

The coming era of

too few physicians

by Richard A. Cooper, MD

Editor's note: This article is an edited version of Dr. Cooper's American Urological Association (AUA) Lecture presented at the 2007 Clinical Congress in New Orleans, LA.

It was an enormous honor for me to be the 2007 AUA lecturer and to have the opportunity to address the College and its many distinguished guests.

I felt not only personally honored but profoundly pleased that the College had chosen that moment in time—the beginning of its 93rd Clinical Congress—to address the important problem of physician shortages. It continues the College's long-standing commitment to this issue.

The coming era of too few physicians is a disturbing topic—one that requires action. My hope is that each of you will take action to reduce the severity of these shortages.

Demand for physicians

It is important to frame the need for physicians in the context of the major forces that drive demand. Figure 1 on page 13 depicts the close relationship that has existed for more than 70 years between the number of physicians per capita and the level of economic growth, as indicated by the nation's gross domestic product (GDP), expressed in per capita terms. With ever-expanding possibilities for beneficial services—and with an insatiable appetite for health care among the public—it is the level of economic growth that ultimately determines how much health care the nation can afford, and it is the amount of health care that the nation is able to purchase that determines the demand for physicians. This relationship between economic growth and the demand for physicians is key in understanding how many doctors we will need to train for the future.

Figure 1 notes that this relationship held throughout the period of more than 70 years depicted here—except for the years after World War II, when there were fewer physicians than would have been predicted by the level of GDP, and that, of course, was the last physician shortage. In response, medical schools were built and residency programs were expanded, and the supply of physicians subsequently increased. Physi-



Dr. Cooper delivering the AUA Lecture.

cian supply overshot a bit in the 1990s, which allowed managed care to exert leverage, but that was short-lived, and balance was achieved by century's end.

The straight-line projection of future demand in relation to GDP assumes that the economy will continue to grow and that the underlying principles that have governed the relationship between economic growth and growth in the demand for health care will persist. Furthermore, this projection assumes that this same dynamic will create an increasing demand for physicians. Nothing on the horizon seriously challenges these assumptions.

The problem is that there will be too few physicians to meet this projected demand. Considering factors such as the aging of the physician workforce, the fact that many more women are becoming physicians, the added emphasis physicians now place on lifestyle, the effect of duty-hour restrictions, and the fact that more physicians are following nonclinical paths, it becomes apparent that the "effective supply" of physicians will be even less (see Figure 2, page 13).

Putting all of this together spells a shortage

of approximately 200,000 physicians in 2020 or 2025, roughly 20 years from now.¹ That amounts to approximately 20 percent too few physicians. But you don't have to wait until then: Evidence abounds that we are already in the early stages of a deepening shortage. The evidence includes longer waiting times for patients, longer referral times for physicians, difficulties in recruiting physicians, and increased salaries and bonuses for new physicians.

Effects of physician shortage

Physician shortages are promoting a restructuring of clinical practice. Hospitalists, and now proceduralists, cover defined segments of care. Primary care physicians are setting up concierge practices. The shortage of intensivists has spawned remotely monitored intensive care units. Teleradiology has become common. And locum tenens has become more popular, as hospitals seek to fill the gap and as doctors seek more structured time.

The problem of adequate coverage for emergency rooms has led to the widespread practice of compensating physicians in certain specialties in order to ensure their availability. In a recent legal opinion that essentially condoned this arrangement, the Office of the Inspector General cited scarcities in specialties such as general surgery, neurosurgery, orthopaedics, urology, otolaryngology, cardiology, gastroenterology, neurology, hematology/oncology, and obstetrics/gynecology.

Other professions are responding to the physician shortages too, and necessarily so. For example, nurse practitioners are moving up the professional ladder by training at the doctoral level, and physician assistants are evolving to higher levels by undertaking specialty training.

