Graduate Medical Education as a Policy Instrument: 
Promise and Problems

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Increasingly, graduate medical education (residency training) is being proposed as a policy instrument to reform the traditional manpower problems of distribution of physicians. This article suggests why graduate medical education has become the latest policy device in the decades-old effort to rectify physician imbalances, and it discusses the potential for reform contained in this approach. It then presents a number of problems that will probably hinder the effective implementation of such policy and concludes that future federal policy directives are uncertain.

INTRODUCTION

In the 1970s, solutions to ameliorate physician manpower problems have centered on the control of residency training. The weight of decades of spoiled programs to rectify physician supply and distribution increasingly lies on that amorphous period of training after medical school [1]. Graduate medical education has become an issue, a social concern, and, most significantly, a perceived lever for the execution of social policy in medical care. The federal government is particularly keen on its potential. In a 1978 speech, the former HEW Secretary, Joseph A. Califano, Jr., noting that there were too many specialists and too few general practitioners, asserted that federal efforts to remedy this situation would be, among others, "...to support more residencies in primary care fields and investigate providing other incentives to encourage primary care" [2].

To aid in this, the Executive Branch established the Graduate Medical Education National Advisory Committee (GMENAC), with a multifaceted mandate to examine the supply and distribution of physicians, develop a methodology to determine the numbers of physicians needed, and estimate the costs of residency training. The effort is to provide a rationale for the regulation of graduate training to meet national medical care policy goals.

Legislative effort has also kept pace with executive activity through the enactment of the Health Professions Educational Assistance Act of 1976 (P.L. 94–484). To promote primary care medicine, university-affiliated residency programs are required by fiscal year 1980 to devote 50 percent of all residencies to general internal medicine, family practice, and general pediatrics [3].

Non-governmental analysts have also been interested. For example, Morrow and Edwards recommended the reduction of the inflow of foreign medical graduates

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(FMGs) and limitation on the number of graduate positions. Although the authors are cautious about the effectiveness of the approach, they state:

This need to referee the allocation of a limited number of GME (Graduate Medical Education) positions provides an opportunity to address issues concerning specialty distribution within a public policy framework by establishing targets for the number of first year positions permitted in each specialty [4].

The impression is that graduate medical education has characteristics which may make it a promising policy mechanism for the 1980s. This paper explains why there is this perception and examines both the promises and the hazards in the approach.

THE CURRENT FOCUS ON GRADUATE MEDICAL EDUCATION

Graduate medical education is relatively brief, having its formal beginning in the late nineteenth century. Stevens has delineated the historical issues which still appear to be present in the 1980s: first, what is the meaning of graduate medical education; second, who should control specialization; third, how far should residents fill hospital needs; fourth, is graduate medical education a university responsibility, and fifth, how far should the distribution of residencies match perceived manpower needs [5].

My perspective is focused on the traditional issues of health manpower: aggregate numbers (e.g., too many or too few physicians), distribution (e.g., rural versus urban location), specialization (e.g., primary care versus secondary or tertiary care), and productivity (e.g., output per units of input). These concerns have their own history. For example, an articulate statement of them is found in the Committee on the Costs of Medical Care's (CCMC) 1932 report, Medical Care for the American People [6]. From that time on, there have been numerous reports and commissions which have wrestled with the oversupply or undersupply of physicians and where they locate their practices [7]. Doubt still exists that these problems have been resolved. In 1976, Lewis, Fein, and Mechanic reflected on the 1932 CCMC report:

It noted the maldistribution of physicians and other medical facilities by geographical area and emphasized the growing imbalance between primary medical care and more specialized practice. Among their conclusions were that “There is a need for geographic distribution and agencies which more closely approximate the medical requirements of the people,” and “There should be effective control over the number and types of practitioners trained, and their training should be adjusted so that it will prepare them to serve the true needs of the people.” Several decades—and many programs later—we find ourselves facing the very same issue [8].

Graduate medical education is a manpower issue, and a renewed focus on it stems not only from the unresolved controversies Stevens has noted, but also from our inability to solve persistent problems sketched above.

In effect, two “pressure points” have been identified as important in controlling the kinds and numbers of M.D.s the nation receives. The more important of these has been undergraduate medical education. The consequence of substantial public action (through the various Health Profession Assistance Acts, among others) based upon arguments of the 1950s about physician shortages was the increase both in the number of medical schools (86 in 1960–61; 122 in 1977–78) and the number of
medical graduates (6,944 in 1960–61; 14,393 in 1977–78) [9]. Further, the curriculum has also been substantially changed by increasing clinical work in the third and fourth years and by adding to the number of electives available to medical students [10]. By the early 1970s, however, the skepticism raised by but a few voices [11] regarding the wisdom of increasing the numbers to ease the shortage became a widespread realization: increasing numbers does not distribute M.D.s where they are needed [12].

In short, maldistribution replaced the problem of aggregate numbers. At the same time, the second "pressure point" (graduate medical education) appeared behind the immigration of foreign medical graduates (FMGs) [13]. The influx of FMGs turned out partially to be a stopgap measure for physician shortages by locality, type of institution, and specialty [14]. At issue here is what FMGs revealed about medical education in the United States.

