PERSPECTIVE

Economists On Academic Medicine: Elephants In A Porcelain Shop?

The strict dictates of economists should be held at bay until either universal coverage relieves academic medicine of its social mission or continued financing is assured in advance.

by Adepeju L. Gbadebo and Uwe E. Reinhardt

THE NATION'S academic health centers (AHCs) educate and train our health professionals, and many from other nations. They provide cutting-edge tertiary care for Americans and for many desperate foreigners who have lost all hope for relief at home. Finally, they are the locus of the basic and applied biomedical research that advances the state of the art in medicine for the world.

AHCs' highly skilled clinicians and researchers are dedicated and not excessively paid—certainly not by the standards of their intellectual peers in other fields. Furthermore, in a nation whose political leaders have become comfortable with having health care be a private-consumption good to be rationed by price and ability to pay, academic medicine remains the most important champion of the idea that health care is inherently a social good to be made available to all, rich and poor.

Academic medicine demonstrates its allegiance to this ethical precept by having become, by default of both public and private health insurers, the cornerstone of the nation's safety net for the uninsured poor. It is this informal, catastrophic health insurance system that emboldens politicians to assert, with a straight face, that "health insurance is just Washington-speak"—that "to be uninsured" does not mean "to go without care."[1]

Persuaded by the virtue of academic medicine's three-prong social mission, convinced that the mission was being pursued at world-class standards of excellence, and excited by diagnostic and therapeutic innovations, both the public and private sectors had for decades shown remarkable generosity toward the profession, trusting that resources allocated there would be spent wisely. For example, it was deemed perfectly acceptable that AHCs would extract sizable profit margins for some of their services to subsidize other components of their social mission.

The Social Mission In Peril

Two distinct forces now threaten this decades-old arrangement between U.S. society and academic medicine. First, the onset of managed competition, coupled with tightly managed care, sucked academic medicine into the vortex of market forces that have little patience for research, teaching, and hidden cross-subsidies for charity care. Forced to compete strictly on the price of patient care with physicians and hospitals pursuing much narrower social missions, academic medicine now finds it difficult to cross-subsidize out of patient care margins its other social missions—especially the expensive safety net.

Second, proposals to privatize cost control for Medicare through premium support have put the spotlight on Medicare's traditional

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support of graduate medical education (GME). The leaders of academic medicine have always justified these subsidies using two premises that have never been questioned: first, that GME saddles teaching hospitals with extra costs that warrant coverage through a public subsidy, because, second, medical education is a public good.

In their paper, economists Joseph Newhouse and Gail Wilensky question both assertions. Relying on the standard theory of occupational training, they argue that trainees themselves typically bear the cost of training in the form of compensation far below the net revenues their employment yields their employers and that direct public support of GME is not really warranted.

Formally, one can think of this proposition as follows. Let R be the extra (incremental) revenue from patient care that a health care facility can earn by employing an additional resident. Let X denote the extra costs associated with the employment of that resident (other than the resident's own compensation, S). These incremental costs include whatever extra outlays can be directly attributed to teaching that particular resident and that would not otherwise be required for proper patient care. Economists make the argument that by virtue of residents' high skills and long hours, the incremental net revenue (R–X) an additional resident yields the teaching hospital typically is greater than or equal to the resident's compensation, S, even in the absence of any tax-financed GME subsidies. On this view, the current federal subsidies for GME simply have tended to expand the profitability of employing residents. That, in turn, has induced teaching hospitals to expand the total number of residents they employ beyond the nation's effective demand for trained physicians, mainly by importing international medical graduates (IMGs).

The leaders of academic medicine find it difficult to recognize their world in this theory. They seem convinced that their GME programs have been expanded not to procure cheap labor for revenue-yielding patient care but primarily to support non-revenue-yielding charity care.[2] Assuming that causation runs from the charitable mission society thrusts on them to the cheap resident labor they hire to meet that social mandate, AHC executives naturally believe that the net revenue (R–X) associated with additional residents typically is negative, not positive, and that the need to pay residents their stipend only makes matters worse. Therein lies their case for public GME subsidies.

It is well known, of course, that replacement of the work of residents with physicians or with nonphysician clinical practitioners would visit substantial additional costs on teaching hospitals.[3] One report estimates this cost at close to $60,000 annually per resident.[4] Some studies do suggest that teaching hospitals view their GME programs as a form of cheap, skilled labor, whatever that labor is asked to produce. However, they address only the cost side of the issue. They do not speak to the fact that the services produced by residents often do not produce any revenue at all and, therefore, do not explore whether the incremental net revenue (R–X) yielded per resident typically is above or below the salary residents are paid.

The sharp divergence of views between economists and academic medicine illustrates, once again, how the problem of the uninsured distorts virtually any discussion on costs and subsidies in the U.S. health care system. Economists are not unaware that resident programs often cross-subsidize other important social missions of teaching hospitals, and they certainly would like these to be funded adequately and explicitly by society. Their concern, as noted, is that the current GME funding for these cross-subsidies has the unintended side effect of expanding the pool of residents beyond the size implied by the nation's projected demand for physicians, because the GME payments made to a hospital vary directly with the number of residents it employs. In principle, economists would like to see GME programs pursue solely the pedagogic needs of the residents and be financed on strictly a break-even basis.

