

DILEMMAS AROUND THE JUNIOR WORKFORCE AND THE INDENTURED SERVICE/APPRENTICESHIP MODEL FOR GRADUATE MEDICAL EDUCATION IN THE UNITED STATES

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1. INTRODUCTION

The United States (US) has historically relied on the indentured service/apprenticeship model to train physicians. After 8 years of post secondary education (4 years of college and 4 years of medical school), a physician in the US must complete several years of training in a specific specialty to become a fully licensed physician. During this period of training, which usually lasts from 3 to 6 years, physicians learn by doing under the supervision of more experienced physicians. As they learn more and become more experienced and skilled, they are permitted to assume increasing responsibility for care and to become more independent. During this period of training, physicians are expected to work long hours, often more than 80 hours per week, for low pay. The vast majority of their work hours are spent providing services with limited direct supervision.

The indentured service/apprenticeship model in the US has been successful in many ways. It has:

- produced generally well-prepared physicians;
- supported the care of the poor and uninsured;
- supported medical research and development; and
- supported academic medical centers (which have contributed to many advances in medical care).

However, the combination of the indentured service/apprenticeship model, a policy of high reimbursement of teaching hospitals for training physicians, and the lack of a system for physician workforce planning, have had a number of negative consequences:

- the number and mix of physicians being trained often reflects the short term needs of teaching hospitals rather than the community or the nation;
- the educational and personal needs of physicians in training may be secondary to the needs of the teaching hospital to provide services;
- most physicians get little exposure to the practice environment outside of the academic medical center, thus, they may not be well-prepared for the settings in which most physicians will practice;
- a relatively high percent of physicians in training being graduates of non-US medical schools (about 26% of all allopathic residents in 1999); and
- a significant annual expenditure associated with the training of physicians including approximately \$10 billion from the Medicare and Medicaid programs which are intended to support care for the elderly and the poor.

There have been a number of efforts to address these problems and issues, although most have been within the basic framework of the current system for regulating and financing medical education and training. This paper provides a brief overview of some of the efforts in the US to address issues around the junior medical workforce.

2. BACKGROUND: MEDICAL EDUCATION AND TRAINING IN THE UNITED STATES AND PHYSICIAN WORKFORCE PLANNING

The oversight of graduate medical education

The system for regulating and financing medical education and training in the US reflects the basic political philosophy and approach to government of the nation: it is a pluralist system with many participants and only a limited structure for planning. Although the government provides billions of dollars each year for training physicians, it has very limited influence over the number or mix of physicians being trained or where or how they are trained. Government has even less control over where physicians practice after they complete their training.

Each of the 50 states determines the requirements for licensure of physicians within their state. Although there are some variations among the states, the basic requirements are very similar. In general, states require: graduation from medical school; completion of 2 or 3 years of accredited post graduate training (generally referred to as “residency training”); and passage of a national examination.

The standards for residency training programs, including curriculum requirements and treatment of junior physicians (“residents”) and the national examinations for physicians, are determined by voluntary national organizations, such as: the Accreditation Commission on Graduate Medical Education (ACGME); and Residency Review Committees (RRCs) in each specialty. It should be noted, however, that while the ACGME and the RRCs establish standards and guidelines for residency programs and residents, they are governed by boards with representatives of diverse groups, and must build consensus for their policies. This promotes incremental rather than sharp changes in policies regulating graduate medical education (GME).

In order to enter residency training, international medical school graduates (ie. graduates of schools outside of the US and Canada) must also pass a set of examinations given by the Educational Commission on Foreign Medical School Graduates (ECFMG). This organization is also governed by a board representing a variety of groups with an interest in medical education and the physician workforce.

For the most part, states and the federal government defer to the ACGME, the RRCs, the ECFMG and other voluntary bodies to determine the policies over the training and standards for GME.

