

Fighting Hand To Hand Over Physician Workforce Policy

The invisible hand of the market meets the heavy hand of government planning.

by **Kevin Grumbach**

PROLOGUE: Analysts and policymakers have been formulating health care workforce policy for many years without definitively answering the question: Should such policy be oriented toward government-based planning or more market-oriented approaches? In recent years the Clinton administration sought to answer this question in its ambitious health care reform proposal by setting out a regulatory scheme. The proposal would have established strict limits on the number of physicians permitted to enter graduate medical education (GME) programs, controlled entry into each specialty, and effectively shut the door to all but a few international medical graduates. The proposal, of course, went down to ignominious defeat, but the question regarding workforce policy remains while answers to it grow more critical in the light of reported shortages of physicians in some geographic areas and among selected specialties.

In this paper Kevin Grumbach makes an impassioned argument that America's reliance on free-market principles to determine physician supply is not only idiosyncratic and irrational but also a key culprit behind the conflict over U.S. physician supply and demand. In characterizing this supply and demand, Grumbach invokes a literary fantasy in which Sisyphus meets Goldilocks: The history is like "an endless cycle of tasting a physician supply porridge that is too hot, or too cold, but never just right." Grumbach concludes that the need for public planning of the physician workforce is "unavoidable" and offers several options for policymakers to consider.

In a Perspective that follows, political economist Uwe Reinhardt suggests that even in principle, workforce planning may be doomed to failure. Reinhardt proposes a "radical departure" from conventional policy, calling for the elimination of GME subsidies and expansion of the National Health Service Corps.

Grumbach, a physician, is a professor of family and community medicine and of health policy at the University of California, San Francisco (UCSF), where he also directs the university's Center for California Health Workforce Studies. He is a frequent contributor to the policy and scholarly literature on physician supply and other topics. An elected member of the Institute of Medicine, Grumbach received his medical degree from UCSF.

ABSTRACT: A vexing problem in health policy is getting the right number of physicians in the right specialties in the right locations at the right time. I examine market and public planning approaches to getting the number “right.” After discussing the basic premises of the invisible hand of the market and the heavy hand of government regulation, I apply these concepts to a review of the past century of U.S. physician supply and workforce policy. I conclude by examining recent health system trends that make clear the need for a firm regulatory grasp on physician workforce policy.

A VEXING PROBLEM IN HEALTH POLICY is getting the right number of physicians in the right specialties in the right locations at the right time. The prospect of too few physicians raises concerns that patients will be deprived of important medical services. Overshooting the right number provokes fears of excessive costs and provision of inappropriate services. Further complicating matters in the United States is the tremendous amount of wishful thinking about physician supply that clouds judgment among both market adherents and proponents of government regulation. Market adherents keep vigil for the miracle of the invisible hand to deftly place the system at its proper point of equilibrium, impeccably balancing patient demand and physician supply. Regulators, for their part, cling to the hope that if they just keep fine-tuning their mathematical models, they will finally solve the riddle of physician supply planning. The result is a saga of the history of the U.S. physician workforce that reads like a version of *Goldilocks* written by Albert Camus: an endless cycle of tasting a physician supply porridge that is too hot, or too cold, but never just right.

In this paper I examine market and public-planning approaches to physician workforce policy. After discussing the basic premises of the invisible hand of the market and the heavy hand of government regulation, I apply these concepts to a review of the past century of physician supply and workforce policy in the United States. I conclude by examining recent health system trends that make clear the need for a firm regulatory grasp on workforce policy.

The Invisible Hand

An alluring quality of the market for policymakers worried about getting the number of physicians right is the promise that a free market will spontaneously solve its own supply problems. In an ideal free market, consumers generate demand for physician services. A supply of physicians develops in response to this exogenous demand, achieving equilibrium between supply and demand.

Moments of market disequilibrium may occur. A shortage in the supply of physicians (demand exceeding supply) may be indicated by lengthening waits for physician appointments and physicians working “overtime.” A surplus in physician supply (supply exceeding demand) may be signaled when some physicians are unemployed or underemployed. However, in a well-functioning market these imbalances should be temporary and self-correcting. A “physician shortage” would lead to physicians’ raising the price for their services, which would in turn

dampen demand, achieving a new point of equilibrium. Or a shortage would send a signal to students so that more of them would decide to pursue careers in medicine. Similarly, a “physician surplus” would result in physicians’ lowering fees or exiting the medical profession, and the market would settle at a new equilibrium point. The workings of this invisible hand would apply to demand and supply for physicians in specific specialties as well as for physicians overall.

In a free market, supply is simply demand revealed. If physicians are busy, then there cannot by definition be too many of them. And if by some chance there were too many of them, the invisible hand would dispense with the surplus.

The weakness of the market begins with the problem that reality too often fails to live up to theory. The history of U.S. physician workforce policy, described in greater detail below, is riddled with market distortions that defeat the self-equilibrating promise of the invisible hand. Moreover, the invisible hand does not firmly grasp certain principles valued by most health systems, particularly the goal of social equity.

