlying knowledge, skills, and attitudes. As patients 65 and older currently comprise 28% of the physician workload in primary care, 32% of surgical care, 43% of medical specialty care, 43% of emergency medical care, and account for 48% of hospital days,¹

physicians must be competent to care for geriatric patients when they graduate from medical school. In April 2008, the Institute of Medicine (IOM)² issued a report, *Retooling for an Aging America: Building the Health Care Workforce*, that made the following recommendation: “All licensure, certification, and maintenance of certification for health care professionals should include demonstration of competence in the care of older adults as a criterion.” Review of the published and Web-based literature reveals that there are no geriatrics-specific, competency-based consensus performance standards for medical students; rather, there are lists of objectives.^{3–8,12}

In 2000, recognizing the need to prepare medical students to care for geriatric patients, the John A. Hartford Foundation (JAHF) began support for 40 medical schools to enhance such training. To disseminate the curricular strategies associated with these innovations, *Academic Medicine* published a report from each JAHF-funded school in a July 2004 supplement. These 40 schools

linked their curriculum efforts to the American Geriatrics Societies’ objectives for medical student education.³ Learning outcomes focused on students’ establishing a relationship with an older adult to improve understanding of the interrelationship of disease, lifestyle and social issues, enhanced knowledge of the differences between normal and abnormal physical changes related to aging, health care systems and insurance, multidisciplinary team care, and ethical issues in geriatric care.⁹

Dissemination of these curriculum strategies and associated findings was a critical step in illuminating the opportunities and gaps in preparing medical students to care for our aging population. However, the range and variation of targeted objectives, strategies, and outcomes emerging from these reports has created a challenge for medical educators striving to balance what geriatric competencies are needed by all medical student graduates and what are important but not critical.

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We present the results of a systematic, multimethod process to identify and define the minimum geriatrics-specific competencies needed by a new intern to adequately care for older adults, an outcome we only half-facetiously refer to as the “Don’t Kill Granny” competencies. We identified measurable performance subtasks associated with accepted standards of evidence-based geriatric care, patient safety, and “do no harm” within the first-year resident’s expected scope of practice. Setting minimum geriatric competency standards establishes the performance benchmarks for all U.S. medical school graduates who as first-year residents will care for geriatric patients. As each medical school operates within its own context and specific objectives, the process for assuring that students receive the education/preparation needed to achieve the minimum geriatric competencies by graduation will vary, but we believe that the competencies outlined below should be achieved by all U.S. medical school graduates.

Process Overview and Timeline

Table 1 provides an overview of our process and timeline used to develop geriatric competencies for medical students. We modeled the initial process, identifying domains and then competencies, after that used by the Florida Consortium for Geriatric Medical Education (FCGME).⁷ A 13-member ad hoc Steering Committee* was convened by Rosanne M. Leipzig, MD, PhD. Members were invited based on their prior work on developing competencies and experience in geriatrics and medical student education. The Steering Committee developed an alpha draft of a minimum set of geriatric competencies that all residency program directors can expect

their incoming interns to have met during medical school. The competencies were to be evidence based and reflect broad input and agreement from the medical student education community, including medical educators in fields other than geriatrics. To guide the Steering Committee’s work, a set of ground rules was established (List 1).

Further refinement of the competencies occurred as part of the July 2007 Association of American Medical Colleges (AAMC)/JAHF Consensus Conference on Competencies in Geriatric Education. A separate Conference Advisory Committee[†] was responsible for planning and facilitating the July 11–13, 2007 conference. This committee was convened by M. Brownell Anderson, principal investigator (PI) of the consensus conference grant from the JAHF to the AAMC, and comprised medical school faculty who had been PIs on the previous AAMC/JAHF grants, had participated in ongoing work with senior mentors programs, and had sustained their geriatrics initiatives at their schools after grant funding ended.¹⁰ They were selected on the basis of their willingness to participate and assist with the final documents from the working groups and their ability to facilitate a group. Committee members participated in drafting the conference agenda, leading the discussion groups, capturing the outcomes of the group discussion, and presenting outcomes to the larger group.

