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THE CASE FOR GRADUATE MEDICAL EDUCATION AS A PUBLIC GOOD

Background Paper

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What is it?

Graduate medical education is the phase of medical education that prepares physicians for independent practice in a medical specialty. Education and training are provided through accredited residency training programs at teaching hospitals and other approved health care facilities, including ambulatory care settings. Graduate medical education involves both the acquisition of detailed factual knowledge and the development of clinical skills and professional competencies in a medical specialty. Residents are physicians in graduate training who acquire clinical experience, knowledge, and skills by participating in a structured curriculum that integrates classroom educational activities with the direct provision of patient care. Residents learn to diagnose and manage patients under the guidance and supervision of teaching faculty, attending physicians, and senior residents. Training periods range from three to seven years, depending on specialty. During the course of training, residents assume progressively greater responsibility for patient care with decreasing levels of supervision, consistent with their individual professional growth (1).

Unlike students entering other kinds of graduate education, those entering graduate medical education already have successfully completed four years of college AND four years of post-college medical school. During their third and fourth years of medical school they must complete required and elective clerkships (full-time clinical assignments) averaging 6-12 weeks each at affiliated health care organizations where they observe and begin to participate in patient care provided by the various medical and surgical specialties. Physicians entering an accredited residency training program already have received a doctoral degree (MD), have successfully satisfied many of a series of certification and licensing examinations, and in most states have a license to practice medicine in a postgraduate medical training program.

Why is it important?

Graduate medical education is a public good—a combination of special activities that benefit all of society, not just those who directly purchase or receive it. The public benefits from having well-educated, highly trained physicians who meet high standards of clinical competence. Physicians-in-training obtain hands-on experience in providing direct patient care, while patients are assured that care is provided under the direction and supervision of teaching physicians and high standards of quality are maintained. Further, society benefits from having settings that
foster medical innovation and research and that facilitate the development, testing, refinement, dissemination, and integration of scientific and technological advances. Teaching facilities also often provide continuing medical education for practicing physicians, enabling them to maintain and expand their medical knowledge and clinical skills and thereby enhancing the quality of care in the community. Like other public goods, graduate medical education requires public support and might not survive if funding depended solely on market forces.

What is the problem?

Maintaining the facilities, staff, and services associated with programs for graduate medical education involves substantial costs that cause patient care charges to be higher at teaching hospitals and other settings fostering graduate medical education. Consequently, facilities that provide graduate medical education are typically at a competitive disadvantage in today's increasingly price-conscious health care environment. As more and more patients enroll in managed care plans, teaching facilities are forced to accept lower per patient payments or lose the patient base needed to sustain viable educational programs. In seeking to direct patients to the most cost-effective settings, managed care plans increasingly utilize teaching settings primarily for care of the most severely ill patients or those requiring higher levels of expertise and services not available at non-teaching settings. Because managed care entities account for larger numbers of insured patients and channel enrollees to predominantly non-teaching settings, the ability to spread graduate medical education costs among payers is reduced.

Concurrently, Medicare and Medicaid payments to hospitals are being restricted, and budgetary pressures to reduce government spending at all levels are limiting the governmental funding that supports graduate medical education. The combination of these pressures on health care payments from both the private sector and government is eroding the financial foundations of the institutions that conduct graduate medical education.

Why should everyone be concerned?

Even individuals and families that are healthy and do not require patient care services from a facility where graduate medical education takes place, benefit from having such settings in their community. Everyone benefits from the assurance that in a medical emergency, highly skilled medical and surgical specialists will be available to provide whatever care is needed at any time of the day or night. Patients may never need the high level of life-saving specialized care or the advanced technological equipment that is often available only at teaching hospitals, but want those services to be available, nonetheless. Patients expect their doctors to be well-trained, clinically competent, knowledgeable about the latest advances in medical science, and familiar with the most up-to-date medical technology. Patients also want their physicians to be able to consult readily with experts with particular skills in the diagnosis and management of a wide range of diseases. They want the assurance that services provided by physicians in graduate training are appropriately supervised and that high standards of quality are maintained.

Employers benefit from having a healthy workforce. Having access to high-quality health care facilities may have a direct bearing on employee productivity. Employers are especially
interested in research that expands medical knowledge concerning the cost-effectiveness of care and promotes evidence-based medicine.

Regardless of their personal health, all members of a community should also want assurance that health care services are available to everyone, treatment is provided to reduce the risk of communicable diseases, health care is provided cost-effectively, and facilities are available to provide the highly sophisticated care often needed by the frail and elderly.

