



CHAIRMAN'S SUMMARY OF THE CONFERENCE

Revisiting the Medical School Educational Mission at a Time of Expansion

In October 2008 the Josiah Macy, Jr. Foundation convened a conference to address complex issues concerning the Medical School Educational Mission. Participants developed the set of conclusions and recommendations found at the end of this Executive Summary.

A more detailed account of the proceedings, along with the background papers, will be included in a monograph to be published by the Macy Foundation in 2009.

For the first time in 30 years, medical schools in the United States are expanding their enrollments in response to projected shortages in the country's physician workforce. The development of nine new allopathic medical schools is already underway with at least five more in planning stages. All but 18 of the 126 existing schools are increasing class size, some by adding new branch campuses. By 2020, allopathic medical schools are expected to graduate an additional 5000 physicians each year. Growth also is occurring among osteopathic schools. Since 2000, nine new osteopathic schools have been added to the 19 already in existence, and more are planned.

This period of expansion offers unparalleled opportunity not only to examine existing medical school curricula but also to explore bold, innovative ways to improve the education of a new generation of physicians. To assess the ways in which current expansion efforts might be harnessed to advance the effectiveness of medical education, the Josiah Macy, Jr. Foundation convened a conference entitled "Revisiting the Medical School Educational Mission at a Time of Expansion." The conference was held in Charleston, South Carolina, in October 2008. Jordan J. Cohen, M.D., President Emeritus of the Association of American Medical Colleges and currently Professor of Medicine and Public Health at George Washington University School of Medicine, served as chair.

For two and a half days, 35 participants, experts in

both allopathic and osteopathic medical education, discussed the challenges and opportunities presented by the current efforts to address the need for more physicians. Their consensus conclusions and recommendations are included at the end of this brief summary.

Discussion and deliberations were assisted by five commissioned papers that reviewed the recent growth in both allopathic and osteopathic medical school enrollments, identified shortcomings in the current system, gleaned lessons to be learned from past expansion efforts, and offered a framework for considering new models of medical education.

Medical education today is rooted in the landmark work of Abraham Flexner, whose 1910 critique led to a greatly revised model of medical education, the broad outlines of which are still in evidence. Indeed, many features of that model — notably its commitment to the scientific foundations of medicine and its insistence on uniformly high standards — remain as valid as ever. However, the enormous changes that have transformed medicine over the past century have outstripped the ability of the Flexnerian model to prepare future physicians adequately for the challenges and expectations of the new century.

This is not to suggest that medical education has remained static since Flexner's reforms were introduced. Far from it. Indeed, participants acknowledged the impressive number of innova-

tions that medical educators have implemented, especially over the past few decades. For example, virtually all schools have made substantial revisions in their curricula, have incorporated small-group, problem-based modes of instruction, and have adopted novel methods for assessing clinical skills; many have introduced earlier and more extensive longitudinal clinical experiences. In addition, medical schools are rapidly adapting modern information technologies to develop novel pedagogical tools, including lecture casting, interactive Web-based instruction, and use of mobile devices to access all manner of helpful resources.

Despite these striking innovations, participants were unanimous in the view that medical educators should seize the current call for expanded enrollment as an opportunity to make substantial additional improvements. Although brand-new schools and new branch campuses of existing schools are arguably in the best position to introduce major innovations, participants agreed that all schools should take advantage of the renewed focus on the content and process of medical education to ensure optimal preparation of their students for the 21st century.

The overarching theme that coursed through the discussions was the urgent desire to bring medical education into better alignment with societal needs and expectations. Hence, much of the discussion focused on contemporary realities that are not yet adequately reflected in the preparation of future physicians. Notable examples include the accelerating pace of scientific discovery; the determined calls for more public accountability; the unsustainable rise in healthcare costs; the well-documented shortfalls in healthcare quality; the unconscionable racial and ethnic disparities in health and healthcare; and the inexorable increase in the burden of chronic illness and disability.

Among the tasks identified for medical schools were the following: (a) re-define the science that is the foundation of medicine; (b) underscore the importance of problem solving and self-directed learning in an era of exploding knowledge; (c) ensure that students experience continuity of care for individual patients, especially those with chronic illnesses; (d) provide students with opportunities to learn the principles of quality improvement and patient safety; (e) place less emphasis on hospital venues and more on community settings as “classrooms” for educating future physicians; (f) prepare students to work effectively as members of inter-

professional teams; (g) broaden the understanding of public health and non-biologic determinants of illness; (h) foster long-term relationships between students and faculty; and (i) develop the teaching and mentoring skills of faculty.

