The Nation's Physician Workforce and Future Challenges

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ABSTRACT

There is much debate about the adequacy of the U.S. physician workforce and projections of its future size, distribution and composition. Beginning with 3 observations about the workforce we believe are largely not subject to dispute, we address the debate by providing an overview of the current state of the workforce and Graduate Medical Education in the United States; a brief history of both calls for graduate medical education reform since 1910 and the recent, intense debate about the reliability of workforce projections; and a discussion of the challenges to understanding the physician workforce. We draw 3 concluding observations: (1) Precisely because projections can be unpredictable in their impact on both physician workforce behavior and public policy development, policy makers need to devote more attention to workforce projections, not less. (2) More research devoted specifically to the workforce implications of delivery and payment reforms is strongly needed. (3) Such research must be pursued with a sense of urgency, given the rapid aging of the Baby Boom generation, which will put a disproportionate demand on the nation's physician workforce.

Key Indexing Terms: Physician workforce; Graduate Medical Education; Public policy; Health policy; Medicare. **[Am J Med Sci 2016;351(1):11–19.]**

There is much debate about the adequacy of the U.S. physician workforce. U.S. medical education, training, and healthcare delivery are referred to as: (1) the envy of the world, or (2) out-of-date and out-of-tune with the needs of the nation and the reality of the market place, or (3) some combination of both.

To address these conflicting views, we discuss the status of the nation's physician workforce, a brief history of calls for change affecting the physician workforce that have occurred for more than a century, the current workforce debate, and challenges facing the future physician workforce.

We begin with 3 observations we believe are generally not subject to dispute:

First, since the late 1800s, the U.S. physician workforce has continually evolved in response to a never ending series of social, economic, technological, demographic, and medical challenges that again and again have changed healthcare overall.[1] This paper speaks to challenges facing U.S. healthcare posed by an ongoing national debate over whether we are collectively at risk of a serious physician workforce shortage within the next decade. The nature of these challenges may change over time, but the fact of change itself is an enduring reality.

Second, U.S. healthcare and medical education have undergone numerous significant changes for more than a century. Still, the U.S. model of undergraduate medical education and graduate medical education (GME) remains primarily led by universities and teaching hospitals as recommended by the 1910 Flexner report. U.S. medical education is focused in its early years on rigorous, graduate level academic studies organized for the most part by university-affiliated medical schools, and it is focused in the later years on hands-on training in the care of a broad spectrum of patients in a variety of largely university hospital-related or other clinical settings, including primary care and other ambulatory care settings. Training is overseen by more senior medical faculty who often bridge the missions of care, education, and research.

In the view of some academic leaders, today's GME programs take insufficient advantage of the academic setting for training physicians to become “scientific practitioners,” expert in “how to approach patients in a rigorous scientific way,” which was at the heart of the model of medical education Abraham Flexner championed.[2] However, other leaders' concern about a lack of sufficient emphasis on primary and preventive care causes them to promote the need for more training in sites outside the university medical centers settings, even as ambulatory site training has become a common part of GME programs.

Neither perspective precludes the other. No one would disagree with the view that modern medical education must produce physicians who are “critical thinkers” in the fast-changing worlds of both academic and non-academic medicine.[3]

Third, a distinguishing attribute of the U.S. physician workforce is that it relies in part on the collective result of individual physicians' personal choices to fulfill the nation's physician workforce needs. Their choices about where and what to study, to train, and to practice shape our physician workforce decade after decade far more than any single government dictate or incentive.

The availability of training sites, accessibility of financial aid for students and opportunities for practice locations—as well as the extent of federal, state and local investments in medical education and attracting physicians to practice in targeted areas—are all influential. Indeed, the rationale for public investment originates in the long-standing and widely held conviction that physician training is a societal good; government funding fulfills an implicit social contract. Still, individual choice remains a significant determinant in how well our physician workforce meets society's needs, in part because it is consistent with U.S. culture's emphasis on individualism and in part because efforts to direct personal choice have not had significant impact.

In this paper, our examination of the differing views on the nation's physician workforce needs is guided by these consensus points: change is constant, we need critical thinkers in medicine, and physicians' personal career choices are fundamental to understanding U.S. physician workforce dynamics.

