

# Implementing the Vision

## Group on Educational Affairs Responds to the IIME Dean's Committee Report

*Educating Doctors to Provide High-Quality Medical Care:  
A Vision for Medical Education in the United States*



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Full text of the Ad Hoc Dean's Committee report, *Educating Doctors to Provide High Quality Medical Care* can be downloaded at [www.aamc.org/meded/iime](http://www.aamc.org/meded/iime)

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## Educating Doctors to Provide High-Quality Medical Care: A Vision for Medical Education in the United States Implementing the Vision

### Introduction

In July 2004, the AAMC's Institute for Improving Medical Education (IIME) issued the report "Educating Doctors to Provide High-Quality Medical Care: A Vision for Medical Education in the United States." The Institute's director, Michael Whitcomb, MD, invited the AAMC's Group on Educational Affairs (GEA) to respond to the report, in particular with ideas for implementation of the report's recommendations.

As a first step, at the AAMC's 2005 annual meeting the GEA sponsored a plenary session on the topic "Looking at the IIME Report; Medical Education: What's Working and What's Not?" A panel of three experts representing the continuum of medical education was charged with the following:

- reflecting on the IIME Report;
- identifying things that are being done well in medical education;
- identifying things that need to be corrected and ideas for correcting them across the continuum.

Approximately 350 AAMC meeting participants attended the plenary session. All attendees were given ballots on which to identify their top three choices of what is working in medical education, what needs to be addressed and improved, and how such improvement should be accomplished. Ballots were collected, and their comments were summarized and used at four focus sessions—one each hosted by the Undergraduate Medical Education (UGME), Graduate Medical Education (GME), Continuing Medical Education (CME), and Research in Medical Education (RIME) section leaders—at which themes from the IIME report relevant to each section were discussed.

A draft report based on these discussions was developed by members of the GEA Steering Committee (Judy Shea, Lee Manchul, Karen Mann, and Kelli Harding), and the draft report was discussed at the GEA regional meetings.

The following is a compilation of the content of the discussions held at the plenary session, at the focus sessions, and during the 2006 regional meetings.

### GEA Plenary Session – "Responding to the IIME Report"

The plenary session featured three speakers, each of whom provided an overview perspective on what is working in medical education and what is in need of improvement. Darrell Kirch, MD, then Pennsylvania State University's senior vice president for health affairs and dean of the Pennsylvania State College of Medicine, provided the perspective for UGME; Timothy Flynn, MD, associate dean for graduate medical education at the University of Florida College of Medicine, provided the perspective for GME; and David Davis, MD, immediate past associate dean for continuing medical education, University of Toronto Faculty of Medicine, provided the perspective for CME. After these presentations and some discussion, audience members were asked to complete a ballot on which they identified the top three areas that are working in medical education and the top three areas that require attention. Compilation of the free-text comments revealed the following:

*What is working/what is best in medical education?*

Audience members identified three main topics that are currently "working" in medical education:

- 1) an increased focus on patient outcomes and patient-oriented care across the medical education continuum;
- 2) a recognition that the separate "silos" of UGME, GME, and CME are barriers to systems change;

- 3) a dedicated cadre of faculty members who need recognition and development if they are to be the best teachers they can be.

### *What needs to be improved in medical education?*

The following areas were identified by the greatest number of audience members as areas that need attention:

- 1) increased integration across the medical education continuum (to include development of assessment measures that provide a comprehensive view of physician performance from UGME to GME to CME);
- 2) academic and financial recognition of educators;
- 3) the need for more rational assessment along the continuum, including the use of common competencies and more use of simulations and personal observations;
- 4) a variety of research areas and studies (elaborated upon later in this report).

## Sections Respond to IIME Report

After the plenary session, each of the four GEA sections met in interactive sessions to begin developing an action agenda for implementation of the IIME report. The UGME, GME, and CME sections met first; the RIME section met after the three section meetings had concluded so that it could develop a research agenda based on the research questions raised at the meetings of the other sections. A draft report of these discussions was disseminated to the GEA membership and discussed during each of the 2006 regional meetings.

The comments of participants at the various meetings indicate that there appears to be consensus about a shared conceptual model, described here.

