

Paying For Graduate Medical Education: The Debate Goes On

A compromise approach to resolving this issue, which has perplexed policymakers for decades.

by Joseph P. Newhouse and Gail R. Wilensky

PROLOGUE: Medicare's looming financial crisis abated considerably between 1997, when Congress instructed the Medicare Payment Advisory Commission to study the program's graduate medical education payments, and 1999, when MedPAC made the surprisingly radical recommendations explained in the following paper by Joseph Newhouse and Gail Wilensky. But discontent with the ad hoc and convoluted GME subsidy still ran deep. Teaching hospitals' Medicare margins looked suspiciously high. More than a few members of Congress had philosophical problems with subsidizing the education of elite professionals outside of the appropriations process.

Part of the problem, Newhouse and Wilensky observe, revolved around the direct medical education (DME) component of the subsidy—the per resident payments to teaching hospitals. It was in this context that they began to focus on a basic economic principle involved in the compensation of apprentice labor, which appeared to point to a way out of Medicare's DME dilemma. Newhouse is vice-chair of MedPAC and the John D. MacArthur Professor of Health Policy and Management at Harvard University. Wilensky is MedPAC chair and the John M. Olin Senior Fellow at Project HOPE in Bethesda, Maryland.

A response by economists Adepeju Gbadebo and Uwe Reinhardt examines both the theory underlying the MedPAC proposal and the political realities that condition the debate over GME reform. Leaders of the academic medical community explain their opposition to the proposal in two additional Perspectives.

ABSTRACT: The debate over Medicare payments for graduate medical education has been conducted under the premise that such payments cover the added costs of training. Standard economic theory suggests that residents bear the costs of their training, implying that the additional costs of teaching hospitals are not attributable to training per se but to some combination of a different patient care product, unmeasured case-mix differences, and the costs of clinical research. As a result, payment for the additional patient care costs at teaching hospitals should come from the Medicare trust fund; any subsidies for training should come from general revenues.

HOW MEDICARE SHOULD PAY for graduate medical education (GME) has been a source of controversy for much of the program's existence. In 1997 Congress asked three entities—the Department of Health and Human Services (HHS), the Bipartisan Commission on the Future of Medicare, and the Medicare Payment Advisory Commission (MedPAC)—to provide advice on changes needed in federal policy affecting GME. In this paper we put forth our views on the appropriate relationship of Medicare payments to teaching institutions.

This thinking formed the basis of the August 1999 report by MedPAC to Congress on this subject.¹ Any analysis and policy conclusions presented here that go beyond this report should be regarded as the opinion of the authors and not necessarily reflecting the view of other commissioners.

'In The Beginning...'

Medicare has always made special payments to teaching hospitals. The legislation that created Medicare recognized that the educational function both enhanced the quality of care in an institution and increased its costs; it recommended that the Hospital Insurance (HI) program (Medicare Part A) bear part of the net costs of such activities.² Although we think that there has been confusion about the causal relationship between education and costs and therefore about exactly what Medicare has been buying with these special payments, we and MedPAC also believe that teaching institutions provide enhanced quality of care and that payments to these institutions need to reflect their higher costs.

Initially, payments to institutional providers under Medicare were based on a cost reimbursement system. Hospitals and other types of facilities were reimbursed according to Medicare's share of "allowable" expenses. This type of reimbursement required separating patient care costs from costs for various other activities because some costs were not allowed, such as clinical research and advertising to consumers.

In general, to be allowable, costs had to be considered both neces-

sary and related to patient care. However, because Congress had made explicit allowance for Medicare to cover a portion of the cost to the hospital of operating a training program, costs for residents' salaries and in some cases salaries for faculty and program administrative staff were also included. Medicare then paid its share of such costs.³ Payments to teaching hospitals did not initially distinguish between training and patient care costs, although hospitals were required to account for these costs separately.

The distinction between direct GME costs (such as salaries paid to residents and supervising faculty) and indirect GME costs (the higher costs per case observed in teaching hospitals not directly attributable to residency programs) was made in the late 1970s, but it was not put into law until 1982. This distinction resulted from efforts to limit the growth in routine patient care costs per patient day, which forced a decision on whether and how to account for teaching hospitals' higher costs. When the inpatient hospital prospective payment system (PPS) was adopted in 1983, the distinction was codified into law. The payment for direct GME was viewed as covering Medicare's share of physician training, although the amounts paid were based on prospectively set per resident amounts multiplied by Medicare's share of days spent in the hospital.

