

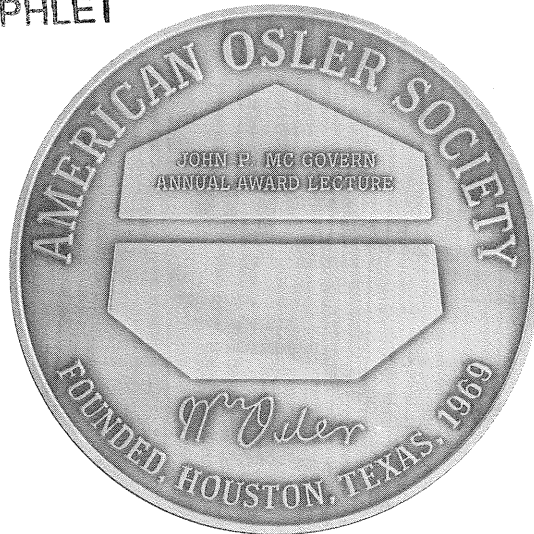
American Osler Society, Inc. John P. McGovern Award Lectureship

Reflections on American Education

Kenneth M. Ludmerer, M.D.



**OSLER
PAMPHLET**



The Sixteenth John P. McGovern Award Lecture

Reflections on American Medical Education



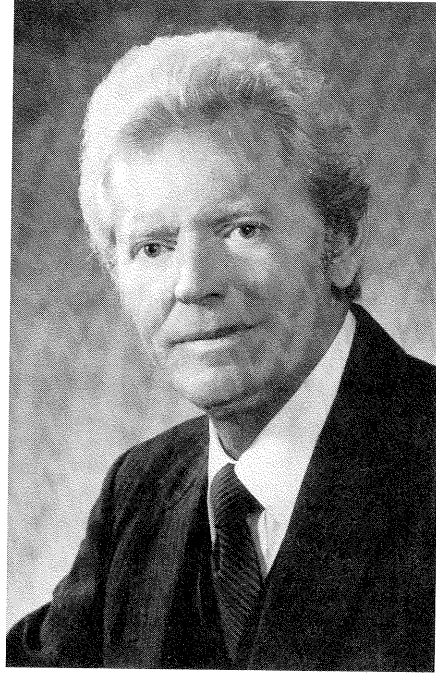
by



Kenneth M. Ludmerer, M.D.

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JOHN P. McGOVERN AWARD LECTURESHIP

Through the generosity of the John P. McGovern Foundation to the American Osler Society, the John P. McGovern Award Lectureship was established in 1986. The lectureship makes possible an annual presentation of a paper dedicated to the general areas of Sir William Osler's interests in the interface between the humanities and the sciences—in particular, medicine, literature, philosophy, and history. The lectureship is awarded to a leader of wide reputation who is selected by a special committee of the Society and is especially significant in that it also stands as a commemoration of Doctor McGovern's own long-standing interest in and contributions to Osleriana.



Kenneth M. Ludmerer, M.D.

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Kenneth M. Ludmerer is Professor of Medicine in the School of Medicine and Professor of History in the Faculty of Arts and Sciences at Washington University, St. Louis. A native of Long Beach, California, he received an A.B. from Harvard College and an M.A. and M.D. from The Johns Hopkins University School of Medicine. Following medical school he did graduate work in history at Harvard and a residency in internal medicine at Barnes Hospital in St. Louis, where he was Chief Resident (1978-1979) prior to joining the faculty of Washington University.

Dr. Ludmerer is best known for his work in medical education and the history of medicine. He has written three books: *Genetics and American Society* (1972), a study of the American eugenics movement; *Learning to Heal* (1985), which details the creation of America's system of medical education, and *Time to Heal* (1999), an examination of the evolution of American medical education from the turn of the Twentieth Century to the present age of managed care. Reviewers have called the latter book "a masterpiece of great national importance" and "the most important work in medical education since the Flexner report."