### *Explanation of the Conceptual Model*

The Educational Process – The primary focus of interest for GEA members is the *Educational Process*, which is currently viewed as having distinct silos (UGME, GME, and CME). Within each silo are *learners* and *educators/teachers*. The shared goal of the educational process, across UGME, GME, and CME, is a positive impact on patient *outcomes*. The primary way in which this goal can be achieved is through enabling learners at all levels to develop and exhibit many elements of *professional competence*, such as acquisition of a strong and broad knowledge base, a wide array of clinical and professional skills, and exemplary professional and humanistic behaviors.

The educational process is just one of several forces that have an influence on patient outcomes. Another is the context in which the educational process occurs. Furthermore, in some cases the educational process may also influence patient outcomes indirectly by improving *practice factors* (e.g., making access easier) or altering *patient factors* (e.g., adherence).

Themes that emerged from the discussion identified population health as an overarching concept, with patient care outcomes as the crucial focus and, at the core, the professional development of the physician – from medical student through practicing physician. Professional development of the physician included the idea of faculty development initiatives aimed at teaching the essential skills of the practicing physician:

- self-assessment;
- reflection;
- self-directed learning and critical appraisal;
- role modeling;
- knowledge management;
- practice-based learning and improvement;
- CME best practices;
- quality and patient safety;
- accreditation and licensing requirements;
- knowledge of health care systems and organizational practice.

There is a need to develop strategies for teaching and measuring these skills. Included in the conceptual model are the idea that the learner must develop and practice these skills early and throughout the medical education continuum, and an emphasis on the early development of professional competencies beyond that of medical expert.

Each GEA section approached the task of responding to the Report differently, but each identified areas that, considered together, provide the elements of an action plan. Each discussion group provided examples of approaches to be taken and suggestions to be implemented. The highlights of the discussions at the 2005 annual meeting and the 2006 regional meetings are summarized below; these highlights are the first steps toward an implementation/ action plan. These ideas are organized and presented in alignment with the “Strategies for Effecting Reform” that are part of the IIME report (pp. 9 and 10): patient-centered care, high-quality care, professional choice and development, efficiency of education, and effectiveness of education.

For each strategy, the issues identified by the UGME, GME, and CME sections are discussed first, followed by research considerations identified by the RIME section for each of the themes. Some of the issues identified by the RIME Section emphasized the need to proceed with research according to the developmental progression of the learners (beginning in medical school, through practice) as a mechanism for developing thematic research areas.

### 1. Key approaches to promoting patient-centered medical care

Each of the Sections recognized the need for promoting a patient-centered approach to health care. Accordingly, there is a need for broadening the undergraduate and graduate curricula to include topics that prepare students to deliver the highest quality of care to a diverse patient population. In addition to the “usual” clinical topics that are specific to specialties, discussions were rich in defining a host of topics that need to be addressed. Topics included those that were linked directly to a patient-centered approach, such as professionalism, but there was considerable interest in making sure that both physicians and learners in

training be exposed to a broader curriculum that looks at patients and their health concerns within the broader social and economic world. Prevalent themes were recognizing the need for learning how to integrate new knowledge into practice, learning how to use informatics to access evidence-based medicine, and assessing practice with QI initiatives. The challenge is not in identifying the content but rather in learning the best venues in which to teach and learn the content and in finding ways to assess both progress and mastery.

A summary of the discussions of important content for a patient-centered approach to medical care included the following examples:

#### *Content*

- Quality improvement measures
- Patient safety
- Evidence-based medicine
- Informatics
- Economics of health care delivery
- Medical humanities (medicine and the arts)
- Health literacy
- Population/community health
- Informed consent
- Patient outcomes
- Access to health care/health care disparities

#### *Educational Methods*

- Problem-based learning
- Patient- and family-centered care
- Acquisition of new knowledge

#### *Attributes*

- Self-assessment, self-reflection
- Professionalism
- Cultural differences/influences
- Ethics
- Public leadership skills