OVERVIEW OF THE U.S. PHYSICIAN WORKFORCE AND GME

Whereas the exact number of clinically active physicians is difficult to pinpoint owing to limitations of available data,[4] estimates of the current supply are generally around 750,000 patient care physicians who have been awarded M.D. or D.O. degrees.[5] An additional 234,000 trainees are in the undergraduate medical education and GME pipeline in the U.S. in hopes of becoming practicing physicians. As of the writing of this article, there were 144 schools of medicine with full, provisional, or preliminary accreditation, from which 85,000 students were seeking their M.D. degrees, including 20,000 first year students. An additional 30 accredited schools of osteopathic medicine awarding D.O. degrees had more than 24,000 students, including 6,800 first year students.[6]

The Accreditation Council for Graduate Medical Education (ACGME) accredited about 9,600 residency programs in medicine, educating more than 120,000 residents in more than 130 specialties and subspecialties in approximately 700 sponsoring institutions in the academic year 2013-2014, the most recent years for which data are available.[7] This does not include an additional 5,000 physicians training in American Osteopathic Association (AOA) accredited residencies not jointly accredited by ACGME. (AOA accredited residency programs are transitioning to a single accreditation system for both M.D.s and D.O.s to be administered by ACGME by June 2020.)[8]

Despite these seemingly large numbers and the nation's well-known disproportionately high per capita healthcare spending by international standards, the U.S. has a relatively low physician to population ratio compared with other countries. In a comparison of 11 industrialized nations' experience, the U.S. number of practicing physicians per 1,000 population was second lowest at 2.5, compared with 2.3 for Japan, which was the lowest rate, 4.2 for Norway (per 2012 data), which was the highest rate, and the median of 3.1. Although the U.S. is criticized for having high rates of testing and physician induced demand, and is above the OECD median on measures like MRIs and hip replacements, it is important to keep in mind that the U.S. is nonetheless below the OECD median in terms of physician visits and hospital discharges. The average annual number of physician visits per capita was 4.0 for the U.S. compared with the highest rate of 13.0 for Japan, the lowest rate of 3.7 for New Zealand, and the median of 6.7. The average number of hospital discharges per 1,000 population in the U.S. was 125, compared with the high of 251 for Germany, the low of 83 for Canada, and the median of 163.[9]

In response to Association of American Medical Colleges' (AAMC's) and others' projections of workforce shortages and the association's 2006 call for expanding the number of medical school graduates by 30%, medical schools have increased enrollment by 23% and are expected to reach the 30% growth goal by the end of this decade. Schools of osteopathic medicine are expected to increase enrollment during the same time interval by 162%, yielding a combined 49% increase in the number of first year students entering medical school in 2019 compared with 2002 levels. All of these physicians will be required to complete some GME training before becoming licensed.[10]

In 1997, the federal Balanced Budget Act placed a hospital-specific cap on the number of resident full time equivalents (FTEs) for which each eligible hospital can claim Medicare GME reimbursement. In the 21st century, this cap has not prevented the opening of new residency programs and slots with federal and non-federal funds, but it is seen as a substantial disincentive, given the high cost of a resident's multi-year training without Medicare GME support.[11]

The number of first year ACGME residency training positions has grown approximately 1% per year between 2002 and 2014; but undergraduate medical education—for both M.D. and D.O. degrees combined—has been growing by about 2.8% annually. About 29,000 residents will complete training and enter practice in 2015. According to current estimates, 29% are likely to become primary care providers defined as physicians with a specialty of general and family practice, general internal medicine, general pediatrics, or geriatric medicine (this does not separate out those who will practice hospitalist medicine); 18% will enter medical subspecialties and another 18% will enter surgical specialties; and the balance will enter other specialties.[12]

These graduates will need, in part, to supplant an aging physician workforce in which more than 1 in 4 (27.6%) active physicians is aged 60 and older and therefore likely to retire in the next 10 years.[12] This will become increasingly challenging as the growing number of U.S. medical school graduates begins to result in a squeeze on