Participants also focused on several key “structural” features of medical education that were considered particularly nettlesome and in need of urgent remedy. One such issue is the growing level of medical student debt. More than 80 percent of medical students graduate with an educational debt that now averages over \$130,000. In addition to the ethical imperative to relieve this burden, the “price tag” of medical school discourages college students of high potential but modest means from even considering a medical career. Similarly, the prospect of such a heavy debt load may discourage medical students from choosing less lucrative but potentially more socially responsible career paths.

A second, and related, structural issue addressed by participants is the persistent skew in the racial, economic, and geographic backgrounds of medical students, which continues to yield a physician workforce that is less representative of the society at large. Thus, there was strong support for re-examining the medical school admissions process — with its heavy reliance on MCAT and test scores — in an effort to attract a broader range of potential students. The continued lack of adequate racial and ethnic diversity among medical students and faculty was a particular worry. Addressing this issue was judged essential for preparing the culturally competent physician workforce needed to care for the country’s increasingly diverse population.

A third issue that greatly concerned participants is the conspicuous gap that exists between the rhetorical commitment to high professional standards and the actual behavior on display in many present-day learning environments. Medical students acquire their professional identities and norms of behavior not nearly as much from exhortations in the classroom as they do from observing how respected role models interact with patients, staff, and outside entities. Too often, what students observe serves to foster cynicism rather than to reinforce the avowed values of professionalism.

While the current wave of expansion offers great opportunities for advancing medical education by addressing these and other shortcomings, the barriers to making substantive changes are equally

great. Participants singled out several such barriers that must be overcome. One striking example is the need to capture the attention and active participation of institutional leadership, without which meaningful change was deemed unlikely. This goal may be particularly challenging in settings where the rationale for expanding enrollment has more to do with local economic development or with gaining prestige for the institution than with meeting the public's need for a more effective physician workforce.

Also cited as a barrier is the perception that current accreditation standards for both undergraduate and graduate medical education are overly rigid. Although the validity of this perception was debated, it was seen nevertheless as inhibiting educators from considering changes that might deviate substantially from traditional practices. Current accreditation requirements were thought to be particularly problematic for implementing novel inter-professional educational programs. The development of such programs was viewed as increasingly desirable, given the widely acknowledged advantages of deploying inter-disciplinary teams in clinical practice, especially to care for patients with chronic illnesses.

The poorly coordinated transitions across the educational “continuum” — first from college to medical school, then to residency, and ultimately to practice — were seen to pose additional obstacles to innovations that might otherwise optimize learning and shorten the duration of formal education.

Fortunately, as reflected in the conclusions and recommendations below, there was no shortage of suggestions about how to address these barriers. While the recommendations are directed specifically at undergraduate medical education, participants were mindful that many also are salient for the graduate and postgraduate phases of medical education and, indeed, for the education of other health professionals as well.

Finally, participants expressed great confidence that thoughtful innovations in medical education stimulated by this era of expanded enrollment would, in the long term, yield measurable improvements in the quality of health care. Documenting the long-term outcomes of educational innovation is admittedly difficult, but efforts to do so should be mounted now so that the next wave of medical school expansion can take full advantage of the lessons learned today.

CONFERENCE CONCLUSIONS

Crisis in Healthcare

Healthcare in the United States is in trouble. More than sixty million people are uninsured or underinsured. Healthcare costs continue to escalate faster than the rate of GDP growth. Health outcomes, patient satisfaction, and quality indicators in the United States are all worse than those of most developed nations. Compounding these difficulties, unconscionable health disparities exist between poor and rich, uninsured and insured, and minority and majority populations.

The U.S. Physician Workforce

The United States is likely to face a significant shortfall in the number of physicians needed for the future. Although that shortfall is difficult to quantify,¹ it is abundantly clear that substantial qualitative changes are needed in medical education to better prepare future physicians for the challenges ahead. Among those changes are the expanded range of competencies that all physicians must have in order to meet the needs of a rapidly evolving healthcare system; the woeful lack of adequate racial and ethnic diversity in the physician workforce; and the persistent geographic and specialty maldistribution of physicians.