Graduate medical education financing in the US

Despite the very limited role in the regulation or planning of physician training, the public provides billions of dollars per year to support physician training. The majority of financing of GME in the US comes from the Medicare program. In federal fiscal year 2000, the

Medicare program will spend an estimated \$7.8 billion to teaching hospitals for GME. (Council on Graduate Medical Education, Fifteenth Report, 2000) It is critical to understand that the Medicare program is a health insurance program for the elderly (and some disabled individuals), not a workforce or education program. The fact that it is also the major source of funding for GME is, perhaps, an historical accident.

When begun in 1966, the Medicare program reimbursed hospitals based on their historical costs. Teaching hospitals cost more and, thus, received a higher level of reimbursement. The Medicare program switched from paying hospitals based primarily on their historical costs to a system that set rates prospectively to encourage hospitals to be more cost sensitive. However, in the case of GME, the mathematical formulae used by Medicare related to GME (embedded in complex formulae) provided generous reimbursement for teaching hospitals and, rather than encouraging prudence, appear to have encouraged the recruitment of additional residents.

Medicaid, the program that provides reimbursement for health care for the poorest of Americans, is run by each of the 50 states under federal guidelines. Most states developed their reimbursement policies for Medicaid based on the Medicare model. As such most states also incorporated formulas that provided generous reimbursement to teaching hospitals for GME. It is estimated that state Medicaid programs provided \$2.4 billion in 1998 to teaching hospitals for GME (Henderson, 2000).

The initial Medicare formulae related to GME were very generous, in part, because teaching hospitals were providing a variety of products and services of public benefit that were hard to individually price out and for which other funding was limited. For many years, this generous Medicare reimbursement served the nation well: it supported the training of physicians, academic health centers; and the care for the poor and uninsured. While not generally publicly acknowledged, policy makers were generally aware that Medicare reimbursement was covering more than just the training of physicians.

Nationally, in 1998 teaching hospitals received on average approximately \$92,000 from Medicare and Medicaid for every physician in training¹. The state with the greatest number of residents, New York, also has a policy of generous reimbursement for GME. It was estimated that teaching hospitals in New York, which train about 15% of the physicians in the country, received \$188,000 for each resident from all payers of care in 1995. (Salsberg, et al., 1996)

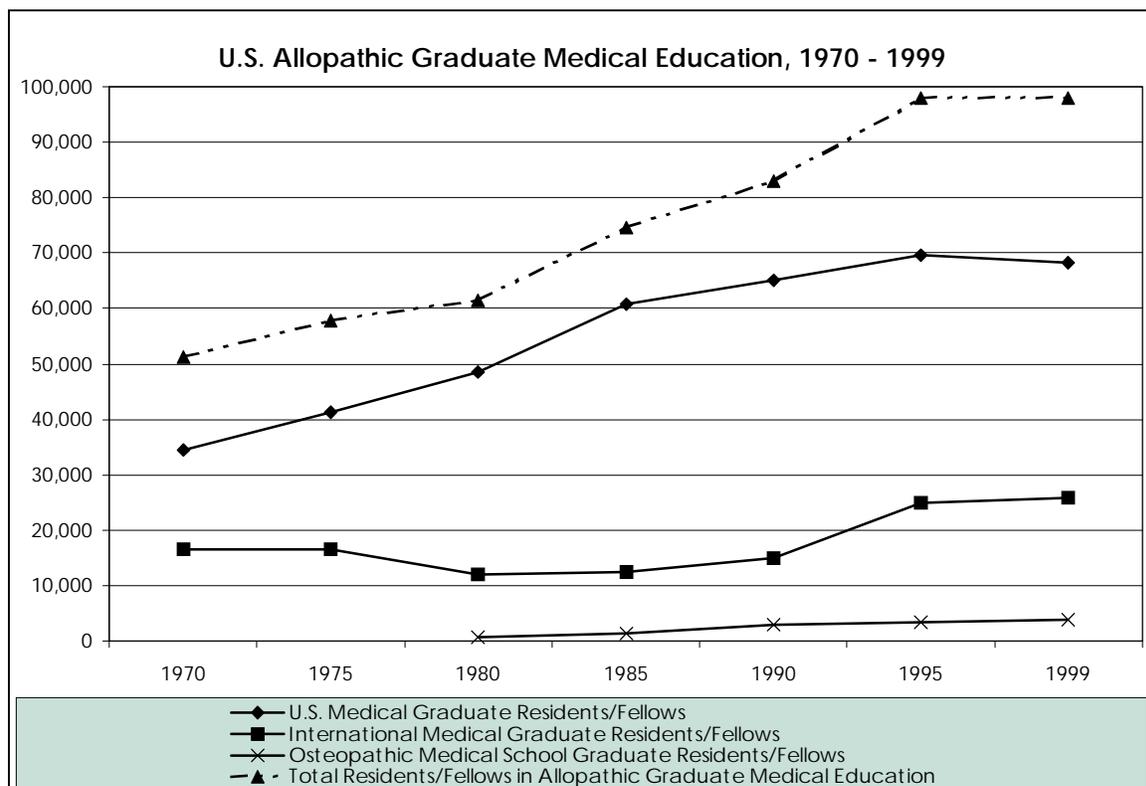
While these reimbursement policies provided solid support for training physicians, there have been a number of negative consequences of this policy:

- First, the policies provided an incentive to train more physicians regardless of need even if it means training large numbers of IMGs. Until passage of the Balanced Budget Act (BBA) in 1997, a teaching hospital received higher Medicare rates for each and every resident it added but no additional reimbursement if it added any other type of staff.

¹This estimate is based on approximately \$6.8 billion in Medicare GME payments plus \$2.4 billion in Medicaid GME payments divided by the roughly 100,000 physicians in training in the US.

- Second, teaching hospitals became very dependent on residents for service and on the government reimbursement associated with GME.
- Finally, the reimbursement policies solidified the central role of hospitals in physician training: billions of dollars were available for training in hospitals but nowhere else.

Figure 1: Allopathic graduate medical education, United States, 1970 to 1999



Sources: Journal of the American Medical Association Medical Education Theme Issues, 1983, 1987, 1991, 1996, 2000; American Medical Association Physician Characteristics and Distribution in the US, 1997/98 Edition

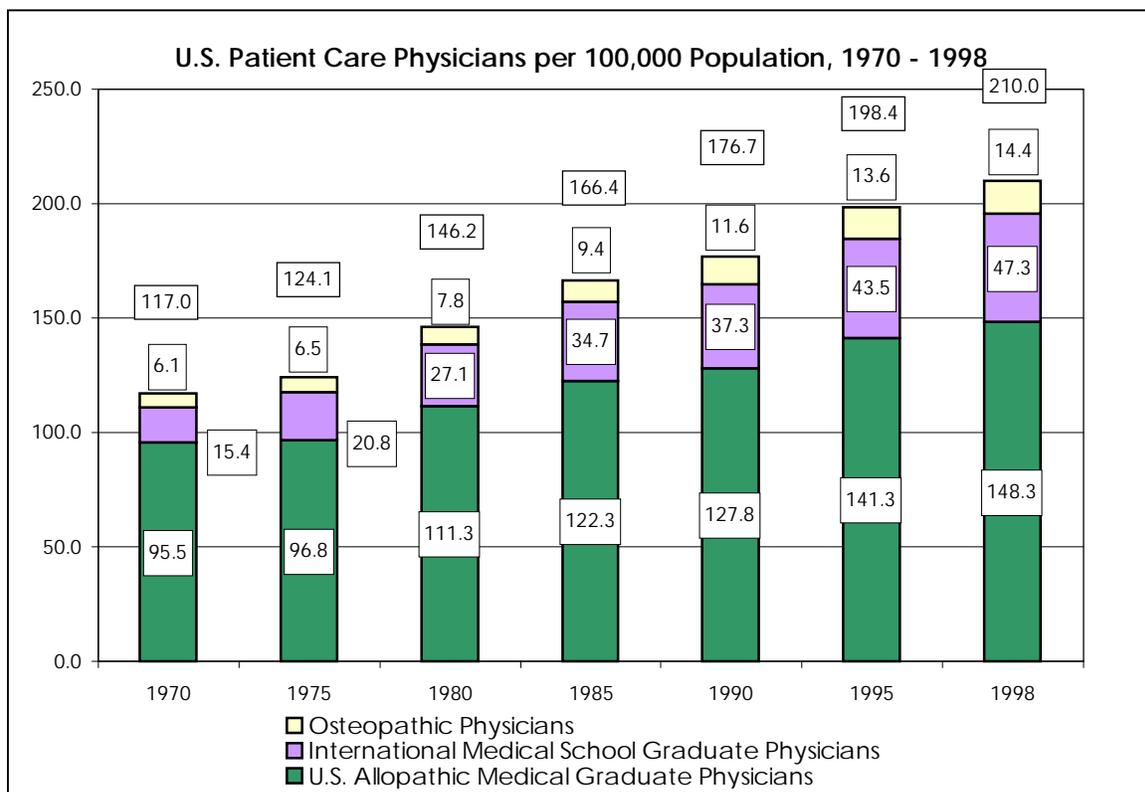
Physician workforce planning

There is no system for physician workforce planning in the US. Teaching hospitals and residency programs, if they can obtain approval of the appropriate RRC, are free to add programs and residents. RRCs do *not* make decisions based on whether they believe there are too many or too few physicians in their specialty. This reflects, in part, concerns over possible violations of anti-trust statutes.

The federal government and the private sector have supported a number of efforts over the years to assess whether the nation needed more or less physicians and has attempted to influence the size and scope of the physician workforce through reports with recommendations for medical schools and teaching hospitals. Some of the more significant reports and studies include the following:

- *The Graduate Medical Education National Advisory Committee (GMENAC):* The Committee undertook a series of detailed analysis in the late 1970s and concluded that the nation was facing a major surplus of physicians (GMENAC, 1980). In response to the work of the GMENAC, the American allopathic medical education system voluntarily limited the number of medical school graduates and the number of graduates has been between 16,000 and 17,000 per year since 1980. However, while the allopathic medical schools responded to the recommendations, there was no constraint on GME and the number of residents has grown significantly since 1980, largely through the growth in IMGs, although over the past several years there has also been an increase in the number of graduates of osteopathic schools in the US.

Figure 2: Patient care physicians per 100,000 population, United States, 1970 to 1998



Sources: American Medical Association Physician Characteristics and Distribution in the US, 1997/98, 2000-2001 Editions; HRSA United States Health Workforce Personnel Factbook; American Osteopathic Association.

- *The Council on Graduate Medical Education (COGME):* The Council, authorized by Congress in 1986, advises the federal government, Congress and the medical education community regarding GME policies and issues. The Council has issued a series of reports over the years warning of a surplus of physicians, arguing for a reduction in the number of residents in training and for an increase in the percent of residents in primary care specialties (COGME, Third Report, 1992; Fourth Report, 1994; Eighth Report 1996; Eleventh Report, 1998). In these reports, COGME has suggested that the number of new residents each year should be equal to the number of medical school graduates

plus an additional 10%, allowing for some IMGs to enter the system. The Council also recommended that 50% of the graduates should be entering primary care specialties, defined as family practice, general internal medicine, general paediatrics and obstetrics. This became generally known as the “110-50-50” goal for GME.

Recently, COGME concluded that there was a need to reassess its prior recommendations in light of changes in the physician workforce, the health care system and population demographics. These changes include the increasing representation of women in medicine, the changes in the nature of managed care, the aging of the population, and the realities of the marketplace for physician services (COGME, Fourteenth Report, 1999).

