



100 Years After Flexner: Time for Innovation in Medical Education?

FORUM SESSION ANNOUNCEMENT

A DISCUSSION FEATURING:

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THURSDAY, NOVEMBER 4, 2010

11:45AM–12:15PM—Lunch

12:15PM–2:00PM—Discussion

LOCATION

Reserve Officers Association
One Constitution Avenue, NE
Congressional Hall of Honor
Fifth Floor
(Across from the Dirksen
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Federal policy discussions about the physician workforce usually focus on graduate medical education, a term that denotes the training that future clinicians receive in residency programs, usually hospital-based and lasting at least three years, which occurs after students have completed medical school and earned an MD degree. A yearly federal investment of more than \$9 billion in support of these programs justifies policymakers' interest. However, assuring an optimal future physician workforce in terms of competency, numbers, specialty mix, and diversity likely requires expanding this fiscal focus to address the content and structure of education in medical school, which establishes the foundation on which residency training is built. The "pre-med" coursework of college undergraduates and the requirements for medical school admission are also relevant concerns because they determine the characteristics of the pool from which future physicians are drawn.

A hundred years ago, the Flexner Report¹ ushered in an era of new scientific standards for undergraduate medical school education, before the development of today's system of residency training. Abraham Flexner was a nonphysician resident scholar at the Carnegie Foundation for the Advancement of Teaching who visited all of the nation's 155 medical schools, found them grossly lacking in consistency and standards, and sparked a reorganization of medical education on a scientific and systematic basis under the aegis of the nation's universities. However, over the past 20 years or more, leaders in the field of medical education have repeatedly called for a reexamination of medical school curricula and teaching methods.² They argue that Flexner's recommendations stand in need of renewal as the result of an explosion of scientific knowledge and the evolution of increasingly complex processes of care. Among other observations, these critics also note that the traditional memorization of scientific knowledge is seen as no longer possible or necessary as fresh discoveries about causes and cures of illness become accessible through electronic information systems and that the traditionally one-sided relationship between unquestioned doctors and passive patients has begun to give way to a patient-centered paradigm that requires improved training in communications and behavior, including cultural competence.³

In view of these concerns, many medical schools are experimenting with new approaches to teaching methods and curriculum organization and content. For example, medical schools and residency programs now frequently use Web-based tools, simulation, small-group learning, and competency-based student assessments. But a

recent study for the Carnegie Foundation for the Advancement of Teaching—the same organization that sponsored the Flexner Report—found that, despite such advances in pedagogy, undergraduate medical education still falls far short of adequately preparing freshly minted MDs for the realities of contemporary medical practice. Courses in the physical and biological sciences still include content of limited practical value and are often still taught in a rigid and didactic fashion that limits experiential, student-centered learning. Important new fields of learning and practice, such as population health, quality improvement, patient safety, interdisciplinary teams, and systems-based practice, are often neglected or given short shrift.

In short, the gap between current educational norms and the reform recommendations of leading policy thinkers is as wide as the gap between theory and practice was at the time of the Flexner Report. These critical issues in medical education also have important implications for the broader challenge of health system reform and the readiness of the future workforce to practice in a system that delivers higher quality and greater efficiency than it does now. A closer look at the details of a few recent critiques will help explain why change has been slow in coming and what some innovative programs are doing to overcome the obstacles.

TURNING THE OCEAN LINER

Before the Flexner Report, medical education took place in small, unregulated, proprietary schools where quality was sketchy at best. The report successfully advocated for bringing medical education under the wing of established universities and dedicating the first two years to classroom instruction in the basic sciences in existing university science departments. Exposure to clinical practice would happen in rotating clerkships in years three and four. In recent years, calls for reform prompted efforts to achieve greater integration of these formal and experiential components of the curriculum. But medical schools have been challenged to break out of the siloed departmental structure of the universities and to find faculty capable of teaching both fundamental science and clinical practice, especially as clinical faculty have been pressured to produce greater revenues for their universities by seeing more patients.⁵