The Heavy Hand

If the invisible hand of the market is at the end of one limb of physician workforce policy, on the other limb is the hand of government regulation. Proponents of public planning of physician supply believe that the physician supply market is neither self-regulating nor an effective means to achieve desired social objectives such as equity. Government intervention is justified on the grounds that government can function as an agent for the collective good. Although one could characterize government intervention in health planning as a “helping hand,” in recognition of the aversion to regulation often articulated in the United States I have opted for the metaphor of the “heavy hand” of regulation. The discussion that follows makes clear my own sympathy for the good intentions of this heavy hand, even as the choice of metaphors concedes that the regulatory hand is not always a deft one.

The planning approach creates the immediate problem that illumination about the question of the right number of physicians will never occur by divine revelation. Market proponents seek comfort in the positivist position that the free market always finds its own appropriate supply of physicians. True public planning is a decidedly normative undertaking. The planner must make a judgment about the required number of physicians and then implement policies to guide supply to this specified level. The hand of regulation is an exposed one.

The perils of resource planning are evident in a story Eli Ginzberg tells of his first assignment as a gainfully employed health economist. Working for the U.S. military in World War II, Ginzberg was given the task of planning the hospital capacity needed to care for wounded U.S. soldiers after the D-Day invasion. As Ginzberg tells it, he got the number just right: There were half as many casualties as expected, but the wounded spent twice as long in the hospital as projected.

This story highlights the analytic challenges facing the workforce planner. A calculation must be made of the expected services to be delivered by physicians, incorporating factors such as the anticipated incidence of disease—in the case of D-Day planning, the incidence of serious wounds. There may be unanticipated morbidity, such as post-traumatic stress disorder in the wounded. In addition, the relationship between supply of personnel and volume of services delivered is not necessarily a constant. In the Ginzberg story, hospital productivity was half that expected. Productivity therefore must be factored into the supply requirements calculation. Finally, the Ginzberg story is silent about the most essential variable of interest: the actual health outcomes for wounded soldiers. We do not know what supply of hospital beds, nurses, and physicians would have been optimal for producing successful recovery from war trauma, much less the marginal cost per unit of health benefit associated with increasing levels of supply.¹

In addition to the technical challenges of workforce planning, there are political impediments to effective regulation. The history of U.S. physician workforce policy highlights both the analytic quandaries and the legislative hurdles facing the physician supply planner.

The Roles Of The Invisible Hand And The Heavy Hand

With this introduction to market and planning concepts in mind, it is illustrative to examine how the invisible and heavy hands have touched the U.S. physician workforce in the past century.

■ **Pre-1910.** The U.S. health care system before 1910 is the closest the nation has come to a traditional free market for physician services. A heterogeneous mixture of minimally regulated purveyors of medical services calling themselves physicians sought their livelihood in a market largely devoid of third-party payment. A degree of physician-induced demand was in effect, much of it mediated by promotional activities of dubious credibility, but this process had limited financial consequences because of the rudimentary medical technology and facilities available in this era. Patients directly incurred the costs of most health care transactions. In 1900 there were 160 medical schools, more than 25,000 medical students, and about 175 physicians per 100,000 U.S. population. Physicians' incomes were modest.²

■ **1910–1963: the post-Flexner era.** The Flexner report published in 1910 marks a distinct shift in U.S. physician workforce policy.³ The report indicted conventional medical education as conducted by most proprietary, nonuniversity medical schools. More vigorous state and professional regulation of credentialing of medical schools and licensure for medical practice soon enforced the standards promoted by the Flexner report. More than thirty medical schools closed in the decades following that report's release. By 1930 the number of physicians per 100,000 population had dropped to about 125.⁴ Physicians' incomes increased. Physician supply hovered around this level for the next thirty years.

The 1910–1963 period was one of an anticompetitive market for physician labor

under professionally dominated regulation. Licensing and related regulatory policies confounded the invisible hand by controlling supply. This is not to say that no market dynamics were at play in this period. The geographic distribution of physicians followed the logic of the market. A 1925 article in the *Journal of the American Medical Association* documented the decreasing supply of physicians in rural America coinciding with deteriorating economic conditions in farming communities. The author was particularly scornful of the suggestion that merely reducing the cost and duration of medical education would make graduates more willing to venture into economically depressed rural areas: “This argument can be logically maintained only on the assumption that a lowering of the standards of medical education will attract into the profession persons who are so mentally debased and generally idiotic that they will not display that degree of common sense in the conduct of their individual economic lives, as evidenced by their geographic distribution, that we see exhibited every day by common laborers, chiropractors, or even college professors...They do business where business is good, and avoid places where it is bad.”⁵ Seventy-five years later Fitzhugh Mullan penned the phrase “white follows green” to describe this persistent inclination of physicians to practice in more privileged communities, a major conflict between market-oriented workforce policy and goals of social equity.⁶

What of planners during this era? Most conveniently sidestepped complicated computations of physician requirements involving interactions among supply, productivity, service delivery, and health outcomes. A series of planning commissions in the 1940s and 1950s contemplated the unequal distribution of physicians across U.S. regions, decided that every region should have at least as many doctors as those regions at the median for physician supply, and concluded that the nation needed more physicians to raise the level of supply in these “below-average” communities.⁷ This is the Lake Wobegon method of physician workforce regulation: make all areas above average.⁸