### Research Considerations

#### The main tasks are the following:

- define *patient-centered* care. It will be important to identify and understand differences between patients', physicians', and educators' perspectives. Also, the context of care probably matters in the definition (e.g., routine care with a regular provider versus subspecialist care versus emergent care);
- learn the relative weight of features of the facility/setting (ease of getting an appointment, waiting time, parking, etc.) that influence the actual provider-patient interaction;
- examine the meaning of patient-centered care when care is provided by teams rather than by individuals. Measure the impact of team care, rather than the care by a provider in isolation, on patient outcomes. This area of research should also give attention to educating patients about the process of care as it is delivered by teams and across systems of care;
- study patient-centeredness as both an independent and a dependent variable. For example, some studies determine the impact of patient-centeredness on outcomes such as health outcomes and satisfaction, and others review educational interventions/approaches that produce patient-centeredness;
- study the impact of different sources of learning (including experiential learning and traditional GME/CME role models) on patient outcomes;
- develop links between medical education and patient outcomes. Elicit feedback from patients about their understanding of prognosis, diagnosis, and treatment. Incorporate this patient-focused understanding into medical education. Within this research strand, organize categories of patient outcomes in terms of patient satisfaction and quality of life, as well as in terms of traditional clinical outcomes;

- elicit students' beliefs about how to care for patients. Examine how these beliefs change during the course of the students' development. How do students learn about interdisciplinary care and their role in interdisciplinary care? How do students learn about systems of care, and how do they develop methods (e.g., resilience) for surviving and thriving within these systems?
- determine the student's understanding of the psychosocial context of patient care. What do students learn about how or whether care plans are negotiated with patients?

## 2. Ensuring that doctors are capable of providing high-quality medical care

The issue of competencies generated two types of discussions. On one level were discussions of the characteristics and competencies one would find in the "ideal physician." There is a group of core competencies that are essential for the physician at all levels of professional development. On a more detailed level, each group recognized that there is currently widespread knowledge of the ACGME competencies and that there are many benefits to be gained (efficiency, enhancing the continuity of education) from expanding and refining the ACGME general competencies so that they meet UGME and CME needs. Ideally, educators could define the core competencies for a longitudinal and integrated curriculum that transcends the limits of departments and disciplines and continues through GME and continuing professional development/CME.

#### *What are the competencies?*

Each of the ACGME competencies is appropriate for undergraduate medical education, some in greater depth than others. In general, these competencies are also appropriate for CME. The traditional definition of CME has been passive and characterized by knowledge acquisition and maintenance. However, current definitions have been expanded to include learning in practice, by reflection on practice (needs assessment, benchmarking, and performance assessment) and by self-direction in multiple areas (procedural skills, management skills, and critical thinking skills). The introduction to the skills required for learning throughout

practice must begin in undergraduate medical education and be carried into graduate medical education:

- **patient care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health;
- **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;
- **practice-based learning and improvement** that involve physicians' investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care;
- **interpersonal and communication skills** that result in effective information exchange and teaming with patients, their families, and other health professionals;
- **professionalism**, as manifested by commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population;
- **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 (ACGME Outcome Project; General Competencies.  
[www.acgme.org/outcome/comp/compMin.asp](http://www.acgme.org/outcome/comp/compMin.asp), accessed 12.9.05).

These competencies should be grounded in a patient-centered focus, including both individual patients and populations of patients. Instruction should emphasize seamless delivery of care, including preventive, curative, therapeutic, palliative, and end-of-life care. A commitment to professional accountability, lifelong learning, self-assessment, and self-reflection is necessary for maintaining competence. Skills that support this commitment should be taught and practiced from the very beginning of medical education. For medical students, there should be substantial emphasis on clinical reasoning and problem solving.

Medical education should address competency development along a continuum. Proficiency will be different for a medical student than for a resident than for a physician in practice. We should define developmental milestones within competencies.

Both the GME section and the CME section propose that specialty boards should grant specialty certification (initial and recertification) only to those who successfully demonstrate clinical competence in their specialty of practice. For GME, demonstration of competency through multiple assessments (direct observation, simulation, 360-degree evaluations, standardized patient assessment, outcomes tracking, evidence-based practice evaluation) should determine readiness to practice. Focusing on competencies raises fundamental issues about the length of educational programs. CME should adopt a model in which a needs assessment of the learners drives continuing education credit and specialty board maintenance of certification. Credits should be granted only in specialty-approved content areas.

