

WORKING P A P E R

Alternative Ways of Financing Graduate Medical Education

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PREFACE

The continuing public policy debate over how graduate medical education (GME) should be financed shows a lack of consensus on the principles for restructuring GME funding and the appropriate role for Medicare as a vehicle for federal support. Policymakers need information on the strengths and weaknesses of the spectrum of approaches to help them weigh the advantages and disadvantages of alternatives as they consider reforming the current system. Our report provides a conceptual framework for assessing the strengths and weaknesses of the current financing system, potential refinements to Medicare's current GME funding, and possible alternative policies for financing direct GME costs. It also applies the framework to the current system and a set of alternative approaches. The report should primarily be of interest to policymakers and other parties involved in graduate medical education financing issues.

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EXECUTIVE SUMMARY**PURPOSE OF CURRENT STUDY AND APPROACH**

Graduate medical education (GME) is clinical training provided to graduates from schools of medicine, osteopathy, dentistry and podiatry. Medicare provides the largest explicit support for GME programs through nearly \$8 billion in payments to hospitals for their teaching activities. There is continuing public policy debate over how graduate medical education (GME) should be financed. The persistence of this debate shows a lack of consensus on the principles for restructuring GME funding and the appropriate role for Medicare as a vehicle for federal support. Policymakers need information regarding the advantages and disadvantages of various alternatives as they consider reforming the current system.

Our study provides background information on the current financing system and the costs and benefits of GME. It follows with a conceptual framework for assessing the strengths and weaknesses of GME financing alternatives. We then use this framework to evaluate the current financing system and alternative policies for financing DGME costs. In developing the potential alternatives, we consider both refinements in the current Medicare policies and models that have been proposed for GME reform and other models that being used to finance GME, both domestically in innovative Medicaid programs and internationally in selected high-income countries. In our analysis, we draw on literature review and discussions with experts in the GME financing issues.

BACKGROUND

In the 2005-6 academic year, there were 104,721 residents in 8,174 allopathic programs (for doctors with the Doctor in Medicine (M.D.) degrees) (ACGME 2006) and approximately another 4,000 in osteopathic intern and residency programs for doctors with the Doctor of Osteopathy

(D.O.) degree).¹ Clinical training occurs primarily in about 1,100 teaching hospitals, where residents provide patient care under the supervision of a teaching physician and often instruct medical and other health students or conduct clinical research as part of their training program.

The performance of residency training programs in preparing physicians to practice in the 21st century has come under increasing scrutiny in recent years. For example, the Council on Graduate Medical Education (COGME)'s 13th Report: *Physician Education for a Changing Health Care Environment* (1999a) emphasized the need for training across the continuum of care and called for expanded training opportunities in community-based settings. The Institute of Medicine (IOM)'s *Crossing the Quality Chasm* (2001) concluded that clinical education for health professions - including physicians - has not kept pace with shifting patient demographics, changing expectations for health systems, evolving systems of care delivery, the expanding evidence base and new technologies and is in need of a major overhaul. In addition to concerns over the content of graduate medical education, there are continuing questions regarding whether GME programs are meeting the nation's physician workforce needs, in terms of the number of physicians, geography and specialty distribution, and diversity (COGME, 1996; COGME, 2005a; COGME, 2005b; IOM, 2003b). Much of the concern over GME programs has centered on the current system for financing it. This system is complicated and the costs of the activities it supports are difficult to measure. GME programs are operated by a variety of different entities: medical schools, teaching hospitals, faculty practice plans, and community-based training sites. The costs of operating these programs vary by type of institution. Conceptually, the costs for operating GME programs include both *direct* and *indirect* costs. Direct GME (DGME) costs

¹The total number of osteopathic residents is understated because only 165 of 245 hospitals listed as osteopathic post-doctoral training institutions responded to a survey (Singer, 2005). According to the American Osteopathic Association, there are 819 accredited osteopathic internship and residency programs (American Osteopathic Association, 2005).

are those directly attributable to teaching, such as resident stipends, teaching physician compensation, and administrative costs and overhead. Indirect medical education (IME) costs are those patient care costs that cannot be directly attributed to teaching activities. Furthermore, the net costs of operating a teaching program considers not only the IME and DGME costs but also the value of patient care services provided by residents.

Currently, most financial support for GME comes from patient care revenues. Medicare provides the largest explicit support for GME programs through nearly \$8 billion in payments to hospitals that are specifically designated as related to their teaching activities. Medicaid is the second largest explicit payer for GME, with 47 states and the District of Columbia providing between \$2.5-2.7 billion in GME support as of 2002 (COGME, 2004; Henderson, 2003). Support for GME by other payers is implicit in their payments to teaching hospitals for patient care; in other words, most payers make higher payments for services furnished by teaching hospitals relative to services furnished by other hospitals.

There has been long-standing debate over the federal role in financing GME. Among the central questions in the debate: Is GME a "public good?" How actively should the federal government address physician supply issues and financing GME? What is the appropriate role of Medicare and other payers in supporting GME? How accountable should teaching hospitals and other recipients be for funds received to support educational activities? The argument that GME provides public benefits that should be supported with federal funds rests on the premise that it is in the public interest to assure that the physician workforce is appropriately distributed and has the competencies to provide high quality care both within residency training programs and in post-training practices.

CONCEPTUAL FRAMEWORK FOR EVALUATING GME FINANCING ALTERNATIVES

This report provides a framework that helps inform this debate. The framework enables comparison of alternative systems for financing GME education can according to their ability to achieve five key

objectives: equity, adequacy, efficiency, accountability, and administrative feasibility.

- **Equity.** An *equitable* financing system links financial support to those who benefit from those activities. The entities and individuals who bear the costs should derive a share of the benefits that is proportional to their contribution. In addition, funding should be distributed such that the health care needs of the nation's entire population are met equitably, both with respect to the care provided by residents in training and the care they will provide in their future practice.
- **Adequacy.** An *adequate* system of funding for GME supports the training needs of the physician workforce. Adequate funding assures sufficient resources for high quality training of future physicians and presupposes a system that provides funding stable enough to enable teaching hospitals and program sponsors to invest in high quality training.
- **Efficiency.** An *efficient* financing system promotes the delivery of effective educational models at an economical price to meet desired workforce and educational goals. It would enable teaching institutions to maintain fiscal solvency and compete on price and quality by subsidizing higher costs attributable to educational activities without supporting inefficiencies.
- **Accountability.** An *accountable* system of GME financing can show direct connections between its pursuit of goals and its resource allocation decisions. It would hold recipients of Federal and State funds accountable for producing physicians of the quality, specialty and number needed to support public goals in an efficient and effective manner. It would encourage transparency in the allocation and use of funds and foster mechanisms that will respond to needs of the health care system, as a whole, with respect to supply, specialty mix, and geographic distribution.
- **Administrative feasibility.** A practical approach to reforming the current GME funding system should be *administratively feasible* in the transition and in its long-term operability. The

administrative burden and overall costs of reform should be commensurate with the gains.

ASSESSMENT OF THE CURRENT SYSTEM

An assessment of the current system is hampered by the lack of a systematic national articulation of workforce goals (i.e., supply, specialty mix and geographic distribution that is needed to gauge the efficiency and equity of the current system) and an understanding of the total and net costs of operating GME programs.

- **Equity.** Relying on the Medicare program to provide most federal support for GME raises two basic equity issues. First, broader-based funding would provide a better match of public benefits with public support. Second, teaching hospitals with high Medicare utilization receive relatively more federal support than low-Medicare volume institutions. In addition, the current formulation of the Medicare IME adjustment does not equitably match Medicare payments with Medicare's share of indirect GME costs.
- **Efficiency.** Without national physician workforce goals, the current system is bound to be inefficient in producing the right number and mix of physicians. There is no consensus on the total number of physicians but there is general agreement that there are shortages in primary care physicians relative to other specialties and in physicians practicing in rural areas.