Economics and quality care

Flowing from the old adage that necessity is the mother of invention, physician shortages have spawned new businesses, such as medical tourism and retail clinics. Entrepreneurs abroad and at home see new opportunities, and more of the same is sure to come, all in the name of mak-

Figure 1

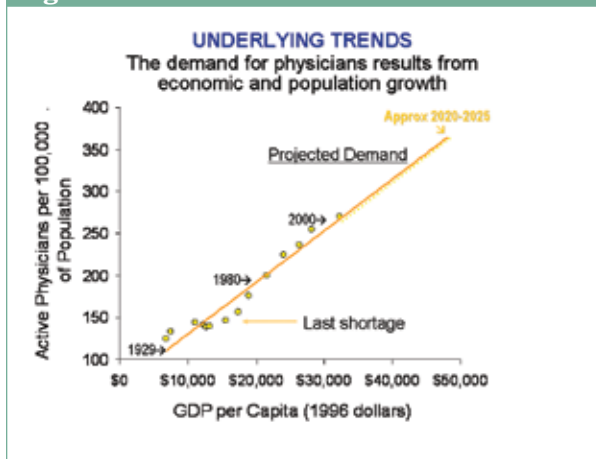


Figure 2



ing more care available to more people.

But is that approach wise? Is additional health care worthwhile? Is what we do of value?

The usual answer is, "Yes." Having more physicians and having the advances in health care that physicians provide are generally viewed as worthwhile. We have seen major increases in cancer survival—more than 10 million cancer survivors are alive today—and major decreases in mortality from heart disease. Life expectancy has increased, and at the same time adult disability has decreased. The result is longer and more

Figure 3

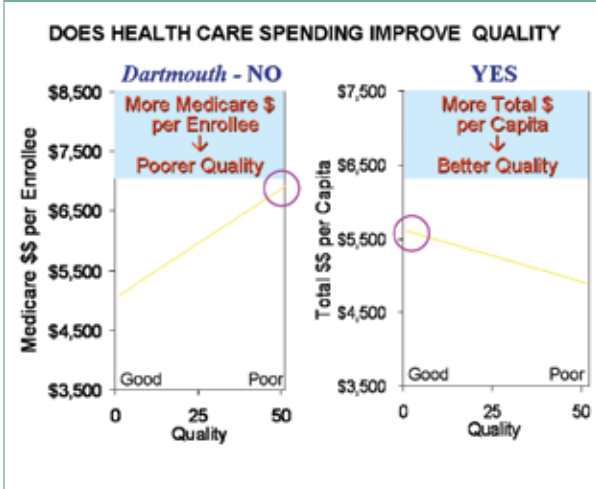
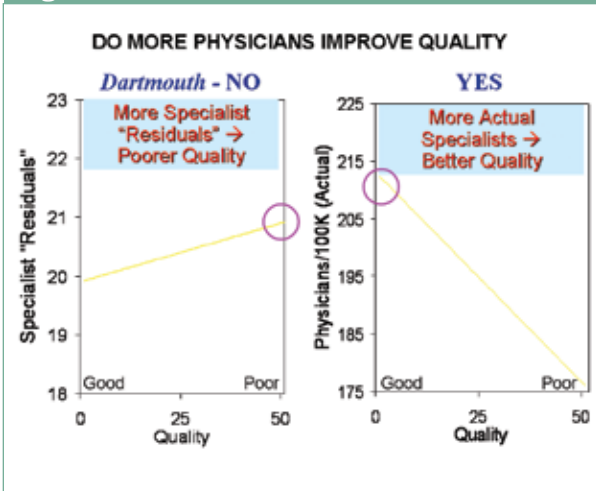


Figure 4



productive lives for many members of society. Moreover, the economy has benefited. Health care has created jobs and has contributed to the economic growth that has, in turn, facilitated health care spending. The jobs report issued by the U.S. Department of Labor in October 2007, just days before the start of the Clinical Congress, tells the story. In September, employment rose by 110,000 jobs, of which 30 percent were in health care, principally in ambulatory services and in hospitals. At the time this report was released,

the total number of jobs in 2007 had increased by more than 1 million—an 8 percent increase—and more than one-third of these jobs were in health care. It's not simply that the growth of health care services depends on economic growth, as I explained previously. To an increasing degree, health care is the economy. It's not only what people want—it's what people do.

