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MEDICAL COLLEGES

Educating Doctors to Provide High Quality Medical Care

A Vision for Medical Education in the United States

Report of the Ad Hoc
Committee of Deans



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Introduction

In the fall of 2002, the Association of American Medical Colleges (AAMC) established the Institute for Improving Medical Education (IIME) to make clear the Association's commitment to respond to growing concerns about the quality of medical education in the United States. The IIME is intended to provide a highly visible vehicle within the Association for addressing those concerns. An ad hoc committee composed of ten deans was appointed to guide the initial development of the institute's agenda. The committee was charged to conduct a comprehensive review of the state of medical education and to recommend strategic directions for reform across the continuum of undergraduate, graduate, and continuing medical education.

The committee held its first meeting in April 2003. At that meeting, the committee members decided to begin their task by developing a vision for the country's medical education system. They reasoned that defining both the mission and the properties of the ideal system would permit the identification of specific systemic shortcomings that must be addressed to improve the quality of medical education. Only then could appropriate strategies for making progress toward the desired goal be recommended.

During the summer and early fall, the committee met on two occasions. In preparation for those meetings, the committee members reviewed background materials

developed by committee staff, which included, among other things, summaries of a series of reports issued in recent years by blue ribbon panels convened to address concerns about the state of medical education in this country. The committee also met with individuals holding leadership positions in the organizations responsible for the accreditation of undergraduate and graduate medical education programs, the accreditation of providers of continuing medical education programs, and the certification and licensure of physicians. The committee members also participated in a series of conference calls to review and discuss the content of a working document that was being drafted to solicit comments from others within the Association.

In February 2004, the committee's working document was submitted to the Administrative Boards of the constituent bodies of the Association's governance – the Council of Deans, Council of Teaching Hospitals, Council of Academic Societies, Organization of Resident Representatives, and Organization of Student Representatives. In April 2004, the committee chair presented a summary of the working document to the deans attending the spring meeting of the Council of Deans (COD). The committee met following that presentation to discuss the comments received from each of the Administrative Boards and to decide on the steps needed to finalize its report. The COD Administrative Board adopted the committee's final report at its June 2004 meeting.

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The State of Medical Education

Background

Although it is generally believed that the quality of medical care in the United States exceeds that provided in the rest of the world, there is growing evidence indicating that the care is often less than optimal.¹ The results of a number of well-conducted studies show that doctors fail on occasion to use diagnostic and therapeutic approaches of proven value and to communicate with patients and their families adequately, and do not always recommend health promotion and disease prevention practices of proven benefit.

In 2001, the Institute of Medicine (IOM) issued a seminal report entitled *Crossing the Quality Chasm. A New Health System for the 21st Century*, which called attention to the need to improve the quality of medical care provided in this country.² The report argued that to improve the quality of care fundamental reforms are needed in the ways doctors and other health professionals are educated. The report recommended that doctors and other health professionals must be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics. The report recommended that a multidisciplinary summit of health professions educators be organized to develop strategies for aligning the education of health professionals with the agreed upon needs of the 21st Century health care system. Particular attention was focused on the changes that might be required of the institutional sponsors of the education programs and of the various credentialing and accrediting bodies.

In response, the IOM convened a summit of health professions educators to determine what needed to be done to improve the quality of health professions education. The report from the summit begins by restating the need for a

major overhaul in health professions education, and presents in rather stark terms an assessment of the state of clinical education.³

Clinical education has not kept pace with or been responsive enough to shifting patient demographics and desires, changing health system expectations, evolving practice requirements and staffing arrangements, new information, a focus on improving quality, or new technologies.

A similar theme appears in reports issued in recent years by two other blue ribbon panels – the Commonwealth Fund Task Force on Academic Health Centers and the IOM Committee on the Roles of Academic Health Centers in the 21st Century.^{4, 5} In their reports, both panels expressed serious concerns about the state of medical education in this country and acknowledged that reforms are needed in the clinical education of doctors if the quality of care provided is to be improved. By linking the attainment of improvements in medical care quality to reforms in medical education, the reports focus attention most directly on the state of graduate medical education (GME), because it is during residency training that doctors learn how to perform the complex integrative tasks that are required to provide high quality care. Of note, both reports call on academic medical centers to take the lead in ensuring that the reforms needed in GME occur.

