Looking Back at Tomorrow

COMMENCEMENT ADDRESS

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We are gathered here to celebrate your commencement, a treasured moment and
distinct honor for you, a joyous occasion for those whom you cherish, and a special
privilege for me as I now share this experience with you.

Some time ago, a medical economist by the name of Michael Marks Davis wrote,
"In order to build its own future, each generation must learn both to utilize its past
and to escape it" [1]. As we are all participants in history, I wish today to examine
some aspects of our recent past to see if we can determine what we might choose to
remember, what we might wish to preserve, and what needs to be reevaluated. I have
given my address the title, “Looking Back at Tomorrow” [2].

I

The most widely acclaimed and accomplished physician of the eighteenth century
was Herman Boerhaave [3] who, although Europe’s most celebrated teacher and
clinician, published little other than his lecture notes. These, however, were read and
reread by most of the physicians in the known world. There are two cases in the Yale
University School of Medicine Historical Library filled with Boerhaaviana. The
books are kept under lock and key for reasons better explained by guardians of
investment portfolios than by historians, especially since the sum total of knowledge
found therein is captured in the aphorism: “Keep the head cool, the feet warm, and
the bowels open” [4].

With some notable exceptions, this phrase encompasses the sum total of therapeu-
tic knowledge dating from Hippocrates to the mid-nineteenth century. Quiet the
nervous system, temper the commotion of the blood in the vessels, stimulate the
intestines, and leave the rest to the healing power of nature.

It should not be surprising, then, that your nineteenth century antecedents were a
profession with a distinguished history but an uncertain future. Their practice was
governed by little that we would call science. Instead, theory, empiricism, dogma, and
assumption governed their medical affairs, all in a busy, bustling, commercial age
filled with sectarians, quacks, and empirics who called themselves Homeopath [5],
Thomsonians, Eclectics, and Naturopaths [6].
In 1832, the medical educator and statesman, Daniel Drake, analyzed the lamentable state of medical affairs and found that physicians, while doing some good, also did much harm. Part of the problem was medical education. Medicine, wrote Drake, ranks with the learned professions, but "not a few of its professors are signally deficient in learning." They know nothing about grammar, geography, or arithmetic; they can't even spell! Those who teach medical students should instead be devoted to medicine and jealous of its character. They should possess, he said, "a sound and discriminating judgment." They should be conscientious, responsible, systematic, and "possess sound morals and chastened habits" [8].

Students, to fulfil their part, were to be "passable scholars" with knowledge of English and the art of composition, physical geography and meteorology, history, mathematics, and natural philosophy, and French, Greek, and Latin. From "this elevated ground," the student would then advance to anatomy, chemistry, pharmacy, materia medica, physiology, pathology and, finally, "by a regular transition [to] the Practice of the profession—its therapeutics and operations"[9].

Those students who were admitted to medical school were to follow certain rules. They were not to come to lectures unprepared. They were expected to take notes and were not to be unruly, noisy, or in any other way "violate the laws of courtesy." They were to be in their seats on time and, as each had a penknife, they were specifically instructed not to carve their initials, mar, or otherwise eviscerate their laboratory benches. Levity, mischief, and idleness were to be abandoned. Students, in sum, were to be "gentlemen" [10].

And to assure that medical students would "know God" and reacquaint themselves with their "soul's eternal worth," attendance at chapel was compulsory [11]. Indeed, throughout the nineteenth century, God was very much in evidence at the Medical Institution of Yale College [12]. Commencement Day speakers at these ceremonies admonished graduates in lugubrious oratory to attend church, observe the Sabbath, and "unconditionally give [themselves] over to the Great Author of Truth" [13].

II

The nineteenth century physician may have known God, but he was on his own as he keenly competed with his colleagues for patients. In the 1860s there was one physician for every 572 persons and in some states the ratio was as high as 1 in 500, even 1 in 400 [14]! In England, the situation was no better. Sir James Paget in 1869 found that of 1,000 of his pupils not more than three out of five actually succeeded in establishing themselves in practice. In his introductory lecture, it was Sir James's custom to look round at the crowd of pupils and exclaim, as if with painful doubt, "God help you all! What will become of you!"[15].

In America the success rate was no better. With so many physicians in the community it was a buyer's market. Patients could shop around. If one physician charged too much, was a "remorseless bleeder," or excessively prescribed calomel (a particularly fierce purgative), then patients would seek other physicians who employed in their practice less heroic remedies. The Homeopaths were especially successful in offering an alternative therapy and grew in numbers and stature throughout the nineteenth century though their practice was based on unproven theory and subjected to the continuous ridicule and assault of those with regular medical training [16].

III

And yet the medical profession survived and prevailed. Rules of conduct and
etiquette were adopted [17]. No longer were physicians publicly to ridicule their colleagues in pamphlets or newspapers (an early form of peer review!); nor were they permitted to challenge each other to duels or to otherwise partake of behavior unbecoming an educated professional.