Paying for educational activities through patient care payments provides limited opportunities for federal support to influence the supply and distribution of new physicians. Hospital staffing needs and financial considerations, including Medicare's explicit payments relative to the costs of replacing residents with other professional staff, weigh heavily in institutional decisions on the number and type of residency slots and rotations to other training sites.

- **Adequacy.** In addition to information on workforce needs, an assessment of the adequacy of the current financing system should consider the costs of GME and its funding sources. However, the myriad of arrangements and the joint production of education, patient care, and research in teaching hospitals make it difficult

to determine both costs of residency training programs and the sources of funding to support those programs.

The continued growth of residency programs despite Medicare funding limits and positive teaching hospital margins are potential indicators of the overall adequacy of current payments. However, resources to support GME activities are affected by a hospital's payer mix and the impact of market competition on private payer payments and vary across teaching hospitals. Further, concerns over the long-term solvency of Medicare trust funds periodically lead to proposals to reduce the level of Medicare funding.

- **Accountability.** Under the current system, there is transparency in how the Medicare and Medicaid funds are allocated to support GME activities because the subsidies are made using a formula-based approach. However, there is no external accountability for decisions regarding the size and composition of residency programs other than those that might be imposed by the accrediting organization. Payments for residents in a single training program flow to multiple hospital training sites as patient care payments. This makes it difficult to determine both the total direct costs for operating the program and the federal subsidies to support the program. At the teaching hospital level, patient revenues are fungible and there is no direct accounting for how the funds are used.
- **Administrative feasibility.** In terms of administrative feasibility, the current system is mixed. Because Medicare and most Medicaid payments are formula-based and linked to patient care costs, the calculation of funding amounts is generally straightforward and administrative costs are low relative to total funding. However, mechanisms added over time to increase responsiveness to workforce goals and needs have made Medicare GME funding increasingly complex and difficult to administer and, in the case of community-based training, have required changes in arrangements between GME sponsors and their affiliated training sites.

POTENTIAL REFINEMENTS TO MEDICARE POLICIES

One approach to reforming GME financing would involve refining the current Medicare payment policies. Two policy directions might be considered in refining the Medicare policies.

The first would be to emphasize that Medicare's purpose is to pay for patient care provided to Medicare beneficiaries. This approach would reflect the arguments advanced by the Medicare Payments Advisory Commission (MedPAC) that patient care payments are not an effective vehicle for achieving workforce goals and that separate, more targeted approaches are needed for this purpose. It would eliminate the explicit Medicare DGME funding but, absent other changes in federal support for DGME, it would fold the costs into an IME-like payment adjustment.

The other policy direction would be to emphasize Medicare's role as the primary vehicle for federal GME support and align Medicare payments more closely with workforce goals. Medicare's payment policies for DGME would be more aggressively aligned with the public benefits derived from GME. This approach would require a clear articulation of national physician workforce goals and the development of Medicare DGME payment policies that are consistent with those goals. As a prudent purchaser, Medicare would explicitly fund only those specialties and programs that generate public benefits and would eliminate other funding.

Under either direction, refinements should be considered in Medicare's IME adjustment to capture the teaching effect on inpatient costs per case while controlling for other missions. Any reductions in IME funding should be accompanied by appropriate adjustments for other public missions, including uncompensated care through refinements in Medicare's disproportionate share payment policies.

Either direction could address the equity problem posed by the current IME adjustment and reduce some of the administrative complexities for the program, and the second direction could improve efficiency. However, more fundamental changes would be needed to align federal support with the public benefits and to increase accountability.

ASSESSING ALTERNATIVE APPROACHES TO GME FINANCING

Because Medicare is a formula-driven payment system and teaching hospitals have higher patient care costs, an explicit Medicare payment for IME is appropriate (with refinements). An alternative funding mechanism might be desirable for DGME costs to increase equity, efficiency and accountability. Based on a variety of alternative financing options identified in the literature and from models used by Medicaid and other countries, we developed three models for alternative DGME financing approaches that illustrate various points on a spectrum of policy approaches that might be taken for federal support of GME programs:

- a market-based approach that does not try to affect physician supply and distribution or educational quality through federal funding policies;
- an incentive-based approach that attempts to influence GME educational and workforce goals through federal funding policies; and,
- a regulatory approach that explicitly aligns federal support with desired GME educational and workforce outcomes.

The models represent a spectrum of approaches and are presented in order to focus attention on the strengths and weaknesses of each policy approach. They are not intended to foreclose an alternative that uses parts from each model. None of the models would dictate the number and distribution of residents in training programs; rather, they utilize different policy approaches to determine the level and type of DGME funding for GME activities that provide public benefits. They assume that Medicare would continue to pay for its share of higher patient care costs through a refined IME adjustment.

All three models involve a role for federal policymakers in monitoring performance and making recommendations on national and state policies, which we call a "commission" but whose functions could be performed in alternative ways.

Market-Based Approach

A "market-based" approach would rely primarily on the market to produce the physician workforce needed in the future in terms of supply and distribution. The quality of the educational programs would continue to be assured through the accrediting organizations. This option is consistent with the Medicare "patient care payment" policy direction outlined above. The commission's role would primarily be to forecast workforce need, monitor supply, and to influence the market indirectly by making information on market conditions available to interested parties.

Adequacy. The question of funding adequacy cannot be answered without additional information on GME program costs and workforce needs. The adequacy of funding levels under this option relative to the status quo depends largely on whether DGME costs are paid through an IME-like adjustment for higher patient care costs and how the adjustment is structured. In any event, the change would redistribute federal funds and should be phased-in to avoid unintended consequences. *Equity.* The equity of this approach depends on one's perspective concerning the nature of the DGME costs. If they are primarily patient care costs, and Medicare payment accounts for these costs through an IME-like payment, the market-based approach is at least as equitable as the current system because Medicare would continue to cover its share of higher patient care costs. However, if DGME costs are considered primarily educational costs that generate public benefits, this approach is less equitable than approaches that broaden the base for federal support.

Efficiency. From the federal perspective, there is less opportunity to influence the composition and distribution of the future workforce if the Medicare funds lose their educational label and are folded into payment rates for services. The commission would play an important role in developing and publicizing projections of physician (and non-physician supply as it impacts physician supply), specialty mix, and geographic distribution that might influence the market decisions.

Accountability. Accountability for the quality of residency programs would continue through the requirements of the accrediting organizations. Because there would be no direct federal support for GME,

there would be no additional accountability for meeting workforce and educational objectives.

Administrative feasibility. Relative to the current system, this option would impose less administrative burden because the DGME-specific policies and rules would no longer be pertinent.

INCENTIVE-BASED MODEL

The incentive-based model would use financial incentives to influence the market to become more aligned with physician workforce and educational objectives. A key design element would be to replace federal DGME subsidies through Medicare patient care payments with another funding source - either general revenues or special purpose funds such as all-payer funds. Breaking the direct link with Medicare patient care payments and clearly labeling the funding as a federal subsidy for DGME provides more flexibility to create direct financial incentives for residency programs that are designed to promote physician workforce and educational objectives. A second important design element would be to flow the funds to program sponsors rather than the teaching sites to strengthen the effect of the incentives and to establish better accountability for the receipt and use of the funds. Effective incentives and accountability are difficult to achieve when the funds flow to multiple entities for a single residency program. A third element of the incentive-based model would be to establish specific outcome measures for residency programs and to reward performance. Flowing funds through the program sponsors is key to being able to measure and reward performance in achieving educational and workforce objectives.