Issues of Concern

The high level concerns expressed in the reports cited previously are that the design, content, and conduct of undergraduate and graduate medical education programs have not kept pace with: advances occurring in the biomedical sciences; the introduction of new approaches for the diagnosis and management of disease; changes in the organization, financing, and delivery of health care services; and changes in society's expectations of medicine. But to develop strategies for addressing those general concerns, specific shortcomings in the ways doctors are being educated – shortcomings that exist across the continuum of undergraduate, graduate, and continuing medical education – must be acknowledged.

For example, despite growing concerns about the quality of the clinical education of medical students, few medical schools have implemented fundamental changes in their clinical curricula.⁶ Most schools continue to require clerkships in the same set of core clinical disciplines that were viewed as critical in preparing doctors for general practice in the 1950s, even though clinical experiences in additional disciplines would be highly relevant for students preparing for careers in modern medicine.⁷ Moreover, the design and conduct of those traditional clerkships remain largely unchanged in most schools despite widespread concern about the relevance and value of many of the experiences students have during their clerkship rotations. And finally, the attention being paid to the teaching and assessment of clinical skills is generally considered to be inadequate, at least in part because of the reluctance of some clinical faculty to commit the time to teach these skills to students.⁸

Medical schools are mindful of these shortcomings and have begun to address them. In the past decade, medical schools have made profound changes in the organization and structure of their curricula and in the pedagogical strategies they employ to enhance their students' learning.^{9,10} Although the changes have been limited largely to the first two years of the curriculum in the majority of schools, some reform efforts are now under way to improve the clinical education students receive during the last

two years of the curriculum. As an example, The New York Academy of Medicine, in collaboration with the AAMC and with funds provided by the Josiah Macy, Jr. Foundation and the Arthur Vining Davis Foundation, has recently awarded grants to six medical schools to assist them in their efforts to introduce fundamental innovations into the teaching of clinical medicine.

Although the quality of the education received by medical students is clearly important, it is during residency training that physicians acquire the detailed knowledge, the special skills, and the professional attitudes needed to provide high quality care in medical practice. Especially worrisome, therefore, is the mounting evidence that many residency programs are not preparing resident physicians adequately for their future responsibilities.^{12,13} One of the explanations for this is that the design and conduct of residency programs have not been based on a clear, data-based understanding of the kinds of patients residents will care for most often after they enter practice and the scope of practice that they will be expected to provide. Instead, residency programs are overly influenced by the tradition and culture of specific clinical disciplines and by the patient care service needs of teaching hospitals and their clinical faculties. Of particular note, the education of resident physicians continues to be based largely in the inpatient services of major teaching hospitals where residents spend the majority of their time involved in the care of patients with acute, episodic illnesses. Those experiences can not adequately prepare residents, at least in several of the specialties, to provide high quality care to the kinds of patients they are most likely to encounter on entering practice, or to provide that care in non-hospital settings.

Having recognized the importance of these issues, several clinical disciplines have undertaken projects designed to enhance the design and conduct of their GME programs. For example, a report describing the results of the Future of Family Practice Project – a project conducted over a two and one-half year period by the leadership of the family practice community – was issued

this past spring.¹⁴ The report notes that changes are needed in the design and conduct of family practice residency programs to better prepare program graduates for practice, and it recommends that programs introduce innovations that will accomplish that purpose. Similarly, a blue ribbon committee of the American College of Surgeons has issued a report calling for changes in the design and conduct of surgical GME programs.¹⁵ And a committee of the Society for General Internal Medicine has issued a report that is highly critical of training in general internal medicine and calls for substantive reforms in internal medicine residency programs.¹⁶ These reports reinforce the generally held view that fundamental changes are needed in GME.

To this end, the Accreditation Council for Graduate Medical Education embarked several years ago on a project designed to shift the orientation of GME accreditation from its heavy emphasis on process measures to an increasing focus on educational outcomes.¹⁷ In the future, programs will no longer be accredited solely by meeting requirements focused on the design and conduct of the program. Instead, program directors will have to document to the satisfaction of the accrediting body that their residents have met predetermined performance standards in six domains of learning and practice (so called core competencies). In other words, they will have to demonstrate that residents completing their program have achieved learning objectives that are believed to correlate with the ability to provide clinically competent care.