Thus, the sole intent of the policy proposed

by Newhouse and Wilensky is to eliminate the distorted incentives inherent in the current GME program, rather than to reduce the overall funding flow to teaching hospitals or to impair their other social missions in any way. At the same time, each teaching hospital might reasonably wonder whether that change in funding would ultimately reduce its own overall flow of revenue. To avoid that consequence, any such policy ought to be phased in very gradually, preserving budget-neutrality for each teaching hospital separately. Ideally, the policy switch ought to be accompanied also by explicit and full funding for the care of the uninsured, at long last.

Is GME A Public Good?

Newhouse and Wilensky offer in passing an even more startling proposition: that medical education is not a public good in the first place. Because that proposition knocks down one of the main pillars supporting the subsidies toward medical education at all levels, it warrants a closer look.

In economic theory, a bona fide public good has two essential characteristics. First, everyone within reach of it can use it in the produced quantity, without detracting from anyone else's consumption of it (to an economist, the good is "non-rival"). Second, it is technically not possible to exclude people from using the good (the good is said to be "non-exclusive").

Because public goods are "non-exclusive," users can benefit from them without contributing to the cost of their production. In a free market, this potential for freeloading typically leads to the production of an inefficiently inadequate quantity of the public good.[5] The case for collective tax financing of public goods rests on this potential for freeloading.

Economists view the product of professional training as "human capital" that is subsequently owned by the trained professional and that can be used in the production of professional services, at its owner's discretion. By its very nature, this human capital lacks the essential traits of a public good. It is neither non-rival nor non-exclusive. Therefore, public subsidies toward the production of professional training must be defended with appeal to something other than the assertion that it is a public good.

When the leaders of academic medicine style medical education as a public good, they do not have in mind the economist's technical definition of that term or "freeloading." Rather, they argue that the human capital it produces provides a multiyear stream of highly valued and often critically essential services from which everyone in society benefits sooner or later. Furthermore, physicians' fees often are much below the benefits that their services bestow upon their patients. This surplus of value left with patients is then seen as the rationale for public subsidies toward the training of physicians.

These arguments have intuitive appeal, but intuition can be a treacherous guide. After all, the training of any human being in any skill generates a multiyear stream of benefits of which many other members of society partake sooner or later. Furthermore, every first-year student of economics learns that the producers of any ordinary good or service typically leave huge amounts of social value on the table, in the sense that the prices they actually charge will be much below the maximum prices most customers would have been willing to pay.[6] Yet this so-called unrecovered buyers' surplus has never been seen as a warrant for public subsidies toward the production or ordinary goods and services, let alone the capital that produces them.

Public subsidies toward the production of a service would be in order if the use of that service bestowed benefits on persons other than its actual user. Economists speak here of a "positive externality in the consumption of the service." An immunization against infectious disease benefits not only the recipient but also others who now are less at risk of contagion. It is a private good with a positive externality. So is the rendering of patient care to an indigent person. Besides benefiting the person, it may please others in society to know that the person has been cared for.

When services produced by physicians

yield externalities in consumption, they do furnish a rationale for public subsidies toward the production of these services, although not to the human capital that produced them. After all, not all physician services yield externalities. Very often these services are purely private goods whose total value accrues wholly to one patient and is then split between that patient and the physician. This is particularly so in a nation that increasingly treats health care as a private consumption good. While in a capitalist society physicians are free to deploy their human capital however they wish, it is not clear why its production should be subsidized with public funds.

The preceding discussion implies that, in principle, medical students themselves should finance fully the true cost (but only the true cost!) of the human capital they accumulate during their medical education, perhaps with borrowed capital from a newly established revolving loan fund. Students could then be forgiven their debt in proportion to their subsequent production of health care services with positive externalities (such as service in underdoctored areas or charity care). On this theory, public subsidies toward medical education could be justified only under several distinct circumstances.

First, if the requirement of self-financed human capital in medicine produced fewer than the socially desired number of physicians, then public subsidies might be justified to entice added candidates into medical school. A preferred alternative, however, would be simply to pay trained physicians more or to make their work more attractive in general.

Second, targeted public subsidies would make sense to produce a desired racial, ethnic, or gender mix of the nation's physician supply than would otherwise occur. It would be much easier to provide these subsidies upstream, at the stage of human capital formation, than downstream, at the stage of physician-service production.

Third, and most important, economists could be accused of eclipsing from view certain psychological and social factors not usually accommodated by economic theory. Thus, it might be argued (as many leaders of academic medicine do) that the complete self-financing of medical education with interest-bearing debt from a revolving loan fund would so commercialize the medical profession as to rob it of its traditional ethos to always put the interest of patients above its own. Indeed, it can be argued that even the current extent of partial financing of their education by medical students has so indebted them to place the profession's traditional ethos in peril.