Yet, not everyone agrees that more health care is better. For example, a large and prominent body of work from Dartmouth Atlas project concludes that “states with higher Medicare spending and more specialists have poorer quality health care.”² That idea is a terrible indictment of what we do and how we do it. Is it true?

It is true that states with higher Medicare expenditures per enrollee have poorer health care quality—but that's more of a reflection of the sociopolitical environment of the states in which this occurs than of health care outcomes. It turns out that states with high Medicare expenditures also have larger percentages of African-Americans, more uninsured individuals, and more residents below the poverty line. These states spend less on K–12 education and more on incarcerating prisoners. It is noteworthy, however, that although Medicare spending is greater in these states, the total amount spent on health care is actually less. In short, higher Medicare spending is a proxy that identifies states that have larger social burdens overall.

Clearly, the quality of health care in a hospital or in private practice offices is not related to any one reimbursement source—Medicare or any other. Quality relates to the total funds available—it relates to per-capita health care expenditures from all sources, Medicare among them. (See Figure 3, this page.) When the relationship between total funds per capita and quality is examined, the answer that emerges is exactly what logic predicts. States where per-capita health care expenditures are higher have better-quality health care. Yes, spending matters.

What about physicians? The Dartmouth group says that states that have more specialists have poorer-quality health care. But these researchers are not referring to real physicians like you and me—rather, they are referring to a theoretical statistical construct that they refer to as “spe-

cialist residuals,” not real doctors. And it is true. States with more of these “specialist residuals” do have poorer-quality health care.

But what about real doctors—physicians like you and me, specialists per 100,000 of population? What’s the relationship between actual doctors and quality? When physician supply is measured in per-capita terms—which is the way that everyone else in the world measures it—logic rules once again. States with more specialists per capita have better quality health care. (See Figure 4, page 14.) Yes, physicians matter.

Simply, but unequivocally stated, more actual specialists and more total health care spending per capita are associated with better-quality care. And quality could be even better, and disability could decrease further, and functional life could be further prolonged as the products of basic research and clinical trials reach the bedside, but it will require skilled and caring physicians to make all of this happen.

By the numbers

So why is there a problem? Why are there too few physicians? The reason is that allopathic medical schools entered a period of voluntary population control in 1980—and that blocked an important source of future doctors. But that’s not the principal reason, since after a brief period of no growth, osteopathic schools continued to expand their output, and in the early 1990s the gates opened to let in more international medical graduates (IMGs).

The principal reason for the physician shortage is that residency positions were capped at 1996 levels by the Balanced Budget Act of 1997, and the number of incoming residents in their first year of postgraduate study (PGY-1s) flattened, and it hasn’t changed very much since then. (See Figure 5, this page.)

Why did that happen? A national consensus developed around the notion that there was going to be a surplus of physicians, and health economists convinced policymakers that too many physicians would be bad for the economy. These inaccurate assumptions were embodied in the 1980 report of the Graduate Medical Education National Advisory Committee; continued with reports and papers from the Council on Graduate Medical Education

