HEALTH POLICY

Medicare Financing of Graduate Medical Education

Intractable Problems, Elusive Solutions

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The past decade has seen ongoing debate regarding federal support of graduate medical education, with numerous proposals for reform. Several critical problems with the current mechanism are evident on reviewing graduate medical education (GME) funding issues from the perspectives of key stakeholders. These problems include the following: substantial interinstitutional and interspecialty variations in per-resident payment amounts; teaching costs that have not been recalibrated since 1983; no consistent control by physician educators over direct medical education (DME) funds; and institutional DME payments unrelated to actual expenditures for resident education or to program outcomes. None of the current GME reform proposals adequately address all of these issues. Accordingly, we recommend several fundamental changes in Medicare GME support. We propose a re-analysis of the true direct costs of resident training (with appropriate adjustment for local market factors) to rectify the myriad problems with per-resident payments. We propose that Medicare DME funds go to the physician organization providing resident instruction, keeping DME payments separate from the operating revenues of teaching hospitals. To ensure financial accountability, we propose that institutions must maintain budgets and report expenditures for each GME program. To establish educational accountability, Residency Review Committees should establish objective, annually measurable standards for GME program performance; programs that consistently fail to meet these minimum standards should lose discretion over GME funds. These reforms will solve several long-standing, vexing problems in Medicare GME funding, but will also uncover the extent of undersupport of GME by most other health care payers. Ultimately, successful reform of GME financing will require ''all-payer'' support.

KEY WORDS: **graduate medical education; internship and residency; Medicare; teaching costs; teaching hospitals.**
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Graduate medical education (GME) is a core mission for over 1,500 hospitals and all 125 medical schools in the United States, educating doctors who set world-renowned standards for medical excellence.[1–3] Currently, Medicare supports teaching hospitals with $7.8 billion per year for their GME, while Medicaid funds over $2 billion and the Department of Defense, the Veterans Administration, and private payers also pay for portions of resident physician education.[4] Despite this substantial support, teaching hospitals are struggling financially and their educational mission is under stress. The reasons are multifactorial, and include rapid changes in medical technology, decreased reimbursements for clinical services, increasing uncompensated care, increasing wage costs, and reductions in federal GME payments.[3,5]

As federal policy makers have become concerned about the future solvency of the Medicare Trust Fund, debate has emerged over the appropriate role of Medicare in funding medical education. Accordingly, various authorities have disseminated proposals for reform of Medicare funding of GME. Some discuss underlying philosophic rationales for federal GME funding,[6] while others focus on the redistribution of GME funds or explore the possibility of identifying alternate funding sources for this essential public service.[7–9]

In this paper, we review the history of GME financing and describe systemic problems from the perspective of various interested parties. We review the current proposals and analyze their potential effectiveness in solving the multiple problems afflicting the current system. Finally, we offer specific recommendations for GME reform that address these problems and confront the daunting political realities that complicate substantive policy change.

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THE HISTORY OF GRADUATE MEDICAL EDUCATION FINANCING

A century ago, funding graduate medical education was not complicated. Most American physicians did not pursue graduate training, and those who did usually received only room, board, and laundry. Over time, it became clear that advanced training was useful for enhancing clinical expertise and developing a practice,[10] with most medical graduates entering hospital-based rotating internships,[11] which eventually became a requirement for licensure.[12] The hospitals paid most of the costs for these internships, building these into patient charges. Following World War II, the environment for graduate medical education changed in a variety of ways (see Table 1).

With the establishment of Medicare in 1965, Congress acknowledged the need to support medical education as well as patient care "...educational activities enhance the quality of care in an institution, and it is intended, until the community undertakes to bear such education cost in some other way, that a part of the net cost of such activities (including stipends of trainees, as well as compensation of teachers and other costs) should be borne to an appropriate extent by the hospital insurance program...."[13] Graduate medical education costs were explicitly approved for inclusion in the calculation by teaching hospitals of "reasonable costs," allowing Medicare hospital payments to partially recompense salaries and benefits for house officers, administrative costs for GME, and cost of faculty. Medicare placed no limit on the number of residents reimbursed, so teaching hospitals were able to start new training programs and add residents to existing programs without federal constraint.

Increasing pressure to control hospital costs resulted in Medicare's shift from retrospective cost-based reimbursement to the current prospective payment system based on diagnosis-related groups. Under the prospective payment system (PPS), direct medical education (DME)

Table 1. A Brief History of GME Financing

GME financing before 1940
- Hospitals pay for trainees (since internships were based in hospitals, not medical schools) building the cost into patient charges. Program costs are modest because interns cost little and provide inexpensive, talented labor for teaching hospitals.[10]

1945–1965: the GI bill and rising specialization
- Following WWII. there is a dramatic increase in the number of physicians entering specialty residencies, with the total number of residency positions offered increasing six-fold from 1940 to 1960.[14] This is aided by federal support of graduate medical education under the GI bill, which provides qualified candidates a subsidized residency experience with a generous living allowance, and a subsidy to the hospitals offering residency positions to servicemen. Residency program costs rise in the 1950s as house staff become accustomed to earning more than a nominal stipend; institutions are able to add cost of facility and technology acquisition and educational program to insurance charges.[15]

1966–1981: early medicare and cost-based reimbursement
- With the establishment of Medicare in 1965, Congress acknowledged the need to support medical education as well as patient care. Medicare Part A pays hospitals on a "cost of service" basis. GME costs are explicitly approved for inclusion in teaching hospitals' calculation of "reasonable costs." At this time, graduate medical education financing is effectively an "all payer" system. Private payers reimburse hospitals based on allowed costs or "usual and customary charges" (derived from a cost basis including GME expenses)[15,16] while Medicare paid its share of GME in its per-patient hospital reimbursements.