Further challenges are posed by widespread calls to transform the way care is delivered in the fragmented, underperforming U.S. health system; these calls intensified a decade ago with reports by the Institute of Medicine (IOM) and others on patient safety, medical errors, and

substandard quality. The IOM's recommendations for transforming the delivery system through team-based and patient-centered care, systems-based practice, medical informatics, and other innovations created a new set of expectations and demands for medical schools. While students may be interested in exploring these new horizons, layering new content on an already demanding curriculum has proven to be problematic.⁶ A 2006 survey of clerkship directors found that only 25 percent of schools had explicit training in patient safety, for example. Research is under way to determine the extent to which quality improvement and systems-based practice are being incorporated into the medical school curriculum. But observers note that instruction in these disciplines needs to be integrated into all phases of student learning, not just tacked on in isolated modules. The implication here is that medical school redesign will entail strenuous and sustained effort.⁷ Increasing the diversity of those entering and graduating from medical schools may be equally challenging. Despite years of attention and some effort, the mix of students has not been altered significantly, and fresh attention is now being devoted to the long pipeline and changes needed even before entry to medical school.

PATHFINDERS

Some attempts to change medical education have been driven by the need to improve access to care in underserved areas, notably in states with large rural populations and unmet demand for primary care services. To address the problem of fragmented clerkship rotations that are potentially irrelevant to future specialty choice, Texas has established a program at eight medical schools that allows students to opt for 12 weeks' training in family practice rotations. The effect has been to roughly triple the share of students who subsequently choose a family practice residency, thereby shoring up the state's supply of primary care providers. Similar programs have been established in Minnesota, Illinois, and the state of Washington.⁸

Another Texas program, launched just a few months ago, takes aim at the supply of primary care providers, workforce diversity, and the cost of medical education by eliminating the fourth year of medical school for students in family medicine at Texas Tech University. The program has been approved by the Liaison Committee for Medical Education, which accredits MD education. Fourth-year students often spend their time on elective courses related to future subspecialty training that a future generalist would not need, program planners reasoned. Reducing both cost and time-to-practice increases

the appeal of family practice, while also opening the doors of the medical school to a wider pool of applicants.⁹ Two Canadian medical schools and two U.S. osteopathic schools, which emphasize primary care, have also introduced three-year programs.

Medical school admissions policies and, by implication, the pre-med preparation track in the undergraduate college curriculum are integrally related areas of concern for the future physician workforce. Medical school applicants are expected to have received top grades in physics, calculus, and organic chemistry and in other courses that will raise their scores on the all-important Medical College Admissions Test (MCAT). Criticism of this science-weighted tradition is of long standing, but little change has occurred. Mt. Sinai School of Medicine, however, has since 1987 offered an alternative admission track, for 10 percent to 15 percent of its annual enrollment, that does not require the MCAT and accepts outstanding course work in the humanities or social sciences in lieu of some science credits, augmented by overview courses in science and medicine. Students in the Mt. Sinai Humanities and Medicine Program perform on a par with other students on a variety of measures.¹⁰

SESSION

This Forum session will explore challenges to undergraduate medical education resulting from the rapid expansion of scientific knowledge, the increasing complexity of clinical processes, and expected future demands on the health care workforce for improved quality, efficiency, and access. Speakers will discuss evidence of the need for change, current efforts to innovate, and obstacles to implementing recommendations that several medical leadership groups have proposed. Further detail and discussion about innovative programs at the Texas Tech University Health Sciences Center and Mt. Sinai School of Medicine will be included. **Michael Whitcomb, MD**, is a lecturer in the school of public health and health services at George Washington University and former medical school dean and senior vice-president for medical education at the Association of American Medical Colleges. He currently advises universities on starting or expanding medical schools, among other pursuits. **Ramona Burdine, MD**, is an associate professor and assistant dean for education at Texas Tech University and regional chair of the Department of Family and Community Medicine at the Texas Tech University Health Sciences Center in Odessa. She has played a leading role in launching the health center's new three-year MD program in family medicine.