**What are the benefits to patients from obtaining health care services in a setting where teaching takes place?**

There is an excitement, an electricity about a place of higher learning that cannot be matched elsewhere. Teaching facilities provide an ideal setting for clinical trials to develop and test new innovations. Cutting edge treatments, diagnostic procedures and techniques, and advanced therapy protocols are conducted in a place where researchers devising such modalities often are in residence.

If it is true, as it most certainly is, that the best way to learn is to teach, then patients will get only the most superb care from teachers of medicine in a university hospital. Indeed, such training programs must meet special accreditation standards that involve particular attention to quality assurance, providing additional safeguards for the quality of patient care.

In this era of the second opinions, educational settings encourage innovative thinking by trainees, fostering environments for suggesting and for testing diagnoses that otherwise might not be considered. The teaching environment offers a system of checks and balances in which patient care is reviewed and thoroughly discussed by interns, residents and teaching faculty.

There are philosophical reasons as well: participating in the training of new physicians enables patients to do something beneficial for the community and for other patients with similar illnesses or injuries. Support for such programs helps humanity in an incomparable way—many teaching facilities serve inner-city underserved areas.

**What accounts for the higher costs of patient care at teaching hospitals?**

Although costs appear to be higher at teaching hospitals than at non-teaching settings, issues of quality and efficiency must also be taken into account. A recent study found that when adjustments are made for severity of illness, patients at large teaching hospitals have a lower risk of in-hospital mortality and lower length of stays than patients in smaller teaching and non-teaching hospitals (2).

The costs of post-graduate residency training include not only the direct costs of salaries (or stipends) and fringe benefits for faculty and residents but also the costs of classrooms and educational materials. Indirect costs involve costs of supervision, caring for indigent patients; overhead, and other costs associated with an educational environment, such as advanced technology, a library, and added administrative costs related to obtaining and verifying credentials, accreditation and residency/fellowship appointments.
Why do costs vary so much among teaching hospitals?

The direct costs of graduate medical education (salaries and fringe benefits for residents, faculty and administrative and clerical staff, classroom space, and allocated institutional overhead costs such as electricity and maintenance) are reported to range from $16,000 to $150,000 per resident per year. Congress has directed the Secretary of the Department of Health and Human Services to conduct a study to determine why graduate medical education costs vary so widely. The Balanced Budget Act of 1997 also calls for a cap on the number of interns and residents counted for Medicare reimbursement and phases in reductions in Medicare payments for hospitals with graduate medical education overhead that is more than 75 percent above the average graduate medical education overhead.

Appropriate graduate medical education costs need to be better identified and reported accurately. However, there are many possible explanations for the wide range of reported graduate medical education costs.

- There are differences in accounting methodologies among institutions.
- Differences in costs in the 1984 base period used by Medicare in determining direct costs have been perpetuated.
- The numbers of residency training positions have greatly expanded, but not equally among institutions.
- Teaching hospitals that educate medical students (i.e. offer clinical clerkship programs) absorb additional costs not incurred either by other teaching or non-teaching hospitals.
- Hospitals bear varying shares of the costs of training at ambulatory sites.
- There may be legitimate regional variations in costs.
- There are differences in academic, research, and patient service missions among hospitals.
- Major factors could include the size of the teaching facility, governance of the hospital (e.g., public or private, for-profit or not-for-profit), number of residents, patient population served, indigent care provided, and the extent of highly specialized and tertiary care services provided.
- Other contributing factors might include differences in numbers of employees, labor costs for support personnel, work rules, limits of job descriptions, and the age of facilities.

Why should the public support the education of physicians who will earn high incomes?

Having well-educated and highly trained physicians benefits the public, not just the individuals being trained. Current public financial support for graduate medical education is linked to the provision of patient care services by residents. Public funds do not go directly to residents either in the form of scholarships, loans, or subsidies. Instead, residents receive a stipend ranging from $30,000 to $43,650 per year through their residency program, in partial recognition of the high level of professional services they provide, but far less than the incomes earned by many other professionals with less post-doctoral education. Residents provide direct patient care for extended periods of time. The average workload for all first-year residents in 1996 was 58.1
hours. First-year residents in internal medicine/pediatric programs averaged 70.5 hours, while those in general surgery averaged 80.6 hours per week. The maximum number of continuous hours a resident is allowed to remain on duty averaged 24.5 hours (3).

Physicians also incur substantial opportunity costs during the seven to eleven years required for post-college education and training. During these productive years, when their contemporaries are actively engaged in establishing businesses, building careers, or otherwise recouping their investments in education and training, physicians are foregoing income and postponing their career advancement.

Any proposal to impose additional financial obligations on residents could create barriers that would limit access to the profession to only the most affluent and those few able to obtain loans from private foundations. Diminished public financial support for graduate medical education would undermine efforts by the profession to recruit students from minority and underserved populations and could Foreclose opportunities for medical careers to students from lower and middle income families.