The length of a medical education was deemed inadequate and increased from two to six months, and then to two years. Students, said the reformers, needed time to read, reflect, think [18]; they also needed the leisure to prepare their M.D. theses, then a requirement for graduation in a few of the better nineteenth century medical schools. Those who did research, who contributed new facts to medical science, who "communicated an impulse to the wheel in medicine's complicated machinery," it was believed, would awaken in themselves a "[spark] of character which [would continue] through life [19]."

The content of the curriculum was also important. Anatomical dissection, physiology, materia medica, internal medicine, surgery, obstetrics, and also something which appears in the Hippocratic treatises, social medicine. Know the signs and symptoms of disease, but also know the community and its citizens [20]. Know therapeutics, but also be cognizant of the impact of a mortgage, the death of a cow, and the effect of a drought on your patient and his illness.

In the mid-nineteenth century, you see, physicians could not always cure, but they could very well care for and comfort their patients. They understood very well the precept that the best physician is often the best inspirer of hope. It was those who were personally agreeable, with recognized good sense, who stood well with their professional brethren, who were approved as honest, able, and courteous, those in whose arms patients would be willing to die [21]—these were your historical antecedents.

IV

Changes soon occurred which led medicine out of its somnambulistic state. As Tennyson wrote in Locksley Hall:

Science moves, but slowly, slowly,
creeping on from point to point; . . . [22]

Medicine qua science, however, developed with breathtaking speed.

At the end of that wonderful decade [wrote William Henry Welch about the period 1880 to 1890] perhaps the most wonderful decade in the history of medicine, there had been a revolution in medical thought through the discovery of the agents causing infectious diseases—discoveries such as the bacillus of tuberculosis, of Asiatic cholera, of diphtheria, of typhoid fever and other infectious diseases. Those living today [in 1914] can hardly realize the enthusiasm and youthful spirit which was stirred not only among medical men, but in the general public by these discoveries. [23]

And soon the basic and clinical sciences found their way across the Atlantic into Flexner's modern schools of medicine. Pathology became the fundamental branch of medical science; obstetrics and pediatrics became specialties; preventive medicine and public health, perhaps more than any other medical discipline, prolonged longevity and reduced mortality; surgery, as a result of the introduction of anesthesia, the principle of asepsis, and the innovative genius of its practitioners, entered the "sharp, white, gleaming cleanliness" [24] of the modern operating theater; biochemis-
try (called then physiological chemistry) arose as a cognate discipline; and physiology, grappling with the abstrusest problems of structure and life, emerged and extended knowledge light years from the aphorisms of Boerhaave.

V

That was yesterday. What of today?

Much has changed, but much remains the same. Today we are also confronted by tensions, confusion, and paradoxes. Our faculty and students, in comparison to our nineteenth century ancestors, are highly educated and paragons of virtue. But there are other problems. Medical costs are too high, quality medical care is not yet available to all who need it, technology proceeds under its own inexorable momentum, government becomes more obtrusive in medical practice—something is wrong. There are troubling, often absurd paradoxes:

— We declare ourselves to be a humane society and yet continue to humble those in need.
— We revere life but appear not to be concerned with the quality of life.
— We have eradicated smallpox but vote at the World Health Organization in favor of commercial enterprise at the expense of the health of infants.
— We worried that we had too few hospital beds and now there are data revealing that we should reduce the number of beds by at least ten percent [25].
— Since the 1930s we have been concerned that we had too few physicians and now, if you accept the mathematical calculus of the Graduate Medical Education National Advisory Committee [26], each of you by the end of this decade will be competing fiercely for patients, as were your nineteenth century predecessors.
— Physicians welcomed the emergence of new health professionals and, as was to be expected, those who comprise this group wish now to establish new rules, seek their own financial arrangements, and further confuse the already puzzling and messy way we in this country organize, finance, and deliver health services.
— We train physicians to be expert in what is known as specialty or tertiary care and find now that many of these physicians are engaged in primary care [27], a modality to which the curricula of our nation's medical schools devote little formal attention.
— Physicians by definition are humane and ethical and yet the editor of our nation's most respected medical journal argues that doctors, if they wish to regain the public's trust and avoid a conflict between their interests and those of their patients, should abandon their lucrative sideline income derived from proprietary hospitals, clinics, nursing homes, and diagnostic laboratories [28].

Paradoxes, tensions, confusion—and other dissonances. There are those who say that medicine should turn inward and pursue only a "narrow but vital role in the prevention and treatment of illness" [that] medicine cannot transform slums [or] coerce people into norms of behavior they find uncongenial or oppressive" [29]. Yet there is another view which holds that medicine is also a social science, that "the health of every individual is a social concern and responsibility, [that] medical care . . . for every individual is an essential condition of maximum efficiency and happiness in a civilized community" [30]; in Sidney Hook's words, that "without access to such care democracy itself is incomplete" [31].