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Even after the direct GME costs were subtracted, teaching hospitals had higher costs per case than nonteaching hospitals had. Teaching hospitals argued that they could not compete with nonteaching hospitals if both were paid the same amount. The indirect medical education (IME) adjustment was intended to cover the higher costs per patient day in teaching hospitals. The costs were presumed higher because teaching hospitals offered a broader array of technically sophisticated services and saw sicker patients whose resource needs were not fully captured by the PPS, but the source of the higher costs remains murky. The IME payment pays a percentage add-on to each diagnosis-related group (DRG) that increases with the resident-to-bed ratio at a given hospital.

The IME payment may have been intended to level the playing field between teaching and nonteaching hospitals, but because the add-on increased directly with the resident-to-bed ratio, it had other consequences as well. Particularly when combined with the direct GME payment, which also increased with the number of residents, Medicare payments became a powerful force to increase the number of residents employed by a hospital.

In the 1980s the number of first-year residents did not change much, but the total number of residents grew as training periods lengthened (Exhibit 1). In the early 1990s, however, the number of first-year residents rose sharply. The resulting growth in the total

EXHIBIT 1 Medicare Payments And Numbers Of House Staff, By Year, 1980–1999

Year ^a	Spending (billions) ^b	Number of residents		Percent international graduates	
		First-year	Total	First-year ^{b,c}	Total
1980	– ^d	18,702	61,465	21%	20%
1985	\$1.4	19,168	75,514	14	17
1990	4.7	18,322	82,902	19	18
1991	5.4	19,497	86,217	24	20
1992	5.9	19,794	89,368	25	20
1993	6.4	21,616	97,370	27	23
1994	6.7	25,992	97,832	26	24
1995	7.0	24,170	98,035	25	25
1996	6.8	24,608	98,076	24	25
1997	6.9 ^b	24,516	98,143	24	26
1998	7.1 ^b	24,571	97,383	24	26
1999	– ^d	25,498	97,989	26	26

SOURCES: Spending values are unpublished data from the Office of the Actuary, Health Care Financing Administration. Sources for the other values: 1980–1993, Physician Payment Review Commission, *Annual Report, 1997* (p. 352). 1994–1998, R.S. Miller, M.R. Dunn, and T. Richter, "Graduate Medical Education, 1998–1999," *Journal of the American Medical Association* (1 September 1999): 855–860. 1999, S.E. Brotherton, F.A. Simon, and S.C. Tomany, "U.S. Graduate Medical Education, 1999–2000," *Journal of the American Medical Association* (6 September 2000): 1121–1126. The figures on first-year residents in the first and second sources for 1994 and 1995 are discrepant; the second source has been used here. (The figures on total residents are the same.)

^a Academic year beginning in year shown; for example, 1996 is academic year 1996–97.

^b Direct plus indirect, in billions of current dollars. Values for 1997 and 1998 are estimated.

^c Percentage is of graduate year 1 residents with no prior graduate medical education (GME). Those with missing information on medical school (about 2 percent of total) are assumed to be missing at random.

^d Not available.

number of residents and Medicare payments, along with the fragile nature of Medicare's future funding status, has contributed to the continued ferment about Medicare's payments for GME.

Debate About Future Medicare GME Involvement

A variety of rationales have been raised as to why and how the federal government should continue its involvement with GME. Most of the members of the Bipartisan Medicare Commission who supported the reform of Medicare through a premium-support model favored removing any non-medical care functions from the premium payment and dealing with them directly. In the case of education payments, they favored the use of the direct appropriations process, which would make the funds more accountable and could make them compete with other appropriations.