### Research Considerations

*The main tasks are the following:*

The focus on competencies naturally leads to a research agenda that emphasizes assessment methodologies. In this broad agenda it will be necessary to conduct studies that

- support rigorous formative and summative assessment programs;
- ensure that learners have acquired the learning objectives and can demonstrate clinical competence. A key task will be distinguishing between learning and practice and clarifying the appropriate focus;
- define important outcomes at different developmental levels;
- explore the role of simulations and their use in assessing quality;
- clarify the usefulness of strategies such as portfolios for assessing longitudinal professional development;

- explore the role (positive and negative) of “systems” and “organizations” in the provision of high-quality medical care: information systems, the regulatory environment, the health care system, and the political landscape;
- define high-quality care. Educators should work more closely with health services researchers who have developed expertise in studying processes and outcomes of care.

*The following are the main tasks in defining high-quality care:*

- include costs as an outcome;
- debate and define the situations/instances in which it is reasonable to link educational processes to patient outcomes – this task falls mostly within the areas of certification and CME, and less so within the education of medical students who appropriately have less independence.

*An overall strategy guiding coherent research in this area could follow a sequential process:*

- 1) define learning outcomes/competencies at progressive developmental levels; collapse isolated definitions of competencies into a growth chart, in which competencies are defined within the context of the level of training. For example, this approach would characterize competency in communication skills at the levels of M1, M2, etc. This approach would also facilitate study of potential relations across competencies at defined developmental training strategies (e.g., are there relationships between the communication skills and patient care competencies that M1 students attain?);
- 2) develop ways of measuring outcomes and identify indicators of these outcomes; be strategic in the identification of feasible methods for measuring important indicators rather than attempting to measure everything. Subcategories within this research could include delineating the role of simulators in assessing quality and determining how longitudinal professional development can be assessed;
- 3) link the indicators of achieved competencies to patient outcomes when possible, feasible, or rational.

### 3. Improving the efficiency of the educational process

There was general agreement that the organization of many educational programs must transcend the boundaries of departments, disciplines, and the educational continuum. Although teaching for some parts of the core competencies will necessarily be aimed at different levels of learners and be best presented by certain departments, breaking down the traditional silos for much of the content and many of the skills would enhance the efficiency of and be consistent with competency-based evaluation. Interdisciplinary teaching seems particularly appropriate at all levels of learning for many of the topics and themes that were outlined above regarding patient-centered care. It will be essential to use teams of different health professionals (including basic scientists, PharmDs, nurses, etc.) to teach the content and skills linked to the competencies, particularly in learning how the community is connected to the basic sciences.

Integration within clinical curricula can be accomplished by emphasizing a set of core clinical skills that support a patient-centered approach and that emphasize the core or “transcendent” competencies (see above). At all levels more work needs to be done to develop curricula that foster the connection between basic science and clinical medicine. It may be necessary to reword/refine competencies in a manner that connects the basic science threads across clinical medicine. The fourth year of medical school appears to be the time and place for exploring efficiency models. If education moves to a competency-based model, it is likely that greater efficiency can be achieved, but the trade-off will be in tightly controlled and centralized presentation and assessment of curricula.

Within UGME there is a shared desire to move toward greater centralized curriculum management and away from departmental autonomy. The LCME accreditation standards both encourage and support this desire. Admittedly, it may be more difficult to envision the same degree of central influence in GME. In the first two years of the UGME curriculum, a number of curricular designs and teaching and learning methods can facilitate centralized curriculum management including problem-based learning, small-group experiences, organization of curriculum by organ system,

and integration of pathophysiology and clinical correlations. In most schools, work is needed to provide a relevant clinical context for learning the basic sciences (e.g., provide a clinical theme for learning immunology).

From a CME perspective, there is a need for strategies that measure team outcomes and systems outcomes and that function effectively within a cost-sensitive, politically charged health care environment. The CME commercial enterprise is burdened by a certain lack of credibility that needs to be addressed. Patients and health care provider organizations may act as advocates for medical education reform.

