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DOCTORS, DOLLARS, AND DETERMINATION: MAKING PHYSICIAN WORK-FORCE POLICY

by Fitzhugh Mullan, Marc L. Rivo, and Robert M. Politzer

Prologue: More than a decade ago, the Graduate Medical Education National Advisory Committee asserted that the United States faced a future surplus of physicians because their annual production had doubled with the help of generous federal subsidies. Its report caused a stir at the time, but its overall impact on the nature of medical practice and on medical specialty distribution was minimal. It did provide the Reagan administration with a rationale for its decadelong inattention to work-force policy. Now, with a more activist administration in power and with the health care system moving toward more assertive forms of medical management, the subject of physician production and distribution has become more prominent. In this paper three federal executives, steeped in the specialized world of health work-force policy, detail the government’s heavy investment in the education of health care professionals. Their message is that work-force policy must be an integral part of any broad-scale effort to reform the health care system. Fitzhugh Mullan, a physician who trained at the University of Chicago’s medical school and in several New York City teaching hospitals, is the director of the Bureau of Health Professions (BHP) in the Health Resources and Services Administration, Department of Health and Human Services. He formerly served us New Mexico’s secretary of health and environment and was among the first physician recruits to serve in the National Health Service Corps (NHSC), which he later (1977-1981) directed. Marc Rivo trained in family medicine at Duke University and preventive medicine at the University of California, Berkeley, School of Public Health; he is director of the BHP Division of Medicine. Robert Politzer holds a doctor of science degree from The Johns Hopkins School of Hygiene and Public Health. He is associate director for primary care policy at the BHP.
Abstract: Because managed care is likely to feature prominently in a reformed health care system, policymakers need to examine the impact managed care will have on medical practice, physician supply, and access to primary care providers. Goals for work-force reform should focus on five areas: (1) training physicians in the generalist disciplines of family practice, general internal medicine, and general pediatrics; (2) shaping the physician work force to reflect the nation’s ethnic diversity; (3) distributing physicians in a geographically equitable way; (4) maintaining the current physician-to-population ratio rather than letting it continue to grow; and (5) establishing supply needs for nurse practitioners, primary care physician assistants, and certified nurse midwives.

Much of the health care reform discussion in the early 1990s and in the market-oriented era of the 1980s has focused on the fiscal and economic incentives that could be brought to bear to increase access and decrease costs in the system. Relatively little of the debate has focused on the nature and size of the physician work force in the United States and its contribution to our present and future circumstances.

Indeed, manpower policy (referred to here as “work-force policy”) as a public-sector pursuit enjoyed national prominence during the period from 1965 through 1980 but fell into disfavor in the 1980s. The doubling of the annual graduating class of all U.S. medical schools to more than 16,000 during this earlier period was the direct result of conscious federal physician work-force policy and associated legislation. This policy was based on the premise that the nation was short on physicians and produced laws providing for construction grants, capitation payments, and scholarship and loan programs. Driven by concerns about access to essential clinical primary and preventive services, these laws also included provisions that targeted support to primary care education and training in underserved areas.

The Graduate Medical Education National Advisory Committee (GMENAC) report of 1981 represented both the high-water mark for the science of physician work-force projection and the onset of a reaction against work-force planning of any sort. GMENAC suggested that the nation had produced too many physicians. That conclusion, coupled with the promarket, antiplanning mentality of the incoming Reagan administration, led to an overall surrender of governmental and academic attention to physician work-force policy. The Reagan administration requested no support in its budget for the health professions programs as a whole; federal support for projection science was virtually eliminated; and scholarly interest in “manpower issues” disappeared.