Academic medical centers (AMCs) and their representatives have advocated an all-payer system of financing that would place a surcharge on private insurance premiums in addition to funding by Medicare and Medicaid. Their rationale is that medical education is a public good and that because everyone benefits from a well-trained workforce, everyone should pay. This notion is very different

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from economists’ view of a public good. Loosely speaking, economists view a good as being public if the benefits are equally available to everyone—that is, if consumers cannot be excluded from consumption (for example, the light from a lighthouse).⁴

Some opponents of an all-payer system have argued that a surcharge on premiums is equivalent to a tax to support GME, and a regressive tax at that.⁵ Some supporters of tax financing would argue that the financing should come from general revenue and be made to compete with other claims on public funds. Others would argue that there is little rationale to government financing of GME because physicians remain among the highest paid of all professionals and because there continue to be more qualified applicants to medical schools than spaces and, at least in the aggregate, more applicants for residencies than graduates. To some degree, this debate has become entwined with the debate over how active a role the federal government should play in shaping the makeup of the workforce. Many of those advocating federal support appear to want to use that support to shape the total number of residents and their distribution among specialties.⁶

Throughout the debate, the participants have assumed that the Medicare monies were in fact paying for educational costs. This is not hard to understand; after all, the entire endeavor has been referred to as “graduate medical education.” Moreover, the programs themselves have been termed *training programs*, and they were generally supervised by a director of medical education, whose salary was usually part of the direct GME payments.

We challenge this common assumption, drawing on our backgrounds as economists and making use of economic theory to clarify who bears the cost of training. When viewed in this way, the costs Medicare was and is reimbursing are not education costs at all. Indeed, economic theory implies that it is the resident or trainee who bears the cost of his or her education. This means that there are no education costs for Medicare to reimburse, and the additional costs at teaching hospitals are attributable to something other than medical education. In the remainder of this paper, we sketch both the theory and its implication for Medicare.

Who Bears The Cost Of GME?

From the point of view of economic theory, both undergraduate and

graduate medical education are examples of general training.⁷ General training means that the person being trained can use the acquired skills at many future jobs; it contrasts with specific training, in which the acquired skills are only useful at the firm (or organization) where the person is being trained. General training may take place in a formal educational institution or on the job. Because it is not in the interest of a firm to pay for on-the-job training when the trainee can use the training elsewhere, the theory implies that trainees bear the cost of general training.

On-the-job training, however, often involves learning by doing, and the “doing” means that the trainee produces goods or services that have some value. For example, apprentice carpenters pound nails, apprentice electricians install wiring, and teaching assistants teach undergraduates. If the value of the goods and services produced exceed the costs of the training, the trainee will be paid; otherwise the trainee will pay tuition.⁸ In either case, however, the wage paid or the tuition charged will account for the value of any services provided by the trainee. It is clearly not in the interest of firms to pay trainees more than the value of the services provided net of training costs, and in a competitive market for trainees a firm cannot pay less or it will find itself losing trainees.

In this respect, residents are no different from senior physicians. Consider a hospital or practice plan that is thinking of bringing on a new senior physician. There will have to be an agreement on a salary offer, as well as some specification of the hours of work expected and other conditions of employment, such as the amount of call. In deciding on a salary offer, hospitals or practice plans will consider not only the value of having the given physician on staff, but also any costs it must pay such as malpractice premiums or continuing medical education and, for that matter, fringe benefits such as health insurance. The greater these costs, the less the firm will offer in salary.

Because the training costs for a senior physician are much less than those for a resident and because the services senior physicians provide are more numerous and valuable, they earn more than residents.⁹ At the other extreme from senior physicians are third- and fourth-year medical students. They provide few services relative to the educational costs they impose, and they pay tuition.¹⁰

The Consequences For Medicare

If residents bear the cost of their training, the higher costs per case at teaching hospitals are not attributable to additional costs of training. To what then might they be attributable? There are at least three, not mutually exclusive, possible causes. In some cases, the very fact of a resident’s presence may alter a patient’s course during

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an illness. Because the resident is physically in the hospital during the early morning hours, for example, treatment may go differently than if the resident were not present. Second, there are almost certainly additional costs of patient care attributable to clinical research. Third, there may be unmeasured case-mix differences between teaching and nonteaching hospitals; that is, within each DRG, teaching hospitals may systematically be admitting higher-cost diagnoses. Finally, although we do not think it is so, teaching hospitals could in principle be less efficient on average. We return to this issue below.

When HHS analysts examined how costs per case varied at teaching hospitals, they found a reasonably strong relationship with the number of residents per bed.¹¹ Indeed, this relationship formed the basis of the current IME payment. A statistical relationship, of course, need not imply that the additional costs are causally related to the training those residents receive, and if residents bear their training costs, they are not causally related.