### Research Considerations

*The main tasks are the following:*

- define what we mean by efficiency and for whom;
- change curricula/practices to encompass a developmental progression model. Identify the model program(s) for studying the effectiveness of such models;
- examine how “institutional” statements regarding readiness correspond to students’ perceptions of readiness. What are the consequences/appropriate actions when these factors are not aligned?
- reconsider institutional barriers to developing different models of education;
- identify the barriers to designing and implementing a more efficient model of education. How do we reconcile “lock-step” programs with efforts focused on progress based on competency attainment and developmental readiness?
- perform research on efficiency, including examination of both curricular structure/flexibility and modes of delivery (e.g., on-line lectures). Research should determine which modes of delivery are efficient in particular parts of the curriculum. For example, is low-level simulation more efficient in the preclinical curriculum?
- define the outcomes that can/will be used to assess efficiency;
- determine how medical schools, medical societies, and health care systems might partner to push this new vision of medical education;
- establish model/pilot programs designed for efficiency and compare models that truncate the four-year medical school experience by moving some of the initial work to premedical courses or tying electives to the internship year;
- learn with and from other health professionals. How much do we want/need to differentiate between medical education and other education for other health care professions? Examples of research questions could include determination of the value-added of the physician’s four-year curriculum compared to that of P.A. trainees. Such research needs to address expectations for attaining unsupervised practice competency.
- determine the background that medical students need if they are to succeed and potentially accelerate in a curriculum based on competency attainment. This determination could include answering questions such as the following: How much basic science education do medical students need? What is the impact of virtual modes of instruction on the students’ respect and empathy for the patient?
- determine the potential efficiency of combined degree programs, which could take the form of MD programs six years after high school completion;
- evaluate impact on career choices. What will be the implications of efficiency-focused shifts for career choices? Are students’ career options and choices limited by NRMP timelines or by the current arrangement of third-year clerkships? Could clerkships be arranged so that students could get a better sense of career options earlier in their training? What novel approaches could be used to address the timeline of career selection?

## 4. Improving the effectiveness of the educational process

Effectiveness of the educational process implies a dual focus on teachers and learners and implications for patient care. Medical education also has the unique role of involving teachers and learners at all levels. In medicine, most faculty members have not had formal instruction in education and teaching. There is a need to prepare educators to teach more broadly and across disciplines, especially in the core clinical skills, and to incorporate the teaching of professional competencies beyond that of expert medical knowledge.

Models for teaching and learning that might enhance interdisciplinary and interprofessional learning include the use of “learning teams” or “learning communities,” peer teaching, the inclusion of other health care professionals as teachers and colleagues (nurses, advance practice nurses, social scientists, public health professionals), and an emphasis on mentoring in core competencies instead of within a discipline. Teaching and learning in interdisciplinary teams will require faculty development and support.

Medical schools and training programs should develop programs to ensure that students and residents are exposed during their clinical educational experiences to members of the clinical faculty who are recognized to be outstanding clinicians and outstanding clinical teachers. Such education should also provide students with opportunities to develop these skills. If we are to promote clinical excellence in teaching, excellence must be defined, educational excellence must be recognized and rewarded, and faculty members must have the resources and development necessary for moving toward excellence as educators.

Medical schools should develop and support a cadre of teaching faculty (perhaps residents?) whose main responsibility is the education of students as they progress through the educational program.

The sections unanimously supported increased faculty development, recognition, and reward. Certainly all faculty members could benefit from education in techniques for teaching in various settings, as well as from exposure to teaching principles drawn from other disciplines. It would

be beneficial to provide skills training to faculty members who teach and to formalize the process of education, perhaps by certification. The following topics were identified as important components of a faculty development program:

- ability to demonstrate desired skills and values for students and residents through role modeling;
- evaluation and feedback skills;
- time-management skills;
- ability to explain clinical decision making;
- expertise in the use of evidence-based medicine (clinically and in teaching);
- information management skills;
- self-assessment and self-reflection skills;
- practice-based learning and improvement skills;
- skills in performance assessment;
- knowledge of the regulatory environment.