Dr. Ludmerer is a member of numerous organizations including Phi Beta Kappa, Alpha Omega Alpha, the Association of American Physicians, and the American Clinical and Climatological Association. He is President-elect of the American Association for the History of Medicine and a member of the National Council of Harvard Medical School. His awards include the Nicholas E. Davies Award of the American College of Physicians for Outstanding Contributions to the Medical Humanities (1997); the Distinguished Alumnus Award of the Johns Hopkins University (2000); the inaugural Daniel C. Tosteson Award for Leadership in Medical Education from Harvard Medical School's Carl J. Shapiro Institute.



It is a great privilege to have the opportunity to deliver the sixteenth John P. McGovern Award Lectureship to the American Osler Society. Dr. McGovern is not only an important member and great friend of this organization, but a leader of American medicine and an exemplary medical humanist as well. The American Osler Society is a very special organization—for the values it exemplifies, the quality of its papers and discussions, and the camaraderie of its membership. I was totally surprised to be asked to deliver this lecture, given that McGovern Lecturers typically come from outside the society, but that makes this honor even more meaningful to me.

For all William Osler's accomplishments and attributes, above all he was a teacher and educator. Among his contributions, he championed the importance of the inductive method of medical education ("learning by doing") and introduced the clinical clerkship to American medical schools. Now that we are at the beginning of a new century, we have a suitable opportunity to review the major challenges and obstacles that medical education presently faces.

In this lecture I wish to focus on two types of challenges to medical education. First, I shall review the major "internal" challenges to medical education. By this I mean the obstacles to medical teaching that have arisen from the internal intellectual development of medical knowledge and practice. Then, I shall discuss the critical "external" challenges that medical education faces at the present moment. By "external," I mean threats to medical education that have arisen from changes in American society and the health care delivery system. My observations are drawn from the two books on medical education I have written, *Learning to Heal* (1) and *Time to Heal* (2), as well as from reflections on the response to *Time to Heal* during the past year.

Internal Challenges

The first internal issue pertains to the challenges to medical teaching posed by the molecular revolution in biomedical science. For most of the twentieth century, a distinctive feature of medical education in the United States was the integration of research with teaching and patient care. The

cohesiveness between teaching and research was made possible because instructors taught students what they themselves were investigating. However, as biomedical research after 1970 became increasingly molecular in its intellectual orientation, teachers found it increasingly difficult to be cutting-edge researchers, and vice versa. Accordingly, the identification of teachers, both in the scientific and clinical disciplines, became a difficult task.

Today, this difficulty is especially clear in the basic science fields, where the research interests of most faculty no longer directly relate to much of the subject matter still taught to medical students. Professors in these fields are in the awkward position of studying fundamental molecular and cellular biology, for which they are rewarded, while teaching clinically necessary subjects they do not particularly value, such as gross and microscopic anatomy, fluid and electrolyte metabolism, and classic organ physiology. In some fields, it has become difficult to find faculty who can still teach the classical subject matter. Gross anatomy is the prime example. Anatomy departments now depend heavily on surgeons, radiologists, anthropologists, and dentists for help in teaching, since the field is virtually dead as an area of active investigation among anatomy faculty (most of whom now work in cell biology). To a lesser extent, this problem affects instruction in the other basic science departments as well. At the dawn of the twenty-first century, officials at some schools are acknowledging the possibility that the basic science departments might be forced to split into separate research and teaching faculties.

Similar developments have occurred in the clinical departments, where the traditional cohesiveness among research, patient care, and education has substantially eroded. Until around 1970, the defining characteristic of clinical research was its focus upon patients. This meant that clinical research went hand-in-hand with patient care and clinical instruction. In the molecular era, patients have been bypassed in clinical research. The results of this approach have been gratifying in terms of medical discovery. However, for the first time, a conspicuous separation of functions has occurred between clinical research and clinical teaching.