1982: TEFRA and indirect cost of medical education
- The Tax Equity and Fiscal Responsibility ACT (TEFRA) recognizes increased cost of patient care in teaching hospitals and increases the limits on allowable hospital Medicare costs on the basis of intern- and resident-to-bed ratios, a precursor to IME adjustments under Medicare Prospective Payment System.

1984–1986: Medicare's prospective payment system (PPS)[17]
- Under PPS, DME payments are made through a "per-resident payment" based on the hospital's per-resident cost. The amount is determined by three factors: the hospital-specific per-resident payment amount, the number of full-time equivalent residents, and Medicare's share of the inpatient days for the facility. The per-resident payment is based on cost negotiated in fiscal year 1983 adjusted for inflation and includes salaries and benefits of residents, supervising physicians, administrative and clerical staff, and office and classroom space. Medicare also continues to reimburse hospitals for "indirect medical education costs" related to the teaching hospital role; these costs include increased use of tests and ancillary services, greater severity of illness, increased inefficiencies in teaching, greater concentration of high technology, and differences in types of physicians and payments.[18]

1986–1996: disproportionate share adjustments and IME payments
- In 1986, Congress adds payment adjustments under the Prospective Payment System for hospitals treating a disproportionate share of indigent patients, at the same time reducing the IME adjustment to 8.1%. In 1989, Congress makes substantial changes in the disproportionate share hospital (DSH) formulas, with the IME adjustment further reduced to 7.7%.

1997–2001: BBA and BBRA changes to Medicare GME
- The Balanced Budget Act of 1997 (BBA97) cuts the IME adjustment from 7.7% to 5.5% (to be phased in over 5 years). BBA also limits the total number of residents who can be covered by Medicare payments, caps resident-to-bed ratios, and carves out GME funds from reimbursements to Medicare HMOs. The Balanced Budget Reconciliation Act of 1999 (BBRA99) authorizes steps toward a national DME per-resident payment amount and freezes the IME adjustment at 6.5%. Subsequent legislation in 2000 further reduces inequities in per-resident payment amounts and delays further reductions in IME adjustments.

GME, graduate medical education; IME, indirect medical education.

payments are made through a "per-resident payment" based on the hospital's per-resident cost (see Table 1). A facility may count residents who are in training outside the hospital as long as the facility has paid substantially all of the training costs.[19] Hospital-specific "per-resident payment amounts" varied substantially for a variety of reasons.[4,7,17,20] By 1995, this payment varied from $10,000 to $240,000 per resident with a median per-resident payment of approximately $65,000.[19] These differences have had dramatic effects on DME payments. A hospital with 80 trainees, a per-resident payment of $20,000, and a 0:4 ratio of Medicare to total bed days would receive $640,000. In contrast, the same hospital with a per-resident payment of $140,000 would receive $4,380,000.

There were some additional DME funding changes in the early 1990s. Residents beyond their "initial residency" (defined either as the minimum period of training required for board eligibility or as beyond 5 years of graduate medical education) are counted as only 0.5 full-time equivalents. This policy was intended to constrain the growth of specialty positions. The inflation update was also withheld for specialist residency positions in 1994 and 1995, giving primary care positions (general internal medicine, general pediatrics, family practice, obstetrics/gynecology), a 6% higher per-resident payment.

While Medicare reimbursements for DME were $2.1 billion in 1998, the reimbursement to teaching hospitals for indirect medical education (IME) expenses was far greater, approximately $5 billion (see Table 2).[4] This payment is for Medicare's share of the cost associated with the teaching hospital role, including the increased use of tests and ancillary services, greater severity of illness, increased inefficiencies due to teaching, greater concentration of higher technology, and differences in the types of physicians and patients at the facilities.[18] Documenting the extent of this IME cost has been controversial since the inception of Medicare PPS.[7,21–23] Indeed, Congress doubled the originally proposed IME adjustment from 5.795% to 11.59% for every increment of 0.1 in the resident-to-bed ratio. Thus, a hospital with 1 resident per 10 beds would receive an additional 11.59% in Medicare payments. In 1986, Congress added payment adjustments for hospitals treating a disproportionate share of indigent patients. With the addition of this disproportionate share hospital (DSH) payment adjustment, the IME adjustment was reduced from 11.59 to 8.1% (see Table 1). In 1989, Congress made additional changes to the DSH adjustment and the IME adjustment was further reduced to 7.7%. Despite these reductions, IME payments grew much faster than DME payments during the 1990s (see Table 2).[4]

Continued growth in GME expenses and controversy over the IME adjustment led to dramatic changes with the Balanced Budget Act of 1997 (BBA97) (see Table 1). These cuts were projected to hit teaching hospitals hard, especially large teaching hospitals with high resident-to-bed ratios, which were already struggling with revenue reductions from private payers and loss of market share to nonteaching hospitals. As a result, many well-known teaching hospitals reported dramatic financial shortfalls[24] and subsequent congressional action has held the IME adjustment at 6.5% through fiscal year 2002 (see Table 1). Legislation has also reduced the variations in per-resident payment amount for DME Medicare reimbursements.