- *The Institute of Medicine (IOM)*: The Institute, a prestigious organization of leaders in the field of medicine, conducted a major study in the mid-1990s of the nation’s physician workforce policies. The report called for reductions in the number of physicians being trained in the U.S. through a reduction in IMGs (Lohr, et al., 1996).
- *The Pew Health Professions Commission*: The Commission, funded by a private foundation, undertook a series of studies of the health workforce in the 1990s. The Commission’s report in 1995, “Critical Challenges: Revitalizing the Health Professions for the Twenty–First Century,” stirred extensive controversy. It called for a major reduction in the number of medical school graduates in the US as well as a major increase in the proportion training in primary care specialties. (Pew Health Professions Commission, 1995)

Although there is no formal authority for physician workforce planning (or for workforce planning for any other profession), in addition to reports and studies, the government has attempted to influence the supply of physicians and educational policies in several ways, which are discussed further in Section 3 below.

Resident work hours and supervision

There are no national rules, requirements or even generally accepted guidelines on the appropriate number of hours that a resident should work in a week. This reflects several factors, including the opposition of teaching hospitals to losing the valuable contribution of residents and the opposition of some physicians who believe that long hours of training result in a better education.

In the late 1980s, New York State approved regulations limiting the hours that a physician training in the state could work in a week to 80 hours and limited to 24 the number of consecutive hours that a resident could work, including being on-call. The regulations also required specific supervision of resident work and activities. These regulations were considered quite controversial and generated extensive opposition and debate. Physicians and hospitals argued that working long hours per week--often more than 100 in a week--contributed to the education of residents and did not reduce quality of care.

While the ACGME has encouraged residency programs to be sensitive to resident needs and to be careful to not over-work residents, no formal national guidelines or standards on work hours have been established.

Forces of change

There are a number of recent developments that are forcing reconsideration of GME policies, regulation and financing in the US:

- In order to help preserve the Medicare program, in 1997, Congress passed and the President signed the BBA which included many changes in Medicare GME funding formulae including major reductions and limits on Medicare reimbursement for GME. This contributed to a major national debate about the most appropriate method of funding GME. It also contributed to a major lobbying effort by teaching hospitals to restore some of the funding.
- Teaching hospitals have argued that the expansion of managed care and increased competition in health care have put them at a disadvantage in the marketplace as some managed care plans have resisted paying the higher costs of teaching hospitals. Some plans have also redirected some patients to less expensive hospitals. Managed care plans and insurers have argued that employers and other purchasers of coverage do not want to pay extra for public benefits that do not directly benefit their members.
- The shift of care to ambulatory settings makes it less appropriate to focus all training and training funds in teaching hospitals. (The decreasing use of hospitals also makes it more difficult to flow the dollars for GME as an add on to the shrinking number of inpatient stays.)
- There is a growing general concern about the quality of care and medical outcomes. Although this is not currently targeted at GME, there is an awareness that GME plays a critical role in the preparation of well-qualified physicians.
- The lack of any indication of a surplus of physicians, despite the growing physician to population ratio, is leading to challenges to the assumption that the nation is training too many physicians. In fact, the aging of the post-World War II baby boom is raising some concern that the nation may be producing too few physicians.

3. APPROACHES TO WORKFORCE PLANNING AND THEIR RELATIVE SUCCESS

As would be expected in the pluralistic political system in the US, the strategies that have been tried have been incremental in nature. The basic policy goals for GME have been to reduce the number of physicians being produced and to encourage more physicians to enter primary care specialties. Several strategies have been pursued.

Medicare reimbursement policies

Medicare, as the largest single source of financing of GME, can influence the number and types of physicians being trained as well as other GME policies. The problem for policy makers has been that Medicare finances health care for the elderly and is paid for by

contributions by workers and the beneficiaries; and it is not a workforce program. The priority for the Medicare program is to make sure funds are spent prudently to pay for care for beneficiaries. Therefore, it has been difficult to target GME related funds to workforce goals unless it is consistent with the service needs of beneficiaries. As a result, while there have been a number of efforts to use Medicare reimbursement policies to influence GME, they have been limited in number and scope.