Clinical departments at many schools have responded by establishing two faculty tracks: a "clinician-teacher" track for faculty concentrating on education and patient care, and an "academic track" for laboratory investigators. Most faculty members specializing in "evidence-based medicine" have joined the clinical track because of their familiarity with the clinical literature and their expertise in delivering medical care. However, such an approach merely highlights the fundamental problem it was meant to solve: the growing estrangement between teaching and

research. Experts in evidence-based medicine seldom possess the clinical investigator's knowledge of the molecular mechanisms of disease and therapeutics, while today's clinical investigators are much more removed from day-to-day patient care and clinical teaching than clinical professors in the past. In the clinical departments, as in the basic science departments, no one has a good answer to the vexing question, "Who are the teachers?"

A second internal obstacle to creating a rich educational environment is the traditional tension at U.S. medical schools between teaching and research. The American medical school, like the American research university, was created by scholars for scholars. This has resulted in an institutional culture that rewards research accomplishments far more than educational effectiveness. Medical schools have long uttered much lip service about the importance of the educational mission. However, their actions have not confirmed their words, as all century long they have granted promotions and other institutional rewards mainly for research, not teaching. Indeed, the folklore of academic medicine has long held that the sure way for an instructor not to be promoted is to win an award for good teaching.

The emphasis on research was not intrinsically harmful to medical education. Indeed, throughout the twentieth century educators have commonly maintained that research invigorated teaching by enabling a scholarly atmosphere for the study of medicine. Students were exposed to the reasoning skills of the finest medical minds, and they became aware of the tentative nature of even the seemingly most secure pieces of medical knowledge. The presence of research kept medical education from going overboard teaching practical details instead of fundamental principles and reminded educators that students needed time to think, digest, and wonder.

Nevertheless, there was also an intrinsic conflict between teaching and research: they competed for a faculty member's time. Teaching, when done well, was time-consuming and labor-intensive, requiring close personal contact with students. Good teaching required a generalist and synthetic orientation that in an era of increasing specialization took greater and greater effort to provide. Herein lay the primary obstacle medical schools encountered in trying to improve their educational programs: time spent teaching meant less time for research. It was difficult to entice faculty members to give much attention to students when they were seldom rewarded by the institution for doing so. Hence the frequent neglect of teaching, whether at the medical school or the research university.

As a result, for the past century medical schools have evolved in a faculty-centered, not a student-centered, manner. In the basic science subjects, the domination of the curriculum by lectures and the de-emphasis of laboratories and individualized instruction represented a much more efficient use of faculty time. In the clinical subjects, the use of house officers as teaching assistants served a similar purpose, freeing the faculty to pursue their other interests, particularly research. By their actions, medical schools everywhere demonstrated a widespread lack of concern for student matters: the difficulty in recruiting faculty to serve on admissions committees or to help with interviews, repeated complaints from students that they were neglected, reports of the unavailability of faculty advisers, the behavior of faculty who resented their lecture duties (for instance, delivering their lectures without introducing themselves to the class), the refusal of departmental chairpersons to sit on curriculum committees, the conversion of student teaching laboratories into faculty research laboratories, the unwillingness of some faculty to write letters of recommendations for students, and poor faculty turnouts at commencement exercises. This deeply ingrained subordination of teaching to research in the value system of U.S. medical schools has presented a formidable obstacle to medical education all century long.

A third internal issue is the relative lack of preparation of today's students for the management of patients with chronic diseases. Medical educators created the hospital clerkship, the mainstay of clinical education, in the late nineteenth century, when life expectancy in the U.S. was barely 40 years and when acute illnesses (infections, injuries, and acute manifestations of chronic diseases) dominated medical practice. Today, as a result of the success of public health and modern medicine, life expectancy in the U.S. is approaching 80 years, and chronic and degenerative diseases dominate the practices of most physicians.