■ **1963–1990: the epoch of government blank checks.** The 1960s ushered in a third era, one of rapid growth in physician supply. By the 1950s some developments were amplifying consumer demand for physician services. Employer-based insurance had become prevalent, shielding patients from much of the direct costs of medical care services and making them less price-sensitive. The “medical miracles” achieved by biomedical science captured the public’s imagination. But these demand-side factors, while perhaps setting the stage for an expansionist era, did not in and of themselves produce large increases in physician supply. It was only in 1963, when the federal government (heeding the calls of Lake Wobegon planners for more physicians) for the first time began heavily investing in medical education, that the U.S. supply of physicians per capita began to increase.⁹

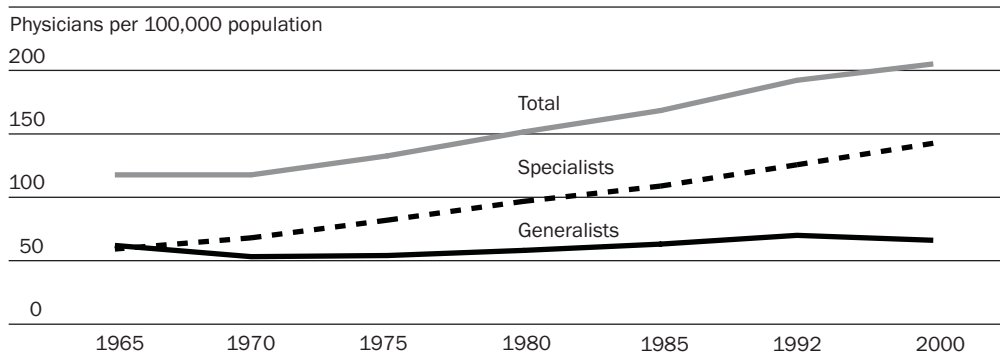
In 1965 there were 115 practicing physicians (excluding physicians in training) for every 100,000 people. By the late 1990s there were almost 200 per 100,000, an increase of nearly 75 percent even after accounting for the underlying growth in

the U.S. population.¹⁰ The increase in physician supply per capita occurred almost exclusively for specialists (Exhibit 1). Open-ended federal subsidies to teaching hospitals provided financial incentives for more specialized physician training programs. By the 1990s the federal government was spending more than \$6 billion per year for graduate medical education (GME), with state governments contributing additional funds for state-supported medical schools. Despite the growth in supply, the average physician's real income rose during this time. The nation's spending on physicians, and on all health care services, increased dramatically. Despite hopes that increased overall supply and market competition would result in passive diffusion of physicians to underserved communities, physicians remained clustered in the same affluent areas.¹¹

The 1963–1990 era demonstrated that contrary to market predictions, a dramatic increase in physician supply could in fact coexist with rising physician incomes, particularly when the profession largely directed its fees under both private and public insurance. Physicians lost some of their atavistic fear of supply growth as a threat to earnings. In addition, Medicare funding of GME revealed that it was possible to obtain government financing without much government regulation. Medicare payments came with no strings attached for how many residents could be trained or in which specialties they would be trained.

A more directive federal approach to physician supply planning was in fact entertained during this era. The Graduate Medical Education National Advisory Committee (GMENAC), appointed by the Carter administration, undertook the nation's most devoted effort to develop a needs-based physician workforce policy. GMENAC analyzed in great detail the expected health care needs of the nation's population and the medical services that could be expected to improve population

EXHIBIT 1 Supply Of Practicing Physicians In The United States, 1965–2000



SOURCE: Council on Graduate Medical Education, *Patient Care Physician Supply and Requirements: Testing COGME Recommendations*, Eighth Report (Rockville, Md.: COGME, 1996).

NOTES: Generalists include family physicians, general practitioners, general internists, and general pediatricians. Specialists include all other physicians. Numbers include only physicians active in patient care and exclude physicians still in training. Numbers for 2000 are estimates. The trend lines shown are linear interpolations of actual observations in five-year increments from 1965 to 1985, plus data for 1992 and 2000.

health. In 1980 the multimillion-dollar GMENAC study produced detailed projections of required supply by individual specialty, concluding that overall projected physician supply would soon exceed estimated need.¹² The GMENAC report experienced an inhospitable response from the newly elected Reagan administration, intent on dismantling government regulation and planning. In addition, many special interest groups objected to the study's methods and conclusions.