But focusing solely on changes needed in undergraduate and graduate medical education programs – the focus of virtually all previous medical education reform efforts – will not be adequate to meet contemporary challenges. Given the growing complexity of medical care and the rapidity with which changes are occurring in accepted standards of practice, the quality of care provided by doctors over the course of their professional careers will be determined increasingly by the kinds of the continuing medical education activities they pursue.¹⁸ At present, the majority of continuing medical

education activities offered to physicians employ learning methods (primarily lecture-based formats) that have been shown not to have a positive effect on the quality of care physicians provide to their patients. Moreover, professional organizations, certifying bodies, and licensing authorities have policies in place that encourage and reward physicians for participating in those programs.

The literature on effective CME suggests strongly that self-directed learning exercises are the most successful in changing physicians' practice behaviors. To be effective, the content, learning methods, and learning resources must be selected specifically for the purpose of maintaining or improving the knowledge, skills, and attitudes a given physician needs on a regular basis in his or her practice.¹⁹ The literature also suggests that continuing medical education learning exercises should incorporate interactive learning formats, and include practice enabling and reinforcing strategies; and that to the degree possible, the learning experiences should be accessible within physicians' practice or work settings.

Fortunately, many of the organizations involved in developing and implementing the policies that affect the CME enterprise have begun efforts to address some of the clearly defined shortcomings in the ways CME is conducted. The American Medical Association, which grants the credits that physicians receive for participating in accredited CME activities, is engaged in several pilot projects designed to evaluate how credit might be given for participating in non-traditional CME activities. In addition, the Accreditation Council for Continuing Medical Education (ACCME) is exploring ways that its accreditation procedures might accelerate the adoption of CME activities that demonstrably change physicians' practice behaviors. The ACCME and AAMC are now collaborating on a project designed to gain a better understanding of how this might be accomplished.

The efforts currently under way to improve CME are intended to ensure that physicians remain clinically competent over the course of their careers. The American Board of Medical

Specialties has launched an important initiative in this regard by obligating each of its member boards to develop and implement a Maintenance of Certification program.

These programs will require board certified physicians who wish to maintain their credentials as specialists to periodically demonstrate that they possess the knowledge, skills, and attitudes deemed necessary by the board, and to document that their practice performance is consistent with high professional standards.²⁰

Obstacles to Reform

The shortcomings that exist in the ways doctors are educated must be remedied if the quality of the medical care provided in this country is to improve. Achieving this goal presents a major challenge, since many of the shortcomings that must be addressed are deeply entrenched in the tradition and culture of the institutions and organizations that compose the medical education system. As illustrated by several of the examples cited above, major associations, specialty societies, specialty boards, accrediting bodies, and licensing authorities will have to reach agreement on approaches needed to remedy these shortcomings. The magnitude of this challenge is emphasized in a report issued recently by The Blue Ridge Academic Health Group – a group of individuals holding leadership positions in academic medicine – which highlights the large number of organizations that influence, in one way or another, the conduct of medical education in this country.²¹ Their report points out that the institutions and organizations within the system operate largely independently of each other in adopting policies and positions on issues affecting medical education. Each is free to adopt and implement policies and positions that affect medical education without concern for their impact on the functioning of the system as a whole, and each guards its right to act in accord with the interests of its particular constituents, often without seeming to take into account the impact of its actions.

The quality of medical education will improve only if each of the components of the country's medical education system – medical schools and teaching hospitals, accrediting bodies, certifying bodies, licensing authorities, and professional societies and organizations – is committed to making progress toward achieving an ideal medical education system. The goal is the achievement of a system that provides excellent medical education throughout a physician's career. The lack of a mechanism for coordinating policies and positions across institutions and organizations is a major obstacle to achieving that goal. Creating such a mechanism is one of the greatest challenges facing those in leadership positions in the institutions and organizations composing the system.

The complex and often opaque means presently employed for financing medical education also present obstacles to making some of the changes needed to improve the education process. In the case of undergraduate medical education, lack of agreement exists even about the true costs of educating medical students, let alone about the principles that should govern how those costs are to be financed. The current method for financing the costs of residents' education is tightly coupled to hospital generated, patient-care revenues and concerns about the adequacy and allocation of those revenues impede efforts to reform residency training in many disciplines. And finally, the heavy dependence on industry sponsorship to defray the costs of continuing medical education hampers efforts to make fundamental changes in the third segment of the medical education continuum.