Content Domain Identification and Creating an Alpha Draft

As depicted in Table 1, in early 2007, the Steering Committee compiled a list of 52 nonmutually exclusive geriatric content domains from previously created curricular documents. To reduce the number to 25 domains, 38 other leaders in geriatric medical education took an online survey during February 2007, ranking each domain using a five-point Likert scale (1 = strongly disagree; 3 = neutral; 5 = strongly agree). Points were

summed for each potential domain, with a maximum of 190 if all respondents strongly agreed that the domain was important and a score of 152 if all simply agreed. For the 25 top-scoring domains, scores ranged from 157 to 188, indicating that most participants agreed or strongly agreed that these were important. The Steering Committee then engaged in a collaborative online process (ending March 16, 2007) to assure that the domain names were clear and unique, resulting in 23 domains. Another online survey was posted (ending March 28, 2007), and we invited approximately 325 “geriatrically interested” individuals (members of Association of Directors of Geriatric Academic Programs, the PIs of Reynolds grants and of the JAHF geriatric Centers of Excellence, and the geriatric interest groups of the Society of General and Internal Medicine and the Society of Teachers of Family Medicine) to mark the 8 of these 23 domains they considered most important for medical students to learn about. One hundred seventeen respondents chose the following domains: (1) Medication Management, (2) Altered Mental Status: Delirium, Dementia and Depression, (3) Functional Assessments, (4) Falls, Balance, Gait Disorders, (5) Prevention Based on Function, (6) (Atypical) Presentation of Disease, (7) Palliative Care, and (8) Hospital Care for Elders.

During April, the Steering Committee derived three to five competencies for each content domain drawing from those developed by FCGME, Mount Sinai School of Medicine, and Florida State University. These competencies were posted on the Portal of Geriatric Online Education (www.pogoe.org) in a series of “wikis” that were open until May 2, 2007. Wikis are accessible online workspaces for asynchronous collaboration that allow users to exchange information, add data or examples, expand or challenge ideas, and maintain an accessible archive of communications during project development. This process allowed Steering Committee members to share, review, and comment on past and current revisions of these competencies at their own pace. Each member of the committee was able to see all edits, comments, and rationales. A final conference call in May 2007 resulted in agreement on an alpha draft comprising 35 potential competencies for the eight content domains.

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**Table 1
Timeline for a Systematic, Multimethod Consensus Process to Determine Suggested Geriatrics-Related Medical School Competencies, 2007**

Task	Dates	Process	Participants	Results
Content domain identification				
Identify universe of potential domains	Jan–Feb 2007	Culled from previous curricular documents (AGS, SGIM, Florida Consortium for Geriatric Medical Education [FCGME], AAFP, CDIM, and the Federated Council for Internal Medicine [FCIM]) ^{4,6–7,12–13}	Steering committee (SC) (N = 13)	52 domains
Identify top 25 potential domains	Feb 2007	Online survey	SC, principal investigators (Pis) of the 30 D.W. Reynolds Foundation Program in Aging grants (Reynolds Pis) and other leaders in geriatric medical education (N = 38)	25 domains
Review domains for clarity and uniqueness	Mar 2007	Collaborative online “wiki” process	SC	23 domains
Reach consensus on 8 domains	Mar 2007	Online survey to choose the 8 most important domains	SC, Reynolds Pis, John A. Hartford Foundation Centers of Excellence Pis, and the geriatric interest groups of SGIM, STFM, and APDIM (N = 117)	8 domains chosen: 1. Medication management 2. Altered mental status: Delirium, dementia, and depression 3. Functional assessments 4. Falls, balance, gait disorders 5. Prevention, based on function 6. (Atypical) presentation of disease 7. Palliative care 8. Hospital care for elders
Competency and alpha draft development				
Develop alpha draft with 3–5 competencies for each content domain	April–May 2007	Posted competencies previously developed by Mount Sinai, FSCGME, and Florida State University on a series of “wikis”; final conference call to resolve differences and ensure consensus	Each SC member charged with moderating one content domain; all SC members charged with commenting on each domain	35 competencies
Content validity	May–June 2007	Online survey	Residency program directors; clerkship directors, deans, and curriculum deans; those with special interest in geriatrics. At least 1857 invited; 315 replied.	>75% of key informants reported that interns <i>must</i> or <i>should</i> be competent in 24 of the 35 competencies
Consensus conference				
Create beta draft based on alpha draft, results of content validity survey, ability to assess attainment, ability of schools to implement	July 11–13, 2007	Four preassigned working groups, each responsible for attaining consensus on two domains; periodic large-group check-ins	98 Conference Advisory Committee participants	Change in name of 3 domains and consensus on 26 competencies
Final document				
Finalize language, with all competencies expressed as completions of this sentence: “The graduating medical student, in the context of a specific older adult patient scenario (real or simulated), must be able to . . .”	Aug 2007	E-mail iterations	Conference Advisory Committee, SC	26 competencies
Working group vetting of their domains’ revised language	Sept 2007	E-mail iterations	Conference participants	26 competencies
Participants’ endorsement of final document	Sept 2007	Online survey	Conference participants	93 respondents all agreed to endorse