Unwilling to tackle the overall physician supply issue, the federal government more narrowly defined its role as one of compensating for the distributional failures of the marketplace. Programs such as the National Health Service Corps, established in the 1970s, attempted to use incentives to induce physicians to practice in communities with a meager supply of physicians.¹³

While the experiences of GMENAC chastened physician planners interested in more assertive government regulation, true believers in deregulated free markets also expressed consternation over the physician workforce's deviation in the 1963–1990 period from market rules. The true believers called for cleansing the health care marketplace of its anticompetitive impurities. Proposals included minimizing licensure and related professional regulations, terminating tax subsidies of medical education, and relegating health insurance to catastrophic coverage. These types of proposals, while perhaps estimable in their ideological and philosophical purity, were anachronistic in their desire to return to a twentieth-century, pre-Flexner, pre-comprehensive health insurance era. Professionalism developed not just as an anticompetitive strategy but in response to legitimate societal concerns about competence and quality with an unregulated health care workforce. Comprehensive insurance addressed desires for pooling of financial risk and mitigation of financial barriers to needed care.

While the true market believers were looking backward to find a more pristine incarnation of the invisible hand, a different breed of market advocates, more accepting of the conventions of modern-day health care, began promoting a different form of market competition. The era of “managed competition,” spanning the decade 1990–2000, attempted to transform the market for physician labor from a retail to a wholesale market. In so doing, this era presented physicians with the most formidable market challenge of the twentieth century.

■ **1990–2000: the era of the wholesale market for physician labor.** The traditional economic model considers physician services as a retail business. Patients shop for physicians, and out-of-pocket and insurance payments follow the patient. The nation's intensification of its experiment with managed care and managed competition in the 1990s was in one sense an attempt to convert physician services into a wholesale market. A new breed of middlemen for physician supply, health maintenance organizations (HMOs), acted as bulk purchasers of physician services through either direct employment of physicians or selective contracting with a network of physicians.

The rise of a wholesale market for physicians had the potential to dramatically

weaken the relative economic strength of physicians. Replacing disempowered individual consumers as procurers of physician labor were large, organized purchasers. Individuals and their sponsors (employers or government) were given the role of shopping for a managed care plan. The health plan assumed responsibility for directly or indirectly hiring physicians and bargaining over the price of physician services. Advocates believed that this new wholesale market would restore conditions favorable to the proper working of the invisible hand (or at least of a translucent managed hand).¹⁴ The HMO bulk purchasers would exercise countervailing market clout against the physician cartel, forcing physicians to become price takers. A well-informed HMO would intercede between individual consumer and physician, protecting against supplier-induced demand. HMOs could affect physician supply by moving their business away from physicians deemed too expensive, too poor in quality, or simply too plentiful.

The wholesale market for physician supply would not address all of the deficiencies of the market, such as the fundamental tension between market allocation and equitable distribution of services. But it would, it was reasoned, at least deal with some of the key failures of the distorted physician marketplace such as excessive costs and production inefficiencies.

The workforce ramifications of the emerging wholesale, managed competition market were made clear in the early 1990s by publication of several prominent studies of HMO physician staffing patterns. Jonathan Weiner and others documented that established HMOs used far fewer physicians per enrollee, especially specialists, compared with the overall supply of U.S. physicians per capita.¹⁵ Weiner's calculations indicated that if enrollment in managed care plans increased as anticipated, the United States would face a surplus in 2000 of 165,000 physicians relative to the number of positions available in HMOs and the vestigial fee-for-service sector.¹⁶ By the mid-1990s research began reporting decreases in employment opportunities for specialists.¹⁷ The changing prospects for specialists were summed up by a *New Yorker* cartoon showing a despondent surgeon standing on a corner wearing a sign stating, "Will do bypass surgery for food."

Physician planners were not idle in this period. In 1986 Congress authorized establishment of a new federal physician workforce planning group, the Council on Graduate Medical Education (COGME). One of COGME's initial activities was to synthesize information from a variety of sources about physician supply requirements. COGME adopted an ecumenical approach to this task. Although the council drew on the classic GMENAC report, it also relied on the studies by Weiner and others on physician staffing in HMOs.¹⁸ These studies did not share the same conceptual framework as GMENAC. They were not normative attempts to evaluate population health needs and relate these needs to physician supply. Rather, these demand-based studies were more akin to market forecasting reports, attempting to project where the new wholesale physician market was heading.

A dilemma arises when demand-based and needs-based physician requirement

“The U.S. health system is heading back on a course of increasing specialization and pressures to increase physician supply.”

projections arrive at markedly different levels of advisable physician supply. This conflict was evident in the post-GMENAC period. Several analysts countered the GMENAC projections of an impending physician surplus by publishing studies indicating that patient demand for physicians, as measured by actual use of services, was still strong and likely to continue to increase.¹⁹ The demand modelers, working in the old retail-market framework, portrayed the GMENAC-style needs-based planners as paternalistic in telling the American people what they needed, rather than allowing the public to freely demonstrate its own manifest level of desire for physician services.

COGME had the good fortune of having the new, wholesale-market, demand-based studies arrive at estimates for physician requirements that were compatible with the GMENAC needs-based estimates. Although disparate in their methodology, both approaches indicated that the United States had too many specialists and too few generalist physicians. This was a blessed convergence of circumstances for the workforce planner: The market was going to give people the physician supply that they really needed.