Figure 5

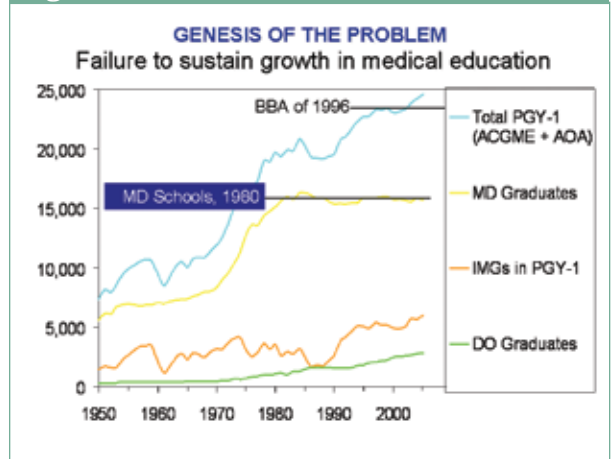
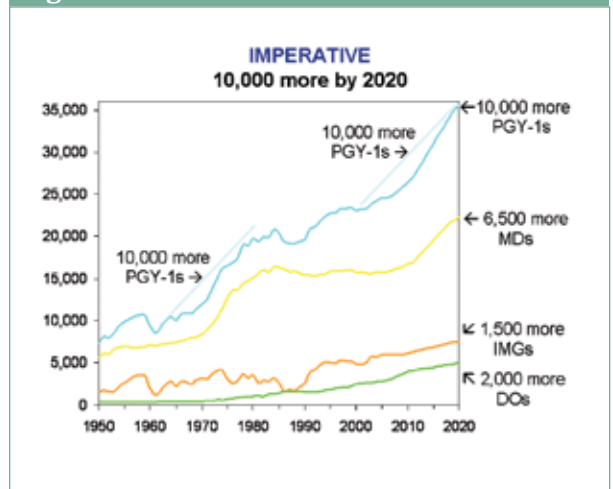


Figure 6



and the Bureau of Health Professions throughout the 1990s; and culminated with the “consensus statement” in 1996, which was sponsored by the American Medical Association and signed onto by the Association of American Medical Colleges (AAMC), the American Osteopathic Association (AOA), and a number of other organizations. It called on Medicare not only to freeze the number of graduate medical education (GME) positions but to reduce them by approximately 20 percent. The good news is that the Balanced Budget Act didn’t reduce residency slots. The bad news is

Figure 7

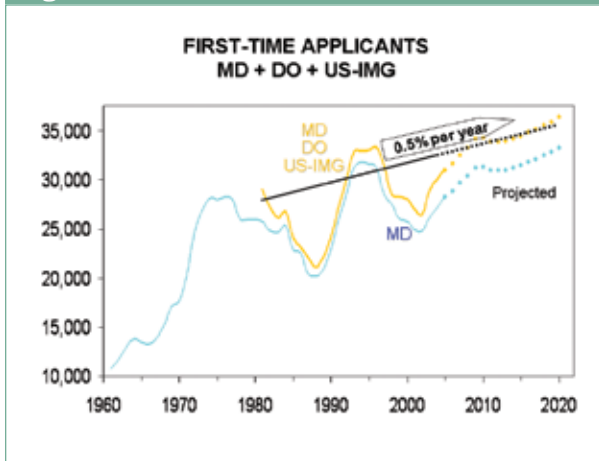
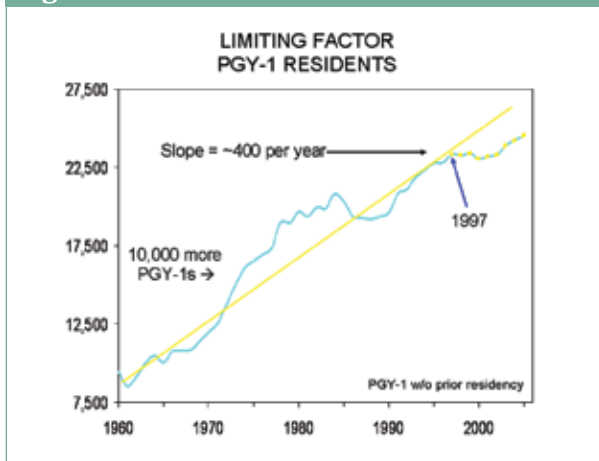


Figure 8



that it froze them, and here we are today.

It's clear now—as it was clear to many thoughtful physicians even then—that the opposite is needed. GME must be increased. We must increase the number of doctors who are being trained annually by approximately 10,000, or 40 percent (see Figure 6, page 15). That's the size of the increase that was accomplished during the 1960s and 1970s, so it seems reasonable to do it again. Of course, to feed those residencies, we'll have to increase the output of both allopathic and osteopathic medical schools as well as increase our reliance on IMGs.

Addressing this issue creates some real challenges. They involve medical schools, applicants, and, of course, GME.