Over the past year and in the newly legitimized environment of health system reform, broad concerns about the medical work force in this country now and in the future. have begun to reemerge. At issue in this complex area in which clinical issues meet labor statistics and mathematical modeling are a number of traditional concerns and several new ones. The more traditional concerns include education policies and employment incentives.
that will promote the geographic distribution of physicians as well as strategies to promote the entry of minorities into medicine. The continued drift of the generalist/specialist mix of physician graduates away from generalist disciplines (family practice, general internal medicine, general pediatrics) toward specialization is seen by many as a core problem that will continue to confound our ability to deal with the dilemmas of access and cost. International comparisons reveal that the United States relies more heavily on specialists than any other developed nation, spends about 40 percent more per capita on health care than the next most munificent nation, yet ranks well down the list on indices of health status.5

An area of important and controversial new attention is the impact of a still-increasing physician work force on the cost of care. Pertinent to this concern is a growing understanding of the role of physician-mandated services (the cost to the system that each physician generates beyond personal income and overhead) and physician-induced demand.6 An appreciation of these phenomena leads to a concern that the continued growth of the physician-to-population ratio in this country will undermine reforms designed to bring medical costs under control.

Impact of managed competition. The health care reform debate in recent months has tended to focus on the concept of managed competition and its potential as a strategy to provide universal coverage while containing health care costs. If managed competition emerges as the vehicle for health care reform, its requirements for and impact on the physician work force will be of paramount importance. Central to managed competition are accountable health plans—various arrangements of providers meeting specified standards of accountability available to render health care services that will be outcome oriented and cost-effective. While it is presumed that the staff-model health maintenance organization (HMO) would be the prevalent form, a spectrum of practice arrangements would function as accountable health plans, including preferred provider organizations, individual practice associations, multispecialty groups, and individual practitioners.7 Market factors driven by large employers, health insurance purchasing cooperatives (HIPCs), geography, and previous clinical arrangements would all play a role in an evolving pattern of service delivery organizations.

The intensity of physician staffing requirements in practices has tended to be inversely related to the degree to which utilization controls are applied by management.8 Staff-model HMOs have been the most doctor efficient, while solo fee-for-service practitioners tend to be the least so.9 Managed care providers have also tended to employ a complement of physicians that is much more heavily dependent on generalists than is the case in nonmanaged settings.10 To the extent that a managed competition reform package would stimulate and support managed care, it would tend to
decrease the demand for nongeneralist physicians while continuing to draw heavily on generalist physician graduates. The magnitude of these tendencies would depend on the degree to which these reforms would catalyze the growth of disciplined managed care organizations.

But health system reform in general and managed competition in particular are likely to generate a second, potentially contrary pressure on the physician supply. At the heart of these reforms is the commitment to provide the nation’s large un- and underinsured populations with access to basic coverage, increasing demand in the system and, hence, the draw on physician services. The types of physicians needed, however, will tend to be generalists—similar to those required by the managed care element of the reforms—since coverage under managed competition will emphasize basic and preventive services. While the actual size of the physician workforce required to meet the needs of the reform proposals will depend on the final shape of the reforms, the imperative to increase the availability of generalist physicians and decrease the supply of specialists seems inescapable.

Opportunities In Physician Work-Force Planning

What are the prospects for making necessary modifications in the physician work force to complement the goals of health system reform—no matter which final shape it assumes?

Medical education receives substantial support from tax dollars, at both the federal and state levels, and therefore should be amenable to public policy influence. The most visible but least substantial federal contribution to medical education is Title VII of the Public Health Service Act, which provides funding for family practice, general internal medicine, and general pediatrics residency programs and family practice departments in medical schools, Area Health Education Centers, and loan and scholarship programs for financially needy and minority students. At $171 million in fiscal year 1992, Title VII represents the smallest of a series of federal programs supporting medical education (Exhibit 1). Title VII is the residuum of health professions policies of two decades ago designed to support the expansion of health professions education.

The Department of Defense and the Department of Veterans Affairs (VA) administer substantial programs of graduate medical education costing a bit more than a quarter-billion and a half-billion dollars, respectively. Although the National Institutes of Health (NIH) is not primarily in the business of medical education, the influence of its support for biomedical research is a powerful and omnipresent feature of medical education at the undergraduate and graduate levels. Many factors in the educational setting, ranging from the types and interests of teaching faculty to the tech-
Exhibit 1
Appropriations For Federal Programs Supporting Medical Education, Billions Of Dollars, 1992