That the relationship is not causal is consistent with events after the IME adjustment was introduced in 1983. In response to the subsidy, teaching hospitals increased the length of training programs and the number of first-year residents. When the slope between costs and the number of residents (the so-called empirical level) has been estimated in subsequent years, however, it has fallen, whereas if the relationship were causal, it should have remained constant, reflecting the added educational costs of the additional residents. From 1989 to 1997 the empirical level fell 30 percent, whereas the number of residents rose by about 20 percent.¹²

It follows that there is no economic reason for Medicare to distinguish direct and indirect medical education costs; both types of cost represent the additional cost of the patient care provided at teaching hospitals. Thus, the direct payments can be treated in the same fashion as indirect costs. Doing so would resolve one anomaly of the current payment method: Direct GME costs are reimbursed at the 1984 level of costs per resident, trended forward by the change in the Consumer Price Index. Reimbursement has been held at 1984 costs plus inflation to preclude hospitals from simply moving other costs to those that are now passed through. As measured by Medicare, however, hospitals had very different levels of costs per resident in 1984, in part because some hospitals had more volunteer faculty

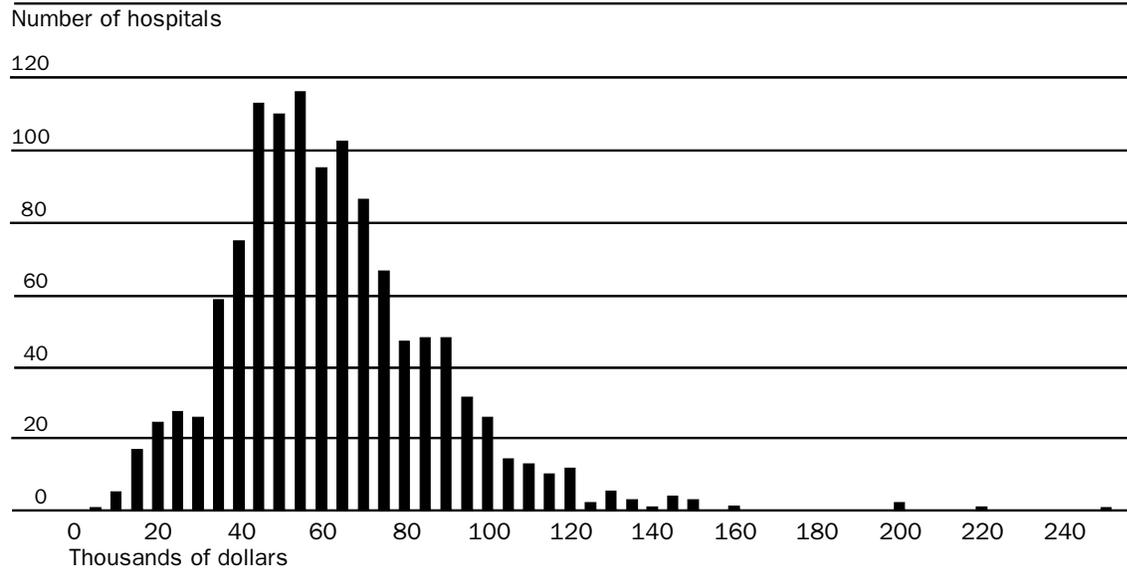
(and thus lower costs) and in part because of differences in hospitals' accounting practices in 1984 (Exhibit 2). Political support for maintaining this variation has naturally varied with where hospitals fell in the distribution, but many impartial observers have called for transitioning to a uniform national amount, possibly adjusted for cost-of-living differences among areas.¹³

At least two arguments support greater uniformity. First, whatever validity the 1984 variation had, it becomes less and less appropriate to base reimbursement on 1984 circumstances as time passes. Second, everything else in the PPS averages variations in costs across hospitals. For example, hospitals differ in their capital costs, but we are now at the end of a ten-year transition when capital costs will be folded into the DRG rate and will no longer be hospital-specific. Direct GME payments remain as the sole feature of the PPS to recognize hospital-specific differences.

Should Medicare Reimburse The Additional Costs?

We listed above several reasons why teaching hospitals, because of their different patient care product, have higher costs. Just because a product is different does not mean that one wants to buy it, but in this case it seems clear that Medicare does. First, for some medical problems, teaching hospitals are the sole source of care. Second, and related to the first point, teaching hospitals are at the apex of various referral networks. Third, every payer we know of has chosen to pay teaching hospitals higher rates (per case or per day) because of their

EXHIBIT 2
Distribution Of Per Resident Payment Amounts To Teaching Hospitals, 1995



SOURCE: Unpublished data from the Medicare Payment Advisory Commission (MedPAC) staff.