Under the incentive-based model, the commission would perform the same functions as under the market-based model but add several other important functions:

- Evaluate and recommend potential performance measures
- Recommend aggregate funding levels
- Recommend policies for allocation of federal funds that would provide appropriate incentives for achieving workforce and educational goals.

Adequacy. Aggregate funding levels would be needed that would provide both a base level of support for needed residency training programs and higher support to those that meet particular goals.

Equity. Assuming that the funding level approximates the public benefits associated with GME, broader-based funding, particularly through general revenues, would be more equitable than the current funding through the Medicare program. It is also more equitable than the current system because Medicare utilization would no longer be an allocation factor.

Efficiency. The incentives to achieve workforce and educational objectives are likely to be more effective than under the current Medicare DGME payment policies because the funds will flow to the program sponsor with an explicit educational label instead of being sent to multiple teaching hospitals through patient care payments.

Accountability. A critical feature of the incentive-based model is holding the program sponsor that is responsible for operating the training program accountable for how funds are used to promote workforce and educational objectives consistent with the public benefits of GME.

Administrative feasibility. Implementing an incentive-based model poses administrative challenges. First, it requires establishing a consensus on workforce and educational objectives and which of those objectives should be promoted through incentives. Second, it requires changes in funding mechanisms, including: establishing a new federal source of funds, implementing a new funding mechanism to pay program sponsors and allowing time for program sponsors and their affiliated teaching sites to renegotiate their financial arrangements. Third, it requires developing metrics to measure performance in achieving workforce and educational objectives, establishing a data collection system (in coordination with the accrediting organizations) to collect and assess performance, and developing appropriate "pay-for-performance" methodologies.

REGULATORY-BASED MODEL

Under a regulatory-based model, federal support for DGME would be directly linked to workforce and educational goals. The key design

elements are similar to the incentive-based model but under the regulatory-based model, there would be explicit decisions on how many residency positions would be funded in which specialties and which programs would receive funds.

The commission's role would be enlarged to provide specific recommendations - that could be binding or not- on which residency programs and slots would be funded through federal subsidies. A methodology would be needed to determine which positions would be eligible for funding if the residency positions offered in a particular specialty exceeded the number of desired positions. Explicit conditions for payment beyond having an approved residency program could be established, and quality and geographic considerations could be incorporated into the allocation policies.

Adequacy. Once a determination is made regarding the residency slots that should be funded consistent with the public benefits, an adequate funding level would reflect the net costs of operating those programs and might vary according to systematic differences in specialty training infrastructure costs.

Equity. Federal support is most closely aligned with the public benefits of GME under the regulatory-based model than under the other models.

Efficiency. Assuming that the commission can accurately estimate future physician workforce needs, the regulatory-based model is the most efficient way to align federal support with the public benefits of GME. However, the methodologies needed to accurately forecast physician workforce needs in the future remain elusive given the fast pace of technological development and changes in the health care delivery system. In the course of just a few years, an anticipated surplus of physicians has changed to an expected shortage.

Accountability. The regulatory-based model could incorporate stronger accountability measures by making certain performance outcomes a condition for payment.

Administrative feasibility. Implementing a regulatory-based model poses similar challenges as the incentive-model but adds the additional challenge of determining which residency positions will be funded.

TOWARD A RATIONAL DGME FINANCING POLICY

Any changes in funding policies should occur gradually over time to allow program sponsors and affiliated teaching institutions time to adjust to any redistributions of funds. Any changes in aggregate funding levels and in fund distribution policies should be based on improved information regarding not only projected physician supply needs but also the net costs of GME. Changes might be considered that would improve the alignment of federal support for GME with its public benefits include:

- Replace Medicare DGME support with broader-based stable funding while continuing to pay for higher patient care costs through a Medicare IME adjustment. The best match of federal support and benefits would occur if general revenues were used instead of Medicare trust funds to provide the federal support for DGME.
- Direct federal support to program sponsors. This would align funding ultimate responsibility for operating the residency program. Flowing funds to a single entity would create accountability for the receipt and use of federal funds to support educational activities.
- Use targeted funds or financial incentives to address specific market dysfunctions and support innovative educational programs.
- Strengthen the federal role in defining national workforce goals and in monitoring system performance in meeting those goals.

Further research and analysis is needed before substantial changes could be implemented. This additional work includes developing:

- Improved methodologies to forecast future physician workforce supply and specialty mix needs and to disseminate this information to interested parties.
- A better understanding of the total costs and the net costs of residency training and the differences in these costs across specialties and types of program sponsors.
- A better understanding of the costs and benefits of GME to providers, residents, patients and their payers, and the public and the current incentive structure.
- Outcome-based performance measures not only to assess the quality of the educational experiences but also to evaluate workforce objectives.

- Refinements to the Medicare IME adjustment that would assess the analytically justified level for both inpatient and outpatient services provided by teaching hospitals and the effect of different public missions on teaching hospital costs.

GME FINANCING WITHIN THE BROADER HEALTH SYSTEM CONTEXT

The federal role in financing GME will be most effective in fostering workforce and educational goals if attention is also given to other factors within the health system that affect the educational environment and the choices that residents make regarding specialty and practice location. These issues should be taken into consideration in designing GME financing policies and, more importantly, in weighing whether significant changes in GME financing are warranted in the absence of other systemic change. The other aspects of the broader educational and health systems that need to be considered include:

- *80-hour limitation.* This limitation was implemented in July 2003 to reduce the risk of resident errors caused by fatigue (AAMC, 2003) but has implications for number of residents (and resident replacement costs), the length of residency programs, and community-based training opportunities.
- *Uncompensated care.* As noted earlier, teaching hospitals are part of the health safety net and in the absence of broader insurance coverage, changes in GME financing policies should be accompanied by better support for uncompensated care. Moreover, charity care negatively impacts on the income of physicians in private practice and affects the attractiveness of primary care and rural practices.
- *Physician payment reform.* The failure of payers to recognize the value of primary care and the differences in income potential between primary care and other specialties remains a barrier to the new physicians electing to practice in primary care. A similar barrier exists for new physicians choosing to practice in rural areas, where low population density, poor economic conditions, and practice isolation pose hardships that are not recognized by either public or private payers. Even if a rural

community is able to attract a new physician, retention is an issue. Unless these issues are addressed, GME financing incentives designed to influence resident choices will not be effective in the long run.

- *Health delivery system.* The current system of health financing and delivery emphasizes treatment for treatment for acute care episodes over patient-centered comprehensive longitudinal care. Support is needed for delivery system models that promote physician-directed interdisciplinary care for chronic conditions. Such models will improve quality, reduce costs, and increase the attractiveness of primary care specialties (ACP, 2006).

The federal government's policies for GME financing are an important factor in assuring an appropriate supply of physicians with the skills and competencies to meet the health needs of the population in the future. These policies can be better designed to align federal support with the public benefits of GME but must be supported by other changes in the financing and delivery system if they are to be effective.