It has highlighted (and contributed to) the disjunction between undergraduate and graduate medical education. FMGs were and are entering U.S. hospitals with no contact with U.S. medical schools [15]. Many hospitals continued to function with the use of FMG manpower, and U.S. medical graduates were able to elect other sites for their training. This disjunction has troubled many [16], and it illustrates the gap between university training programs and less desirable community hospital programs. One response to this has been for university medical schools to affiliate with community hospitals and to allow their house staffs to rotate through them. The outcome of this effort has yet to be determined.

Thus, physician migration has suggested the need for reform of residency training at a time when disappointment over experiments in undergraduate medical education has led policy makers to search elsewhere for answers [17]. If the medical school approach was less successful than hoped, will this new approach offer better and more workable solutions?

THE PROMISE

Graduate medical education appears to be a stage in medical training where leverage for policy application and reform is possible.

First, both the available and filled positions can be determined; annual data are available, and projections of trends and the relationship between supply of and demand for positions by specialty are relatively easy to see. In comparison with later periods in the career of the physician, the "labor market parameters" are easy to define. In contrast to other occupational groups, such as professional nurses, laboratory technicians, or hospital administrators, we possess the most complete and reliable data in existence [18]. The availability of these data do two things: (1) permit quantitative analysis to be performed with greater rigor than for other professions in health care; (2) give the appearance that regulation of these "numbers" is possible; that is, where quantitative data can be developed, decision-making is usually perceived as more precise, easier to make, and more flexible [19].

Second, because residencies are roles within organizations, a level of hierarchical control which exists in few other settings can be exercised over the physicians. There is in the hospitals a system of regulation, with implications for quality and performance, across the nation. One of these is the potential for definitions of tasks and responsibilities. Indeed, there is a small but growing literature on what these young physicians do [20], whereas little exists on what physicians out of training actually do [21]. For residents, the determination of productivity enhances the possibilities for substitution of their services by less expensive personnel with resulting lower costs.
Third, the educational component of graduate training provides a time-honored vehicle for change. Changes in attitudes, through the influence of professors and teachers, is an appealing aspect of the educational function. This context not only offers a potential system of control, but also relies on voluntarism (through educational persuasion) in promoting change and, thus, bridges the gulf between laissez-faire manpower training and governmental control and regulation.

Fourth, the link between residency specialty choice and specialization in practice after graduate training is a point policy advocates may hope to exploit. Training X number of surgeons will mean X number of surgeons in practice later. There is little information to support the view, but that has not dampened the hope.

In sum, the precision of our knowledge about the quantity and types of residencies, the organizational control that is possible through hospitals and universities which sponsor residencies, the possibility of change and control through educational influences, and the assumed link between training specialty and specialty in practice, these four "promises" make a powerful argument for graduate medical education as a policy mechanism for change in ameliorating traditional manpower problems.

How this would occur can be sketched out. Aggregate numbers can be easily controlled: if a surplus exists, simply cut back on the number of available positions, and vice versa if a shortage exists. If maldistributions exist by either locality or specialty, simply cut back or augment the appropriate positions. If people do not enter residency positions, which analysts feel are vital to the nation's health, then educate them to like these through course content, clinical emphasis, appropriate role models, differential stipends. If certain tasks performed by physicians may be more economically and efficiently performed by paramedical personnel, an assessment which the organization context would have allowed in the first place, the authority for change and regulation of roles and responsibilities is present.

There may also be an underlying appeal in these uses of graduate medical education. Few would probably foresee a medical care delivery system patterned after hospital residency training, i.e., closed, salaried medical staff and hierarchial, bureaucratic lines of authority. Yet there are all the elements of a national system present in the hospitals. The structures of the Veterans Administration hospitals, health maintenance organizations, prepaid group plans, and similar organizational settings have provided visions of where health care delivery can occur; the model of hospital training, although different from these settings in many respects, may offer a starting place for reform in the delivery system.

THE HAZARDS

The promise that exists in graduate medical education as a policy vehicle must be tempered in several ways. We cannot have any notions that the "system" of graduate medical education—housed in more than 1,600 hospitals—would function in ways textbooks portray a system as operating. Unintended and unforeseen consequences of social policies have a disturbing way of being the rule rather than the exception [22].

Beyond this somewhat cryptic hurdle, there are straightforward reasons why graduate medical education may not work so well. They include, first, the ever-present debate on how to measure the health needs of the nation. Measures of "need," "demand," and "effective demand" tend to produce widely discrepant estimates of physician requirements [23]. Thus, the best way to determine the number of residency slots for each specialty is subject to debate.

The second point relates to the data on physicians, which, although comprehen-
sive, suffer from a number of weaknesses. For example, an ongoing debate exists as to whether the count of FMGs is accurate [24]. Questions have been raised about whether the definition of a "primary care" physician has not changed drastically enough to invalidate current manpower estimates [25]. In short, certain measurement and technical problems weaken the data.

The more basic problem is that data on residents are the property of a professional group (The American Medical Association) which makes the information less accessible than is desirable. The kind of planning that I believe analysts have in mind would require a much improved and more readily available data base.