<table>
<thead>
<tr>
<th>Program</th>
<th>Amount (billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicare graduate medical education (GME)</td>
<td>$5.2</td>
</tr>
<tr>
<td>Direct medical education (DME)</td>
<td>1.6</td>
</tr>
<tr>
<td>Excluding nursing/allied health</td>
<td>1.3</td>
</tr>
<tr>
<td>Indirect medical education adjustment (IMEA)</td>
<td>3.6</td>
</tr>
<tr>
<td>National Institutes of Health</td>
<td>8.934</td>
</tr>
<tr>
<td>Department of Veterans Affairs</td>
<td>0.643</td>
</tr>
<tr>
<td>Department of Defense</td>
<td>0.282*</td>
</tr>
<tr>
<td>Health Resources and Services Administration (Title VII)</td>
<td>0.171</td>
</tr>
</tbody>
</table>

Source: F. Mullan, Presentation at National Primary Care Conference, Washington, D.C., 30 March 1992


Technologies and instrumentation available to subspecialty fellows, are influenced by the presence and valence of NIH funding. This is not to suggest that these funds or the search for new knowledge that they represent run counter to the requirements of medical education, but rather that their very potency within medical education represents an opportunity for policymakers seeking to modify elements of the medical education system.

The Medicare graduate medical education adjustments represent the largest and least appreciated source of federal funding directed to medical education. These funds, awarded to hospitals where graduate medical education takes place, are the result of the 1983 implementation of the Medicare prospective payment system (PPS). Prior to that time, hospitals covered the costs they incurred for resident salaries and associated expenses within the usual and customary charges made to Medicare and other public and private insurance entities they billed. The diagnosis-related groups (DRGs) introduced by PPS were constructed on the basis of the cost of care exclusive of the costs associated with graduate medical education. To maintain Medicare’s payments for residency training following the implementation of PPS, a system of direct medical education payments and indirect medical education adjustments was established at the same time. The direct system is designed to reimburse hospitals for the salaries and associated teaching expenses of residents for the percentage of time they care for Medicare patients. The indirect portion is intended to remunerate these same institutions for the increased intensity of care associated with the presence of residency training programs. This “adjustment” is for both the rigor of care associated with teaching programs and the disproportionate share of critically ill patients and uncompensated care that is typical of teaching facilities. Both direct and indirect costs are calculated annually for hospitals based on formulae driven by the number of residents present and
In 1992 Medicare paid hospitals $1.6 billion for direct medical education costs ($1.3 billion for medical residents and fellows, with the balance for nursing and allied health) and $3.6 billion for indirect medical education adjustments. Although a number of factors cause hospital rates to vary, the mean payment per resident per hospital for direct costs was $18,600 and for indirect, $51,500, for a total mean payment of more than $70,000 per house officer (Exhibit 2). Those payments, however, were made only for the days of care attributed to Medicare patients, which, using the Medicare rate of 38 percent, means that the actual rate at which hospitals were being reimbursed for each resident was on the order of $180,000 per year.

These figures are important because, no matter how the hospitals use the funds, they represent substantial federal support to hospitals with training programs. The amount of support per hospital is governed by the numbers of residents and fellows hospitals recruit. These payments are a potential point of powerful leverage for reforming the medical education system—a point of leverage that has never been used. Outside of several unsuccessful efforts by the Health Care Financing Administration (HCFA) to weight the payment system in favor of primary care residents, no policy, regulatory, or legislative initiatives have been undertaken to use this money to influence the training behavior of teaching hospitals and medical schools.

Federal loan and scholarship programs also enjoy public subsidies that make them potential instruments of change in reshaping the physician work force. Some programs such as the National Health Service Corps are designed to have a positive policy impact on the work force-educational financing in return for primary care practice in underserved communities. Others that have been work-force policy-neutral have been modified by Congress in the recent reauthorization of Title VII to require primary care or underserved community practice commitments as a condition of student assistance. The Health Professions Student Loan Program, now available

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**Exhibit 2**

Medicare Graduate Medical Education Payments Per Resident Physician, 1992

<table>
<thead>
<tr>
<th>Amount (mean)</th>
<th>Rate (mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct medical education (DME)</td>
<td>$18,600&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Indirect medical education adjustment (IMEA)</td>
<td>51,500&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Total</td>
<td>70,100</td>
</tr>
</tbody>
</table>

*Source: Authors’ calculations.*

<sup>a</sup> $1.3 billion (total DME, excluding nursing/allied health, divided by 69,900, which is the estimated number of full-time-equivalent interns, residents, and fellows eligible for Medicare reimbursement in 1991).