The State of Medical Education

Although medical educators have implemented countless curricular and pedagogical innovations over recent decades, medical education has not kept pace with the growing public expectations of physicians or with the novel demands of an increasingly complex healthcare system. As a consequence, medical students too often graduate without all of the knowledge and skills that 21st century physicians need and without fully appreciating the role that professional values and attitudes play in sustaining medicine as a moral enterprise.

To address current shortcomings and achieve better alignment with societal needs and expectations, medical schools will need to modify both the content and the processes of their educational programs, and to give greater priority to the teach-

¹ The ongoing expansion of medical school capacity will not result in a larger physician workforce unless the number of residency positions also increases. Absent a parallel expansion of GME, increasing the number of U.S. medical school graduates will only serve to reduce the number of graduates of foreign medical schools who enter residency training in this country but will not increase the number of physicians entering practice in the United States.

ing mission of faculty. In addition, medical schools will need to take concerted actions to ensure that the learning environments in which students are immersed reflect the professional attributes espoused in the classroom. Medical students acquire their professional identity and standards of behavior largely as a consequence of the role models they encounter in the course of their education. Too often the lessons students learn from the powerful “hidden” or “informal” curriculum experienced in the course of their education not only fail to reinforce but also serve to undermine the school’s expressed commitment to inculcating high standards of professional behavior.

Finally, attention must be given to the prevailing cultural norms that exist in far too many institutions, norms which can be aptly described as individualistic, autonomous, expert-centric, and hierarchical. Such cultural attributes are increasingly at odds with those known to be conducive to delivering high-quality healthcare: namely, collaborative, mutually accountable, patient- and community-centric, and outcomes focused.

This Moment in Time

The need for action is urgent and compelling. This time of expansion in medical school enrollment provides an unparalleled opportunity to re-examine longstanding assumptions in medical education and to encourage focused innovation that will better prepare students to meet the needs of the American people. Efforts to improve must span the continuum of medical education — from premedical education, through undergraduate, graduate, and continuing medical education — with careful attention to the transitions between those stages.

To accomplish this task, institutional leaders and governing bodies must become visibly and actively engaged in the improvement process. The assistance of federal and state governments as well as private foundations will also be required.

This period of expansion in enrollment must not result in “more of the same.” Failing to take full advantage of the opportunity afforded by this “natural experiment” to advance the mission of medical education for the benefit of the public would be tragic.

RECOMMENDATIONS

The expansion of medical school enrollment for the first time in more than 30 years provides an extraordinary opportunity for *all* schools to reassess their educational programs to assure that they are meeting the health needs of society. This opportunity is particularly propitious for new schools and those opening new 2- or 4-year branch campuses, but also should be seized by established schools, whether or not they are pursuing enrollment growth.

Regarding Institutional Leadership and Governance

- Medical school deans, as well as presidents and governing boards of parent institutions, have a clear role and responsibility in affecting needed changes and must exert strong leadership in facilitating, and participating in, the change process if the sought-for improvements in the institutional culture are to occur.
- In order to achieve the core educational mission of their institutions and meet the health needs of the public, institutional leaders and governing boards should be comprised of men and women from all racial and ethnic groups in American society.

Regarding the Core Mission of Medical Schools

- All medical schools have an obligation to educate future physicians who are prepared both to assess and to meet the health needs of the public. This obligation entails:
 - ensuring that all medical students retain their enthusiasm for medicine and remain committed to its societal missions
 - fashioning educational experiences that enable all students, whether intending careers in practice, research or administration, to acquire the knowledge, skills, attitudes and behaviors of true professionals
 - providing a physician workforce drawn from all sectors of American society
 - educating medical students who are prepared to choose careers as generalists and specialists in adequate numbers to address the full range of patient needs in all geographic regions of the country
 - fostering greater inter-professional teamwork and collaboration

Regarding Medical School Admissions

- To ensure access to high-quality health services for everyone, medical schools must broaden the definition of merit in determining who is qualified for admission to the profession.
- Medical schools must reduce their reliance on standardized tests, college grade point averages, and traditional undergraduate course requirements in selecting applicants for admission. Although these factors can predict success during the first two years of the traditional medical school curriculum, they fail to assess the full range of attributes required of fully competent physicians. Medical schools must employ a more balanced, comprehensive set of admission criteria in order to attract, matriculate, and support students who, in addition to the requisite intellectual skills, have the maturity, judgment, and commitment to serving others required to meet public expectations and needs.
- Medical schools also must develop and utilize more effective methods than those currently employed to enlarge and diversify the pool of applicants for admission.