All sections recognized the importance of providing faculty members with protected time for teaching. Data from systems that have been designed to recognize and reward teaching (e.g., educational RVUs, mission-based budgets that pay for teaching, creating faculty tracks that reward teaching) will be invaluable as new efforts for faculty development are designed. The work done in educational scholarship and the outcomes of a recent consensus conference on the scholarship of teaching will be instrumental in defining and assessing teaching effectiveness. One outcome of the scholarship consensus conference was to enumerate what schools can do to encourage teaching; some of those activities are listed below:

- identify master teachers and encourage the development of others;
- develop teaching academies (funding, innovations, travel, endowments);
- develop teaching awards and acknowledgements;
- reward educational scholarship;
- disseminate teaching accomplishments;
- create promotion and tenure tracks based on teaching;
- develop robust evaluations of clinical teaching;
- provide teachers with appropriate feedback and opportunities for improvement;
- reward faculty development;

- protect time for teaching and development of instructional materials;
- support educational research and scholarship;
- support innovation in education (teaching, curriculum development);
- engage the community (clinical/teaching interface).

There is a need for a corresponding focus on research on the outcomes and impact of faculty-development efforts.

On the learner side of the effectiveness equation, most discussions focused on assessment methods, although there was also recognition that medical schools should find and provide faculty mentors who model the competencies they want students and residents to acquire.

Assessment methods should reflect the goal of assimilating general competencies along a continuum. Self-assessment should be expected and should occur regularly. However, the ability to perform self-assessment does not appear to develop automatically. Early in their medical education, students should be empowered (with guidance) to identify, among the general competencies, their strengths and the areas in which they require growth. Portfolios, with mentored review, may promote reflection and emphasis on broader competencies.

Measurements should be able to discern the different levels of learners, e.g., the RIME scheme (reporter, interpreter, manager, educator). We must develop methods (when they do not exist) for measuring what we value, such as information access and management, ability to work on teams, and effective communication.

In the clinical setting, opportunities for continuity with a cohort of patients, across disciplines, would provide integration and allow a focus on core competencies. The pilot at Harvard/Cambridge Hospital is a good example. Longitudinal and integrated curricular topics might also achieve this goal (e.g., ethics, cultural sensitivity, end-of-life care). If the opportunity is present, multidisciplinary clerkships that emphasize ambulatory education as much as they emphasize inpatient education may provide more integration. Simulations may be another means of increasing the emphasis on core skills rather than on discipline-specific skills. Also important are opportunities to work in teams.

### Research Considerations

*The main tasks are the following:*

- define *effectiveness* of the educator role and the learner role. This definition would include distinctions between what students/practitioners know, can do, and practice in defined settings;
- draw on the education literature and expertise to develop models of effective teaching in medicine;
- define the attributes of an effective doctor. The components of patient satisfaction, morbidity/mortality, quality, teamwork, etc., lead to an almost infinite number of possible profiles. How is student success in medical school/residency tied to later learner success/patient outcomes?
- explore two constructs – reflective practice and feedback – that seem especially important, and both areas require more study;
- examine the interaction between effective teaching and effective learning. Identify and develop measures for evaluating effectiveness. Recognize that tests alone will not enable distinctions between what students/practitioners know, can do, and practice. The spectrum of outcomes should include patient outcomes, practice changes, and learner gains (including knowledge and satisfaction). Methods should match learners' background and needs; they should also reflect strategic use of adult learning principles, simulation, Web-based learning, and standardized patients;
- examine the extent and impact of self-directed learning throughout the professional's development;
- examine how effectiveness links with efficiency, particularly recognizing that teaching cannot include every topic.

## 5. Ensure that medical students understand the various career options available

Medical student education requires support for personal professional development, including emerging professional identity and values, self-awareness and care, career decisions, and reflective practice. We must address the transition that occurs between medical school and residency and consider the elements that have an impact on the practicing physician's professional development.

All three sections—UGME, GME, and CME—discussed the knowledge, skills, and attitudes that promote a successful transition from medical school to residency and from residency to independent professional practice. These include the following:

- the transition from user of information to manager of information;
- skills in accessing information;
- understanding and use of evidence-based medicine;
- systems-based thinking;
- more focus on patient outcomes;
- leadership skills;
- team skills;
- ethical and professional navigation;
- knowledge of the economics of health care;
- communication skills;
- teaching skills;
- skills in self-directed learning;
- skills in self-assessment and critical reflection.