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ACRONYMS

ACGME	Accreditation Council for Graduate Medical Education
BBA	Balanced Budget Act of 1997
BBRA	Medicare, Medicaid, and SCHIP Balanced Budget Refinement Act of 1999
BIPA	Medicare, Medicaid, and SCHIP Benefits Improvement and Protections Act of 2000
CHGME	Children's Hospitals Graduate Medical Education Payment Program
CMI	Case Mix Index
CMS	Centers for Medicare and Medicaid Services
COBRA	Consolidated Omnibus Budget Reconciliation Act of 1985
COGME	Council on Graduate Medical Education
DGME	Direct Graduate Medical Education
DRG	Diagnosis-Related Group
DSH	Disproportionate Share
FTE	Full-Time Equivalent
GME	Graduate Medical Education
HRSA	Health Resources and Services
IME	Indirect Graduate Medical Education
IMG	International Medical Graduates
IOM	Institute of Medicine
IRB	Intern-and-Resident-to-Bed ratio
MedPAC	Medicare Payment Advisory Commission
MMA	Medicare Prescription Drug, Improvement and Modernization Act of 2003
NRMP	National Residency Match Program
PPRC	Physician Payment Review Commission
PRA	Per Resident Amount

1. INTRODUCTION

BACKGROUND

Graduate medical education (GME) is clinical training provided to graduates from schools of medicine, osteopathy, dentistry and podiatry. At least one year of training beyond medical school is required to be licensed to practice medicine and additional training is required for specialty certification (ACGME, 2006). GME is provided in residency programs approved by non-governmental accrediting organizations for the various specialties (Council on Graduate Medical Education, 2000). In the 2005-6 academic year, there were 104,721 residents in 8,174 allopathic programs (for doctors with the Doctor in Medicine (M.D.) degree) (ACGME 2006) and approximately another 4,000 in osteopathic intern and residency programs (for doctors with the Doctor of Osteopathy (D.O.) degree).² Residency programs are typically sponsored by a medical school, a teaching hospital, or an educational consortium. In 2004-2005, 727 institutions sponsored one or more residency programs. An additional 1195 institutions served as either the primary training site for a program that is sponsored by another organization (117) or provided a major portion of the training for one or more residency programs (1078) (JAMA, 2005).

Clinical training occurs primarily in teaching hospitals, where residents provide patient care under the supervision of a teaching physician and often instruct medical and other health students or conduct clinical research as part of their training program. A teaching hospital is any hospital that has an approved residency program and at least one resident in training. There are about 250 teaching hospitals with at least 100 residents and another 850 hospitals with fewer than 100 residents. In addition to GME, teaching hospitals carry out other public missions to varying degrees: undergraduate medical and other health professions education, research, specialized care and charity

²The total number of osteopathic residents is understated because only 165 of 245 hospitals listed as osteopathic post-doctoral training institutions responded to a survey (American Singer, 2005). According to the American Osteopathic Association, there are 819 accredited osteopathic internship and residency programs (American Osteopathic Association, 2005). According to the American Dental Association, in 2003 there were 727 dental resident programs with 5,257 dental residents.

care. Approximately 125 teaching hospitals are affiliated with a medical school and at least one health professions school is integrated as part of an academic health center.

Table 1.1 Selected Hospital Characteristics by Teaching Status

	Number of Hospitals	Average No. of Beds	Number of Residents	Average Resident -to- Average Daily Census Ratio	Average Medicare CMI	Average DSH Percent
Major Teaching	243	503	60,576	.70	1.69	39.6
Minor Teaching	852	246	18,966	.17	1.46	27.5
Non-Teaching	2729	115	0	0	1.25	24.4
All	3824	169	79,542	.08	1.33	26.0

Source: FY06 Prospective Payment System Impact File. Facility-weighted means.

Table 1.1 summarizes information from the FY2006 Medicare Prospective Payment System Impact File by teaching status. For this purpose, we have defined major teaching hospitals as those hospitals with at least 100 residents. These hospitals account for slightly more than 75% of residency training and average about 250 residents. Their ratio of residents-to-average daily inpatient census, a measure of teaching intensity, is .70 compared with .17 for other teaching hospitals. The major teaching hospitals tend to have a higher Medicare average case mix index, a measure of the average resources required by Medicare patients, and have a higher proportion of low-income patients as measured by the percentage of low-income patients used to determine Medicare disproportionate share (DSH) payments.³ We use the DSH percentage as a measure of a hospital's commitment to serving low-income persons since charity care data are not readily available.

However, there are substantial differences within the major teaching hospital category. When we rank all hospitals according to their case mix index and DSH percentage, we find that only 3 of the 242 major teaching hospitals also rank in the top 242 hospitals for both

³ This percentage is based on the percentage of Medicare patients who are entitled to SSI benefits and the percentage of all patients who are entitled to Medicaid. It does not account directly for charity care.

case mix and for DSH (see Figure 1.1). There are 82 major teaching hospitals among the top 242 hospitals for case mix and another 45 major teaching among the 242 highest DSH hospitals. A fourth public mission, research (not shown) also varies in intensity across major teaching hospitals.⁴ These differences are important in assessing GME financing alternatives because it means that teaching intensity is not a good proxy measure for the other social missions (e.g., specialized care, charity care, other health professions clinical training, and research) and that to the extent public support is appropriate for these missions, separate funding streams should be considered.

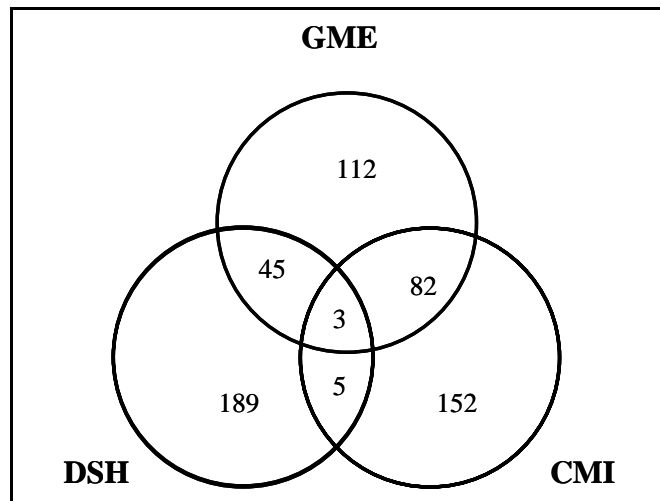


Figure 1.1 Overlapping Missions of Major Teaching Hospitals

Training may also occur in community-based settings such as health centers and clinics, schools and physician offices that reflect the environment where a given specialty commonly practices. Oversight for the quality of residency training programs rests primarily with the accrediting organizations. Each specialty establishes its own program requirements and the competencies that should be developed during training with the Accreditation Council for Graduate Medical Education (ACGME) serving as an umbrella organization for the medical specialties. The American Osteopathic Association (AOA) accredits osteopathic post-graduate training institutes.

⁴ An analysis of FY2000 data showed that of the 100 top hospitals receiving NIH funding, 25 were also in the top 100 hospitals for both DSH and GME and another 30 were in the top 100 for GME but not DSH (Anderson et al, 2001).

Residency program sponsors take workforce and internal staffing needs as well as any accreditation requirements affecting program size into account in deciding how many positions to offer in a given residency program. The National Residency Match Program (NRMP) provides a mechanism for matching applicant's preferences for residency training programs with program director preferences for applicants and a uniform date for commitments. For the 2005-6 program year, there were 25,348 active applicants for 21,454 post-graduate year 1 (PGY-1) positions (NRMP, 2006).⁵

The performance of residency training programs has come under increasing scrutiny in recent years. For example, the Council on Graduate Medical Education (COGME), in *Physician Education for a Changing Health Care Environment* (1999a), emphasized the need for training across the continuum of care and called for expanded training opportunities in community-based settings. The Institute of Medicine (IOM), in *Crossing the Quality Chasm* (2001), concluded that clinical education for health professions - including physicians - has not kept pace with shifting patient demographics, changing expectations for health systems, evolving systems of care delivery, the expanding evidence base and new technologies and is in need of a major overhaul. In addition to concerns over the content and quality of graduate medical education, there are continuing questions about GME programs' ability to meet the nation's physician workforce needs, in terms of the number of physicians, geography and specialty distribution, and diversity (COGME, 1996; COGME, 2005a; COGME, 2005b; IOM, 2003b).