A 1994 COGME report endorsed implementation of a stronger system of federal financing and regulation of GME, reducing the number of residency training positions and shifting a greater proportion into primary care fields.²⁰ Other prominent agencies echoed the COGME recommendations.²¹ The general parameters of the COGME recommendations were drafted into a legislative proposal introduced to Congress as part of the Clinton health plan. Although many features of the Clinton plan were criticized, some of the most turgid rhetoric in Congress was reserved for the proposed regulation of GME. Sen. Daniel Patrick Moynihan (D-NY), chair of the Senate Finance Committee and protector of New York’s teaching hospitals, righteously declared that the proposal was a “sin against the Holy Ghost.”²² Public planners of the GMENAC period may have been chagrined to have their work dismissed by the Reagan administration. How sharper than a serpent’s tooth for COGME-era planners to be scorned by a New York Democrat!

As the 1990s progressed, it appeared that the market was starting to have an effect even without enactment of new regulations. Medical students were responding to market signals about career opportunities. In 1996–1997 precipitous decreases occurred in the number of U.S. medical school graduates selecting certain high-profile specialties for residency training, such as anesthesiology and radiology. Conversely, the number of first-year residents in U.S. family practice programs increased.²³ Although these changes also coincided with nonmarket-based initiatives, such as foundation and government interventions to create more primary care-oriented medical school curricula and culture, most observers credited

the changing market as the most influential force. Subsequent research provided additional evidence that regions with more competitive HMO markets were experiencing slower growth in physician supply and incomes.²⁴

The late 1990s were a heady time for market enthusiasts. The new managed competition marketplace was succeeding where regulators had been ineffective. The market was changing the primary care/specialist supply balance, constraining physicians' incomes, and possibly even dampening growth in overall physician supply. Moreover, these outcomes were being achieved not by the heavy hand of government regulation but by the self-regulating hand of a competitive market and the actions of private physician wholesalers. Ruthless HMO executives operating in the private sector might even do what no government regulator dared: commit the sin against the Holy Ghost and downsize the physician workforce through active policies of disemployment.

■ **Health care 2000: the collapse of the wholesale market.** A curious thing happened in the new millennium: Managed care faltered. Between 1999 and 2000 enrollment in HMOs dropped by almost half a million. Medicare experienced an exodus of participating HMOs. Premiums for HMOs and less-managed insurance plans alike began to rise at rates triple that of overall inflation.

Analysts have offered various reasons for the demise of tightly managed care. One common theme is that employers and health plans simply became exhausted trying to manage the health care system.²⁵ Managing a health system is hard work, and among the hardest tasks is tackling basic issues of health-system capacity such as physician supply. In the battle between physicians and the tight-fisted (and frequently scandalously profiteering) private wholesalers of physician labor, physicians won. This is not to say that physicians haven't been bloodied in the process, with wounded incomes, sunken morale, and perhaps even some market fatalities in terms of physicians opting for early retirement or alternative careers. But as the dust from this fracas begins to settle, it appears that the U.S. health system is heading back on a course of increasing specialization, rising physician incomes, and pressures to increase overall physician supply.

The mid-1990s decrease in specialty residency match rates and the increase in primary care match rates were short-lived phenomena. After the peak year of 1997, family practice residency programs experienced a steady decline in the number of first-year residents. Conversely, specialty programs rebounded.²⁶ Recent surveys on job opportunities indicate bountiful positions for newly trained specialist physicians.²⁷ Some observers are calling for a ramping up of specialist supply.

The Need For A Firm Regulatory Grasp

The United States is moving back toward a retail market for physician labor. Defined-contribution employment-based health insurance, fixed-value vouchers for Medicare beneficiaries, and increased out-of-pocket payments represent a retreat from public planning and organized forms of private health care manage-

ment alike, toward an individual market based on ability to pay.

Some observers are celebrating this latest incarnation of the invisible hand in health care, hoping once again that individual demand for care will guide the system to its proper functioning. But if one thing is clear from the past 100 years of history of the U.S. physician workforce, it is this: The notion of untainted individual consumer demand for health care and physicians is a delusion. Supplier-induced demand abounds, anticompetitive regulations persist, production of physicians is totally reliant on taxpayer funds, and most care will continue to be collectively financed by means of private and public insurance. The U.S. health care system is embarking on a period of increased costs and inequity, with little promise that this trend will confer benefit to the health of Americans.

Regulation and planning are required. They are required not because there is anything inherently good about the heavy hand but because regulation is the only way to achieve socially desired objectives for the health care system. Markets are not designed to achieve social equity. They cannot answer the question of what health care is really needed as opposed to what is simply desired. Markets do not necessarily achieve systemwide cost control.²⁸

History also reveals the many imperfections of physician workforce planning. The technical challenges to planning are formidable. In truth, the complete health production function equation will never be solved in a way that specifies the physician-supply term with a high degree of precision. Too many variables are uncertain in the equation: What services need to be delivered? Which services definitely improve the public's health? What assurances are there that physicians are devoting themselves only to necessary services and not to inappropriate services, or are performing necessary services with adequate quality? What system factors are influencing patterns of care and productivity? What are the costs associated with differing levels of physician supply? Even if the equation were solvable, judgments would still need to be made. For example, are additional costs associated with increased supply worth the expense?²⁹

The daunting features of the planning calculation often create what Morris Barer and Greg Stoddart have termed "analysis paralysis."³⁰ Policy making is deferred while awaiting the "right" answer to the question of "how many physicians?" However, the complexity of the health production function equation also has its liberating features. If one acknowledges that health is a multifactorial outcome, getting the number of physicians exactly right no longer has such portentous ramifications for health outcomes. Physician supply becomes simply one of many uncertain variables that can combine in many ways to affect health.