### Research considerations

*The main tasks are the following:*

- focus on defining *career*. It is certainly more than specialty selection and includes much more than providing medical care (e.g., teaching, research, administration);
- synthesize the existing data about how students/residents and practicing physicians make career decisions; consider commissioning a review/synthesis of the literature;

- determine what students really understand about careers. Synthesize research methods and findings about how career decisions are made within medicine and in other professions. From other fields (e.g., business) we know/expect/hope that careers change over a lifetime. Do students understand this fact? How does this fact relate to lifelong learning?
- investigate the impact of curricular exposures on career selection. Can exposure be characterized as a dose-response relationship?
- study career satisfaction, including practitioners whose careers change over time. This research could include study of the impact of such practices as tenure on the loyalty of practitioners and their willingness to engage in continuous quality improvement and planned organizational reforms;
- determine the roles of electives in relationship to specialty choices. Do they come too late to benefit specialty choices? Are they used mainly for ruling in or ruling out specialty choices?
- synthesize the relationship between values and career/specialty change, and define areas in need of more study;
- study the overlap and differences between specialty selection and career evolution;
- study the impact of the hidden curriculum on career evolution. Develop and study a model of career evolution that includes initial specialty selection and demarcates crucial evolutionary points. What causes one to enter or to be dissuaded from entering a particular career?

### Summary

The response to the recommendations of the IIME report yielded consensus on a variety of topics across the four sections and within the five areas of the IIME report. Clearly, acting on the most important issues mentioned in the original report and in this response will take decades. In the interim, the GEA members have developed a “short list” that captures the immediate interests and priorities of the GEA membership.

Before considering the specifics, it is useful to stand back and take a broader, summary view. In doing so, several things become clear. First, there is a fair amount of overlap among questions that are intriguing to each GEA section and those that arise from each IIME strategy. We see this finding as positive, because it reflects the complex and inter-related nature of the elements of the system and of strategies developed to improve medical education. Second, among sections it is encouraging to note a common vision and a common understanding of many of the existing issues. Third, given the complexity of educational interventions and of the systems in which they are implemented, it is unlikely that single interventions will lead to such complex outcomes as self-directed learning; however, these interventions might inform our thinking about the teaching environments and the learning methods that are associated with becoming effective lifelong learners.

*The primary topics of consensus are the following:*

- patient-centered education and care;
- competency-based education for UGME, GME, and CME;
- coherent and consistent approaches to education across the continuum. All changes to the continuum of medical education that are called for and enacted by the IIME report should be associated with measurable short-term and long-term outcomes. The effectiveness of instituted changes must be determined through rigorous planning and data gathering. No change should occur in any of the three domains (UGME, GME, and CME) without careful consideration of how the other domains will support the concept in continuum and how any change will positively or negatively affect the other domains;

- inclusion, in educational activities at all levels, of specific educational activities and assessment of learners in the area of team care and interprofessional care;
- faculty development and support for the contributions of teaching;
- careful integration of basic and clinical sciences.

Overlying these important topics are suggestions summarized by the RIME section that address the methods and mechanics of carrying out quality educational research; these suggestions are applicable to many topics. Clearly, one of the most enduring contributions of researchers is to continue to question agendas and to ask for evidence in support of popular ideas. For example, is the medical education process really broken? Or are the products inferior? If we are to address these issues, definition of important constructs – efficiency, effectiveness, career (versus specialty), patient-centered medicine, high-quality medical care – is a priority. Definition is also to some extent specific to situations. Thus we encourage care and specificity in undertaking research. It is likely that the best research will be driven by good questions formulated in a theoretical framework. Furthermore, these frameworks could come from academic fields outside medical education (anthropology, sociology, economics).

Concurrently, we will need to find ways of accessing and using, in a sensitive and meaningful way, the vast amounts of patient data that are collected by various organizations. It will be important to develop methods, funding, and patience for longitudinal studies that are needed to show that our educational processes and curricula influence professional competence and, sometimes, patient outcomes. The boundaries of our knowledge will be informed by replicating intriguing studies performed at single institutions, or better yet by embarking on interinstitutional studies.

The research questions form the beginning of a research agenda, process, and product.