The Ideal Medical Education System

The Mission

The mission of the medical education system of the United States is to serve society by educating and training a diverse medical workforce capable of meeting the country's need for physicians engaged in the practice of clinical medicine, public health practice, biomedical and health services research, medical education, and medical administration; and for physicians who can contribute to fields such as ethics, law, public policy, business, and journalism. The system can meet its unique responsibility to educate and train highly competent medical practitioners only by ensuring that they acquire and possess throughout their careers the knowledge, skills, attitudes, and values needed for medical practice as members of an interdisciplinary health care team, and the ability to perform the complex, integrative tasks required to provide high quality care to the patients who seek their help.

Properties of the System

To create a diverse medical workforce capable of meeting society's needs, the system will:

- be effective, efficient, and affordable
- attract and successfully educate a diverse group of learners
- support the health and well being of learners
- cultivate mentoring relationships for learners at each stage of their careers
- encourage and support learners who have diverse career goals
- provide opportunities for learners to engage in effective learning experiences throughout their careers
- provide opportunities for learners to shift the focus of their professional goals during the course of their careers

To produce practitioners of clinical medicine who will provide high quality care to the patients that seek their help, the system will promote:

- a humanistic approach to medicine
- an appreciation of the importance of the biological and population sciences for the advancement of medicine
- a patient centered approach to medical care
- an appreciation of the importance of fundamental research for the advancement of medical practice
- an understanding of the organization, financing, and delivery of health care in the United States
- a global perspective on contemporary health issues

the system will ensure that doctors are able to:

- provide culturally sensitive and appropriate care
- listen and communicate effectively
- weigh quality of life issues appropriately when making patient care decisions
- access and use available evidence effectively and efficiently when making patient care decisions
- provide care in the face of uncertainty and doubt
- use resources efficiently and effectively in providing patient care
- use technologies appropriately in providing patient care
- participate effectively in multidisciplinary and team approaches to patient care
- contribute to eliminating medical errors and improving the quality of health care
- balance individual and population health needs when making patient care decisions

To ensure that those learning objectives are achieved, the system will:

- develop and support effective teachers of medicine
- employ educational strategies of demonstrated effectiveness
- employ educational technologies that enhance learning
- promote the acquisition of skills necessary for self-directed learning
- provide developmentally appropriate opportunities for learners to acquire the attributes – knowledge, skills, attitudes, and values – they will need to meet their professional responsibilities
- provide learning experiences that promote a thorough understanding of the biomedical sciences and the relevance of those sciences to the practice of clinical medicine
- provide clinical education experiences primarily in settings where learners will encounter the kinds of patients they are most likely to care for after entering practice

To ensure that learners have acquired and possess throughout their careers the knowledge, skills, attitudes, and values needed to be a competent physician and the ability to perform the complex, integrative tasks required to provide high quality medical care to their patients, the system will:

- base graduation from undergraduate and graduate medical education programs on learners' ability to demonstrate that they have acquired the learning objectives set forth by their programs
- base accreditation of undergraduate and graduate medical education programs on the programs' documentation that learners have acquired in a developmentally appropriate manner the learning objectives set forth
- conduct rigorous assessment of learners' abilities throughout the course of their careers to assist them in improving their performance (formative assessment) and to ensure that they have achieved the level of performance required to advance professionally (summative assessment)
- base licensure and specialty certification on physicians' demonstrated ability to provide high quality medical care to patients

Strategies for Affecting Reform

All of the shortcomings of the current system cannot be addressed immediately. But there are specific actions that can be taken in the near term to improve the quality of medical education in this country. Following are examples of the kinds of actions that should be undertaken.

To promote a patient-centered approach to medical care:

- Medical schools should present early in the curriculum a patient-centered clinical experience that will imprint on entering students the importance of viewing a patient as a person, a member of a family, and a member of a community.
- Medical schools and residency programs should provide clinical learning experiences of an interdisciplinary nature for the purpose of preparing future physicians to function effectively as members of a care team.