In the 1980s, Medicare GME reimbursement for the costs of training beyond the training needed to become board certified in an initial specialty was reduced. Thus, a hospital would receive their full reimbursement for the first 3 years of training in internal medicine but a lesser amount for any additional training in a sub-specialty. This was designed to slow the growth in sub-specialty training and constrain the growth in Medicare expenditures. While it did save limited funds for the Medicare program, it had little impact on the number of specialists being trained in the US. (This is discussed further below.)

As mentioned earlier, the BBA included a number of major provisions related to Medicare reimbursement for GME. This includes the following:

- a major decrease in funding for the indirect costs associated with training physicians;
- a freeze in the number of residents for which a teaching hospital could be reimbursed;
- provisions to encourage training at off-site ambulatory care settings by allowing some Medicare funds to flow to training sites outside of hospitals;
- authority for a voluntary incentive program to reduce residents; and
- authority to flow funds through a consortia of hospitals and medical schools.

Some of these provisions are still in the process of being implemented and it is too early to know how effective the provisions will be in the long run. While the total number of physicians in training has stabilized, this appears to have begun a few years before the BBA and may reflect several developments.

The provision related to funding for training in ambulatory settings is complex and while it is supportive of the general effort to shift training to ambulatory settings, it is unlikely to be a major source of funds for ambulatory settings. It also appears that very few teaching hospitals are taking advantage of the provisions related to the voluntary reduction incentives (discussed further below) or the option of establishing GME consortia.

In 1999, under pressure from teaching hospitals across the country, Congress reduced some of the GME cutbacks of the BBA and teaching hospitals continue to press hard to eliminate additional scheduled cutbacks in GME reimbursement.

It is important to note that the focus of the policy discussions in Washington regarding GME are not about physician workforce planning or the nation's needs for physicians. Rather, teaching hospitals have argued that they are part of the basic infrastructure of health care and that scheduled BBA cuts would damage these institutions and curtail important services and programs. While additional relief is possible, it will probably not be tied to a restructuring of the GME policy framework.

GME grants and fiscal incentives

Grants

In order to encourage more training in primary care and ambulatory care settings, the federal government, through the Department of Health and Human Services, Bureau of Health Professions, provides millions of dollars each year for grants to residency programs and teaching hospitals. These grants are designed to support the training of additional primary care physicians, increased training in ambulatory settings, and improvements in curriculum. While these grants have supported important innovations, for the most part, they are making only marginal changes in the training system.

Decreased Medicare funding for subspecialty training

The Medicare provision to limit the reimbursement for sub-specialty training does not appear to have limited the number of physicians training in sub-specialties. There are numerous factors that determine whether teaching hospitals and physicians are interested in sub-specialty training. In light of the high level of reimbursement for GME, it appears that even at a reduced level of Medicare reimbursement there is an incentive to use residents to provide services. The willingness of residents to work 80 to 100 hours per week at relatively low wages (generally between one-third and one quarter of the cost of a fully trained physician), may make them an attractive provider of services for teaching hospitals even if Medicare reimbursement is decreased.

Recent immigration policy has allowed foreign-educated physicians with temporary visas to stay in the US if they remain in training. This has contributed to an increase in the number of IMGs training in many sub-specialties. This ready supply of physicians willing to sub-specialize may have helped counter any potential impact of the decrease in Medicare reimbursement on training beyond the basic board eligibility.

State efforts to “upweight” Medicaid GME reimbursement for primary care training

Several states, including New York and Massachusetts, have a policy of providing higher Medicaid reimbursement to teaching hospitals for training primary care physicians than for training in non-primary care specialties. In New York, residency training programs had to meet certain criteria, including for curriculum, to be eligible for enhanced reimbursement. Many internal medicine and paediatrics programs in the state did modify their curriculum to qualify for the higher payments and a few teaching hospitals added family practice residency training programs. While this is encouraging and probably produced better-qualified physicians, there is little evidence to date that more physicians decided to practice in primary care specialties as a response to the policy.