Finally, although physicians as a profession traditionally have been well compensated, the marketplace for physicians is becoming increasingly competitive, and there are no guarantees of future earnings or employment. Indeed, recent data indicate that growth in physician incomes has leveled off and earnings, particularly in some specialties, have begun to decline.

**How is the education of physicians different from the education of lawyers, architects, and other professionals, who generally pay for their own education?**

Medical students and their families do pay for education leading to the doctoral degree in the same manner as students aspiring to become lawyers and other professionals. The intensity and length of professional training required for physicians is unlike that of any other profession. Suggestions that physicians should pay tuition for their post-graduate education fail to recognize the nature of graduate medical education or the exceptional commitment of energy, time and money that physicians-in-training are already required to make. By the time a physician enters residency training, he or she has already accumulated substantial educational debts in the course of at least eight years of college and medical school. Repayment of these debts typically cannot begin until completion of post-graduate training, an additional period of three to seven years.

The average cost of four years of education at a private college today (including tuition, room, and board) is $70,525 (4). In 1996-97, tuition and fees at public medical schools averaged $9,921 per year for in-state students and $21,936 per year for out-of-state students. At private medical schools, tuition and fees averaged $23,644 per year for state residents and $25,407 per year for non-residents. Note that these figures do not include the cost of room and board. Approximately 83 percent of medical school graduates are in debt when they enter residency training; the average debt for the class of 1997 was about $80,000. For those who graduated from private medical schools, the average indebtedness in 1997 was almost $100,000 (5).

All states require physicians to complete a prescribed educational and training program in an accredited residency training program in order to be fully licensed to practice. Residency training
requirements range from three to seven years—a period of post-doctoral training longer than for any other profession. Physicians seeking subspecialty board certification must also complete a fellowship program, necessitating additional years of intensive training. In a sense, this is not unlike training or apprenticeship costs absorbed by other public or private organizations employing professionals, however the period of education and training is much more defined and much more extensive, and the compensation for residents is much lower. Further, unlike the absorption of professional education and training costs in other professions, such as on-the-job training for lawyers and architects, much of the cost of graduate medical education is separately identifiable and not equitably shared among all payers. Although Medicare and the VA reimburse graduate medical education costs, other payers increasingly seek to reduce health care expenses by directing patients to lower cost providers.

Why should public funds continue to support the training of physicians when there are more than enough physicians now and surpluses are projected through 2020?

Projections of future physician supply assume continuation of current trends. Changes in physician lifestyles, productivity, and practice arrangements will affect future workforce requirements in ways that are difficult to predict. New diseases, advances in medical science, changes in medical practice, changes in patient demand for or access to health care services could also influence future workforce requirements in unpredictable ways. A substantial disruption in funding would certainly alter current workforce projections. It should also be recognized that there is a continuous entry and exit in the profession; that is, new practicing physicians enter and others leave due to career changes, retirement, or death. There is a constant need to train physicians for the future. Medical knowledge is also rapidly expanding, and the nature of training changes correspondingly. Research will lead to new therapies, which will further change workforce requirements. More recently trained physicians will have skills and knowledge not possessed uniformly throughout the existing talent pool.

Financial support for graduate medical education also enables physicians to enter medical specialties, such as general internal medicine and other primary care specialties, that are needed to meet the nation's health care needs, but which are not the most financially remunerative. Rising student educational costs or increased indebtedness due to loss of financial support for graduate medical education could force greater numbers of new physicians to choose medical careers in over-subscribed, high income specialties, thus further distorting the nation's maldistribution of physicians among specialties.

Why shouldn't public funds be used only to support the education of physicians in specialties in which there are shortages, to provide educational opportunities for students who are financially disadvantaged or from underrepresented groups, or in exchange for service in underserved areas?

The educational pipeline is extremely long. Those specialties predicted to be in surplus or shortage today could face quite a different outlook ten or more years from now. Needs also change quite rapidly, and the assignment of public funds often cannot respond to these changes nor anticipate newly evolving needs with the alacrity that could be required. The physician workforce must be flexible enough to adapt to and deal with emerging health threats. The AIDS
epidemic, emergence of multi-drug resistant tuberculosis, and outbreaks of Ebola fever and Lyme disease, all required physicians with special expertise and health workforce needs that could not have been predicted.