Currently, most financial support for GME is provided through patient care revenues. Medicare provides the largest explicit support for GME programs through nearly \$8 billion in payments to hospitals for their teaching activities. Medicaid is the second largest explicit

⁵ The number of active applicants and match rates by where they were educated were: U.S. medical schools: 14,719 (93.7% matched); Canadian medical schools: 85 (100%); Osteopathic medical schools: 1,524 (100%); U.S. graduates of foreign medical schools: 2,091 (100%); non-U.S. graduates of foreign medical schools: 5,554 (55.6%).

payer of GME, with 47 states and the District of Columbia providing between \$2.5-2.7 billion in GME support as of 2002 (COGME, 2004; Henderson, 2003). Support for GME by other payers is implicit in their payments to teaching hospitals for patient care; in other words, payers make higher payments for services furnished by teaching hospitals relative to services furnished by other hospitals.

There has been longstanding debate over whether GME is a "public good" and how active the federal government should be in addressing physician supply issues and financing GME. The argument that GME provides public benefits that should be supported with federal funds rests on the premise that it is in the public interest to assure that the physician workforce is appropriately distributed and has the competencies needed to provide high quality care both within residency training programs and in post-training practices. Central to the debate are questions concerning the appropriate role of Medicare and other payers in supporting GME, whether funding through patient care payments or more targeted funding mechanisms should be used to further workforce objectives, and how accountable teaching hospitals and other recipients should be for funds received to support educational activities.

Since the early 1990s, continuing concern over the financial pressures on teaching hospitals and their residency programs created by reductions in Medicare and Medicaid spending and the impact of market competition has led to proposals for alternative financing mechanisms to broaden and stabilize the sources of funds to support GME programs. Part of the concern has been spurred by the financial status of the Medicare trust funds. The Medicare Part A Trust Fund, which pays inpatient benefits (and provides most GME support), is funded through payroll contributions. The Part A Trust Fund had negative cash flows in 2005 and annual cash flow deficits are expected to continue and to grow rapidly after 2010 as baby boomers begin to retire. The Part B Trust Fund, which pays for physician services (and provides some GME support), is funded through general revenues and beneficiary premiums. The Part B Trust Fund will require substantial increases over time in

both general revenue financing as well as in beneficiary premium charges (2006 Annual Report of the Board of Trustees).

Concern over the limitations of using patient care payments to support physician workforce objectives has led to calls for better targeting of federal funds and/or greater accountability for those funds. For example, the Council on Graduate Medical Education (COGME) has recommended funding special projects and programs to build high-quality, community-based training capacity or to achieve specific workforce goals in addition to funding through patient care payments (COGME, 2000). More recently, the IOM recommended that the Administration and Congress identify accountability mechanisms for both the disbursement and use of public funds (IOM, 2003a).

PURPOSE OF THIS STUDY

The continuing public policy debate over GME financing alternatives illustrates the lack of consensus on the principles for restructuring GME funding and the appropriate role for Medicare as a vehicle for support. As they consider reform alternatives, policymakers need information regarding the advantages and disadvantages of the various alternatives. Our study is intended to meet this need. It provides a conceptual framework for assessing the strengths and weaknesses of GME financing alternatives and applies this framework to a set of alternative financing approaches, each of which envisions a different federal role.

The study addresses the following questions:

- What are the costs and benefits of GME programs from the perspective of the resident, teaching institutions, patients, and society?
- What criteria should be used to evaluate GME financing alternatives?
- How is GME currently financed and what are the strengths and weaknesses of the current system?
- What incremental improvements to the current system might be considered and what are their strengths and weaknesses?

In addition, the study focuses on two additional questions that deal with one type of costs associated with GME. Conceptually, the costs for operating GME programs include both *direct* and *indirect* costs. Direct GME (DGME) costs are those costs that are directly attributable to the teaching activity, such as resident stipends, teaching physician compensation, and administrative costs and administrative overhead. Indirect medical education (IME) costs are higher patient care costs associated with having GME programs that cannot be directly attributed to the teaching program. With respect to the DGME costs, the two additional questions the study addresses are:

- What is the range of alternatives that might be considered in financing DGME costs?
- What are the costs and benefits of selected alternatives for DGME financing?

Our study focuses on financing the training of future U.S. physicians. Other missions associated with GME are important but are not an explicit study focus. These are:

Other health professional education. Undergraduate medical education and other health professional education commonly occur alongside GME and receive little federal support relative to GME. Some all-payer proposals for GME financing would also provide funds to support clinical education for other professions such as advanced practice nurses and physician assistants or support medical schools as well as teaching hospitals. Most recently, the IOM recommended revisions in Medicare financing policies to support interdisciplinary, team-based community training. These proposals raise important issues that are not within the scope of our study but should be examined in the future.

Training of non-U.S. International Medical School Graduates (IMGs). Approximately 27,000 (26%) residents in approved training programs are IMGs (Brotherton et al., 2005). About 14% percent of IMGs are native U.S. citizens (JAMA, 2005); however, most foreign-born residents remain in the United States after completing their residency training

programs.⁶ The impact that U.S. training has on physician shortages in other countries and on U.S. physician supply and the appropriateness of using Medicare funds to support these residency positions are critical issues that are not within the scope of our study but which should be examined as part of a comprehensive review of GME financing policies.

Other social missions associated with teaching activities. These missions are research, charity care, and highly specialized services for patients with complex needs. As noted above, these social missions are not exclusively provided in teaching settings nor do all teaching hospitals provide these goods. Our approach implicitly assumes that financing for these social missions should be disentangled into separate funding streams so that each institution's level of involvement in a given mission is recognized and supported to the extent policymakers determine appropriate.

STUDY APPROACH

Our study focuses on alternatives to the current system of financing GME. We took a two-pronged approach to identifying the issues and financing options that have been considered since the Clinton health care reform proposals in 1993. First, we collected and reviewed published literature over this period. Our review covered published articles in policy journals, reports issued by public and private public policy organizations and advocacy groups addressing GME financing issues, legislative proposals for broad GME reform and legislative/regulatory changes in Medicare payment policies beginning with the Balanced Budget Act of 1997. We also used the literature review to collect information on GME funding sources.

⁶ Cromwell et al. (2005) analyzed how many IMGs remain in the U.S. based on matches between the Intern and Resident Information System (IRIS) and the Physician Registry. They concluded that 72% of IMGs (compared to 84% of US medical graduates) who were residents in 1998 had active Medicare practices in 2004, with 28% either inactive or unmatched because they had left the U.S. or were employed in managed care, research, administrative, or a VA facility that would not be linked to Medicare.

Second, we had discussions with 16 individuals who are involved in GME issues from various perspectives, including previous and current federal and state government policy analysts and decisionmakers, researchers, and representatives of academic health centers. We also consulted individuals in four other countries: UK, Canada, Australia, and New Zealand. We used a semi-structured discussion that concentrated on the person's particular area of interest and expertise. A copy of the guide is included in Appendix A.

Drawing on the literature and the discussions with key informants, we developed a conceptual framework for analyzing the strengths and weaknesses of the current system. We also drew on information from the literature and from key informants to develop alternative policies and mechanisms for financing direct GME costs along key dimensions: source and type of funds, fund allocation vehicle, eligible recipients, and potential mechanisms and incentives to align public support with physician workforce and educational goals.

ORGANIZATION OF THIS REPORT

The remaining chapters of this report are organized as follows:

Chapter 2 provides a conceptual framework for assessing the strengths and weaknesses of the current system of financing GME and potential alternatives. It begins with a conceptual discussion of the costs and benefits of GME, outlines commonly articulated goals for GME, and suggests criteria for evaluating GME financing systems. Chapter 3 examines the current funding system for GME and evaluates its strengths and weaknesses.

Chapter 4 assesses potential refinements in both Medicare IME and DGME payment policies. The underlying question addressed in this chapter is what refinements should be considered if Medicare continues to pay for both the IME and DGME costs associated with care provided Medicare patients.