GME downsizing demonstrations

In 1996, the teaching hospitals in New York and the federal Health Care Financing Administration (HCFA) entered into an agreement for a demonstration project to encourage hospitals to reduce the number of physicians in training. Under the demonstration, hospitals would be able to continue to receive some of their GME reimbursement from the Medicare program even if they reduced the number of physicians in training. However, to be eligible a hospital had to agree to reduce the number of residents by at least 25% and to maintain the

proportion in primary care specialties. (An alternative was a minimum 20% decrease if the proportion in primary care was increased by 25%.) In return, hospitals would continue to receive funding as if they had the original number of residents, but this subsidy would be reduced each year and end altogether after 6 years. Conceptually, hospitals could use the demonstration funds to cover the costs of practitioners to replace the physicians in training. Participation by a hospital was voluntary.

The demonstration project was greeted with great enthusiasm by the teaching hospitals in the state and hospitals with about 75% of all the residents training in the state initially agreed to participate. However, participation has dropped off sharply. After the first 3 years of the demonstration project, the number of residents training in the state had decreased by about 5%; however, since most hospitals have dropped out of the demonstrations, few if any, additional cutbacks are expected. While this is a modest decrease, it is a reversal of the longer-term trend. Nationally, during this period the number of residents in training outside of New York was stable; indicating that the demonstration may have been the primary factor contributing to the downsizing.

The reasons why most hospitals decided to drop out of the demonstration are informative. Many hospitals found it very difficult to reduce residents to the extent required by the demonstration. They found that alternatives were hard to find and/or expensive. There was also great resistance by residency directors and chiefs of service who were very accustomed to using residents. Financially, many hospitals concluded that residents were a cost-effective approach even when GME reimbursement was reduced significantly. There was also concern with the loss of status if residency programs were cutback or reduced. Finally, many in the medical education community were not convinced that there was going to be a surplus and many cited that the new physicians had little trouble finding jobs.

The BBA also included a provision to permit downsizing demonstrations similar to the one in New York. However, there is very little interest by teaching hospitals in the US.

Modifying incomes of practicing physicians

In the open market system of the US, medical students and physicians in training can (and do) respond to opportunities in the practice marketplace. For example, in the early 1990s, in response to reports in the popular press that there were few jobs for new anaesthesiologists, the number of medical students and residents selecting the specialty dropped off sharply and quickly. While job opportunities and income potential are not the only factors considered by medical students and residents in the selection of a specialty, they are important factors, especially in light of the very high cost of medical education in the US.

For years it has been noted that non-primary care specialties, especially those that are procedure-oriented, receive higher and better reimbursement than those in primary care specialties. This can provide a disincentive for physicians to select primary care specialties. To try to address this imbalance, the Medicare system introduced a major adjustment of physician reimbursement based on a new relative value scale (RVS) in the 1980s. While this did lead to an increase in the incomes of primary care physicians and a reduction for some

specialties, non-primary care specialists continue to have higher incomes than their primary care counterparts. For example, in 1999 the median income of primary care physicians completing training in New York with confirmed practice plans was \$106,000 compared with \$135,000 for non-primary care physicians. (Center for Health Workforce Studies, 2000)

Another effort in the US to adjust the income of practicing physicians as an incentive to address workforce needs is the policy of providing higher reimbursement under Medicare for physicians practicing in federally designated geographic primary care Health Professional Shortage Areas (HPSAs). Under this policy, physicians practicing in these areas are eligible for a 10% enhancement in their fee-for-service reimbursement rates. While this policy appears to be helpful, since it applies only to Medicare, its impact is limited. The policy might be more effective if it applied to all payers of care and if the adjustment were greater.

Government regulatory approach

This is not a preferred approach in the US. There are a number of significant regulations at the national and state level that impact on the GME and on physician workforce planning, but they are generally limited in scope.