The diagnosis and management of chronic diseases, unlike that of many acute illnesses, is largely an outpatient activity. During the past two decades, there have been many calls for medical schools to provide more and better ambulatory experiences so that students might obtain greater exposure to patients with chronic illnesses. The Association of American Medical College's "GPEP" Report in 1984 was the most prominent of these calls. Nevertheless, on balance, medical schools continue to rely on inpatient hospital clerkships for the great majority of clinical instruction. How students are to acquire the knowledge, skills, and attitudes required for the care of patients with chronic diseases is a conspicuous deficiency in medical education today. It remains uncertain whether current students will be fully prepared for many of the most

important challenges they are likely to face when they begin the practice of medicine.

External Challenges

Throughout the twentieth century, American medical schools have found themselves with two homes: one in the university, the other in the health care delivery system. Of the two, the ties to the university have traditionally been far stronger. Since the passage of the Medicare and Medicaid legislation in 1965, the patient care activities of medical faculties have grown enormously, and the ties of the medical schools to the health care delivery system have correspondingly increased. Accordingly, academic medical centers are now firmly enmeshed in the health care delivery system—and hence subject to all the forces and cross currents of this system. In the current environment, this has led to a series of unprecedented “external” threats, both to academic medical centers as institutions and to the quality of medical education they are able to provide.

The most obvious consequence of today’s market-driven health care environment for academic medical centers is financial. Because of education, research, charity care, and a sicker case mix of patients, the costs of teaching hospitals run about 25 to 30 percent higher than those of community hospitals. Previously, third party payers were willing to accept higher bills from teaching hospitals to cross-subsidize these socially important activities. In the 1990s, however, insurers were increasingly unwilling to do so. Instead, they insisted on paying only for the costs of hospital care actually incurred by their enrollees. Accordingly, the margins teaching institutions depended on for education and research were whittled away. In 2000, the University of Pennsylvania Health System—one of the country’s strongest and best medical centers—suffered a \$200,000,000 operating loss. It has been estimated that if current trends go unchecked, as many as two-thirds of teaching centers will be operating in the red within five years. Academic medical centers now find themselves in a buyers’ market indifferent to their needs—a market where insurers are rapidly withdrawing from the support of socially valuable functions they had nurtured for over half a century.

From the educational perspective, many of the current difficulties of medical education have arisen from the responses of teaching institutions to these financial pressures. In general, academic medical centers have responded to the lower payments they are receiving by increasing the volume of patients they see. By caring for enough patients fast enough, they hope to remain solvent, at least for the moment. Such behavior,

though understandable from a purely business perspective, has come at a great price: academic medical centers have begun to lose sight of their mission and *raison d' être*. Institutional survival is being accomplished, but in the process the core principles those institutions have been entrusted to preserve are being sacrificed. Today, academic medical centers are rapidly losing their academic qualities, and the opportunities for students and house officers to acquire fundamental clinical skills and caring attitudes have been seriously undermined.

The market's erosive effects on medical education are exerted in many ways. For instance, fewer and fewer clinical faculty are available to serve as teachers and mentors. Instead, today's faculty are under intense pressure to be "clinically productive"—that is, to see as many paying patients as possible so that they can help keep the medical center financially afloat. (The common definition of "clinical productivity" at medical schools refers to the amount of professional fees generated, not to the quantity or quality of care. Delivering ordinary care to paying patients is considered clinically productive; delivering outstanding care to charity patients is not.) This writer knows of a chairman of internal medicine at a prestigious medical school who has told his faculty, "If you want to teach, do so at lunch—and keep your lunches short." Because of such pressures, many clinical faculty presently have little time to teach, advise, serve as mentors, or conduct research. In addition, medical students' opportunities to observe faculty doctoring in a teacherly, caring way are dwindling. If there was one tenet of medical education that helped to ensure medicine's place as a university discipline in the twentieth century, it was the importance of conducting medical education in a scholarly environment. This principle is being violated by the shift in emphasis from teaching and research to patient care and by the conversion of a scholarly faculty into an exclusively clinical faculty.