Efforts should be made to enhance educational opportunities for students who are financially disadvantaged or from underrepresented minorities. It is reasonable to require "public service payback" from those individuals who have received a publicly funded medical education (up to the MD degree). This would further amplify the public's "return on investment." Any proposal to tie funding support for graduate medical education to a compulsory period of service should apply equally to all those who receive post-graduate training, since all benefit at least indirectly from public funding support. Tying educational support to service is a concept embodied in the National Health Service Corps and the Uniformed Services University of the Health Sciences (USUHS). Most residency training already involves considerable amounts of service to poor and indigent patients. Indeed, the 1998 Residency Review Committee requirements for internal medicine state that the graduate medical education training experience should include exposure to caring for patients from disadvantaged socioeconomic populations.

Funding should also be provided to assure that sufficient numbers of physicians are trained in those specialties that are most needed and those for which there are expected to be shortages. The aging of the population, particularly the large "baby boom" population over the next 20 to 30 years, will further increase the need for primary care physicians, especially for physicians with expertise in geriatrics and complex diseases.

**Why should for-profit health care organizations be expected to contribute to the cost of graduate medical education?**

For-profit health care corporations sometimes argue that they already pay their share in taxes to fund expenditures for public goods such as graduate medical education and should not be expected to contribute further. However, for-profit health care organizations derive a disproportionately high value from the health care system compared to non-health care related firms. They benefit directly from having a pool of well-trained physicians and other health care professionals, and their subscribers benefit from having teaching and research facilities available and also from having well-trained health professionals. Graduate medical education programs are also responding to the special training needs of residents for entering capitated or managed care practice, and managed care organizations rely on residency training programs for information about trainees for credentialing purposes. Consequently, they should pay more, just as the trucking industry pays more in highway taxes and the paper industry is required to plant more trees.

Private corporations have incentives to increase profits for their shareholders and not to return funds voluntarily to maintain a system that benefits all of society. State and federal action mandating contributions to a graduate medical education trust fund would be necessary to ensure that for-profit organizations participate in a graduate medical education funding system and pay their equitable share.
Why should other payers support graduate medical education at teaching hospitals, especially if they seek to send most patients to non-teaching settings? If patients can be treated at lower-cost non-teaching settings, shouldn't they be sent there? What's wrong with paying for services at teaching hospitals only as needed?

All payers depend on high-quality medical graduates, medical research, and technical advances from teaching institutions to meet societal demand for a high standard of health care. All payers also derive value from this system and should share in the requisite investment in education and research.

Neither teaching hospitals nor training programs would survive if they were sent only the most complex patients. A patient mix consisting only of the most severely ill patients would increase teaching hospitals' costs and place them at a competitive disadvantage in competing for contracts with managed care organizations, private insurers, and the Medicare program. Viable graduate medical educational programs must expose physicians in graduate training to a full range of patients to provide education of sufficient scope and breadth to assure broad competencies. Failure to expose residents to the requisite patient care experiences would result in poor quality health care and the training program's loss of accreditation.

Teaching programs often serve as providers of health care for inner-city populations that otherwise are under-served. They provide substantial amounts of uncompensated care for poor and indigent patients. However, graduate medical education is the lynch pin for these inner-city "safety net" hospitals, and they cannot survive if their educational programs are not adequately funded. The demise of these hospitals will result in unrecognized and untreated health problems among disadvantaged populations that will increase the risks of epidemics and other public health hazards with great potential for overall societal damage. The costs of providing graduate medical education and uncompensated health care must be supported or teaching facilities will go bankrupt.

Conclusion

Graduate medical education is a unique public good that benefits all of society and must be financially supported by all who pay for health care services. Graduate medical education provides intense educational experiences and supervised, hands-on training required to prepare physicians for clinical practice. Whether provided in an inpatient setting at an academic medical center, at a community hospital or at an outpatient setting such as an ambulatory clinic or physician's office, additional costs are involved and these costs are substantial. Yet, in an era of curtailments in federal and state spending and increasing cost competition in the medical marketplace, financial support for graduate medical education is eroding. Meanwhile, medical students are incurring staggering amounts of debt for their undergraduate and medical school costs that continue to mount while they forego current earnings in order to obtain further requisite graduate medical education and training.

Unless there is continued, broad-based funding to support graduate medical education, with all-payers sharing in funding the costs of graduate medical education, access to the medical profession will increasingly be available only to families of the very affluent and the fortunate
few who are able to obtain financial support from private foundations. Efforts to maintain opportunities for students from lower and middle income families and to increase ethnic and racial diversity will be thwarted. Further, without adequate financial support, teaching facilities will be unable to continue to perform their missions and new physicians will be forced by financial necessity into fields with the greatest income potential rather than those specialties and areas where there are shortages.

All patients and all members of society should be concerned that the nation's system of graduate medical education is preserved, that the high standards of quality required for patient care services provided by resident physicians are maintained, and that opportunities for entry to the medical profession are available to the best qualified candidates.

References