Tremendous variation exists across U.S. communities in the supply of physicians. Yet very little is known about how this variation may or may not be associated with differences in access to care and health outcomes. The little research that has been performed does not reveal a clear association between physician supply, particularly of specialists, and better population health status.³¹

Appropriately using the heavy hand of regulation means appreciating that the hand is not designed for fine movement and micromanagement of the workforce. Its strength is not in deciding exactly how many urologists are needed in Topeka. The regulatory hand needs to have a firm grasp on setting boundaries, maintaining physician supply within broad parameters while allowing a role for market forces and local planning processes to determine the exact deployment of physicians.

This regulatory approach was in fact the strategy adopted by COGME. COGME settled for defining a range of physician requirements: 60–80 generalists and 80–100 specialists per 100,000 population.³² These numbers permitted some flexibility around supply targets and did not prescribe the exact composition of specific specialties within the generalist and specialist categories.

The Policy Decisions At Hand

Although most COGME recommendations were never implemented in federal regulations, Congress did enact one important piece of physician supply legislation in the aftermath of the COGME proposals.³³ The 1997 Balanced Budget Act (BBA) included a provision capping the number of residency positions funded by Medicare at the number in place at that time. This policy has effectively halted growth in residency positions, since almost no hospitals and training programs have indicated a willingness to increase positions without receiving more Medicare GME dollars. With residency training output now stabilized, the expansionist era of physician supply that began in 1963 will come to an end within the next ten years, when the number of practicing physicians per capita plateaus. This relatively crude regulatory action of 1997, motivated more by congressional concern about the need to reduce short-term Medicare spending than by careful consideration of long-term workforce planning objectives, has profoundly affected the future of U.S. physician supply.

Congress will come under increasing pressure to repeal the resident funding cap. The rhetoric will be familiar: The market is “demanding” more specialist physicians, and, by the way, taxpayers should foot the bill for expansion of specialist training.³⁴ How might Congress respond?

Congress could assert that if the market is demanding more specialists, then the market should figure out how to pay for their training without asking for additional taxpayer dollars. The nation does not in fact have any federal regulations that prohibit training programs from adding new positions and training more physicians. All that is limited by regulation are the federal funds to pay for additional positions. Congress could indicate that it was content to maintain its support for the current number of residency positions and expects the costs of educating additional physicians to be borne by the additional trainees themselves, by their training institutions, by private insurance plans, or by some combination.

It is doubtful that physician supply would in fact increase without additional government funds, given the utter dependency of training institutions on

Medicare GME dollars to pay for residents' salaries and related training expenses. The most likely outcome of a continued Medicare GME cap would be to highlight the absence of a self-regulating physician-supply marketplace that can augment the current level of production without major new governmental subsidies.

Another option for Congress is to remove the GME funding cap and resume its tradition of writing blank checks for medical education. As I have suggested above, a policy of government funding devoid of government regulation and planning is a peculiarly American approach to financing medical education bereft of policy integrity. Resuming this business-as-usual approach would perpetuate the many irrationalities of the traditional system of Medicare GME funding.

A third option—and the one that I consider most compelling—is for Congress to use a renewed debate about the adequacy of the nation's physician supply as an opportunity to create a more rational and accountable system of federal physician workforce regulation and funding. The first step in this process would be to tie federal financing of GME much more explicitly to long-term objectives for the supply and distribution of physicians. Many proposals in recent years have suggested thoughtful ways to restructure federal GME funding.³⁵ Congress should next demand answers to the hard questions of whether the current complement of physicians is effectively serving the public's needs, and what the cost and benefit would be of further increasing the number of physicians per capita.

Unlike most nations, which have long accepted that government must play a decisive role in regulating and financing medical care, the United States has maintained a mixed health care economy that blends private and public financing and market forces and government regulation. Medical education, like the health system overall, depends heavily on Medicare, Medicaid, and other tax-financed programs. Despite this public funding, the body politic tends to regard the heavy hand of regulation as an unseemly intrusion into health affairs and directs a long-ing gaze toward the invisible hand—or at least toward where it visualizes the invisible hand to be. Yet the need for public planning and regulation of the physician workforce is unavoidable—as unavoidable as lack of consensus on whether the planned number of physicians is ever exactly “right.” A more realistic acceptance of these truths would be an important step toward sensible physician workforce policy in the United States.