There is something to this argument. Although many of his latter-day disciples look upon medical practice as just another business, none other than Adam Smith, the father of modern economics, argued that society cannot safely subject physicians to the stringent fiscal discipline of freely competitive markets.[7] Of all the rationales for public subsidies toward medical education, this strikes one as the most compelling.

Elephants In The Porcelain Shop

The last point brings us back from the clean sphere of economic principles to the murkier world of policy implementation. It is doubtful that the leaders of academic medicine, recruited from the most intelligent stratum of society, would fail to grasp the basic economic principles of medical education. Nor would they oppose the reform of GME financing if it could be achieved without adverse side effects. The fear in academic medicine is that there would be such side effects, which could have serious consequences for the social mission of the nation's teaching hospitals.

Spokespersons for AHCs, for example, readily admit that the wide dispersion in GME payments depicted in Newhouse and Wilensky's Exhibit 2 cannot be explained by the actual costs of GME. As noted, the AHCs simply have used some or all of that GME money to finance their other social missions, notably indigent care. Although Newhouse and Wilensky call for overall budget-neutrality in making the policy switch they propose, there could be a sizable redistribution of public subsidies among teaching hospitals, with unintended consequences.

In this regard, AHC leaders make a valid point. By their own inability to implement the Judeo-Christian ethic they so often recite in their political campaigns, the nation's politicians have saddled academic medicine with an important social mission that is not asked of their peers in any other nation: the provision and financing of a social safety net that has, so far, kept the United States in the Club of Civilized Nations. While the financing of medical education, in general, and of GME, in particular, may violate the strict dictates of sound economic theory, AHC leaders do have a solid moral platform in their demand that the dictates of economists be held at bay until either universal health insurance coverage relieves academic medicine of a burden it has shouldered on the nation's behalf, or until the continued financing of academic medicine's social mission is otherwise assured in advance.

Such a time awaits the careful and open renegotiation of America's social contract with academic medicine. For its part, society must communicate explicitly what social missions it wants academic medicine to pursue, and to what degree. Society must also be willing to pay reasonable costs to accomplish these missions, in a stable manner that facilitates the prudent strategic management of AHCs. In return, the leaders of academic medicine must inform society what each component of their multiprong social mission really costs, and they must be willing to be held more formally accountable for their use of the resources allocated to them.[8]

In regard to GME, AHC leaders should negotiate a social contract under which GME programs will never be structured as a source of cheap, easily exploitable, highly skilled labor, to accomplish various social missions. Instead, these programs ought to be operated strictly as programs that carefully balance purely pedagogic *desiderata* with the *desideratum* not to extract undue personal sacrifices from idealistic young physicians during precious years of their lives.

This Perspective draws on Adepeju Gbadedo's senior thesis at Princeton University, entitled "Financing Graduate Medical Education: Producing Physicians—Who Benefits? Who Should Pay?" (April 2000).

NOTES

1. Presidential candidate George W. Bush, during the third debate with Vice-President Al Gore, October 2000.
2. See, for example, Greater New York Hospital Association, *Recent Efforts in GME Rightsizing: A Status Report and Literature Review*, October 1999, <www.gnyha.org/gnhy> (19 December 2000).
3. Veterans Health Administration, Department of Veterans Affairs, *Report of Residency Realignment Review Committee*, 7 May 1996, <www.va.gov/resrpt.doc> (19 December 2000).
4. J. Knickman et al., "The Potential of Using Non-Physicians to Compensate for the Reduced Availability of Residents," *Academic Medicine* 67, no. 7 (1992): 429–438.
5. The efficient quantity of a public good is the volume beyond the total collective benefit yielded by an extra unit of the good that would no longer cover the added cost of producing that unit. In theory, the "collective benefit" is represented by the sum over all citizens of the maximum amount each would be willing to pay to see that extra unit of output produced. Unfortunately, in practice that collective willingness to pay is almost impossible to ascertain, leaving the matter to an imperfect political decision.
6. According to standard theory, only the last, reluctant purchaser of a commodity—the marginal buyer in the market—derives from the commodity no greater value than he or she pays for it.
7. A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (New York: Modern Library, 1937), chap. 10, 105.
8. To illustrate, if one divides the total revenues of accredited U.S. medical schools in 1999 ($38.3 billion) by the total number of medical students in that year (66,500), one arrives at revenues per student per year equal to $572,000. Annual tuition and fees ($1.46 billion, or $22,000 per student) account for only 3.8 percent of this total revenue. How much of that total can properly be allocated to the true annual cost of educating a medical student? Put another way, how much of the cost of research undertaken by medical school faculty can properly be allocated to the cost of educating a U.S. medical student? See J.Y. Krakower et al., "Review of U.S. Medical School Finances, 1998–1999," *Journal of the American Medical Association* 284, no. 9 (2000): 1127–1129.