Content Validity: E-Vetting the Alpha Draft With Key Stakeholders

We then surveyed three groups of key stakeholders/informants to ascertain the content validity of these 35 competencies for new interns. Stakeholders included residency program directors responsible for the care provided by interns and those with special interest in geriatrics (program directors of geriatric academic programs, the geriatric interest groups in internal medicine and family medicine, the American Geriatrics Society's Education Committee, and the PIs of D.W. Reynolds Aging and Quality of Life Program grants and the JAHF Center of Excellence in Geriatrics awards), and key informants included those responsible for the training of medical students—that is, clerkship directors in internal medicine and family medicine and deans of medical education and curriculum.

The Steering Committee developed and pilot tested an online survey that asked these key stakeholders and informants to indicate, for each of the 35 competencies, if an intern *must*, *should*, or *does not need* to be able to perform that competency at the start of his or her first postgraduate year. Professional associations facilitated distribution of invitations containing a direct link to the survey by direct personal e-mail listserves, or newsletter announcements to at least 1,857 individuals. The final online survey was conducted between May 14 and June 8, 2007.

There were 315 survey respondents: 26% geriatricians (n = 81), 21% family physicians (n = 67), 24% general internists (n = 77), 6% neurology program directors (n = 20), 14% general surgery program directors (n = 43), and 9% other (n = 28). Of the survey respondents, 24 were decanal appointees responsible for medical student education (e.g., associate dean for medical student education, assistant dean for curriculum). For each competency, we averaged the percentages of all respondents who replied *must* or *should*.

More than 75% of key informants reported that interns *must* or *should* be competent in 24 of the 35 competencies. Of the remaining 11 competencies, at least 58% of respondents indicated *must* or *should* for each (median 66%; range 58–74%). To compare responses by

List 1

Steering Committee's Guiding Principles for Developing an Alpha Draft of Competencies for Geriatrics-Related Medical School Competencies During a 2007 Systematic, Multimethod Consensus Process

1. The competencies must focus on issues that matter to health outcomes for older adults.
2. The competencies must be important to patient care that is likely to occur at the start of one's internship.
3. The total number of content domains and competencies should be limited, with no more than eight domains, and no more than five competencies in each.
4. The competencies should be similar to quality indicators in that they are the "floor" behaviors and could be taught and evaluated at any medical school. They are not meant to limit what the "ceiling" could be.
5. The set of competencies, derived from evidence-based standards and reflecting broad-based key stakeholder input, must be completed in less than six months to serve as the working document for a consensus conference.

discipline, "agreement" was defined as >70% of a specialty's respondents indicating that their interns *must* or *should* have this competency at the start of their internship (i.e., ≤30% said that interns do not need this competency). Using this definition, general surgery agreed with 69% of the competencies (the lowest rate of agreement), whereas geriatrics had the highest rate, 94% (Figure 1).