Though teachers are important to the learning environment, the opportunity for students to spend ample time with patients is even more critical. In this respect, the marketplace has again been extremely injurious to clinical learning. Through the mid-1980s, the average length of stay at teaching hospitals was 10 to 12 days. Now, it is three to four days. In part this change reflects technological advances in medical care, such as the growing use of minimally invasive surgery. However, it largely represents the attempt by third-party payers to reduce hospital costs. Short hospital stays have forced medical schools to conduct clinical education in an atmosphere in which speed is the principal mandate for patient care. As a result, students are being converted from active learners to passive observers, with deleterious consequences for their ability to

acquire fundamental knowledge and skills.

Among the negative effects of today's clinical environment on the education of students is its impact on the acquisition of cognitive skills. It is much harder for learners to develop problem-solving abilities when patients are admitted with their diagnoses known and treatment plans already determined. Clinical clerks in surgery, meeting patients under the drapes of the operating table, can still learn about removing a gall bladder, but such encounters do not teach students to recognize the patients who might actually need the procedure from those who do not. Once admitted, patients are often discharged before a diagnosis has been made or the effects of therapy observed—or even before an attending physician has had the chance to confirm a physical finding. These circumstances deprive students of the opportunity to follow the course of disease and treatment.

Of equal concern are the negative implications of this hurried environment for the all-important latent learning of the "hidden curriculum." Habits of thoroughness, attentiveness to detail, questioning, and listening are difficult to instill when learning occurs in a clinical environment more strongly committed to patient "throughput" than to patient satisfaction. In addition, it is hard to imagine how caring attitudes can easily be developed when medical education is conducted in a highly commercial atmosphere where a good visit is a short visit, patients are "consumers," and institutional officials speak more often of the financial balance sheet than of the relief of suffering.

Thus, as the twenty-first century begins, the university system that characterized American medical education during the twentieth century is being taken apart, and a second revolutionary period in American medical education is starting. The challenge of the first revolution in medical education was to pull medical education from the environment of medical practice into the university. Now, medical educators are raising the question whether medical schools should leave their universities to join integrated delivery systems. A task of the first revolution was to establish research as a major focus of the medical school. Today, medical educators often find themselves apologizing about research, and some even have asked whether the classic model of the research-intensive medical school should be allowed to persist in the future. A goal of the first revolution had been to make medical education a true university activity by freeing medical professors from having to practice medicine to make a living. Now, as at the proprietary schools a century before, clinical faculty find themselves increasingly dependent on private practice for their livelihood. A central mission of the first revolution was to create a stim-

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ulating learning environment to help assure that medical education would be graduate education rather than vocational training. At the turn of the new century, the clinical learning environment is rapidly eroding, with serious implications for the quality of medical education. During the first revolution, university presidents had taken a deep interest in medical education, and many had helped lead the movement to create a strong system of university-based medical schools. Today, few university presidents are defending medical schools' goals of education and research, and even fewer seem to be aware that medical schools are in danger of leaving the university. These comparisons could be continued, but it is clear that medical education at present is reverting toward a proprietary system that university and medical leaders had self-consciously rejected a century ago.

Solving the External Challenges

As the above discussion has shown, academic medical centers find themselves at the dawn of a new century with less self-confidence and a greater sense of loss of control than at any time in nearly a century. Yet, for advocates of quality in medical education, there is reason not to despair. The past, bearing as it always does on the present, harbors the principles by which academic medical centers and society can better serve each other so that high standards might be retained. Specific solutions will need to be crafted for the twenty-first century; tactics appropriate for one time, place, and social context typically do not serve as a template for another. However, guiding principles can be derived from an understanding of the past. The key lies in restoring the tattered social contract between society and academic medicine.

For the general public, there is one overarching message: academic medical centers are fragile institutions that need aggressive nurturing, sustained protection, and the unwavering support of those with vision, power, and means. The most important social functions of academic medical centers—the education of future generations of medical professionals, the discovery of new medical knowledge, the provision of highly specialized clinical services, and the care of poor and uninsured persons—are activities that are revenue-draining, not income-generating. Insurers and third party payers have traditionally helped pay for these public services, but most managed care organizations are unwilling to do so. If American medicine is to retain its future-directedness and its humanity—its investment in education and research, and its capacity to serve the sickest patients and those who can not afford to pay—specific sources of funding for the public missions of academic medical centers

must be provided.