Although Medicare has been the chief source of public financing for GME over the past 35 years, the Department of Veterans Affairs (DVA) is another major supplier of GME support, with about 10% of all residency positions funded by the DVA.[4] The Department of Defense supplies another 3,000 resident positions[4] and the new Children's Hospital Teaching Funding, administered through the Health Resources and Services Administration, provides $235 million in support. Some states also provide GME payments, typically through the Medicaid program, totaling $2.4 billion in 1998. New York, Michigan, and California are the states with the largest Medicaid GME payments.[17]

Table 2. Medicare GME Payment to Hospitals ($ Billions)

	IME Payments	DME Payment
1990	2.91	1.76
1991	3.21	1.89
1992	3.67	2.36
1993	4.09	2.55
1994	4.50	2.61
1995	5.10	2.74
1996	5.55	2.86
1997	5.16	2.43
1998	4.99	2.10

COGME Fifteenth Report. "Financing Graduate Medical Education in a Changing Health Care Environment." December 2000.
GME, graduate medical education; IME, indirect medical education; DME, direct medical education.

CONCERNS WITH CURRENT MEDICARE GME FUNDING

The "Front Line" Perspective—Patients, Residents, and Generalist Faculty

For society, there are several benefits of federal support for GME. Foremost is the public benefit derived from education of highly trained and competent physicians. Further, the nation's teaching hospitals and academic medical centers help maintain the health care safety net by serving as the providers of care for much of the low-income and marginalized patient populations.[25,26] The medical innovation and scientific/technological advancement occurring in GME settings are another critical public good accruing to all society. Sufficient support for educational programs is important to ensure appropriate training and supervision, prevent overwork, reduce errors, and optimize the care of residents' patients.

GME funding problems have clear consequences for physicians in training. Residents, adults in their late twenties and thirties, undergo one of the longest apprenticeships of any professionals in the United States—3 to 9 years from professional degree to independent practice. Resident indebtedness, now averaging $85,000, has risen much more rapidly than inflation or resident compensation ($37,383/PGY-1).[27] Under current GME policy, 1983 DME costs are adjusted only by inflation, so institutional resources to increase resident compensation are limited. Under these constraints, residents now may spend their years of advanced training in either financial hardship or exhaustion from moonlighting. Under the best of circumstances, residents have little control over their workload, given the dominance of unscheduled patient illness in their work life. Furthermore, the conditions under which they practice can vary substantially. While some programs ensure adequate supervision, working conditions, and educational content, other programs may struggle to provide the needed resources.

Arguments from traditional economics might suggest the public has no interest in or need to fund the direct cost of medical education.[28] As this argument goes, residents are incompletely trained individuals who are seeking general training from hospitals and who pay for the cost of their education through their labor. Under this line of reasoning, if current public support for graduate medical education is inadequate, then residents will make up the difference through lower stipends, additional labor (either for the teaching hospital or through moonlighting) or personal loans. However, as Gbadebo and Reinhardt state, "Thus, it might be argued ... that the complete self-financing of medical education with interest-bearing debt ... 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 as to place the profession's traditional ethos in peril."[29]

For faculty as well, inadequate GME funding has important effects on the work environment. As discussed previously, while DME payments are based on the hospital's historical estimate of training costs, hospitals are not required to demonstrate that they use these funds to support resident education. Not surprisingly, in many institutions, the financial support for education is not explicit and the critical work of resident training not directly supported. With declining clinical revenues and decreased funding of teaching hospitals, there is often increased pressure on faculty to concentrate on revenue-generating work rather than on teaching. Indeed, there may be negative incentives to devoting physician time to residency program administration, resident instruction, and faculty development. There can also be significant pressures to use residents to increase the financial productivity of the clinical services.

The Educational Program "Middle Management"

Department chairs and program directors must negotiate with hospital administration to secure resources for resident and fellow training, but they have limited leverage in these negotiations. This problem is only exacerbated by the fact that Medicare GME funds are not paid to hospitals in any relationship to what the institutions actually expend on medical education. Variable and idiosyncratic reimbursement of house staff positions by Medicare further complicates this negotiation. Of course, the BBA97 cap on the number of residents funded by Medicare also diminishes the flexibility of program directors and chairs in adapting to new technologic, community, and clinical trends. For example, this regulation complicates shifting resident or fellow positions between institutions to best meet the needs of the educational program.