Regarding the Debt Burden of Medical Students

- Medical schools must find ways to substantially reduce the level of student debt. For example, schools should consider:
 - making additional funds available (e.g., from endowments, alumni giving) for needs-based scholarships
 - organizing the curriculum to allow students the option of meeting graduation requirements in three rather than four years
 - advocating the creation of more state and federal programs that provide substantial debt forgiveness in return for a period of public service
 - ensuring that all students receive appropriate counseling for minimizing and managing debt
 - capping tuition at current or reduced levels

Regarding Innovations in Medical Education

- To address recognized shortcomings in traditional models of medical education, all medical schools should update their curricular content and implement, evaluate, and disseminate innovative pedagogical approaches that enhance

student achievement of learning objectives.

- All medical schools should ensure that students become familiar with critical subject matter not yet incorporated sufficiently in the typical curriculum. Examples include:
 - knowledge and skills for improving the quality of patient care and enhancing patient safety
 - application of information sciences and systems thinking
 - principles of public health and prevention
 - role of non-biologic determinants of illness
 - health implications of cultural diversity
 - organization, financing, and performance of the healthcare system
 - creation and impact of governmental health policy
- All medical schools should adopt promising pedagogical innovations to enrich the learning experience for students. Examples include:
 - underscoring the relevance of “basic science” topics by integrating preclinical and clinical education throughout the curriculum
 - employing novel models of clinical education that:
 - epitomize inter-professional, team-based care
 - incorporate extensive community as well as hospital-based experiences
 - enable longitudinal patient and faculty relationships
 - using computer- and mannequin-based simulations for education and assessment
 - applying e-learning and other information technologies to augment traditional methods of instruction and to develop skills for life-long, self-directed learning

Regarding Medical School Faculty

- Medical schools should recruit and support men and women faculty members who reflect the ethnic and racial diversity of the American population.
- Medical schools and their faculty must assure that all learning environments exemplify and nurture the development of positive profes-

sional values. To this end, faculty must:

- embody and express consistently the professional values and competencies expected of medical students
 - engage in effective professional development activities
- Medical schools must assure that faculty are recognized and rewarded, financially and otherwise, for excellence in teaching, mentoring, and inter-professional activities, and that career pathways for medical educators are supported.

Regarding Standard-Setting Bodies

- The agencies responsible for accrediting allopathic and osteopathic medical education at both the undergraduate and graduate levels should promote innovation across the continuum. The Liaison Committee on Medical Education (LCME), the Commission on Osteopathic College Accreditation (COCA), the Accreditation Council for Graduate Medical Education (ACGME), and the Council on Osteopathic Postdoctoral Training (COPT) should:
- begin promptly to share information with one another
 - collaborate to assure maximal flexibility in designing and implementing accredited undergraduate and graduate education programs. This flexibility is particularly important for the LCME and COCA in fostering innovations in new, applicant schools, and schools undergoing significant expansion
 - foster team training and the efficient use of faculty and clinician resources across the professions
 - develop methods to disseminate information about innovative programs
- Those responsible for high-stakes tests and evaluations (i.e., for admission, licensure,

and certification) should make certain that their assessments are aligned with educational objectives throughout the continuum of education.

- The Association of American Medical Colleges (AAMC) and the American Association of Colleges of Osteopathic Medicine (AACOM) should accelerate their efforts to assess (a) the relevance of traditional course requirements for admission to medical school and (b) the elements of the MCAT examination and its role in the admission process.

Regarding Government and Private Entities

- The federal government should:
- greatly expand existing forms of national service for health professionals, especially the National Health Service Corps (NHSC), and develop additional programs of national service to help address societal needs
 - recast the role of and increase the investment in Title VII to support innovations and research in health professions education
 - authorize and support a collaborative body to assess the country's health workforce and recommend policies for meeting future health workforce needs
- Public and private entities should be encouraged to:
- provide funds to document and evaluate the outcomes of the current medical school expansion efforts
 - fund a national center or institute to disseminate successful innovations and support research in health professions education

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