To ensure that doctors are capable of providing high quality medical care:

- Medical schools and residency programs should establish rigorous formative and summative assessment programs to ensure that students and residents are acquiring the knowledge, skills, attitudes, and values deemed necessary at their stage of learning, and that they are able to perform in a developmentally appropriate manner, the complex, integrative tasks required to provide high quality patient care.
- Accrediting bodies should ensure that undergraduate and graduate medical education programs document that learners have acquired the learning objectives – knowledge, skills, attitudes, and values – established by the programs.
- Specialty boards should grant specialty certification (initial certification and recertification) only to those who successfully demonstrate clinical competence in their specialty of practice.

- Licensing authorities should grant licensure (initial licensure and re-licensure) only to physicians who have completed an accredited residency program and regularly demonstrate clinical competence in the practice of their specialty.

- Licensing authorities, specialty societies, and other professional organizations should revise their policies affecting continuing medical education to ensure that physicians engage throughout their careers in learning activities that are effective in improving their practice behaviors.

To ensure that medical students understand the various career options available:

- Medical schools should provide students with appropriate experiences to acquaint them with the various career options available to physicians.
- Medical schools should offer a variety of joint degree and research training programs, and should be flexible in tailoring programs that allow students, residents, and practitioners to acquire the education needed to pursue specific career goals.

To improve the efficiency of the educational process:

- Medical schools should explore the possibility of integrating into undergraduate, pre-medicine programs some of the course work required in the biological sciences, bioethics, the medical humanities, informatics, communication skills, and health systems.
- Medical schools, residency programs, and accrediting bodies should explore the possibility of providing opportunities for residency requirements to be integrated into the medical school curriculum.

- Accrediting bodies should regularly review existing program requirements to ensure that they truly reflect the education and training experiences needed for preparation for practice.
- Accrediting bodies should facilitate integration of the clinical education of learners across the undergraduate and graduate medical education continuum by coordinating the adoption of relevant accreditation policies.
- Medical schools and teaching hospitals that sponsor graduate medical education programs should establish and empower educational councils composed of the institutional officials responsible for undergraduate and graduate medical education to ensure optimal integration of the clinical education of learners.
- Medical schools should require faculty members and residents who have regular contact with students to complete periodically a program orienting them to the goals and objectives of the educational program as a whole, and those of the specific student learning experiences in which they participate.
- Medical schools should develop programs that ensure that students are exposed during their clinical education experiences to members of the clinical faculty who are recognized to be outstanding clinicians and clinician teachers.
- Medical schools and teaching hospitals should share learning resources (e.g., simulation laboratories, standardized patient programs, information technology applications, etc.) to ensure that learners at each stage of their education receive the highest quality educational experience.

To improve the effectiveness of the educational process:

- Medical schools should develop and support a cadre of teaching faculty whose main responsibility is the education of students as they progress through the educational program.
- Medical schools and teaching hospitals should develop and conduct the kinds of continuing medical education programs that have been demonstrated to be effective in improving physicians' practice behaviors.

AAMC Action Agenda

In its 1996 strategic plan, the AAMC declared its intent to be the champion of medical education. It strives to fulfill this commitment by stimulating changes in medical education that will lead to a better alignment of educational content and goals with evolving societal needs, practice patterns, and scientific developments.²² Thus, the AAMC is positioned to play a leadership role in guiding the enterprise toward the ideal system envisioned by the committee – one that provides truly excellent medical education.

To pursue this goal, the AAMC should strive to achieve two major strategic objectives:

- Effect major changes needed in the institutional and organizational policies now governing the medical education system to achieve the ideal system envisioned by the committee.
- Catalyze the educational innovations needed across the entire educational continuum to achieve the educational objectives outlined in this report.

To achieve these objectives, the AAMC should convene a series of task forces to address issues that affect directly the design and conduct of the educational programs conducted by medical schools and teaching hospitals, the certification and licensure of practitioners throughout their professional careers, the financing of medical education, and the fragmentation of policymaking within the medical education system. The task forces should be organized as collaborative ventures that involve the leadership of all of the organizations that have an effect on the relevant issues. In addition, the AAMC should collaborate with foundations and other funding sources to establish grant programs that can support the efforts of institutions and organizations to develop and implement innovations in medical education.

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