Medical School Leadership

In the past 50 years, the relationship of medical schools to graduate medical education has been reconsidered. Residents now play a critical role as teaching assistants in the clinical years of medical student education. Furthermore, medical school is now recognized to be a foundational experience, insufficient to prepare a physician for independent practice. By statute, an internship, and by recent custom, a full residency, is required to prepare a physician for 21st-century practice. With this re-examination of the relationship between undergraduate and graduate medical education, there is a growing expectation from residency program directors that medical schools graduate students who function at a predictable level. As medical schools are asked to become accountable for their graduates' capabilities, they seek a greater role in institutional and national GME policy. Increasingly, they also are asking for a reasonable share of the local financial support their hospitals receive for GME. Nonetheless, in most cases, little GME funding flows to the school. Even in university-based teaching hospitals, the transfer of GME dollars to the programs and faculty are individualized, often idiosyncratic, arrangements varying from school to school.

The Teaching Hospital

Teaching hospitals must balance multiple social missions, including specialized patient care, indigent care, teaching, and particularly for academic health centers, research. Due to decreasing ability to cost shift over the past 20 years, teaching hospitals have increasingly relied on GME funding to help sustain their often substantial indigent care and specialized clinical service functions.[29] As GME payments, especially IME, decline, hospitals struggle to cross-subsidize these activities. Even before BBA97, most teaching hospital operating margins were lower than those of less complex nonteaching hospitals.[7] Indeed, for many teaching hospitals, the combination of

DME and IME monies is now insufficient to even cover institutional residency program costs.[20] Although the opportunity to participate in the training of new physicians is a longstanding and fundamental mission for many teaching hospitals, in these financially distressed times, teaching hospital administrators regularly observe, "No margin, no mission."

In addition to IME payment reductions, several other factors confound teaching hospital leadership. Medicare's arbitrary inequities in per-resident payments are a fundamental problem, particularly when combined with new DME costs that have emerged over the years. These new educational costs include increased educational infrastructure required by the Residency Review Committees, resident workload restrictions, understandable resident agitation for enhanced compensation, shifts in faculty cost, and training-related educational and clinical technology. The Medicare reforms that variably underfund some resident positions further complicate hospital support for GME. Recent trends in clinical care create additional financial challenges for teaching hospitals. Increased patient acuity, coupled with shorter lengths of hospital stay, has led to dramatically increased intensity of care for hospitalized patients, with attendant increased costs for staff and critical care services. Rapid expansion of managed care through the 1990s has created fierce price competition in many health care markets, where the increased costs incurred by teaching hospitals win little sympathy.

The Federal Government Perspective

BBA97 directed the Medicare Payment Advisory Commission (MedPac) to study the need for changes in Medicare financing of graduate medical education. As stated in the June 2000 MedPac report, this request was motivated by a variety of concerns. These included the general concern regarding whether the federal government should continue to support GME.[30] A related question was whether Medicare should be the mechanism for federal GME support. Another concern was the substantial variation in Medicare's payments, including hospital and geographic variations in the "per-resident payment amount" so important to determining DME reimbursements. Finally, the MedPac report notes the concerns of many that the current Medicare GME financing mechanism distorts teaching hospital choices regarding the number and specialty mix of residents, as well as choices regarding the appropriate site for training.[7]

The recent 15th report from the Council on Graduate Medical Education (COGME), "Financing Graduate Medical Education in a Changing Health Care Environment," raises some additional concerns regarding the current Medicare GME payment policies. Specifically, COGME notes that paying hospitals for educational costs may impede the development of residency programs in nonhospital ambulatory and managed care settings. Furthermore, COGME notes that the linkage of payments to clinical services furnished for Medicare patients concentrates federal support on those providers with high Medicare utilization; the inevitable result is that little graduate medical education funding is distributed to providers with few Medicare patients, such as children's hospitals and federally qualified health centers. Not surprisingly, COGME is also concerned that using patient care payments to support educational costs is "not an effective mechanism for achieving specific work force goals."[4]

MEDICARE GME PROBLEMS AND PROPOSALS

In reviewing the perspectives of the various parties central to reform of Medicare GME, a daunting list of problems emerges. First, there are idiosyncratic variations in hospital per-resident payment amounts; these will be moderated, but not eliminated, over the coming years through implementation of BBA reforms. Second, the requirement of budget neutrality in recent DME adjustments has precluded meaningful re-evaluation of teaching costs since 1983; there remains no mechanism to recalibrate these reimbursements, a problem compounded by various policies introduced in the 1990s that have led to variable underfunding of resident positions by year of training and specialty. Third, many authorities are concerned that paying teaching hospitals for DME may impede the development of residency programs in nonhospital settings such as community-based ambulatory sites and managed care organizations. Furthermore, serious difficulties with instructional support can arise from the fact that those responsible for resident training control no DME funds. Also, the failure to tie GME payments to actual expenditures on resident education limits institutional accountability for this investment of public monies. Of course, GME revenue is earned without accountability for program outcomes as well.

In the past several years, 5 distinct proposals for financing GME have been discussed. These proposals have been developed by various authorities, including a group commissioned by the Commonwealth Fund, MedPac, the majority members of the Bipartisan Commission on the Future of Medicare, COGME, and the American Association of Medical Colleges.[9] These recommendations are analyzed and summarized in Table 3. In Table 3, we describe each reform and review the source of funding. We also address whether the proposal engages each of the 6 critical problems with Medicare DME as identified above. Our conclusion is sobering; none of the current GME reform proposals adequately address all of these problems.