<sup>b</sup> Rare equals mean amount ($18,600) divided by 38 percent (Medicare days of care in 1990).

<sup>c</sup> $3.6 billion (total IMEA divided by 69,900 as noted for DME).

<sup>d</sup> Rate equals mean amount ($51,500) divided by 38 percent as noted for DME.
only for students committed to careers in primary care, is an example of such a policy shift. This program requires both students and institutions to commit to primary care training and practice. The Health Education Assistance Loan (HEAL) Program, the largest insurer of medical student loans, currently holds approximately $2.7 billion of federal loan guarantees for health professions education, of which close to $2 billion is for allopathic and osteopathic medical education. The medical portion of the program cost taxpayers upwards of $14 million in 1992 and includes no work-force goals. This loan program presents an opportunity for policy change.

A further source of large, poorly analyzed, and increasingly visible public support for medical education comes from state budgets. Of the nation’s 126 allopathic medical schools, 76 are state schools receiving substantial state subsidies. Overall, state and local support represents approximately 13 percent of all schools’ budgets at a figure in excess of $2.7 billion. A significant number of private schools, moreover, receive state support via one mechanism or another. As issues of specialty and geographic distribution continue to plague many areas, state legislatures are beginning to address more targeted questions to their medical schools concerning the practice patterns of their trainees. State medical education policy, coordinated with federal strategies, is an important reform opportunity.

By all measures, the public contribution to the undergraduate and graduate education of physicians is substantial. With a few exceptions, these public programs have not required specific outcomes from medical schools and teaching hospitals other than the production of competent physicians. Unlike many areas of public policy in which resources are insufficient or nonexistent, medical education is an arena that attracts considerable public investment—an investment that if managed with performance-based incentives and disincentives could produce major changes in the U.S. physician work force and support the broader goals of health system reform.

Quiet Partners

In a consideration of physician work-force reform, two quiet partners of U.S. medical graduates help to constitute the medical work force in this country: international medical graduates (IMGs) and nonphysician providers (nurse practitioners, physician assistants, and certified nurse midwives). Analysis of the current work force and future projections need to take into account the substantial presence and contributions of these practitioners. Moreover, they need to be factored formally into any deliberations about work-force planning, reform, and legislation.

Currently, 21 percent of practicing physicians in the United States and 20 percent of physicians in graduate medical education are IMGs. While
the number of U.S. IMGs has declined in recent years with fewer U.S. citizens seeking medical education in “offshore” medical schools, the number of non-U.S. citizen IMGs seeking training in this country and entering practice here has increased steadily. If physician work-force reform entails moderating downward the number of physicians in practice, policymakers would be hard pressed to recommend closing U.S. schools or curtailing their class size when more than 3,000 physicians trained elsewhere are joining the U.S. physician work force every year.

Some 21,000 nurse practitioners, 21,000 physician assistants, and 4,300 certified nurse midwives are now in practice in the United States. These numbers have grown steadily over the past two decades, so that there is approximately one nonphysician provider for every twelve physicians and one for every four primary care physicians. Nonphysician providers traditionally have practiced primary care, although today there is a growing tendency for physician assistants, in particular, to work in specialty settings. Are these sensible ratios? Are we training too many, too few, or just enough nonphysician providers? These questions have never been studied systematically, and funding to train nurse practitioners, physician assistants, and nurse midwives now bears no relationship to any articulated national goals. This component of the work force, then, is another area badly in need of scholarship and policy debate that should ultimately find itself an integral part of the larger deliberations on the medical work force.