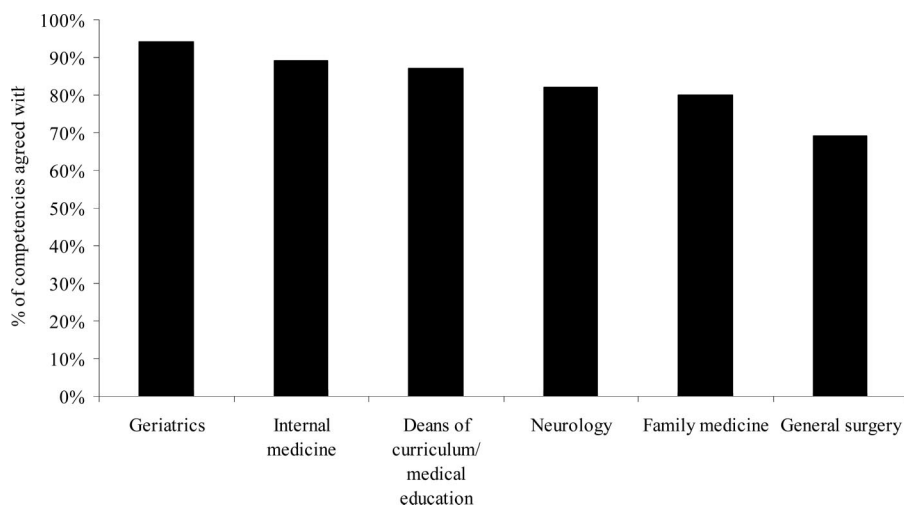


Figure 1 Agreement by discipline about the content validity of an alpha draft of 35 geriatric-related medical school competencies from a systematic, multimethod consensus process in 2007. "Agreement" meant that >70% of the discipline's respondents replied that their interns *must* or *should* have a certain competency at the start of their internship.

The content validity process was robust, involving more than 300 clinicians, the majority of whom were not geriatricians. Many, but not all, disciplines who offer a postgraduate year one were represented in the process, with some specialties like pediatrics excluded because of relevance, and others, like otolaryngology, excluded because of small numbers of respondents. The short turnaround time for survey responses and/or the distribution list requirements of selected program director organizations limited access to adequate numbers of program directors in obstetrics–gynecology, psychiatry, or emergency medicine. Response rates to our e-mail invitations (embedded in the society's electronic newsletters and e-mail blasts) were low. Those who responded probably had the strongest predilection for geriatrics, but they also are most likely to be able to identify the critical competencies.

Consensus Conference

The alpha competency draft and content validity survey results served as the focus for a 2.5-day working conference attended by 98 people who responded to a combination of targeted invitations and general announcements about the conference. An HTML e-mail message was sent to more than 3,000 medical school faculty at all U.S. and Canadian medical schools involved in the 40 AAMC/JAHF educational programs for medical students. In addition, announcements of the conference were printed and distributed at the regional

meetings of the AAMC Group on Educational Affairs and posted to the newsletters of the Society of Teachers of Family Medicine and the Association of Clerkship Directors. There was no application process, and participants paid their own way to attend the conference and covered registration fees from their own budgets, so all in attendance were there out of interest in the topic.

Participants represented 57 different U.S. medical schools and included representatives from the American Medical Association, the AAMC, the Canadian Geriatrics Society, the American Geriatrics Society, the Society of General Internal Medicine, and the American Medical Directors Association. Conference participants represented the specialties of geriatrics, gerontology, internal medicine, family medicine, and psychiatry and included those with roles as ambulatory providers, hospitalists, curriculum deans, clerkship directors, and program directors. Participants were preassigned to working groups to provide breadth of perspectives. The consensus conference participants used the key informants' results to inform their deliberations; however, they were not bound by them. Each working group was facilitated by members of the Conference Advisory Committee, focused on two competency domains, and was charged with developing, for each content domain, a final list of two to five competencies appropriate for graduating medical students that realistically could be achieved by all U.S. medical schools. During the conference, each working group's domain(s) and competencies were vetted and revised by the rest of the conference participants to broaden consensus. Conference participants changed three domain names to better capture the intended scope. (Altered Mental Status: Delirium, Dementia and Depression became Cognitive and Behavioral Disorders; Functional Assessments became Self-Care Capacity; and Prevention Based on Function became Health Care Planning and Promotion.)