.....
This paper was developed from the presentation, “The Role of the Market in the Clinical Workforce,” delivered at the Fifth International Medical Workforce Conference held in November 2000 in Sydney, Australia. The author expresses his debt to the authors of briefing papers for the conference session and to conference participants for their insights into workforce markets and regulation—in particular, Alan Maynard, Jane Hall, Raisa Deber, Robert Evans, Doug Conrad, Morris Barer, and Fitzhugh Mullan. The author also thanks Howard Rabinowitz for his knowledge of workforce history, Tom Bodenheimer for his editorial comments, and Art Munger for assistance with manuscript preparation. This work was supported by the National Center for Health Workforce Information and Analysis, Bureau of Health Professions.

NOTES

1. Economists provide much more elegant mathematical formulae for this health production function equation, including the physician supply term. See, for example, U.E. Reinhardt, "Health Manpower Forecasting: The Case of Physician Supply," in *Health Services Research: Key to Health Policy*, ed. E. Ginzberg (Cambridge, Mass.: Harvard University Press, 1991), 234–238.
2. P. Starr, *The Social Transformation of American Medicine* (New York: Basic Books, 1982).
3. A. Flexner, *Medical Education in the United States and Canada*, Bulletin no. 4 (New York: Carnegie Foundation for the Advancement of Teaching, 1910).
4. Starr, *The Social Transformation of American Medicine*.
5. R. Pearl, "Distribution of Physicians in the United States," *Journal of the American Medical Association* 84, no. 14 (1925): 1024–1028.
6. F. Mullan, "Some Thoughts on the White-Follows-Green Law," *Health Affairs* (Jan/Feb 2002): 158–159.
7. Reinhardt, "Health Manpower Forecasting"; and E. Ginzberg, "Physician Supply in the Year 2000," *Health Affairs* (Summer 1989): 84–95.
8. In Garrison Keillor's mythical community of Lake Wobegon, "all the children are above average."
9. Reinhardt, "Health Manpower Forecasting."
10. Council on Graduate Medical Education, *Patient Care Physician Supply and Requirements: Testing COGME Recommendations*, Eighth Report (Rockville, Md.: COGME, 1996).
11. COGME, *Physician Distribution and Health Care Challenges in Rural and Inner-City Areas*, Tenth Report (Rockville, Md.: COGME, 1998).
12. Graduate Medical Education National Advisory Committee, *Summary Report*, DHHS Pub. no. (HRA) 81-651 (Washington: GMENAC, 1981).
13. COGME, *Physician Distribution and Health Care Challenges*.
14. A.C. Enthoven, "The History and Principles of Managed Competition," *Health Affairs* (Supplement 1993): 24–48.
15. J.P. Weiner, "Forecasting the Effects of Health Care Reform on U.S. Physician Workforce Requirement: Evidence from HMO Staffing Patterns," *Journal of the American Medical Association* 272, no. 3 (1994): 222–230; R. Mullhausen and J. McGee, "Physician Need: An Alternative Projection from a Study of Large Prepaid Group Practices," *Journal of the American Medical Association* 261, no. 13 (1989): 1930–1934; and S. Gamliel et al., "Managed Care on the March: Will the Physician Workforce Meet the Challenge?" *Health Affairs* (Summer 1995): 131–142.
16. John Wennberg and colleagues went one step further in their projections, performing specialty-specific analyses based on HMO staffing patterns that suggested that some specialties would soon have two to three times more physicians than that required by a managed care market. See J.E. Wennberg et al., "Finding Equilibrium in U.S. Physician Supply," *Health Affairs* (Summer 1993): 89–103. The authors even suggested a plan to gently remove superfluous physicians from the patient care market by retraining them as health services researchers, a proposal that made many policy scholars carefully weigh the advantages for the health care system against the threat to the prestige of the field of health services research.
17. R.S. Miller, M.R. Dunn, and M.E. Whitcomb, "Initial Employment Status of Resident Physicians Completing Training in 1995," *Journal of the American Medical Association* 277, no. 21 (1997): 1699–1704.
18. COGME, *Improving Access to Health Care through Physician Workforce Reform: Directions for the Twenty-first Century*, Third Report (Rockville, Md.: COGME, 1992).
19. W.B. Schwartz, F.A. Sloan, and D.N. Mendelson, "Why There Will Be Little or No Physician Surplus between Now and the Year 2000," *New England Journal of Medicine* 318, no. 14 (1988): 892–897; and W.B. Schwartz and D.N. Mendelson, "No Evidence of an Emerging Physician Surplus: An Analysis of Change in Physicians' Work Load and Income," *Journal of the American Medical Association* 263, no. 4 (1990): 557–560.
20. COGME, *Recommendations to Improve Access to Health Care through Physician Workforce Reform*, Fourth Report (Rockville, Md.: COGME, 1994).
21. Pew Health Professions Commission, *Critical Challenges: Revitalizing the Health Professions for the Twenty-first Century* (San Francisco: Center for the Health Professions, University of California, San Francisco, 1995); and Physician Payment Review Commission, "Graduate Medical Education Reform," in *Annual Report to Congress, 1994* (Washington: PPRC, 1994).
22. O. Fein, "Funding Graduate Medical Education in the Year of Health Care Reform," in *Information Trading: How Information Influences the Health Policy Process*, ed. M.E. Lewin and E. Lipoff (Washington: National Acad-