Chapter 5 describes other approaches to financing GME, including proposals for GME financing reform and current systems used by selected countries and innovative Medicaid programs.

Chapter 6 describes alternative policies and mechanisms for financing direct GME costs (costs that can be directly attributed to residency training programs) along key dimensions: source and type of funds, fund allocation vehicle, eligible recipients, and potential mechanisms and incentives to align public support with physician workforce and educational goals.

Chapter 7 synthesizes the policies and mechanisms identified in the earlier chapters into three conceptual models for federal participation in financing DGME costs. These alternatives vary along a continuum that increasingly aligns federal support with physician workforce goals: a market-based approach that provides only implicit support through Medicare for higher patient care costs; an incentive-based approach that attempts to influence GME outcomes through federal funding policies; and, a regulatory approach that explicitly aligns federal support with desired GME outcomes. This chapter concludes with a summary discussion of financing issues warranting further consideration.

2. CONCEPTUAL FRAMEWORK FOR EVALUATING GME FINANCING ALTERNATIVES

This chapter presents a framework for assessing approaches to financing GME. The chapter begins by describing in conceptual terms the costs and benefits of GME from the perspectives of key stakeholders: training providers, residents, patients, insurers, and the public. Next, it links these costs and benefits to the workforce goals of GME training. Third, with these considerations in mind, it presents criteria for identifying the strengths and weaknesses of the current system and of alternative approaches to financing GME.

COSTS AND BENEFITS OF GME

Our analysis of GME financing begins with a conceptual discussion of the costs and benefits of residency training. The costs of professional education in most fields are generally spread across institutions and individuals. Institutions that provide education carry a cost burden when direct payments or labor services from individuals do not cover the resources expended upon their training. Individuals undergoing training carry a cost burden if they pay fees and/or forgo income as a consequence of training. In addition, some of the costs of professional education may be subsidized by government agencies or other entities, particularly if they perceive a benefit to the public or to themselves resulting from the training.

The costs of professional training programs are difficult to quantify because education and labor services are jointly produced. In these situations, education is carried out not in classrooms but on the job. In fact, the greater the "on-the-job training" component of the education, the more difficult it becomes to disentangle the costs of education from the cost of services rendered by the trainee. In the case of GME, institutions simultaneously produce education and patient care – and, in some cases, research – and residents simultaneously provide patient care services and accumulate human capital, i.e., knowledge and skills that have economic value. These joint production activities complicate the task of assessing the costs and benefits of

residency training and the proper allocation of these costs and benefits across institutions and individuals.

In the sections that follow, we describe in conceptual terms the costs and benefits to various institutions and individuals with an interest in investing in GME: training providers, trainees, patients and their insurers, and society at large.

The Cost and Benefits to GME Providers

Teaching hospitals and other GME training providers incur a number of types of financial costs. These are generally divided into two categories: direct costs and indirect costs. Direct GME (DGME) costs are directly attributable to teaching activity, such as resident stipends, teaching physician compensation, and administrative costs and overhead. These are costs that can be identified through the accounting system.

Indirect medical education (IME) costs are higher patient care costs associated with having GME programs that cannot be identified through the accounting system. They can be considered the cost of unavoidable inefficiencies in patient care and administrative duties due to the presence of residents. For example, higher than necessary numbers of staff spending time treating the same patient or reviewing the same document might be an inefficiency that occurs in teaching hospitals as a direct consequence of the educational mission.⁷ Indirect costs can also be considered opportunity costs – that is, the difference between revenues obtained while utilizing resources to provide GME and revenues that could be obtained if resources were employed differently. Thus, opportunity costs consist of revenues forgone by allocating resources to educational activities rather than to other revenue-generating activities. For example, if the time physicians or nurses spend interacting with residents could be spent in an activity that

⁷ It is important to note that not all inefficiencies in teaching hospitals are necessarily unavoidable inefficiencies.

generated greater revenue, the lost revenue would represent an opportunity cost resulting from GME.

Although it is relatively simple to describe the costs of GME in conceptual terms, quantifying these costs can be difficult. Some direct costs are easily calculated. Resident stipends and benefits, about 42 percent of total direct costs, can be readily aggregated (COGME 2000). It is important to note, however, in determining the cost of operating a residency program, that these expenditures are offset by the replacement value of services performed by residents. The value of the services can vary by the specialty and experience level of residents. If this offset is higher than the cost of residents, teaching hospitals may actually save money by employing and teaching residents rather than other personnel capable of carrying out the same duties, such as hospitalists, physician assistants, or advanced practice nurses. This offset may be considerable.⁸ Thus, it is possible that the direct "cost" of compensating residents may result in a net benefit to the training institution, particularly if the saving covers other costs associated with training.⁹

⁸ In 1996, the Residency Realignment Committee of the Department of Veterans Affairs looked explicitly at the costs associated with replacing residents and estimated that net replacement costs were more than two times the hourly rate paid for resident services ("Department of Veterans Affairs," 1996). Green and Johnson (1995) found that, depending on the strategy used, proposals to replace residents would require New York City-area hospitals to hire thousands of midlevel practitioners and other staff. For example, one replacement strategy would replace each resident with 3 midlevel practitioners; another would reallocate resident time to physicians (20%), midlevel practitioners (35%) and other non-physician employees (11%). Knickman et al (1992) classified time spent by eight internal medicine residents in New York City into activities that had to be done by a physician, were educational in purpose only, and could be done by non-physicians. The traditional model estimated that 50% of resident's time spent in activities must be done by a physician while an alternative model that allowed for more non-physician care estimated that only 20% would need to be done by a physician.

⁹ In addition, it could be argued that the employment of residents increases patient care revenues by enabling attending physicians to use them as substitutes for their own labor and see more patients. These

With regard to other direct costs, program administration costs are generally relatively easy to quantify as well, since the personnel associated with them often have dedicated percentages of their time assigned to program activities. Faculty costs are more problematic to determine, since a large proportion of faculty salaries are derived from patient care revenues. This is particularly the case for faculty who serve in university medical schools with closely connected residency programs. Various methods have been used to estimate these costs.¹⁰ In allocating a portion of the salary to teaching activities, the assumption is that the salary is for the full range of activities that the faculty member performs and that the proportion of time spent in teaching activities determines the portion of faculty salaries attributable to teaching. In addition, the use of volunteer faculty may affect some of these costs.

It is worth noting that some economists (e.g., Newhouse and Wilensky, 2001) argue that, in effect, the so-called direct costs of GME do not exist, since the compensation of residents is jointly determined by the *willingness of hospitals to hire residents* at rates that can be offset by the replacement value of services and the *willingness of residents to supply labor* at compensation rates offered by hospitals in exchange for training. By their argument, all so-called direct costs of educating residents are covered costs borne by the residents themselves. Alternatively, one could argue that these costs are eliminated by the offset derived from the replacement value of residents.

Indirect infrastructure costs and inefficiencies that come with the types of staffing and procedural interactions needed for education are more difficult to calculate. In determining indirect costs, it is

increments to revenues, however, should be accounted for in the calculation of resident replacement costs.

