Every activity in which the medical profession is engaged has something to do with education. The challenge is to integrate the education of physicians into all other agendas we pursue. This mandate for physician learning derives from the foundational ethics of our profession, specifically, Principle V of the *Code of Medical Ethics* of the American Medical Association:

A physician shall continue to study, apply, and advance scientific knowledge, maintain a commitment to medical education, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated [1].

Collectively, our current and future patients need ready access to high-quality, increasingly safe, appropriate, and evidence-based care that leads to excellent outcomes and improves health. But the future demands more from medical education than preparing physicians to deliver good patient care. We must make changes throughout the continuum of medical education and training that foster the development of medical leaders who can think and act—with our patients’ best interests preeminent—in the service of the profession and our health care system.

To be sure, technical advances will accelerate changes to medical care and how we deliver it; medical school curricula will always have little breathing room; residency training will continue to consume more than 4 years (on average); and maintenance of both certification and licensure will demand that we keep our knowledge and skills current. And it doesn’t stop there. We also must be grounded in humanism, act ethically, be steeped in science, and be increasingly competent. Every patient we see deserves this level of commitment. That’s a tall order. But it is not enough. Physician learning that focuses only on medical needs of patients is critical and necessary but not sufficient.

**Physicians Must Act to Correct Problems in the Health System in which We Work**

Whether our nation succeeds in overhauling our health system, the education of our physicians and surgeons must prepare them to serve patients in whatever system we have [2]. As physicians, we must accept personal and collective responsibility for shaping any health system of which we are a part.

Just as we learn to diagnose diseases and develop treatment plans for individual patients, we must also learn to diagnose and treat problems in the systems. Too often
our profession has left this task to administrators, regulators, and insurers. Medical care doesn’t end when we leave the patient’s bedside or exit the examining room. As public expectations increase, we must help the organizations in which we work adapt, and this will demand new knowledge and skills, the ability to work in teams and problem-solve with our colleagues and other health professionals, to name just two. This commitment is embodied in Principle VII of the Code of Medical Ethics:

> A physician shall recognize a responsibility to participate in activities contributing to the improvement of the community and the betterment of public health [3].

The challenge to medical education is to take bright, altruistic, scientifically adept students of every ethnic background and socioeconomic status and imbue them with the knowledge, skills, attitudes, and behaviors that advance patient care and elevate the profession of medicine to its highest potential within society [4].

The profession must learn the same lessons we learned individually as medical students:

- Focus on the health system in which we work.
- Think of our system as a sick patient with multiple problems.
- List the problems and make diagnoses; compare our problem lists with others committed to improvement.
- Work with our colleagues to find solutions for each of the problems we have identified.

**Broad Competency Versus Specialization**

As medical students, we were all generalists. We took the same courses in anatomy, physiology, and biochemistry; learned the same physical exam skills; and took the same U.S. medical licensing exams. In residency training we differentiated into 24 specialties. Many of us chose additional training beyond that in one of more than 100 subspecialties. Specialization is essential to gain the competence we need to perform highly technical surgical procedures or completely understand the pathophysiology of the heart, for example. But has specialization become an excuse to withdraw from solving systemic problems that affect us all?

Consider the U.S. Army. At the top are generals. At the bottom are specialists (formerly called privates). We expect a lot more from generals than from specialists. Generals must know the roles and responsibilities of all the specialists and officers they command. In addition to that, they must understand strategy and tactics and possess vision and leadership skills. Who are the medical profession’s generals?

If the military analogy seems far-fetched, consider business. Many CEOs start as engineers or accountants—specialists. They acquire knowledge and skills as they rise through the ranks. By the time they become CEOs of Fortune 500 companies, they have mastered multiple disciplines. Who are clinical medicine’s CEOs?
Or, finally, consider higher education. College presidents and deans often start as specialists in narrow academic fields. By the time they administer a university or college, they have mastered many disciplines and developed a broad understanding of the multiple contributions of their departments, divisions, and faculty members. Who are the presidents and deans in the practice of medicine?

Do we have it upside down in clinical medicine? In our patient care roles, we pay specialists much more than generalists. Too often, our medical culture devalues generalist skills. A medical student who is attracted to the challenge of treating undiagnosed and undifferentiated illness at the front doors of medicine (as a family physician or general internist) is often told he or she is “too bright” to enter primary care and is encouraged by professors (mostly academic subspecialists) to concentrate his or her efforts in a particular clinical niche.

Further, our system of accreditation, certification, credentialing, and licensure narrows medical practice. Systems that were put in place to assure competence and recognize and honor special expertise are now regularly used to stake out and protect economic turf—and, more unfortunately, to divide us as a profession. For many doctors, the longer we practice, the more narrow the range of problems we deal with.

Rising to the top of one’s specialty in academics or practice is admirable, but from the outside, when things are broken or not working, our segregation by specialties looks like a form of tribalism.

So how can medical education adapt to a paradigm of constant change? Students and physicians in training and in practice with broad interests and ambitions, regardless of specialty, should be encouraged to become leaders in our health systems [5, 6]. That means some of us must become generalists anew. This may involve learning skills in business, public health, and engineering. Regardless, we should create pathways to help our future leaders obtain the additional knowledge and skills they will need to become our medical generals, CEOs, and presidents.

There are some communities that have just that kind of leadership—bright spots on the medical map where doctors and hospitals have focused on improving quality and lowering costs [7]. Two we know well are the Mayo Clinic in Rochester, Minnesota, and Group Health Cooperative of Puget Sound, Washington. One has thrived in the fee-for-service system, the other is a long-time champion of prepaid health care. In both organizations, it has been medical leadership, groomed and exercised over decades, that has made the difference.

Two recent reports noted the need for more emphasis on health system financing and delivery issues in medical school and residency training [8, 9]. Although systems-based practice is one of the six core competencies required by the ACGME, residents are not receiving adequate training in new systems of care, such as the medical home [8]. U.S. medical students have similar concerns about lack of instruction in the practice of medicine and medical economics [9]. All of us, not just students and residents, should learn some basics about health care systems.
Summary
The commitment of the medical profession to education and learning is vital to preparing and maintaining the medical workforce for any health system. This commitment is grounded in the ethical principles of our profession and manifested in the continuum of medical education fostered by the AMA for over a century. Knowledge and technology will advance. Financial incentives will change. Medical practice and health organizations must also adapt. But through all of this, one constant will remain: Sick people will seek care from their doctors, and doctors will care for patients one patient at a time. That brings us to Principle VIII of the Code:

A physician shall, while caring for a patient, regard responsibility to the patient as paramount [10].

Regardless of setting, place, or time, physicians must learn and work together to create health systems that preserve and enhance the value of the patient-doctor relationship. For it is that relationship that is central to the sacred trust society has given our profession.

References

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Acknowledgment
We would like to acknowledge Catherine Welcher, Fred Lenhoff, Sarah Brotherton, and Gail Cates as critical reviewers whose suggestions improved our initial efforts.

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