RECOMMENDATIONS FOR GME REFORM

Thus, another proposal for reform of Medicare GME is warranted. In developing our proposal, we focus on Medicare reimbursement of the direct costs of graduate medical education. We recognize that graduate medical

Table 3. Comparison of Major GME Reform Proposals

	Commonwealth Fund	MedPAC	Bipartisan Commission on the Future of Medicare	COGME	Medical Education Trust Fund (AAMC)
Major points	Calls for strong emphasis on social missions of teaching hospitals Urges that financing method should evenly distribute burden of payment Recommends that financing should not contribute to regional oversupply or specialty imbalance among U.S. physicians	Calls for improvement of case-mix measurement method to more accurately reflect illness severity/inpatient care cost relationship Recommends that developing workforce policy is not a role for Medicare Urges refinement of DRG system Uses "teaching hospital adjustment" in place of DME payment system	Raises question of whether DME should be subject to appropriations process Acknowledges difficulty in differentiating IME costs between teaching and non-teaching hospitals, and so recommends that Congress continue current methodology	Creates a GME fund that combines federal funding with all-payer funds Calls for DME monies to be paid directly to program sponsors Would modify Medicare teaching physician rules to emphasize teaching physician's overall responsibility for patient care and to reduce importance of documentation	Amends Social Security Act to add new title (Title XXII) that would establish Medicare Education Trust Fund Calls for specific premium tax of 1.5% on health insurance premiums
Funding mechanism	All-payer	Use of current funding mechanism (PPS system) Intended to be budget-neutral and to improve accuracy of GME payments	Use of current funding mechanism, but raises question of whether DME should be subject to appropriations process	All-payer	All-payer
Unique characteristics	Emphasis on social missions Site-neutral distribution of trust fund payments Specific attention to safety net providers	Only proposal calling for elimination of DME payments and use of "teaching hospital adjustment"	Only proposal to discuss possibility of subjecting DME to appropriations process Only proposal to recommend exploring funding IME and DSH payments outside of Medicare program Unique level of influence due to standing of former Commission members in Congress	Only proposal to recommend paying DME monies directly to program sponsors Only proposal to recommend modifying teaching physician rules to place aditional emphasis on overall responsibility for patient care and less emphasis on documentation	Only proposal to call for legislation amending IRS code, establishing 1.5% premium tax on all health insurance premiums
Potential to improve the current idiosyncratic variations across institutions in per-resident payment amounts?	Yes	Yes	Unclear	Yes	Yes
Does the proposal in question allow for recalibration of teaching costs to reflect year 2002 realities?	Yes	No	Unclear	Yes	Yes
Authority over DME funds shifted to the professionals responsible for resident education?	No	No	No	No	No
Potential to improve the current problem that resident positions are variably underfunded by year of training and specialty?	Yes	Unclear	Unclear	Yes	Yes
DME payments tied to the institution's actual expenditures on resident education?	Unclear	No	Unclear	Yes	Unclear
Potential to improve the current problem that DME monies are earned without any accountability for program outcomes?	No	No	Unclear	Yes	No

GME, graduate medical education; MedPac, Medicare Payment Advisory Commission; COGME, Council on Graduate Medical Education; DRG, diagnosis-related group; DME, direct medical education; PPS, prospective payment system; IME, indirect medical education; DSH, disproportionate share hospital.

education funding through Medicare supports teaching hospitals and academic health centers in their provision of other important social goods as well.[29] These social goods cannot be delivered by teaching hospitals and academic health centers without appropriate support for the direct costs of graduate medical education, but DME funding alone is not sufficient to support these other missions. We are also concerned that hidden federal support for these social goods through Medicare funding of DME has confused, rather than enhanced, reform of GME policy. Therefore, our proposal (summarized in Table 4) addresses only Medicare funding for the direct costs of graduate medical education.

Accordingly, the following proposal does not address mechanisms for explicit federal support of other critical missions of teaching hospitals, such as care of the uninsured and development and sustenance of clinical research and technologic advancement. Furthermore, we do not propose methods for refinement of payment of indirect medical education expenses. The appropriate calculations of these costs will doubtless involve their own complexity and debate. Certainly there has been evidence that at least during the early and mid-90s, some institutions found they could substantially increase revenue in the form of IME payments by expanding their teaching programs.[31] Also, current Medicare IME policies result in seemingly idiosyncratic variations in indirect medical educational payments to teaching hospitals and academic health centers.[17] Furthermore, COGME has concluded that the current IME payment methodologies have proven "counterproductive to physician workforce goals."[4] Only by understanding and properly supporting the direct costs of graduate medical education can the additional indirect costs of teaching hospitals be understood and appropriate policies developed to adequately support these. Whatever public support is required for indirect medical education costs and the other social goods provided by teaching hospitals should continue to be directed to these institutions.