- emy Press, 1977), 27–48. Moynihan's statement is from *Congressional Record* (13 August 1994): S11667. The Moynihan passage in greater length is as follows: "Do we want fewer doctors in order that there be better health? This has never been debated, never been explained. It just keeps coming out in this legislation. There is a staff member somewhere who wants this. And no matter what we do, we keep getting it. This is hubristic. This invites the wrath of the gods. This invites the death, the closing of a great moment of medical discovery, unprecedented on Earth. In the history of medicine, no such thing has happened in the advances in the last 30 years made in the United States. This is, if I may say,...a sin against the Holy Ghost." The bill in question was S. 2357.
23. P. Pugno et al., "Entry of U.S. Medical School Graduates into Family Practice Residencies: 1999–2000 and Three-Year Summary," *Family Medicine* 32, no. 8 (2000): 534–542.
 24. J.J. Escarce et al., "HMO Growth and the Geographical Redistribution of Generalist and Specialist Physicians, 1987–1997," *Health Services Research* 35, no. 4 (2000): 825–848; J.J. Escarce et al., "Health Maintenance Organization Penetration and the Practice Location Choices of New Physicians," *Medical Care* 36, no. 11 (1998): 1555–1566; and J. Hadley and J.M. Mitchell, "HMO Penetration and Physicians' Earnings," *Medical Care* 37, no. 11 (1999): 1116–1127.
 25. J.C. Robinson, "The End of Managed Care," *Journal of the American Medical Association* 285, no. 20 (2001): 2622–2628.
 26. Pugno et al., "Entry of U.S. Medical School Graduates."
 27. J.A. Nolan et al., *Residency Training Outcomes by Specialty in 2001 for New York State, A Summary of Responses to the 2001 NYS Resident Exit Survey* (Rensselaer, N.Y.: Center for Health Workforce Studies, 2002); and J. Nolan et al., *Residency Training Outcomes by Specialty in California: A Summary of Responses to the 2000 and 2001 CA Resident Exit Surveys* (Rensselaer, N.Y.: Center for Health Workforce Studies, 2002).
 28. Market competition tends to be viewed as a success for consumers if it drives down prices. For example, if competition makes computers more affordable and consumers buy more of them, this outcome is viewed as a market success for consumers. No one is particularly concerned if the upshot of this market dynamic is greater overall national expenditures for computers. In health care, because of the collective financing of the majority of expenditures through private or public insurance and the resulting concern about affordability of total costs, cheaper prices are not always an unmitigated social good. If lower prices lead to more services' being consumed and an increase in total spending for health care (regardless of whether this occurs as a result of exogenous consumer demand in response to lower prices or of supplier-induced demand from physicians intent on maintaining incomes), it is not self-evident that this outcome is in the public interest. Uncertainty about the value of this outcome is accentuated when evidence about the health value of the additional services delivered is in question.
 29. These questions, in somewhat different form, were clearly articulated a decade ago by Barer and Stoddart in their comprehensive analysis of physician workforce policy in Canada. See M.L. Barer and G.L. Stoddart, "Toward Integrated Medical Resources Policies for Canada: 2. Promoting Change—General Themes," *Canadian Medical Association Journal* 146, no. 5 (1992): 697–700.
 30. *Ibid.*
 31. L. Shi et al., "Income Inequality, Primary Care, and Health Indicators," *Journal of Family Practice* 48, no. 4 (1999): 275–284; D.C. Goodman et al., "The Relation between the Availability of Neonatal Intensive Care and Neonatal Mortality," *New England Journal of Medicine* 346, no. 20 (2002): 1538–1544; and K. Grumbach, K. Vranizan, and A.B. Bindman, "Physician Supply and Access to Care in Urban Communities," *Health Affairs* (Jan/Feb 1997): 71–86.
 32. COGME, *Recommendations to Improve Access to Health Care*.
 33. Some states, such as California, also took a more active role in workforce regulation.
 34. R.A. Cooper et al., "Economic and Demographic Trends Signal an Impending Physician Shortage," *Health Affairs* (Jan/Feb 2002): 140–154; M. Bhargavan, J.H. Sunshine, and B. Schepps, "Too Few Radiologists?" *American Journal of Roentgenology* 178, no. 5 (2002): 1075–82; and D.C. Angus et al., "Current and Projected Workforce Requirements for Care of the Critically Ill and Patients with Pulmonary Disease," *Journal of the American Medical Association* 284, no. 21 (2000): 2762–2770. For a contrary view, see K. Grumbach, "The Ramifications of Specialty-Dominated Medicine," *Health Affairs* (Jan/Feb 2002): 155–157; and K. Grumbach, "Specialists, Technology, and Newborns: Too Much of a Good Thing," *New England Journal of Medicine* 346, no. 20 (2002): 1574–1575.
 35. J. Coffman, E. Mertz, and the Pew Health Professions Commission, *Beyond the Balanced Budget Act of 1997: Strengthening Federal GME Policy* (San Francisco: Center for the Health Professions, University of California, San Francisco, 1998).