For medical educators, there is also an overarching message: external support cannot be expected without convincing demonstration that academic medical centers are serving the needs of the public. Medical schools and teaching hospitals have always existed for the community's well being, and not vice versa. Yet somehow since the 1970s, many medical faculties have forgotten this fact. If medical educators are to succeed in preserving the vitality of academic medical centers, they need to remember the admonition of Charles Eliot, a former president of Harvard University, that "the first step toward getting an endowment is to deserve one."

Medical faculties have a number of issues to address if they are to demonstrate that they are still deserving of generous public support. First, they need to adjust more fully to the new environment of resource constraints. This entails becoming leaner, more efficient, more agile, and more cost-effective in the practice of medicine. This also requires a far more effective process of long-range planning. Academic medical centers can no longer try to be all things to all people; rather, they will finally have to make tough decisions about which academic areas to pursue and which to leave to someone else. They will also have to reevaluate the optimal size of their student enrollments, graduate training programs, and faculty and support staffs. Collectively, they will even have to address the thorny question of whether the nation's medical schools and residency programs are producing too many doctors for the country's needs, and if so, how to correct the problem.

Second, medical schools needed to do a better job of producing the type of doctors that the country needs. There is a distinct need to improve instruction in such areas as cost-consciousness, preventive medicine, health promotion, ambulatory medicine, primary care, the appropriate use of diagnostic tests, and the psychological dimensions of patient care. Faculties need to accelerate the effort introduce a population perspective into medical education—that is, to teach strategies to maximize the health of a defined population (such as that of an HMO) with the resources at hand. Faculties also need to work on those factors under their control to produce a specialty mix more closely aligned with the health care needs of the country.

Third, medical faculties can demonstrate that they are serving the public interest by regaining the critical initiative in monitoring and maintaining the quality of care, which in the view of many observers has been eroding for over a decade. The answer to preserving quality is not open-ended spending. Rather, the intellectual elite of the profession need to

provide guidance regarding how to use resources wisely. If academic and professional leaders can speak in a unified voice about what is best for patients, a powerful force for the public good could be released.

Lastly, medical faculties need to make clear that their research interests are fully concordant with the health concerns of the public. In an era of chronic diseases and an aging population, this means integrating the study of the organization, financing, and delivery of health care with traditional scientific work. All the rich intellectual resources of the university could be called upon to assist in this effort. Of course, something as large and complex as the health care delivery system is not the sole responsibility of academic medicine to fix. However, the problems of promoting health and organizing health care in the United States have become so pressing that they deserve much more attention from medical schools than they have traditionally received. Certainly, rapid evolution of the country's health care system is going to continue with or without the involvement of medical educators, but without their participation, they and the public are less likely to be satisfied with the results.

Though imposing, these challenges are not as daunting as they might seem at first glance. There are many reasons to be optimistic, and the challenges of maintaining a strong system of medical education are not as great as those of creating the system a century ago. At the start of the twenty-first century the public is already accustomed to supporting medical schools generously, the capacity of medical care and potential of medical research are widely recognized, the public is expressing its belief in medicine by spending over a trillion dollars a year on health care, considerable national goodwill toward the medical profession remains, the public is realizing that managed care needs significant improvements, and the majority of physicians retain a conscience and a deep-seated sense of service. These represent major advantages not available to the pioneering medical educators and create genuine hope that the social contract might be restored. At the present moment, the time available to do so is shrinking—but there is still opportunity for visionaries to dream, for men and women of good will to stand up for principle, and for leaders to act.

References

1. Kenneth M. Ludmerer, *Learning to Heal: The Development of American Medical Education* (New York: Basic Books, 1985).
2. Kenneth M. Ludmerer, *Time to Heal: American Medical Education from the Turn of the Century to the Era of Managed Care* (New York: Oxford University Press, 1999).