Table 4. SGIM GME Cluster Proposal for Medicare DME Reform

- The funding for the direct costs of graduate medical education should go to the physician entity providing the instruction for the residency program; these include schools of medicine in academic health centers and faculty practice plans at major teaching hospitals.
- A current analysis of the true direct costs of resident training by major specialty should be conducted nationally to determine the correct per-resident payment amount by specialty. These per-resident payment amounts should be identified within appropriate subcategories of direct costs for graduate medical education.
- Per-resident payment amounts should be adjusted for local market factors, such as wage index; the direct costs for resident training should be re-evaluated every ten years.
- Educational entities must maintain budgets for each program and document that at least 75% of the funds received for each category of training expense are spent for that category. Programs will need to submit proof of compliance with these rules to the appropriate Residency Review Committee (RRC) and to CMS.
- The RRC should establish objective, annually measurable standards for training program performance to ensure institutional accountability for outcomes (e.g., performance on standardized patient assessments or certification examination pass rate). Programs that fail to meet the minimum standards should lose discretion over the graduate medical education funds not required to be spent for specific categories of costs.

GME, graduate medical education; DME, direct medical education.

Funding Disbursement

The funding for the direct costs of GME should go to the physician entity providing the instruction for the residency program. Faculty physicians must teach residents in their specialty, so these physicians must have the authority and responsibility to manage the resources needed for education. Many different physician entities could be responsible for education and thus eligible for GME funds. Among these entities are schools of medicine in academic health centers and faculty practice plans at major teaching hospitals. Teaching hospitals that employ physicians without an independent faculty practice plan could establish an education and research foundation to receive funds, affiliated with but distinct from the hospital, and controlled by the physician educators. By this means, DME funds would be kept separate from revenue supporting the operating expenses of the teaching hospital.

We do not recommend how individual residency programs within the entity would receive the GME funds; we view allocation of these funds within an institution as a local decision. We recognize, for example, that a substantial infrastructure is required to sustain a set of residency programs. Because of Accreditation Council for Graduate Medical Education requirements and economies of scale, not all funds related to a program should flow exclusively to the specialty physicians affiliated with that program. Nonetheless, where training programs are linked (e.g., medicine subspecialty fellowship programs linked with an internal medicine residency program), shared infrastructure for educational resources and regulatory compliance may be required, coordinated with the residency and fellowship program directors.

Funding Level

We propose that the physician entity receive DME funding through quarterly per-resident payments. A current analysis of the true direct costs of resident training by major specialty should be conducted nationally to determine the correct per-resident payment amount by specialty, and these per-resident payment amounts should be identified within the appropriate subcategories of direct costs for graduate medical education. These include

resident salary and fringe benefits, institutional graduate medical education infrastructure, residency program leadership and administrative infrastructure, clinical and didactic faculty teaching costs, educational facility costs (conference rooms, call rooms, additional outpatient clinic facilities required for teaching), educational materials and technology (books, handouts, computers, projectors, personal digital assistants, etc.), faculty training and development, educational travel for residents, etc.

This analysis may find economies of scale within training programs. The per-resident payments for 10 interns in an internal residency program may be higher than the per-resident payment amount if 2 more interns are added. The per-resident payment for an internal medicine resident may be different from that required for a surgical resident. Per-resident payment amounts will also need to be adjusted for local market factors, such as wage index.

Following this national cost analysis, we propose a requirement that direct costs for resident training be reevaluated every 10 years. This reevaluation will be necessary for the incorporation of changes in educational processes and costs within, as well as between, specialties.

Financial Accountability

Lack of accountability has been a source of considerable frustration for program directors as well as policymakers. Policymakers and payers are concerned that there is no mechanism for monitoring or ensuring that society is receiving value for the funds expended. Faculty and program directors suspect at best and are certain at worst that some of the monies distributed to institutions for the direct costs of graduate medical education are used for other purposes. Our proposal promises to improve accountability of expenditures by directing these funds to a separate physician entity specifically for the purpose of graduate medical education. Nonetheless, we recommend going further to ensure financial accountability. Since the physician entities will receive these direct medical education payments in per-resident amounts by cost category (e.g., resident salaries, faculty effort, etc.), we propose that the entities maintain budgets for each program and document that at least 75% of the funds received for each category of training expense were spent for that category. This would allow flexibility in institutional use for 25% of the funds distributed on the per-resident payment basis, so programs that intend to undertake an expensive new faculty development program or acquire an expensive educational technology would have the flexibility to do so. Programs would need to submit proof of compliance with these rules to the appropriate Residency Review Committee and to the Centers for Medicare and Medicaid Services.

Educational Accountability

We propose that the Residency Review Committees establish objective, annually measurable standards for training program performance to ensure institutional accountability for outcomes (e.g., performance on standardized patient assessments or certification examination pass rate). Programs that fail to meet the minimum standards would lose discretion over the graduate medical education funds not required to be spent for specific categories of costs. Instead, these funds would be used to support a special Residency Review Committee–sponsored site visit and implementation of the action plan arising from this visit. If, after 18 months, the program still failed to achieve the minimum standards, a second consultation and action plan would be required. Programs that failed to achieve satisfactory performance for 4 consecutive years would lose GME funding. This would hold programs administratively and financially accountable to produce qualified physicians. Tying this program to the Residency Review Committees would maintain the current infrastructure and professional role in program oversight through a mechanism with substantially lower incremental costs for compliance than is typically required for federal grant programs.