“The effect of the subsidies has been to increase numbers of residents in training, disproportionately from abroad.”

higher costs. It seems obvious that we want to preserve the capabilities that are found in teaching hospitals.

If teaching hospitals were less efficient than nonteaching hospitals, one would not want to pay the higher costs, but this explanation of higher costs does not seem plausible. Few payers reimburse hospitals at cost anymore, and thus if teaching or nonteaching hospitals can save a dollar by being more efficient, they have an equal incentive to do so because they can use that dollar saved for other purposes. Also, pure inefficiency costs that are directly attributable to training, such as excess tests ordered by inexperienced residents, will be shifted to residents' salaries, as we have argued above.

The Structure Of The Medicare GME Subsidy

If teaching hospitals were reasonably homogeneous, it seems clear that the PPS would have been set up differently. Instead of increasing payments with the number of residents, as both the direct and indirect GME payments do, it would have simply have had one rate for teaching hospitals and one rate for nonteaching hospitals, just as it in fact has one rate for large metropolitan hospitals and another for all other hospitals.

However, teaching hospitals were and are not homogeneous, and the correlation of costs with the number of residents led to the current system, with payments that are roughly proportional to the number of residents. Structuring the payments in this fashion effectively acts as a subsidy to hire additional residents, since hospitals obtain more revenue by doing so. Consistent with the subsidy, the number of residents expanded greatly, as described in Exhibit 1.

However, according to economic theory, if only U.S. medical graduates had been available and the length of the training period were fixed, the shift in demand for residents that the subsidy induced would have raised residents' salaries but would not have affected the number of residents (since that number would have been fixed). In fact, however, teaching hospitals could obtain residents from abroad and did so. Thus, the effect of the subsidies has been to increase numbers of residents in training, disproportionately from abroad (see Exhibit 1), as well as time spent in training programs.

The subsidy for hiring an additional resident was ended by the Balanced Budget Act (BBA) of 1997, which capped the number of

residents for which a hospital could claim reimbursement for both direct and indirect medical education at its 1996 number. Nonetheless, the subsidy is still in place in the other direction, and given the relative stability of resident numbers since 1993, it is the other direction that is important. A hospital that chooses to reduce its number of residents will lose some of its direct and indirect payments, although the BBA put in place some transition funds for such hospitals so that all of the funds are not lost immediately.

The Politics Of GME Payments

Although we have used economics to arrive at our conclusion that Medicare’s GME payments do not pay for education costs, we end with a word on the politics. We think that our conclusion that there is no meaningful substantive distinction to be made between direct and indirect GME costs is a reasonable compromise between two widely divergent viewpoints. On the one hand, as noted at the outset, AMCs have for many years advocated an all-payer system for reimbursing educational costs, whereas others have questioned why the federal government was financing any educational costs or, at a minimum, thought that such costs should come from general revenues and be subject to the annual appropriations process.

If the additional costs that teaching hospitals write down on their Medicare cost reports do not represent educational costs, that debate is moot. Medicare is not in fact paying for educational costs, so there is no reason to move the direct GME payments to general revenue financing. On the other hand, we already effectively have an all-payer scheme for the additional costs of teaching hospitals, in that insurers determine what use they wish to make of teaching hospitals and what rate they are willing to pay. In our view of what Medicare is paying for, the monies Medicare spends for GME would remain outside the annual appropriation process, but there would be no federally mandated all-payer scheme for teaching hospitals.¹⁴

Similar reasons led to the MedPAC recommendation that the distinction between direct and indirect GME payments be ended and that the additional costs of teaching hospitals, including the cost of residents’ salaries, be recognized through an additional payment for each admission, just as indirect payments are now made.¹⁵ Doing so would also end the large disparities among hospitals in payments per resident for direct medical education.