Medical schools

Achieving the necessary number of medical graduates will require a substantial increase in medical schools, even more than was the case in the 1960s and 1970s. Before 1960, most medical schools were small, admitting fewer than 100 students per class. They had room to grow, and they did—in fact, 65 percent of the growth of medical school capacity in the 1960s and 1970s was the result of the expansion of existing schools. But having grown, these schools have little additional expansion capacity, and many of the new schools that were established in the 1960s and 1970s are community-based and lack expansion capacity. Various surveys indicate that, on average, existing medical schools can expand by approximately 15 percent, so the majority of growth will have to come from new medical schools. We'll need as many as 75 more.

At present, there are 25 medical schools in various stages of development. They're mainly in the sunbelt but some are in the north. All are small. Of these schools, three allopathic schools and six osteopathic schools are already operational. Others may come on line in the next few years. Each has been a massive effort, all the more so because there hasn't been any national program to foster the development of medical schools—not at the federal level nor through foundations, which played such an important role in medical education in the past. Yet, these efforts will yield, at best, one-third of the needed growth. More must be done to expand the infrastructure for undergraduate medical education.

Applicants

The next question is, "If we build them, will they come?" Are there enough qualified applicants to fill 75 new schools plus some expansion in existing schools? Figure 7 on this page shows the number of first-time applicants to allopathic medical schools over the years. This number rose sharply when medical schools were

expanded in the 1960s and 1970s, but that was because enrollment at colleges and universities also increased—the percentage of baccalaureates applying to medical school didn't change. Applications peaked during the Viet Nam War draft, but from the end of the draft forward, growth in the number of applicants has averaged only 0.5 percent per year. Based on these trends and data from the National Center for Education Statistics, we've projected the future size of the applicant pool, and it follows the same trend line. But this projection only deals with applicants to allopathic medical schools. What about osteopathic schools and U.S. citizens going abroad for medical school?

Working with colleagues at the AAMC, the Educational Commission for Foreign Medical Graduates, and the American Association of Colleges of Osteopathic Medicine, we've recently completed an analysis of the entire applicant pool, including applicants to allopathic schools, osteopathic schools, and off-shore schools. It turns out that the total pool is only approximately 10 percent larger than the allopathic medicine applicant pool. So where does that leave us?

Currently, there are approximately 30,000 unduplicated, first-time applicants to one or more of the pathways to becoming a doctor—allopathic or osteopathic schools in the U.S. and abroad. And at present, almost 80 percent of these applicants gain entry to some school somewhere. Furthermore, virtually all of these individuals will subsequently enter residency programs sponsored by the American Council of Graduate Medical Education or the AOA.

What will happen if medical schools expand to the degree that we believe is necessary, and if the applicant pool increases as we have projected? The answer is that almost 90 percent of applicants will become physicians. It's unlikely that 90 percent of applicants are qualified to be physicians. Yet, it's also likely that young people who are not now applying might pursue medicine if the early hurdles created by the Medical College Admissions Test and the U.S. Medical Licensing Examination Step-One exam were different; furthermore, the financial hurdles of a medical education can't be ignored. These issues must all be addressed.