Strengths and Weaknesses

This proposal addresses many of the critical weaknesses of the current mechanism for funding DME. It updates per-resident payments to reflect current direct medical education costs and establishes a method for recalibrating these for changing training needs and environments. It directs DME funds to the individuals responsible for resident education. It explicitly ties GME revenue to expenditures on resident education. It creates mechanisms for ensuring institutional accountability to society for the quality of its training programs, and even for funding the remediation of struggling residency programs.

Unfortunately, our proposal contains within it a critical weakness; since Medicare, by statute, pays only its proportionate share of direct GME costs, the "physician entity providing the instruction for the residency program" will only receive from Medicare a portion of the total direct costs for its resident programs. Some simple math illustrates this problem at the national level. Currently there are approximately 105,000 residents in the United States. Current DME Medicare monies are slightly over $2 billion annually. This means there is less than $20,000 total Medicare DME support per resident per year. Obviously the sum is insufficient to support the total costs of direct medical education.

Thus, only residency programs that serve a 100% Medicare population would receive funding for the program's entire operating budget from Medicare DME sources. In all other institutions, program directors would need to find support for the balance of DME expenses from the same sources that currently fund this as an ongoing and hidden subsidy: affiliated hospitals, medical schools, health centers, and foundations. While teaching hospitals currently cover most residency program costs, these implicit subsidies can result in inadequate support of resident workload, faculty teaching

effort, educational infrastructure, and other teaching costs. Hospitals cover what costs they can by cross-subsidizing the residency programs through other revenue streams, such as Medicare IME funds, clinical program profits, or higher charges to payers. Under our proposed reform of Medicare GME, both DME costs and institutional subsidies become explicit. Only all-payer financing of residency education, or consistent federal and state funding of the non-Medicare direct costs of resident training, can solve this dilemma.

POLITICAL REALITIES

With any policy proposal, it is important to consider not only the technical merits of the reform, but also the likely friends and foes to be engaged during the legislative process. Department chairs and residency program directors will be attracted to the opportunity to manage the resources for resident education, but daunted by the deficits exposed absent all-payer financing. Teaching faculty and residents will likely support this reform, making explicit, as it does, the resources required for teaching and management accountability for expenditures and outcomes. Deans, like department chairs, will likely see advantages in directing DME monies, but must be cautious since the financial viability of their teaching hospital partners is often critical to the success of their institution. Lay public opinion will be difficult to engage effectively on this issue; while we have argued that the public is best served by adequate, accountable funding of GME, the technical issues of reform are abstruse, and debating points may be easily recast as "doctors are greedy" or "teaching hospitals are unsafe."

Leadership of teaching hospitals will have a complex algebra to consider when weighing this proposed policy. While these financially distressed institutions will be reluctant to give up any revenue source, under our proposed reform they are also relieved of direct financial burden for the currently underfunded direct costs of resident education. Nonetheless, without all-payer financing of GME, they will inevitably be asked to subsidize the non-Medicare–funded portion of residency program budgets at recalibrated, and likely higher, per-resident cost rates. Public policymakers will likely respond along philosophical lines. Advocates of constrained federal expenditures, now in the political ascendancy, will oppose this reform. Given the ultimate necessity of all-payer financing made explicit through this reform, intense opposition will likely emerge as well from the health insurance industry and from self-insured employers.

Nonetheless, advocates for these recommendations for reform of graduate medical education funding need not lose hope. Policymakers, teaching hospital leadership, faculty and residents are united in agreement that our current mechanisms of funding graduate medical education are profoundly flawed. Increasing medical student indebtedness, continued funding-related distortions in physician workforce, increased awareness of environmental factors in hospital errors, are all emerging issues likely to facilitate public discourse on the need to adequately support the direct costs of GME. Furthermore, as medical care and physician training continue to shift out of inpatient settings, the logic of funding the direct cost of medical education through inpatient facilities will become increasingly strained. Both the public and policymakers can easily understand that the support of graduate medical education for the 21st century will be sustained best by newer policies than those of 1944, 1965, and1983. As Franklin Roosevelt said, "The future lies with those. . .who realize that the great public is interested more in government than in politics."[32] We argue that by devising, refining, and advocating wise GME public policy, SGIM can meaningfully shape the reform debate, with better law the result.

CONCLUSION

In this paper we have briefly reviewed the history and policy context for reform of Medicare GME funding. We have considered the perspectives of the various interested parties relevant to Medicare GME policy and summarized recent proposals for reform. We have outlined a proposal for Medicare funding of the direct expenses of GME. In developing this proposal, we highlight the often-unstated reason that reform of GME funding has been long deferred. Real solution of problems in Medicare funding of the direct costs of resident education cannot occur without securing explicit support for non-Medicare DME costs.

We recognize that our work has just begun. Our assessment of the "political realities" suggests our, or any, proposal that will correct most of the current problems with Medicare GME funding will encounter potent opposition and will require continuing, clear, and consistent advocacy. Our proposal poses a number of empirical questions as well. What are the current direct costs of medical education? How do they vary by program type? What are the residual indirect costs of medical education? What are the best measures of institutional accountability for training program performance? These questions will require thorough analysis prior to implementing substantive revisions of Medicare GME funding.