Reforming Physician Work-Force Policy

The goals of any reform program aimed at the physician work force must be predicated on the problems that exist in the current system. Work-force deficiencies include too few generalist and too many specialist physicians, too few minority physicians, poor geographic distribution, and continued growth in the physician-to-population ratio. The system continues without established goals, with no coordination of state and federal policy for medical education, and with a lack of coordination among federal policies. Absent a national vision or a forum for reasoned analysis, fundamental issues remain unaddressed, such as the continued annual importation of international medical graduates equivalent to the entire graduating class of twenty foreign medical schools, the lack of plans for the training of nonphysician primary care providers, and the absence of training programs for managed care and retraining programs for mid-career specialist physicians. The reform goals tailored to this work-force analysis would focus on five areas. First, a majority of practicing physicians in this country should be trained and receive continuing education in the generalist disciplines of family practice, general internal medicine, and general pediatrics. Second,
the physician work force should reflect the population’s racial/ethnic diversity. Third, the physician supply needs to be better distributed to ensure full geographic access to health care. Fourth, a physician work-force target should be established that would maintain the physician-to-population ratio at current levels. Finally, supply needs must be established for nurse practitioners, primary care physician assistants, and certified nurse midwives, who will provide a valuable source of primary and preventive care.

**Strategies For Reform**

**Commissions.** Central to any reform of public spending for medical education would be a forum in which both analysis and decision making could take place. A number of commentators have suggested the establishment of a national commission such as the Physician Payment Review Commission (PPRC) or the Prospective Payment Assessment Commission (ProPAC). If a National Health Board is established, as has been suggested in a number of reform proposals, a work-force commission might well be part of it. To be effective, this commission would need to be entrusted with binding authority in designated areas of educational support that would govern the management of certain aspects of federal programs. The commission would have adequate funding and a permanent staff to analyze physician work-force needs and trends. Its domain would include projections of physician requirements in the United States, as such, it would examine the number of U.S. medical school graduates and IMG trends and policies. Nurse practitioner, physician assistant, and certified nurse midwife training and practice policies also would fall within the commission’s purview. A medical education Federal Reserve Board, tied to the political process but buffered from it, the commission would be able to implement consistent work-force reforms across medical schools, hospitals, students, residents, and practitioners.

Since regional needs and resources vary and since states have invested heavily in medical education, the concept of state or regional commissions that would serve to interpret and implement the actions of the national commission on a local basis also has been suggested. Such a commission is already in place in New York State and has been proposed for broad use. State commissions would be able to carry out regional work-force projections and planning in a manner similar to provincial bodies in Canada.

**Educational consortia.** A second important element of a reform strategy would be the formation of educational consortia that would work in conjunction with the national and local commissions to translate educational policy into action. The current system of medical education is disjointed, with 141 allopathic and osteopathic medical schools providing “under-
graduate” medical education and more than 1,500 teaching institutions sponsoring “graduate” medical education. This situation complicates educational accountability and makes outcomes measurement almost impossible. Public funds dedicated to medical education should be used to stimulate the formation of consortia of medical schools and teaching hospitals that would be affiliated with HMOs, community health centers, and public health departments. Each consortium would be responsible as a unit for the ultimate specialty choices of its trainees. The continued receipt of federal and state funds would provide the incentive for achieving policy goals such as producing more generalists and fewer specialists, training of more disadvantaged minorities, or limiting the number of residents trained. The most obvious funds available for this strategy are Medicare graduate medical education (GME) funds, but other sources of public support such as NIH, VA, or state funding could be similarly managed. This strategy would leave the implementation of educational policies and principles in the hands of educators working collaboratively within each consortium. 

Adequate funding. Title VII programs, which have provided modest but crucial support for primary care training, must be augmented as a key element of the reform strategy. Some have criticized these programs for failing to produce major increases in the number of primary care or rural physicians or to stem the specialty tide. These funds, in fact, have been awarded in an environment in which incentives for contrary outcomes have received far more support and thus have been far more powerful. The targeted and categorical funding for the more costly generalist training programs has been essential to the ability of primary care educators to maintain their programs in the midst of institutional disinterest and substantial incentives for trainees to take their careers elsewhere. Continued support of these programs should be a fundamental element of physician work-force reform. Even in a future environment in which standard incentives such as Medicare GME funds are coupled with reform strategies such as production of more primary care providers, targeted support to the primary care disciplines will remain important. Moreover, the arena of modeling and projection science, as well as research in medical education and physician behavior, across the spectrum from admissions policy and student indebtedness through mid-career retraining, will be important areas for future support. Title VII therefore should provide strategic, targeted funding for primary care training in concert with the goals of physician work-force reform as well as an intra- and extramural analytic program.