### ACTION STEPS

The section that follows outlines a sampling of activities currently under way or of interest to each section and in place in most regions. Taken together, these action steps will bring us closer to realizing the vision set forth in the IIME Report.

### RIME Section

The RIME section has three current initiatives that are consistent with the messages within this report:

- 1) Section members are committed to studying the research process and defining means to improve it. For example, a current project is devoted to highlighting successful relationships between medical education researchers/offices and local IRBs.
- 2) Recognizing that medical education research could be improved by more funding and interinstitutional research, section members are engaged in a planned initiative aimed at identifying potential funders and crafting medical education research questions of mutual interest.
- 3) The section stands ready to collaborate with peers from the other GEA sections and groups to collaborate in medical education research.

### UGME Section

Section members are currently involved in at least five projects that represent action steps toward realizing the components of the report.

- 1) using the Tool for Assessing Cultural Competence Training (TACCT) to assess cultural competency teaching at schools;
- 2) completing the Values project: A qualitative analysis of a survey aimed at determining why medical school faculty members (clinicians, administrators, basic scientists) are teachers;

- 3) presenting sessions at regional and national meetings on challenging topics contained in the LCME standards (i.e., ED-2, monitoring of quality/equivalence of student learning experiences);
- 4) performing longitudinal evaluation of competencies (not medical knowledge);
- 5) working in collaboration with a basic science group (International Association of Medical Student Educators [IAMSE]) and the clinical clerkship group (Alliance for Clerkship Education [ACE]) on joint ventures to be undertaken with regard to the GEA's response to the IIME report.

### GME Section

*The GME section has two central interests at this time:*

- 1) Responding to efficiency/integration and quality, the GME community is focused on exploring competency-based education, using a liberal interpretation of the concept. Such an approach could lead to shortening (or lengthening) the residency training period on the basis of both entry-level abilities and periodic assessments of competency. The proposed approach would require the development of highly valid and reliable measures of competency.
- 2) The GME community is working with the scholarship consensus group to help set criteria for acknowledging and rewarding teaching as a scholarly activity.

### CME Section

The CME community through their academic societies, medical associations, medical colleges, and accreditation organizations has a leadership role in a number of initiatives that are aligned with the current report. Among their foremost priorities are projects on:

- 1) Best-practice, evidence-based CME based on objective needs (eg, societal, health care, quality assurance, patient safety) as well as subjective (individual learner's) needs
- 2) Research and scholarship in CME and knowledge translation that assesses the impact of interventions on practice, and health outcomes
- 3) Interdisciplinary, interprofessional and team-based learning
- 4) Incorporation of professional competencies into CME and other professional development activities
- 5) Faculty development in CME to support CME providers and enhance CME delivery and scholarship

### Regional Activities

There is considerable activity within the four regions to discuss, develop and made headway with one or more of the topics outlined above. [Recent Regional meeting programs are available at [www.aamc.org/gea](http://www.aamc.org/gea)] For example, at several of the regional meetings there were discussions of improving the efficiency of the education process and, in turn, promoting patient-centered medical care. One possible means to achieve this goal is through purposeful integration of basic and clinical sciences in preclinical undergraduate education. **S**GEA is developing curricular models based on interdisciplinary basic science and clinical science approaches rather than on discipline-specific educational models.

Interprofessional learning is also high on the agenda for several regions. In recent years **S**GEA, **C**GEA, and **N**EGEA have featured workshops and other activities pertinent to the topic, including simulations that emphasize teamwork and effective team communication skills in patient care settings. Learning teams and communities have also been featured prominently on regional programs. The **W**GEA has been especially successful in planning meetings around curricular innovations across the continuum that encompassed UGME, GME, and CME.

### Conclusion

The projects outlined above, as well as additional research topics, will compose the GEA's agenda in the coming years. Though none were specifically begun in response to the IIME report, the retrofitting of current projects to the ideas within this report gives evidence of overlap in interests. Future, prospectively planned initiatives and research projects will undoubtedly take us closer to the larger goals. Accomplishing all of the items on the agenda may take decades; thus, over the next 18 months each section will define its priorities as well as the measures for monitoring progress and success. As projects on the agenda are completed, new projects will be defined. Everyone is invited and encouraged to participate.



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