¹⁰ Guidelines provided by the Residency Review Committees for various specialties and studies based on observing the time spent by faculty on educational activities have provided estimates of the effort involved (in terms of FTE) that form the basis for cost calculations (Zeidel et al., 2005, Nasca et al., 2001). Hospitals report the compensation attributable to the portion of time physicians spend training residents on their Medicare cost reports.

important to note the separate nature of specialized care and residency training. Costs relating to specialty care in teaching hospitals represent a separate category of costs. These are not indirect costs of education, but they are often lumped together with indirect costs in discussions of GME financing. The educational mission and specialized care mission of teaching hospitals may be complementary but are not necessarily interdependent. Many teaching hospitals serve as tertiary and quaternary care facilities, providing a wide range of services, testing capabilities, and experimental procedures. Thus the more specialized resource-intensive care provided in these institutions may be of higher quality and higher cost than the care provided in less sophisticated hospitals.¹¹ In addition, teaching hospitals may serve patients with higher acuity levels than are generally captured in standard case mix indices, precisely because their infrastructure supports more extensive treatment (Retchin, 1998; Bailey et al., 1999; Heisler et al., 2003). This adds another component to patient care that distinguishes teaching hospitals from non-teaching hospitals and creates an upward pressure on costs.¹² It is important to recognize that the potentially higher cost of patient care under these circumstances may result from functions that are not necessarily generated by the training mission. While these functions may make teaching hospitals optimal settings for training and enhance the quality of that training, the distinctive patient care mission undertaken in these facilities is driven by the demand for specialized care and to a certain extent, opportunities for research, and not by the need to train residents. If the need for advanced facilities and the need for physician specialty

¹¹ The AAMC reviews 23 articles comparing quality of care in teaching and non-teaching hospitals and finds that teaching hospitals have better quality of care overall (Kupersmith, 2003).

¹² The most common approach to quantifying these types of indirect costs is to estimate the total cost of patient care at teaching hospitals and compare it with the cost at non-teaching hospitals. Koenig et al. (2003) and, more recently, Koenig et al. (2005) use this approach. They use multiple regression techniques to estimate the separate components of the cost increment due to the educational, research, and high-need patient care missions in teaching hospitals.

training are independent from one another yet possibly complementary, it is possible that a cost savings can be realized by combining the two in the same institutions.

Costs and Benefits to Residents

Residents themselves also bear costs for GME. Classic economic theory regarding the acquisition of skills--i.e., human capital theory--asserts that individuals should bear the cost of training if the training is *general* (i.e., training that can be used at many institutions (hospitals or clinics, in the case of GME) and firms should bear the cost of training if the training is specific to the particular production process operating in the firm and is not transportable (Becker, 1975). The theory assumes that firms will be unwilling to support training that makes individuals more attractive to other firms and more likely to leave, resulting in a loss on their investment. Similarly, it assumes that individuals will only be willing to pay for training that increases their market value.

Thus, in any form of professional education, an appropriate cost split must be determined between individuals and institutions, based partly on the nature of the training. Individuals may carry the cost in the form of direct payments to education providers and opportunity costs. Direct costs are usually in the form of tuition and fees. Opportunity costs of training consist of lost income from the alternative activities that could have been undertaken during the time spent in training. In addition, opportunity costs extend more broadly to the present value of all future income that might result from other types of training or occupations versus the one chosen.

In the case of residency training, the individual pays no tuition or fees but renders services and receives a salary and benefits. Opportunity costs of training, however, consist of lost income from the alternative activities that could have been undertaken during the time spent in residency, including the practice of medicine in a non-

educational setting.¹³ Residents agree to a relatively low compensation package because they are investing in the accumulation of general human capital. In determining whether to undertake specialty training, the individual must weigh the present value of all current and future earnings against the present value of other occupations.¹⁴ Factored into this calculation is the individual's willingness or ability to invest in the present for earnings in the future.¹⁵ In addition, the decision to pursue GME is conditional upon the decision to pursue medical school. Once medical school has been completed, however, the physician faces not only the decision of whether to specialize but also the choice of specialty.

Thus, the monetary benefit that accrues to the resident is the present value of the training in terms of present and future earnings combined. There are two aspects to this benefit. The first is the value of the board certification, which grants the individual an indicator of competence and thus the ability to charge prices in accordance with the perceived value of this competence. The second is the value of the learning itself, which enables the future specialist to diagnose and treat disease. The extent to which trainees learn to do this effectively depends upon the quality of their training. This latter type of benefit accrues to the individual by providing a monetary reward in the form of increased demand for his or her services. This benefit also accrues to society, suggesting that society has an interest in supporting high-quality training.

¹³ This would apply to residency years beyond the first year of training, since all states require at least one year of graduate medical education for licensure.

¹⁴ Weeks & Wallace (2002) concluded that procedure-based physicians enjoy similar returns to education to lawyers, higher returns than dentists and businesspeople, and much higher returns than primary care physicians. However, this study relied on 1997 data, and the compensation of physician training of all types may have risen or fallen relative to alternative occupations since then.

¹⁵ In the human capital literature, this willingness is measured by the individual's "discount rate"—i.e., the weight he or she places on future versus present earnings.

It is sometimes useful to compare GME with other models of advanced professional training and note the relative degree to which costs of training are assumed by the trainees themselves. Residency training is sometimes compared with other forms of advanced health professional training, such as advanced nursing degrees and doctoral programs in pharmacy and psychology, as well as other advanced training such as law and teaching. These post-collegiate training programs are difficult to compare with GME, however. GME follows medical school, which already constitutes post-collegiate training and is generally pursued at considerable expense to the medical student. Medical students generally accumulate a sizeable debt load.¹⁶ Although some other advanced professional training models exist (e.g., psychologists practice at a reduced rate to accumulate experience necessary for licensure, Ph.D. holders sometimes take post-doctoral posts, newly licensed lawyers may pursue clerking opportunities for judges at a low wage in exchange for the opportunity to learn), there is essentially no equivalent in other professions to the comprehensive system of specialty training that physicians undertake following graduation from medical school.

Costs and Benefits to Patients and Insurers

As we noted, patients who need specialized care benefit from the costly infrastructure available in teaching hospitals. The increased value of services rendered in teaching hospitals may also depend in part on the educational mission itself. For example, attending physicians may remain more aware of cutting edge and effective procedures as a result of their educational responsibilities. On the other hand, attending physicians may be less engaged in patient care than physicians who cannot rely on residents as a substitute for their involvement.

¹⁶ In 2003, 85% and 81% of the graduates of public and private medical schools, respectively, were in debt. The median debt was \$100,000 (public) and \$135,000 (private). (American Medical Student Association, 2003; Jolly, 2005). Woodworth et al. (2000) found that 55% of surgical specialty residents and 28% of primary care specialists anticipated owing more than \$100,000 upon completion of training.

Patients in teaching hospitals can be categorized according to the health care insurance that pays for their care. Currently, Medicare, Medicaid, and third-party payers account for approximately 34, 12, and 43 percent of teaching hospital costs, respectively.¹⁷ About 6 percent of care is uncompensated. As described in detail later in this report, Medicare and Medicaid pay explicit GME subsidies to teaching hospitals. Third-party payers do not pay explicit subsidies bearing a GME label. Most third-party payers currently pay higher costs per case to teaching hospitals than to non-teaching hospitals, however, reflecting a perception on their part that these hospitals provide more valuable services than non-teaching hospitals (Dobson et al., 2006). In some cases, private payers may be constrained to pay higher prices to teaching hospitals if the latter are the sole source of certain types of care. In these cases, teaching hospitals hold natural monopolies in certain market areas because the expense of investing in the infrastructure needed to provide this type of care acts as a barrier to the entry of new hospitals.

Cost-shifting has been offered as an additional explanation for the higher payments per case by third-party payers in teaching and other hospitals (Dobson et al., 2006). If, for example, hospitals receive no compensation for treating the uninsured or less than full compensation for treating Medicaid patients, they may shift the expense of treating these patients to other payers. Thus, these patients are beneficiaries of hospital services who do not bear their fair share of costs, and third-party payers may subsidize the care of low- or non-paying patients.¹⁸ The willingness of third-party payers to subsidize the care of low- or non-paying patients depends upon the market power of teaching hospitals. Insured patients may view teaching hospitals as providers of

¹⁷ Based on information provided by analysts using American Hospital Association survey data for 2003.

