The Physician Workforce: A Medical School Dilemma

Are today's medical schools equipped for the rising numbers of students needed to fill a projected physician gap?

by Douglas L. Wood

ABSTRACT: Richard Cooper has advanced a projection of a sizable deficit in physicians in the United States, requiring the training of as many as 10,000 additional physicians annually by the year 2025. He questions the ability of U.S. medical schools to "fill the gap." This challenge presents another important dilemma for medical education. Could the applicant pool be enlarged sufficiently to increase qualified applicants? Would medical schools be able to accommodate this increase in students? The impact of these increases could be an ultimate decrease in the quality of health care and the production of physicians who are not current with research findings, particularly in the area of genetics.

Medical schools constantly confront many important dilemmas: the balance between education, research, and service; the appropriate curricular model to employ; the impact of the genetics revolution; and the many issues contained in the quality movement, among others. Richard Cooper has advanced yet another dilemma by proposing that the United States will soon have a shortage of physicians. This view is contrary to the generally accepted notion that we are producing too many physicians. Cooper now questions medical schools' ability to "fill the gap" if more physicians are required.

Cooper has developed an alternative method to predict physician workforce needs, one that is grounded in macroanalysis of trends underlying the supply and use of physician services (trend model). Using this model, he anticipates that a sizable deficit of physicians will exist by 2025 and that addressing this deficit will necessitate an increase in graduates from medical school and from residency and fellowship programs. According to Cooper, the medical education establishment must produce 10,000 additional physicians annually to address the deficit. He questions whether this can be accomplished, partly based on an assertion that change in medical education generally is a protracted process.

What if Buz is right? A plenary session at the 2002 annual meeting of the Association of American Medical Colleges (AAMC) was titled, "What If Buz Is Right?" (Cooper's nickname is Buz). If he is right, then the challenge to both medical schools and graduate medical education (GME) programs is serious and might well require some less-than-desirable trade-offs. Let us move forward to the year 2025 and consider some of the effects of producing 10,000 more medical school graduates per year.

The pipeline issue. Approximately

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57,000 people sit for the Medical College Admission Test (MCAT) each year. That number has been decreasing, as has the number of medical school applicants (except for the entering class of 2003, when a slight increase was noted). In 2003 the American Medical College Application Service (AMCAS) reported a 5 percent increase, and the American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS), a 6.9 percent increase, compared with last year's entering class. Only time will tell whether the increase is a one-year phenomenon.

What, then, are the consequences of pursuing a supply expansion of 10,000 applicants? The most important is quality—can we find that number of qualified applicants? Even in 2025 the answer is probably no, in that the demands placed on physicians are growing, leading to a smaller pool. Physicians in training must assimilate fundamental knowledge concerning an ever-increasing number of medical topics in addition to the so-called orphan topics such as humanism, professionalism, ethics, and several others. One of the trade-offs would be to accept applicants who are less qualified than today's medical students. This, however, would most likely decrease the quality of medical care, with consequences that would be unacceptable to the American public.

**Medical school issues.** If we presume that the pipeline could produce 10,000 more qualified applicants, what effect would this large student body have on medical schools? Initially, would current curricular trends have to be modified, and, probably more important, could they be modified? Increasingly, lectures are being phased out of medical schools in favor of small-group teaching/learning. This is particularly evident in schools where the problem-based model or clinical presentation model is being used. A sizable increase in students could require a move back to large lecture presentations and away from small groups, because the small-group model is very faculty-intensive. This leads to at least two other issues: How could the number of faculty be increased to accommodate the increased number of students if small groups are to continue, and what effect would it have on students' learning if adequate faculty could not be found and large-group lecture presentation were the only alternative? If a decision were made to continue small-group teaching/learning, then active recruitment and screening of faculty members would be needed, to increase their numbers. This issue would be extremely difficult, if not impossible, to address, in that the quality of educational offerings depends upon the quality of the instructor. Within U.S. medical education, few people possess the medical and educational backgrounds needed to meet the qualifications of an ideal instructor. One could then conclude that the students' learning would suffer, especially if the only alternative was the lecture, and the result could be less-than-qualified physicians.

Another issue to consider is the balance between education, research, and service in medical schools. Many believe that the balance is now oriented toward research in deference to education and service. Could the future of 10,000 more medical students per year mean that some of those now involved in research would be "drafted" into the teaching ranks for the majority of their time? This could result in decreased research productivity and fewer medical breakthroughs. Would Americans tolerate this decrease in research productivity?

**Quality of care.** Over the past few years the issue of health care quality has been prominent in both the popular press and health literature. The Institute of Medicine (IOM) has now produced three reports on this issue, the latest of which outlines important challenges ahead for health professions education. This latest report made five recommendations, among them that physicians should employ...
evidence-based practice; apply quality improvement methods; and use informatics. Of the three, the first seems to be best taught and learned in medical schools. What would happen if the number of students were to increase? For some, these techniques are difficult to understand and put to use, so that more instruction time would be required than for other topics. We again circle around to the need for small-group models and skilled instructors. I contend that most medical schools offer minimal instruction in quality improvement methods and that medical students generally show insufficient concern for what they feel are “soft topics.” Will this situation worsen if there are even more students?

The topic of using informatics presents a current and potential challenge if student numbers increase. It is faculty-intensive and requires advanced computer labs. It, however, is a part of the future of health care practice, and students must embrace it if they wish to provide effective, efficient, and up-to-date health care as physicians. Having increased numbers of students will stress the medical education system in this arena, however; if this is not addressed, it could result in a decrease in the quality of care.

| Human genomics. | One of the most important challenges facing medical education now and in the future results from the findings of the Human Genome Project. In 1997 the project’s director, Francis Collins, challenged medical education to plan for and implement change because of the project findings’ significance for diagnosis and treatment. In a recent interview Collins stated that ten to fifteen years from now, one will not recognize how we engage in diagnosis and treatment. Can medical education face its current and future challenges in this area and still produce 10,000 more physicians annually? If not, physician practice will lag further and further behind research findings, and diagnosis and treatment will be less than optimal.

In sum, the challenges to medical education resulting from Cooper’s predictions are daunting. If Buz is right, revolution in medical education will be essential.

NOTES
2. Based on author’s communication with the American Medical College Application Service and with the American Association of Colleges of Osteopathic Medicine Application Service.