There are those who believe that government is venal, that it regulates and controls our lives. We resent this intrusion because it threatens our way of life, our liberty. But there is another view which holds that our government is not an invading hostile
force; nor is the bureaucracy our enemy. Government is ourselves, ourselves organized and the bureaucracy is the means by which a democracy translates and transforms policy into programs [32]. We should watch government like a hawk, but few would wish for a society in which there were no public expenditures for health and human services, no food stamps, childhood immunization programs, or Medicaid, no one to examine the safety and efficacy of new drugs or medical devices, no forum in which to present or debate complex issues, no institution to effect compromise among competing interests.

Medicine now appears to be sounding yet a new dissonance. You were artisans and developed then into scholastics, empirics, scientists, and specialists. You now are becoming technocrats, managers. Our medical schools and hospitals have become cathedrals of technology and, almost without realizing what has happened, diagnostic judgment based on a patient's feelings and a physician's observation has been supplanted by technological evidence [33] beeped with transistorized efficiency from a machine. This technological arrogance is a far cry from the nineteenth century painting by Sir Luke Fildes of the physician, chin in hand, elbow resting on knee, all concern and deep concentration, sitting by the side of a sick child. He has been there all night, as have the child's parents. The light from a kerosene lamp shines on both the physician's face and the child's and together, the sentinel and his patient, are united in one thought as the faint glimmer of morning light, the one symbol of hope in this somber scene, appears in the single window [34]. Of course, goodness and concern alone will not heal this child. Of course, the physician depicted in Fildes' painting knew almost nothing about the nature of the child's malady. And, of course, we can say cynically that this physician is a relic from the past, a dinosaur, a romantic archaism. But look deeper into that picture, for it represents what modern medicine today is in danger of forgetting.

And there is one additional dissonance. You have completed an educational experience which has made you intellectually fit for medicine. You can now "distinguish dogma from truth, assertion from evidence" [35] and your nineteenth century counterpart would marvel at the scientific sophistication of your curriculum. But you somehow remain socially vulnerable, uncertain. Some believe that your present concerns have become narcissistic, even petty. You have repressed your idealism. Many of you seem to have forgotten that yours is a calling, a glorious and even sublime activity which, in William Osler's words, "will be very much as you make it—to one a care, a perpetual annoyance; to another, a daily joy and a life of as much usefulness as can well fall to the lot of man" [36]. If you accept this interpretation, then you indeed enter the profession of medicine. You lose your anonymity. You no longer have the luxury of contemplating a life of splendid isolation in a temple of health protected from a world that desperately needs your attention, creative energies, and special talents. You become, in short, what you have always been, a healer and a member of society.

VI

Ours, then, is an age which has not yet escaped its past. Many of the uncertainties which were present in the nineteenth century have reemerged:

— No one appears to be in charge [37].
— Our medical curriculum is again called into doubt [38].
— Confidence in medicine has eroded.
— Our health care system remains fragmented and desultory.
— New health fads (what Lewis Thomas calls the "new magic" [39]) surround you
just as the "regulars" in the nineteenth century found themselves besieged by Homeopathy and other "kindred delusions" [40].

— The new science which distinguishes you from modern empirics and sectarians has altered your agenda and modified your role and oddly has taken you further from those whom you serve in your offices and at the bedside [41].

— Many ridicule your profession as self-indulgent, a chamber of commerce instead of a priesthood of healers.

You appear not to have travelled as far from the previous century as you may have thought.

VII

Your future is somewhat "precarious" [42]. To paraphrase the American historian, Henry Steele Commager, it presents a series of questions which I ask you to consider with me:

You have evolved for over 25,000 years and will soon be modern physicians; can you adapt to our rapidly changing environment and adopt new roles compatible with societal needs? Dedication and concern has marked your character; with the number of you increasing each year will you be able to maintain your enthusiasm and preserve your integrity? You have explored and taken to bits the fundamental particles of life itself; will you be equally inventive and resourceful in the realm of social institutions? You will be working with nurses, physician's associates, nurse practitioners, midwives, countless others; what will be the final product of this health professions amalgam? You are ambitious; will you let your ambition overwhelm your compassion? You are scientists; will you forget your art? You have been exposed to the wonders of modern technology; will you master its nuances and harness its excesses? You have abandoned the spiritual in medicine (and in your lives); what will you put in its place? A part of you has hibernated these many winters of medical school; will you now be able to resuscitate, befriend, and nurture your other self? You are concerned with government; will you help determine government's proper role in our complex society as the pendulum swings away from social programs toward sterile efficiency? The world has changed since you last looked; will you be ready to do your share to influence the future?

Members of the Class of 1981: You have fulfilled the responsibilities that the Yale School of Medicine and your past have imposed upon you; are you willing to establish your own place in the flow of events which leads you to this moment, and beyond?

All of us who are here today, who love and embrace you and now let you go, have a stake in how you answer these questions.

We wish you well; good luck and Godspeed!

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