David Muller, MD, is an associate professor, dean for medical education, and chair of the Department of Medical Education at Mt. Sinai School of Medicine in New York City. He recently completed a study of student outcomes in Mt. Sinai's Humanities and Medicine Program. **M. Brownell Anderson** is senior director for educational affairs at the Association of American Medical Colleges and is responsible for the association's curriculum and evaluation programs for all the nation's medical schools. She recently compiled a report on 128 U.S. and Canadian schools, highlighting changes in the past decade.

KEY QUESTIONS

- To what degree is consensus developing among medical educators that significant changes in undergraduate medical education and admissions policies are needed? What kinds of changes do educators agree about and what others are controversial?
- What external pressures might increase the demand for change, such as calls for reducing the cost of medical education, increasing the diversity of the physician workforce, raising the competency level of graduating MDs, or producing more primary care providers?
- What are the primary goals of undergraduate medical education reform? What are the most important things that medical schools need to start doing?
- Are changes needed in the preparation of specialists as well as generalists, and what differences might there be between these two categories?
- What are the primary obstacles to change?
- What federal policy levers are available to influence the shape of undergraduate medical education? What is the role of the states? Of professional and institutional leaders? Of students? Of payers and the public?

ENDNOTES

1. Abraham Flexner, *Medical Education in the United States and Canada* (The Flexner Report) (New York: Carnegie Foundation for the Advancement of Teaching, 1910).
2. Susan Skochelak, "A Decade of Reports Calling for Change in Medical Education: What Do They Say?" *Academic Medicine*, 85, no. 9 (September Supplement 2010): pp. S26–S33; available at http://journals.lww.com/academicmedicine/Fulltext/2010/09001/A_Decade_of_Reports_Calling_for_Change_in_Medical.4.aspx.

- 3 Molly Cooke *et al.*, "American Medical Education 100 Years after the Flexner Report," *New England Journal of Medicine*, 355, no. 13 (September 28, 2006): pp. 1339–1344; available at www.nejm.org/doi/pdf/10.1056/NEJMra055445.
- 4 Molly Cooke, David Irby, and Bridget O'Brien, *Educating Physicians: A Call for Reform of Medical School and Residency* (San Francisco: Jossey-Bass, 2010), summary available at www.carnegiefoundation.org/elibrary/summary-educating-physicians; and Donald Berwick and Jonathan Finkelstein, "Preparing Medical Students for the Continual Improvement of Health and Health Care: Abraham Flexner and the New 'Public Interest'," *Academic Medicine*, 85, no. 9 (September Supplement, 2010): pp. S56–S65; available at http://journals.lww.com/academicmedicine/Fulltext/2010/09001/Preparing_Medical_Students_for_the_Continual.7.aspx.
- 5 David Byers *et al.*, "Report of the 'Scientific Basis of Medicine' Group," background paper for a conference, "2020 Vision: Renewal of the Undergraduate Curriculum," held November 27–28, 2009, Dalhousie University, Halifax, Nova Scotia; available at <http://symposium.medicine.dal.ca/documents/FinalSBoMreport.pdf>.
- 6 Cooke, "American Medical Education."
- 7 Berwick, "Preparing Medical Students."
- 8 Linda Cronenwett and Victor J. Dzau, "Who Will Provide Primary Care and How Will They Be Trained?" Barbara J. Culliton and Sue Russell, Eds., proceedings of a conference sponsored by the Josiah Macy, Jr. Foundation, Durham, NC, 2010; available at www.josiahmacyfoundation.org/index.php?section=publications#.
- 9 Scott Jaschik, "Will medical schools join 3-year degree trend?" *USA Today*, March 25, 2010. Available at www.usatoday.com/news/education/2010-03-25-medical-school-early_N.htm.
- 10 David Muller and Nathan Kase, "Challenging Traditional Premedical Requirements as Predictors of Success in Medical School: The Mount Sinai School of Medicine Humanities and Medicine Program," *Academic Medicine*, 85, no. 8 (August 2010): pp. 1378–1383; available at http://journals.lww.com/academicmedicine/Fulltext/2010/08000/Challenging_Traditional_Premedical_Requirements_as.26.aspx?WT.mc_id=HPxADx20100319xMP.