Finalizing the Competencies

After the conference, members of the Steering and Conference Advisory Committees reviewed the final competencies and associated domains to provide consistency in terminology and

to assure that the competencies were performance oriented and measurable and that they followed from the statement, "The graduating medical student, in the context of a specific older adult patient scenario (real or simulated), must be able to...."

The reframed competencies were then circulated to the conference working group leaders associated with that domain for review and comment. Competencies were revised, and the final document was then circulated electronically to all conference participants for their approval. Ninety-three percent have responded; all approved the final document. The final document consists of 26 competencies nested within the eight content domains (List 2).

Reflections and Future Work

The eight domains and 26 competencies identified through a multimethod consensus process present the floor—a minimum standard for performance—not a ceiling. Faculty from almost half (44%) of U.S. medical schools and representatives of several major medical education organizations participated in the consensus conference, with significant participation from other key informants across specialties during the initial competency development process.

For each domain, the specific competencies identify observable behaviors that medical students must demonstrate to prove competency. The importance of synthesis and integration, obtaining corroborating information, and working with caregivers and with the interdisciplinary care team has been made explicit within the appropriate competencies. Other behaviors and actions are less explicit, recognizing the limitations of measurement and medical school resources. For example, a competency that states "Interact with older adults without exhibiting ageism" might be difficult to evaluate, yet it can and should be addressed through instructional methods and strategies because it is a critical affective objective for all physicians and underlies many of the competencies listed.

Recognizing that the medical school curriculum is overwhelmed with "new" content areas (e.g., genomics,

bioterrorism, quality improvement, global health), our highest priority was to minimize the number of competencies. For this reason, certain competencies in the alpha draft, such as the transient causes of urinary incontinence, did not make the final version. Others, such as frailty, were eliminated because of the lack of an agreed-on gold standard for diagnosis, whereas theories of aging were considered irrelevant to the care provided by a new intern. Consensus was achieved on the standard requiring that all students be competent in assessing gait, mental status, and function, but there was marked resistance at the consensus conference to requiring the use of a standardized tool for doing this, so the method of patient assessment was omitted.

For the last several years, the term "competency" in medical education has been assumed to refer to the six Accreditation Council for Graduate Medical Education (ACGME) competencies: medical knowledge, patient care, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.¹¹ However, the term "competency" has a long history in education as the term used to refer to required performance associated with a task/job. Although the medical student geriatric competencies were not written to fit specific ACGME competencies, each geriatric competency does match at least one of the six ACGME domains. For example, "Develop an evaluation and nonpharmacologic management plan for agitated demented or delirious patients" could be considered patient care (in the context of an actual observed patient encounter), medical knowledge (as an examination question), interpersonal and communication skills (as an OSCE station dealing with the family and/or staff), professionalism (as a 360-degree evaluation from the student's patient-care team), or systems-based practice (working with nursing to develop a protocol for nonpharmacologic management), depending on how a particular school has framed the ACGME competency domains and its curriculum.

The next steps in the process of incorporating these competencies into medical school curricula and in achieving the IOM goal of building a workforce competent to care for an aging America

List 2

Minimum Geriatric Competencies for Medical Students as Determined by a Systematic Multimethod Consensus Process in 2007**Medication Management**

1. Explain impact of age-related changes on drug selection and dose based on knowledge of age-related changes in renal and hepatic function, body composition, and central nervous system sensitivity.
2. Identify medications, including anticholinergic, psychoactive, anticoagulant, analgesic, hypoglycemic, and cardiovascular drugs, that should be avoided or used with caution in older adults, and explain the potential problems associated with each.
3. Document a patient's complete medication list, including prescribed, herbal, and over-the-counter medications, and, for each medication, provide the dose, frequency, indication, benefit, side effects, and an assessment of adherence.

Cognitive and Behavioral Disorders

4. Define and distinguish among the clinical presentations of delirium, dementia, and depression.
5. Formulate a differential diagnosis and implement initial evaluation in a patient who exhibits dementia, delirium, or depression.
6. In an older patient with delirium, urgently initiate a diagnostic workup to determine the root cause (etiology).
7. Perform and interpret a cognitive assessment in older patients for whom there are concerns regarding memory or function.
8. Develop an evaluation and nonpharmacologic management plan for agitated demented or delirious patients.