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NOTES

1. Medicare Payment Advisory Commission, *Report to the Congress: Rethinking Medicare's Payment Policies for Graduate Medical Education and Teaching Hospitals* (Washington: MedPAC, August 1999).
2. J.K. Iglehart, "Medicare and Graduate Medical Education," *New England Journal of Medicine* (5 February 1998): 402–408; J.K. Iglehart, "Support for Academic Medical Centers—Revisiting the 1997 Balanced Budget Act," *New England Journal of Medicine* (22 July 1999): 299–304; Institute of Medicine, *On Implementing a National Graduate Medical Education Trust Fund* (Washington: National Academy Press, 1997); and National Bipartisan Commission on the Future of Medicare, "Building a Better Medicare for Today and Tomorrow" (Unpublished report, 16 March 1999).
3. Medicare's share was defined as its proportion of patient days.
4. Those supporting Medicare payments for GME argue that the payments result in a well-trained physician workforce and hence are a public good, but this use of the term does not accord with economists' use because patients can be excluded from physician services. (Indeed, those who cannot pay, or whose Medicaid insurance pays below-market rates, are at times excluded.) Moreover, on this logic government would pay for all kinds of training, from that of accountants and actuaries to engineers, lawyers, and plumbers. Teaching hospitals also cite the availability of standby capacity such as burn units as a public good, but standby capacity has no necessary connection with a public good, as the examples of parking facilities near sports stadiums show. Such facilities presumptively make a profit but sit empty much of the time. (If, however, society determines that no burn victim should be excluded from being treated at a burn unit, public financing could well be necessary, but this should be a service delivery and not an education program.) Teaching hospitals also argue (correctly) that they treat disproportionate numbers of uninsured patients. Again, however, the link to educational subsidies is remote. In the Medicare context, disproportionate-share payments are in principle directed to this latter function, although the actual payments are a function of Medicaid share rather than uninsured share. By contrast with training, insofar as the output of research is not appropriable, research is a public good.
5. Economists view employer-paid premiums as coming from the total compensation employers are willing to make and therefore coming from the wage bill. Because premiums are a fixed amount per person, they do not rise with income and are thus presumptively regressive, although possible redistribution within the work group makes this conclusion tentative. See J. Gruber, "Health Insurance and the Labor Market," in *Handbook of Health Economics*, ed. A.J. Culyer and J.P. Newhouse (Amsterdam: North-Holland, 2000).
6. See J. Eisenberg, "If Trickle-Down Physician Workforce Policy Failed, Is the Choice Now between the Market and Government Regulation?" *Inquiry* (Fall 1994): 241–249; and U. Reinhardt, "Planning the Nation's Health Workforce: Let the Market In," *Inquiry* (Fall 1994): 250–263.
7. G. Becker, *Human Capital*, 2d ed. (New York: Columbia University Press, 1975).
8. We assume that multiple firms provide training, which is the case for residency training, so that the market for trainees is competitive. We also abstract from the public-sector subsidies to formal education programs, such as state support of public medical schools, that reduce dependence on tuition payments. Such support does not affect our analysis.
9. By training costs for a senior physician, we mean, for example, that a new staff physician will potentially have to learn the ways of doing business at a new institution that will make him or her initially somewhat less productive.

- Usually we would expect such costs to be negligible.
10. The astute reader may have noted a possible objection: The value of services provided by residents over the course of their training net of training costs almost certainly goes up more rapidly than their salary. Because residents tend to spend their entire residency in one training program, however, the program can account for costs and services over the entire residency. Because residents prefer a more even income path over their residency than would be implied by the services they are delivering, they are likely paid more than the value of their services net of cost in their early years and paid less in their later ones. This also implies that lengthening training programs can accommodate an overall rise in resident salaries or training costs.
 11. J. Pettengill and J. Vertrees, "Reliability and Validity in Hospital Case Mix Measurement," *Health Care Financing Review* (December 1982): 101-128.
 12. The source of the 30 percent figure is an unpublished calculation from the MedPAC staff.
 13. IOM, *On Implementing a National Graduate Medical Education Trust Fund*.
 14. The economics of an all-payer scheme are not straightforward. Suppose private payers were asked to pay an amount per resident, just as Medicare has. In the first instance, it is not clear how such a system could work absent rate regulation, since private payers could simply negotiate lower underlying rates with teaching hospitals to offset their additional payments per resident. With rate regulation and an additional payment per resident, we expect the demand curve for residents to shift out yet again unless hospitals were not permitted to expand their number of residents. If resident numbers were not permitted to expand, we would expect that the salaries of residents would not change and the monies would be used by the teaching hospitals for other purposes.
 15. MedPAC, *Report to the Congress*, 9.