There is also a gap between data analysis and implementation of policy. Manipulation of statistics on residency slots does not mean their alteration. The rhetoric of policy change is the more impressive when statistical evidence can be mustered behind it; quantification may bring about higher expectations than are warranted.

Third, good predictors of physician location, type of practice, or specialty still do not exist, as a review of recent literature shows [26,27]. Not knowing which factors have an impact on these decisions suggests that we may not know what to regulate during residency training.

Fourth, efforts to exert policy change could be consciously thwarted. Suppose, as P.L. 94-484 does, that one controls the proportion of a university-affiliated residency program devoted to primary care medicine. This could be satisfied by allocating a greater proportion of first-year residencies to general internal medicine but then thwarted by permitting second- and third-year residents to elect specialized areas which require at least some antecedent general medicine. This is one possible device to circumvent the intent of current legislation, and suggests the need for detailed regulations to avoid such efforts.

A fifth hazard emerges from the suspicion, recently documented by Aiken and associates [28], that many specialists delivery primary care. The participation of specialists in primary care medicine means that tight control of residency training may have little relation to type of care ultimately delivered. The adjustment of numbers of residents among specialties may be less relevant than the inclusion of some primary care medicine for specialists in training.

Sixth, a network of hospitals with training programs does not mean that effective organizational control will be implemented. Who will have the authority to determine numbers of residency slots, their content, their quality? Who will order changes in productivity of residents? Who will replace certain physician tasks by non-physicians? Residency programs are currently subject to influences from other organizations, such as the specialty boards, licensure bodies, the American Medical Association, and it is unlikely that this influence will be given up voluntarily.

Finally, and perhaps the most fundamental hazard of all, is the ambiguity in the meaning of graduate medical education. Is it an education activity with a strong emphasis on practical clinical skill development? Is it educational, but with an emphasis on scientific research training? Is it really an apprenticeship requiring the side-by-side working relationship between novice and master? Is it manpower to supply hospital needs? Or, is graduate education a period of initiation, of long-term socialization, before the physician is permitted to enter the ranks of "mature" practitioners? Must these questions be repeated for each specialty with its own separate part of the body, function, or age-specific focus?

It is an open question whether there can be a consensus on these questions: moreover, the differences are consequential. For example, the question of whether graduate medical education is a job for the hospitals or one for the universities will
predictably cause controversy. The proponents of hospital control will argue that contact with patients, development of a good bedside manner, and practical clinical medicine would be jeopardized if the universities get too involved. The proponents of university control will argue that education is sacrificed, residents are exploited, and training in sound scientific medicine is diluted if hospitals have control. In both cases, the definitions of graduate medical education differ, and the products will differ accordingly.

It is probable that other hazards exist which make the prospect of policy change through graduate medical education less promising than it appears to be. My intent is not to detail an inventory of pitfalls; rather, I suggest that the search for ways to alter the number and distribution of physicians is often accompanied by frustration with existing techniques and by unwarranted hope in the new. A rush headlong into different policy initiative without dispassionate scrutiny of whether the "promise" is half mirage will lead to yet more discarded programs.

THE FEDERAL ROLE AHEAD

We can be confident that the federal role in overcoming physician manpower problems will not slacken, but whether it will remain focused on graduate medical education is less certain. I believe that there has been disillusionment in government with undergraduate medical education and with the development of paramedical personnel in the absence of changes in physician behavior toward them. This will probably lead to continued effort through legislation to influence medical manpower through graduate training. There has been as yet no disillusionment with this policy mechanism. However, the federal government tends to attempt short-term solutions because of its need for rapid, visible political outcomes. When the new Health Professions Education Assistance Act expires in either 1983 or 1984, the short-term solutions will probably not be at hand, not only because of the "hazards" already mentioned, but also because of the lag between physician training and ultimate physician specialty choice. It takes more than three or four years for the results to make themselves manifest. In short, results will be incomplete, and a clear assessment of governmental policy will not be at hand.

Whether these efforts will be abandoned at that time is moot. By 1984, we will have a new administration. There may be some form of National Health Insurance. There may be an expanded National Health Services Corps. The Federal Medical School will have graduated several classes of new physicians, many of whom will be officers in the Public Health Service. The increased numbers of medical students in the 1970s will finally be entering the employment market and the predicted "physician abundance" will be with us [29]. As some have argued, it may create a surplus of physicians willing to practice in traditionally underserved areas [30]. These are some of the intangible factors that one must consider half a decade away.

The issue is whether physician resources are more responsive to market forces of effective consumer demand, i.e., a patient's ability to pay for services and his freedom of informed choice of alternatives of care, than to direct policy manipulation of physician supply. The topic is hotly debated [31], and federal manpower policy currently favors the latter approach. If events in the 1980s favor the operation of a market-like atmosphere of physician services, i.e., an abundance of physicians, freedom in advertising, greater patient ability and choice in purchasing services, it seems possible that the policy of intervention into graduate medical education may be curtailed. Whether either alternative will finally give us a solution to physician
manpower imbalances which have persisted for most of this century is still an open question.

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