Accreditation and certification reform. The current system of accreditation in medical education and specialty certification needs to be overhauled. Educational standards governed by the actions of accrediting and certifying bodies have a significant, complicated, and irregular influence on
the specialty choices and competencies of the physician work force. Many see these physician-dominated, uncoordinated, and often contentious bodies as reinforcing an educational paradigm that is antiquated and unresponsive to training the kinds of physicians needed for the next century. This pluralistic system of standard setting and credentialing needs to be simplified and coordinated with the policies and programs of the national and local commissions and consortia to meet common work-force goals.

Income management. Future practice income plays an indisputably important role in the career decisions of physicians, as is the case for all professionals. To maintain generalist graduates in generalist practice, the system of physician reimbursement must provide equitable compensation for them. If the gross discrepancies that currently favor specialist reimbursement are not eliminated, educational reforms that favor generalists will founder in practice as generalists seek specialty recompense.

The Long Haul

One point that is often overlooked is that a physician’s projected work life is forty years. Changes in educational outcomes, therefore, affect the practice community slowly. If residency programs began graduating 50 percent generalists next year, it would take until 2040 for the physician work force as a whole to reach the 50 percent point. Likewise, it would take until the year 2004 to reach the goal of 50 percent in general practice if every graduate entered primary care starting this year. These projections present a sobering challenge to the physician work-force reform agenda. To affect the balance of the work force in the near term, retooling and retraining physicians already in practice offers the most direct approach.

What circumstances would cause physicians to redirect their careers in mid-course? While physicians by and large are not going without work, there is some evidence that certain medical specialties are experiencing a crowded marketplace. This phenomenon likely will become more apparent as the physician-to-population ratio in this country continues to climb, and more pressing if managed competition prevails as the mode of reform and managed care becomes the popular practice configuration either spontaneously or through purposeful government policy. Such an increase in managed care will stimulate the need for generalist physicians while reducing the employment sphere of many specialists. These developments might well lead many physicians to change their pattern of practice toward primary care, falling back on their basic medical training to do so. This, of course, is not a formula for the practice of good primary care, good specialty care, or good managed care.

Since few practitioners would subject themselves to the reduced income
and rigors of a mid-career retraining program voluntarily, an important element of a physician work-force reform plan would be a strategy to support the mid-career retooling of physicians. Such a program might focus on skill building in both the clinical disciplines of primary care and the cognitive and systematic capabilities required of physicians practicing in managed care settings. This strategy could be abetted if managed care programs and hospitals required that primary care practitioners hold either initial up-to-date boards in a generalist discipline or a certificate of subsequent generalist/managed care training. Such a requirement as part of an overall work-force management strategy would provide substantial incentive for retraining prior to career specialty transitions.

Physician work-force reform will not succeed as a stand-alone enterprise. It will need to be carefully enmeshed with broader health care reforms that seek to bring the system under control. This collaboration needs to occur at the policy development and legislative level as well as in the training setting and in practice. Many groups who will be central to these changes, including medical schools, teaching hospitals, and practicing physicians, may interpret work-force reforms as inimical to their current interests. However, if these reforms are developed and implemented as part of a larger recalibration and redirection of health care in the United States and do not single out the medical profession, they are far more likely to be accepted and adopted. Modifications of this magnitude in the education and re-education of physicians in this country will not be easy, but health system reform as a whole will not prosper without physician work-force changes of the type discussed here. The prognosis for this challenge is far better than it might be, in that the current system devotes substantial resources to medical education, making major new expenditures unnecessary. The dollars are there, and strategies are available. Political will and professional leadership are needed now.
NOTES