Furthermore, other substantive issues affecting funding of America's teaching hospitals are left unaddressed in this proposal. Most important are the mechanisms for all-payer financing of medical education and for regulation of the specialty composition of the physician work force. Other Medicare financing issues critical to residency programs include support of the indirect costs of medical education as well as payments for teaching hospitals' disproportionate share of patients who have complex illnesses and financial disadvantage. The GME Financing Cluster of the SGIM Health Policy Committee hopes to address each of these issues in future work.

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REFERENCES

1. Association of American Medical Colleges. AAMC Data Book: Statistical Information Related to Medical Schools and Teaching Hospitals. Washington, DC: Association of American Medical Colleges; 2000.
2. Anonymous. Appendix: II. Graduate Medical Education. JAMA. 2000;284:1159–72.
3. Reinhart UE. Academic medicine's financial accountability and responsibility. JAMA. 2000;284:1136–8.
4. COGME Fifteenth Report. Financing Graduate Medical Education in a Changing Health Care Environment. Rockville, Md: U.S. Department of Health and Human Services; December 2000.
5. COGME Resource Paper. The Effects of the Balanced Budget Act of 1997 on Graduate Medical Education. Rockville, Md: U.S. Department of Health and Human Services; March 2000.
6. Task Force on Academic Health Centers. Leveling the Playing Field: Financing the Missions of Academic Health Centers. New York, NY: The Commonwealth Fund; May 1997.
7. Report to the Congress. Improving Medicare's Payments for Inpatient Care and for Teaching Hospitals. Washington, D.C.: Medicare Payment Advisory Commission; June 2000.
8. National Bipartisan Commission on the Future of Medicare. Building a Better Medicare for Today and Tomorrow. U.S. Government Printing Office; March 16, 1999.
9. Bill S. 743. Medical Education trust Fund Act of 2001.
10. Rosenberg CE. The Care of Strangers: The Rise of America's Hospital System. New York: Basic Books; 1987.
11. Medical Licensure Statistics for 1940. JAMA. 1941;116:2021–55.
12. Medical Licensure Statistics for 1970. JAMA. 1971;216:1783–852.
13. Committee on Ways and Means. U.S. House of Representatives, 89th Congress, 1st Session, House Report, No. 213 (Washington, DC: 1965).
14. Stevens R. American Medicine and the Public Interest. New Haven and London: Yale University Press; 1971.
15. Starr P. The Social Transformation of American Medicine. New York: Basic Books; 1982.
16. Ebert RH, Ginzberg E. The reform of medical education. Health Aff (Millwood). 1988;7:5S–38S.
17. Oliver TR, Grover A, Lee PR. Variations in Medicare Payments for Graduate Medical Education. Oakland Calif: California HealthCare Foundation; June 2001.
18. U.S. Congress. Ways and Means Committee Report. House of Representatives, House Report no. 98-25 March 4, 1983.
19. Report to the Congress. Medicare Payment Policy. Volume II: Analytical Papers. Medicare Payment Advisory Commission; March 1998.
20. Blewett LA, Smith MA, Caldis TG. Measuring the direct costs of graduate medical education training in Minnesota. Acad Med. 2001;76:446–52.
21. Anderson GF, Lave JR. Financing graduate medical education using multiple regression to set payment rates. Inquiry. 1986;23: 191–9.
22. Shine D, Beg S, Jaeger J, Pencak D, Panush R. Association of resident coverage with cost, length of stay, and profitability at a community hospital. J Gen Intern Med. 2001;16:1–8.
23. Blumenthal D, Bass EB. The need for data not dogma on the costs of graduate medical education. J Gen Intern Med. 2001;16:66–7.
24. Coughlin JR, Daley DC, Ibrahim T, and Alliance for Academic Internal Medicine Task Force on Financing Medical Education. Why Medicare supports graduate medical education. Am J Med. 2000;109:516–21.
25. Fishman LE. What types of hospitals form the safety net? Health Aff (Millwood). 1997;16:215–22.
26. Mann JM, Melnick GA, Bamezai A, Zwanziger J. A profile of uncompensated hospital care. Health Aff (Millwood). 1997;16: 223–32.
27. AAMC Division of Health Care Affairs. 2001 AAMC Survey of Housestaff Stipends, Benefits and Funding. Washington, DC: Association of American Medical Colleges; November 2000.
28. Report to the Congress: Rethinking Medicare's Payment Policies for Graduate Medical Education and Teaching Hospitals. Washington, DC: Medicare Payment Advisory Commission; August 1999.
29. Gbadebo AL, Reinhardt UE. Economists on academic medicine: elephants in a porcelain shop? Health Aff (Millwood). 2001;20: 148–52.
30. Newhouse JP, Wilensky GR. Paying for graduate medical education. The debate goes on. Health Aff (Millwood). 2001;20:136–47.
31. Diamond HS, Fitzgerald LL, Day R. An analysis of the cost and revenue of an expanded medical residency. J Gen Intern Med. 1993;8:614–8.
32. Jackson Day Dinner Speech, Franklin D. Roosevelt, January 8, 1940, Washington, DC: Roosevelt Library Archives.