Among the more significant regulations may be those related to international medical school graduates (IMGs). IMGs are a significant proportion of the physician workforce in America, representing 22.5% of the practicing physicians in 1998 and a higher percentage of those entering residency training (COGME, Fourteenth Report, 1999). Thus, US immigration policies and regulations can have a major impact on the total supply of physicians. However, in general, immigration policies have not been used as an explicit tool for workforce planning. Concerns with potential shortages have historically led to more liberal immigration policies but it has proven difficult to tighten up those policies even when there is concern about a potential surplus of physicians.

IMGs with temporary visas, who would otherwise be required to return to their native country, are allowed to stay in the US if they practice in an underserved area as specifically designated for the program by a federal agency (or if they continue in training). While several agencies have taken advantage of this provision, the main federal agency responsible for addressing workforce and access issues (the Health Resources and Services Administration) does not participate.

Several states have taken steps to increase the proportion of primary care physicians being trained in their state; some have used a regulatory approach. For example, several states have mandated that their publicly supported medical centers have a department of family practice. In California, the University of California signed an agreement with the Governor in the mid 1990s to train half the physicians they train in primary care specialties. These state efforts appear to have encouraged and supported efforts to increase the number of physicians in primary care specialties.

Finally, New York State, as noted earlier, has limited the hours worked by residents to 80 hours per week. While this demonstrates that states can use regulations to impact on

working conditions and hours, in general, they have been reluctant to do so, perhaps in fear of being accused of interfering with academic freedom.

Assisting the marketplace: reports, task forces and commissions

Reports, task forces and commissions can have a major impact both through the formation of new public policies and through their influence on organizational decision makers, such as medical schools and teaching hospitals as well as individuals, such as medical students and physicians in training.

As noted earlier, after the GMENAC report in 1980, the allopathic medical schools limited the number of medical school students for the next 20 years. After the reports of few jobs for anesthesiologists in the early 1990s, the number of residents training in the specialty dropped sharply.

4. CONCLUDING COMMENTS

Physician workforce planning

There is no system for workforce planning in the US and a formal, highly structured system is not on the horizon. Currently, there is not even consensus as to whether the nation should be educating more or less physicians at the medical school level (Mullan, 2000) or at the GME level or whether we need a higher percent of physicians in primary care specialties (COGME, 14th Report, 1999). The US is likely to try to reach some modest degree of consensus through research and analysis as to a preferred general direction, and this is likely to motivate change in that direction. In the absence of political support for a comprehensive planning process, the US is also likely to continue to promote incremental change through modest regulations and financial incentives to support any consensus that develops from additional research and analysis.

Educational reform

There is an effort underway to assess and modify the training of physicians in the US. This effort is being led by the education sector itself with some prodding and support from the government. The accrediting bodies, such as the ACGME, are exploring approaches to measuring outcomes and improving the education and training process.

There is also a growing effort to promote training outside of teaching hospitals (COGME, Thirteenth Report, 1999). This includes efforts by the medical education field to find ways to assure a quality education even at a distance from the medical center and the teaching hospital. Improvements in telecommunications, information systems and other advances in technology will greatly assist in this effort.

Government is also being supportive by trying to improve the funding for training outside of teaching hospitals. To date, this effort has been hampered by the current structure of financing of GME that is tied to hospital reimbursement. There has been much discussion and policy debate over the past few years regarding the need to revise the financing of GME. This is an ongoing discussion.

The indentured service/apprenticeship model for training physicians

This model for training, despite its shortcomings, has generally served the US well. It has helped address several issues, such as care for the uninsured, and has been a major source of physician services and financing for academic medical centers. The nation is not likely to support a drastic revision of this system, although some changes are urgently needed. Some changes are likely to increase attention to educational needs and the personal needs of residents. The nation is also likely to find ways of supporting training outside of teaching hospitals; but this is likely to continue to be under the indentured service/apprenticeship model.

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