

## VIEWPOINT

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## Unraveling the Physician Supply Dilemma

**Over the past decade**, physician shortages have worsened, patients' frustrations have increased, and the profession has molded itself around these new realities. Some forecasters project that the shortages will further deepen, and many organizations and individuals are urging that residency training programs be expanded. But others argue that additional physicians would simply work in places where there are enough already, that additional physicians would induce the demand for unneeded care, that fewer physicians would be necessary if more were primary care physicians, and that any gaps in service could be filled by nurse practitioners and physician assistants. Although desired by many, **the expansion of residencies faces a wall of opposition.**

### Why Physician Supply Is a Pressing Issue

With the implementation of the Affordable Care Act (ACA), millions of uninsured and underinsured persons will become insured and enter the mainstream of health care. This seems **certain to increase the demand for care in a system that already is stressed.** Indeed, despite providing more care than any other developed

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country, the United States has fewer physicians than predicted from the size of its gross domestic product.<sup>1</sup> Only 4 countries have fewer—Poland, Mexico, Chile, and Turkey.<sup>1</sup>

Moreover, although the number of physicians per capita is increasing in most other countries, physician supply in the United States will remain essentially flat for the foreseeable future. **Yet the Medicare actuaries project that US health care spending will continue to increase faster than the gross domestic product.**<sup>2</sup> It is no wonder that more than 30 state medical or hospital organizations, more than 20 medical specialty societies, and the major organizations representing allopathic (MD) and osteopathic (DO) medical education and practice have expressed concern about evolving physician shortages and have called for remedies.

### Getting It Right

None of this is a surprise. More than a decade ago, my colleagues and I assessed the future demand for physicians based on the long-term trends that link economic growth, health care spending, and physician supply.<sup>3</sup>

Over the preceding 70 years, the numbers of physicians had deviated from these trends on only 2 occasions, declining below the predicted level of demand in the 1950s and 1960s, when shortages were apparent, and exceeding demand to a small degree in the late 1990s, when most observers agreed that physicians were abundant. And now, again, supply has declined below the level predicted by demand.

**The initial projection was a shortage of about 200 000 physicians by 2020,**<sup>3</sup> similar to, but somewhat higher than, the shortage projected by the Association of American Medical Colleges, using a similar approach.<sup>4</sup> Until the recent recession, shortages within this range appeared likely. However, demand declined as the economy contracted. In retrospect, health care spending had been slowing even before the recession, in part because growth of the gross domestic product had slowed and in part because the incremental growth of health care spending above gross domestic product had narrowed, possibly because fewer new interventions addressed previously untreated conditions. Population growth had also slowed, although not among elderly people.

These realities moderate future shortages, but they remain large.

### The Legacy of the 1990s

Why should today's projections of shortages be any better than the projections of surpluses developed by the Bureau of Health Professions (BHPr) for the Council on Graduate Medical Education in the 1980s and 1990s? The reason is that the projections from the BHPr were based on measures of the amount of care being provided at the time, adjusting only for anticipated demographic changes. However, most elements of care are not readily measured, nor can future elements be known. For instance, who in 1990 could have predicted the widespread use of coronary stents, knee replacements, or magnetic resonance imaging today? As a result, demand was systematically underestimated.

Although challenged by some contrarians<sup>5</sup> and consistently contradicted by the Bureau of Labor Statistics,<sup>6</sup> the BHPr's projections were almost universally endorsed. They stimulated efforts in the early 1990s to reduce specialist training and fueled legislation in 1997 that capped the number of residency positions supported by Medicare. Few now believe that there were 75 000 physicians too many in 2000 (as projected) or that there will be 100 000 physicians too many in 2020. Yet the failure to appreciate the methodological shortcomings underlying these earlier projections of surpluses diminishes the authority of today's projections of shortages.

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As the year 2000 approached and the broadly anticipated surpluses did not materialize, osteopathic medical schools began to expand and, a few years later, allopathic medical schools followed suit. Current estimates indicate that there will be more than 27 000 US medical graduates in 2020, 50% more than in 2000. These graduates will need residency training to gain licensure and enter practice, but the number of entry-level residency positions was effectively frozen by the Medicare cap for almost a decade, and there have been only small annual increments since then.

### The Need for Consensus

Most major medical organizations acknowledge that physician training must be expanded, but some analysts have raised concerns. One view is that much of health care is wasted and, therefore, more physicians are not needed. The Institute of Medicine (IOM) estimated this waste at \$750 billion in 2009, equivalent to 30% of health care spending.<sup>7</sup> The IOM's most compelling evidence came from researchers associated with the Dartmouth Atlas, who attributed variation in spending among hospital referral regions to the overuse of supply-sensitive specialty services in regions that spent more and, based on these conclusions, advised Congress not to increase Medicare support for residencies.<sup>8</sup> However, when hospital referral regions are disaggregated into their constituent zip codes, the added spending in high-spending regions is seen to be concentrated in areas of poverty, and without these areas, spending is rather average.<sup>9</sup> Nonetheless, 30% waste continues to resonate, while poverty struggles to be heard.

Some analysts suggest that fewer physicians would be needed if physicians were distributed more evenly. However, like other social and commercial activities, health care resources follow the uneven distribution of economic resources. Among states, physician supply has correlated closely with state gross domestic product for more than 40 years,<sup>3</sup> and, within states, per capita supply relates strongly to population density.

In addition, some analysts question whether fewer physicians might be needed if more were primary care physicians. But paradoxically, as the shortages deepen, physicians are being drawn away from office-based primary care, not only into the traditional specialties but into areas of special care (such as hospital medicine, emergency medicine, and critical care).<sup>10</sup>

### What Are the Solutions?

The most direct solution is to lift the Medicare caps on residency positions, but there is little political will to do so. Indeed, deficit reduction may further reduce residency funding. If more residency positions are funded, additional resources will be needed to develop new residency programs or expand existing ones. Even with such support, it is unclear whether there are enough hospitals or outpatient sites willing to sponsor the needed expansion.

Alternatively, positions for new residents could be freed up if the duration of training were shortened in some specialties, but there is little enthusiasm among program directors to do so. Nonetheless, there is a growing body of opinion that the medical school-residency continuum must be streamlined.

Can't nurse practitioners and physician assistants fill the gap? Yes, but they do already. Between 1990 and 2012, the number of physicians increased by 50% while the entire health care labor force doubled and the number of nurse practitioners and physician assistants grew 5-fold. Further expansion in the participation of nurse practitioners and physician assistants is embedded in the long-term projections of physician supply.<sup>10</sup> Simply attaining these goals will be challenging.

Although it is generally accepted that residency training is the only route to licensure in the United States, that is not the case in Britain, Canada, or Australia; and as pressures mount, it may no longer be the case in the United States. However, residency training in the United States gives assurances that a desired level of quality has been reached. If physician immigration is permitted outside of the residency structure, new mechanisms to assure quality will be needed. Moreover, any substantial increases in the numbers of physicians entering the United States could devastate physician supply in developing countries.

If residency programs had not been capped in 1997 and annual growth in the number of positions had continued at its preexisting rate, there would be no physician shortages today. Now, more than 15 years later, there is little that can be done to materially correct the near-term situation, but it is imperative that some combination of strategies be undertaken for the long term. To do nothing ignores powerful economic and demographic trends and leaves future generations to ponder why they and their loved ones must experience illness without access to competent and caring physicians.

### ARTICLE INFORMATION

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