Self-Care Capacity

9. Assess and describe baseline and current functional abilities (instrumental activities of daily living, activities of daily living, and special senses) in an older patient by collecting historical data from multiple sources and performing a confirmatory physical examination.
10. Develop a preliminary management plan for patients presenting with functional deficits, including adaptive interventions and involvement of interdisciplinary team members from appropriate disciplines, such as social work, nursing, rehabilitation, nutrition, and pharmacy.
11. Identify and assess safety risks in the home environment, and make recommendations to mitigate these.

Falls, Balance, Gait Disorders

12. Ask all patients > 65 years old, or their caregivers, about falls in the last year, watch the patient rise from a chair and walk (or transfer), and then record and interpret the findings.
13. In a patient who has fallen, construct a differential diagnosis and evaluation plan that addresses the multiple etiologies identified by history, physical examination, and functional assessment.

Health Care Planning and Promotion

14. Define and differentiate among types of code status, health care proxies, and advance directives in the state where one is training.
15. Accurately identify clinical situations where life expectancy, functional status, patient preference, or goals of care should override standard recommendations for screening tests in older adults.
16. Accurately identify clinical situations where life expectancy, functional status, patient preference, or goals of care should override standard recommendations for treatment in older adults.

Atypical Presentation of Disease

17. Identify at least three physiologic changes of aging for each organ system and their impact on the patient, including their contribution to homeostasis (the age-related narrowing of homeostatic reserve mechanisms).
18. Generate a differential diagnosis based on recognition of the unique presentations of common conditions in older adults, including acute coronary syndrome, dehydration, urinary tract infection, acute abdomen, and pneumonia.

Palliative Care

19. Assess and provide initial management of pain and key nonpain symptoms based on patient's goals of care.
20. Identify the psychological, social, and spiritual needs of patients with advanced illness and their family members, and link these identified needs with the appropriate interdisciplinary team members.
21. Present palliative care (including hospice) as a positive, active treatment option for a patient with advanced disease.

Hospital Care for Elders

22. Identify potential hazards of hospitalization for all older adult patients (including immobility, delirium, medication side effects, malnutrition, pressure ulcers, procedures, peri- and postoperative periods, and hospital acquired infections) and identify potential prevention strategies.
23. Explain the risks, indications, alternatives, and contraindications for indwelling (Foley) catheter use in the older adult patient.
24. Explain the risks, indications, alternatives, and contraindications for physical and pharmacological restraint use.
25. Communicate the key components of a safe discharge plan (e.g., accurate medication list, plan for follow-up), including comparing/contrasting potential sites for discharge.
26. Conduct a surveillance examination of areas of the skin at high risk for pressure ulcers, and describe existing ulcers.

seem clear. Specific evaluation tools must be identified and, if necessary, developed, and a tracking system must be established to support medical schools' achievement of these competencies. Concurrently, the competencies we present provide a starting place for determining which additional proficiencies would be expected of the residents, fellows, and practicing physicians in every discipline, as performance expectations in medical training increase by training levels. For example, medical students have neither prescribing privileges nor primary responsibility for a patient's care; competencies for residents would need to explicitly address these added roles. Additionally, we view these competencies as dynamic, not static, and we recommend that these standards be reconsidered every five years to incorporate new knowledge, models of care, and changes in medical education.

All medical educators share a common goal of excellence in medical education and trainee performance. The systematic, multimethod approach to achieving consensus on minimum standards presented in this paper presents a model in the stepwise progression of competency-based education in geriatrics. The proceedings from the AAMC/JAHE Geriatrics Consensus Conference will be disseminated as part of the series of reports from the AAMC's Medical School Objectives Project. Medical students' achievement of these minimum competencies, grounded in evidence-based principles of quality care for older adults, will assure that, each year, older patients are in safer hands on July 1.

Acknowledgments

This work was funded by grants from the John A. Hartford Foundation to the Association of American Medical Colleges and by the American Geriatrics Society to the Mount Sinai School of Medicine.

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