Figure 9

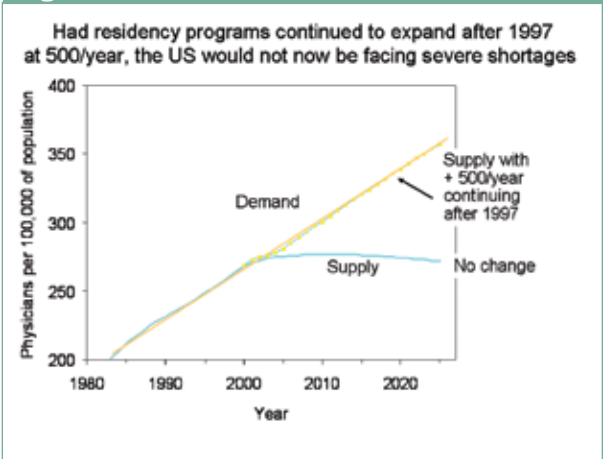
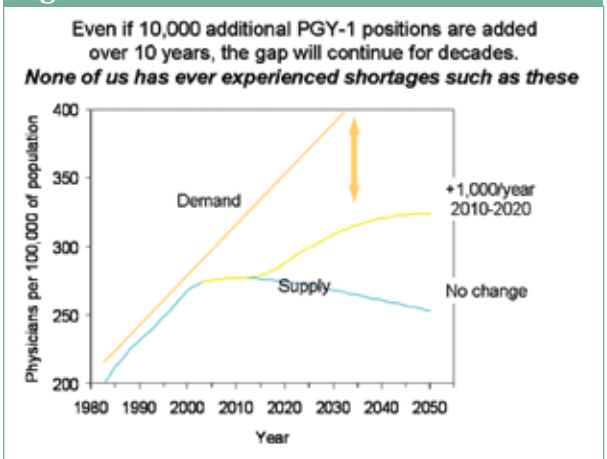


Figure 10



GME

The final challenge is, of course, GME.³ GME is critical because it is the portal to practice. Unlike in Canada, Britain, and Europe, where physicians who have trained elsewhere may become licensed to practice, licensure in the U.S. demands residency training in the U.S. Perhaps that could change. If the physician shortage becomes severe enough, the public may demand that qualified physicians from other countries be allowed to practice here. But for now, residency in the U.S. is the portal to practice in the U.S.

As mentioned previously, GME positions progressively increased from 1960 to the mid-1990s and were frozen in 1997. These increases were not planned and were uneven over time, but over the course of 35 years, first-year residency positions increased on average by approximately 400 per year (see Figure 8, page 16).

That represents an increase of approximately 2.5 percent per year—1.5 percent more than population growth—barely enough to keep up with technology and economic growth. Nonetheless, had that rate of growth continued beyond the mid-1990s, and had residency positions continued to expand at a rate of approximately 500 per year, we would not now be facing a physician shortage. (See Figure 9, page 17.)

But that was more than a decade ago. Time and tides wait for no man, and so a decade has passed. Sadly, increasing residencies by the same amount—500 annually—starting in 2010 will have little impact over the subsequent decade. It's too little, too late. Even reaching the target I proposed of adding 1,000 new PGY-1 positions annually for 10 years—a total of 10,000 more first-year residents and more than 40,000 over all years of training—will fail to correct the shortages by 2020.

Nor will it correct them over the ensuing decades. We will never fully catch up (see Figure 10, page 17). But we can narrow the gap, and while doing so, we can work to find other ways to ensure that patients will have access to the care that they will need. Further delays will only assure an even bleaker medical future. A great deal must be done and it must be done now.

The reality

It's easier for policymakers to believe that all is well, that there are enough doctors—really too many—and more will only make things worse. And it's easier to believe that there's no need for more medical students or medical schools—or for more residents or residency programs—or for more funds for either. And it is comforting to believe that there are enough medical school applicants and that they are the most uniformly qualified in history.

Sadly, none of this is true. We have a looming doctor shortage, a woefully inadequate number

of residency positions, a need for major expansion of medical schools, and a crisis in the way medical students are selected, educated, and tested.

Never before in history—not in the time of Flexner nor during the great expansion of the 1960s and 1970s—has there been a greater need for leadership from organized medicine, foundations, and government. And rarely before has there been so much complacency—indeed, “active inertia.”

If we do not rise to meet the challenge, future generations will wonder what ours was all about—what purpose was served by allowing a great profession to stagnate—and why they and their loved ones must experience illness without access to competent and caring physicians.

But that need not happen. Both the American Surgical Association and the American College of Surgeons are firmly on record that GME must be expanded and that Medicare's caps on GME must be lifted. It is time for colleagues in other specialties to sign onto these goals so that a broad national consensus can be created.

The medical profession has long accepted the responsibility for ensuring an adequate supply of physicians. Fulfilling that responsibility is an obligation that we must now embrace. □

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