¹⁸ Dobson et al. (2006) and Mayes & Lee (2004) provide numbers regarding the payment-to-cost ratio, both private compared with other sources and over time, respectively. As of 2002, hospitals received \$1.22 from private payers for every \$1 of cost, in contrast to less than a dollar from other sources for every \$1 of cost.

high-quality care and third-party payers competing for insurance business may be willing to accept higher prices in these hospitals to increase market share of premiums. On the other hand, insurers and managed care plans trying to keep their premiums competitive may be unwilling to make higher payments to teaching hospitals for services that can be obtained elsewhere at a lower price.

Costs and Benefits to the General Public

Underlying the current system of financing for GME in the U.S. is a belief that its contribution to society warrants public support. In addition to overall welfare increases, monetary benefits from GME may accrue to society at large in the form of reduced costs for health care and increased wealth and tax revenue from a healthier, more long-lived and productive population. Not only current patients but future patients and the general populace may also benefit from the educational mission of teaching hospitals and the advancement of science that may take place in these facilities.

The justification for providing public funding for GME is generally based on the argument that GME is a *public good*. This assertion is often debated, since GME does not fit perfectly into the classic definition of a public good. Public goods are defined as commodities that have a value to society but whose provision cannot be properly financed by private enterprise because its benefits are far reaching and its consumption by one consumer does not reduce the supply available to other consumers.¹⁹ In these cases, it is in the interest of society for the government to step in and provide funding. Typical examples of public goods are police protection and national defense. GME does not fit the definition of a public good because only so many

¹⁹ The far reaching and shared quality of public goods are described more technically in economic theory. In technical terms, a good is a public good if no one can be excluded from benefiting from its availability once it has been produced – i.e., it is “non-exclusive”—and if the marginal cost of an additional consumer is zero – i.e., it is “nonrivalrous.” (Nicholson, 2005)

residents can be taught, and, as one individual occupies a residency slot, another is excluded.

It may be more appropriate, therefore, to base the economic argument for public financing of GME on the notion of the health of the population as a desirable *externality* of GME. Externalities are by-products of production processes that people care about that are not sold on markets.²⁰ For example, there are generally no markets for negative externalities, such as the air pollution that occurs as the result of factory production, or positive externalities, such as the civic harmony that occurs as the result of K-12 education. If externalities have far-reaching consequences, governments can intervene by introducing regulations, taxes or subsidies, or markets. In the pollution example, governments can regulate levels of pollution emissions, impose pollution taxes, or sell allowable pollution quotas to firms in the form of tradable vouchers. In the education example, governments can mandate compulsory amounts of schooling, publicly finance schools, or provide individuals with vouchers to be used to purchase schooling on a private market. The benefits to society that GME provides transcend those provided to patients and residents, and are therefore not likely to be paid for by either party in a purely market-based system. Thus, there is a role to be played by the government in financing GME, and it is not necessary to label GME as a public good to provide a foundation for advocating public support.^{21 22}

With regard to GME, the benefits accruing to society are a function of the degree to which the production of specialists in the future physician workforce matches societal needs. If public support for GME is based upon the contribution of GME to a healthy population, then subsidies should be constructed to maximize the benefit to society. Any form of public subsidy will carry along with it a set of incentives

²⁰ See, for example, *Microeconomics* by Varian, 2006.

²¹ This view is supported in Gbadebo and Reinhardt (2001).

²² By the same argument, governments may choose to provide different levels of support to different specialties, if the externalities are perceived to vary by specialty.

that will affect the supply, specialty mix and quality of the physician workforce. It is important that these incentives be aligned with public goals. Such goals might include a particular distribution of physicians across different specialties or a particular distribution of specialists across different geographical locations. In addition, they might include an emphasis on training settings that enhance the quality of the care that future specialists will be able to deliver. We discuss these goals in greater depth in the next section.

By the same token, any overall system of GME financing - both public and private - will carry with it a set of incentives relating to the quality, number, and distribution of specialists in the physician workforce. These incentives may or may not be aligned with the goals of the GME providers who receive funds. Following the discussion of public policy goals in the next section, we discuss criteria by which any given system of GME financing can be evaluated.

WORKFORCE GOALS FOR GRADUATE MEDICAL EDUCATION

As one of the primary contributors to building and sustaining the physician workforce in the U.S., GME is susceptible to changes in policy and trends that shape the physician workforce. The medical workforce, in turn, evolves in response to national health care and market force developments. In our study, we attempt to align the alternative models of GME financing with the public policy goals of GME, which, in essence, are to shape the physician workforce for effective provision of quality health care. Below we describe the current issues and objectives concerning the physician workforce.

Supply. Unlike other countries such as Australia and the United Kingdom, the U.S. does not have an authoritative body charged with monitoring physician supply and demand. It is important to note, however, that those countries with workforce planning do still experience cycles of shortage and surplus, and lack both the information and assessment systems necessary to evaluate the effectiveness of their forecasts and planning. In addition, until recently, planning in these countries has been completely physician-dominated and conducted without much consideration of other members of the health workforce. Most

countries have also failed to use any form of incentives and to adequately address geographical and specialty distribution. (Bloor & Maynard, 2003).

The need for the U.S. to begin engaging in workforce planning, however, is becoming clearer through recent developments in the policy debate over physician supply and demand. It was widely held during the 1980s and the 1990s that there would be an overall surplus of physicians in the U.S. by 2000, especially non-primary care specialists (COGME, 1994; COGME, 1996; COGME, 1999b; American Association of Colleges of Osteopathic Medicine et al., 1996). This was the prevailing view at the time the Balanced Budget Act of 1997 (BBA) established limits on the number of residents that could be counted for Medicare's GME subsidies.

That view, however, has been recently challenged by many, including COGME, which originally promulgated the view. Based on COGME's latest assessment of current and future physician supply and demand (COGME, 2005), the number of practicing physicians is expected to rise from 781,200 full-time-equivalent physicians in 2000 to 971,800 in 2020. Demand, however, is projected to grow even more rapidly than supply during this period, from 1.03 million physicians to 1.24 million by 2020. Another estimation put forth by Cooper et al. (2002) also suggests that the U.S. will have 200,000 fewer physicians than needed in 2020. Others remain skeptical as to whether the predicted shortage will actually materialize (Garber, 2004) and suggest that the method of estimating the shortage may be approached in alternative ways.

According to a report from the IOM, the debate over supply, demand, and need is likely to persist unless an agreement is reached on the estimation method (IOM, 1996b). The lack of consensus on a method to estimate future workforce needs poses a major challenge in developing GME financing policies that provide adequate and sufficient funding to meet those needs. Moreover, the infrastructure within medical schools and GME programs requires considerable time to adjust to changes in physician supply needs.

Geographic distribution. One objective for GME financing is to improve the distribution of both resident physicians and physicians in practice. In comparison to the physician supply debate, the issue of geographic distribution is far less contentious. Physicians are clearly located disproportionately in metropolitan areas, relative to the population. According to a GAO report, the geographic disparity between urban and rural areas persists, despite efforts by the Health Resources and Services Administration (HRSA) and individual states to encourage health professionals to practice in underserved areas. As of 2001, metropolitan areas had 267 physicians per 100,000 population, while non-metropolitan areas had 122 physicians per 100,000 population (GAO, 2003). Residents of non-metropolitan areas, therefore, often travel great distances to receive quality or specialized care. Inner-city areas - typically low-income communities with large proportion of minorities and the uninsured - also face difficulties ensuring a physician supply that is adequate to provide high-quality health care to a local population. The persistent physician shortages in such underserved areas have precipitated the demand for non-physician clinicians (COGME, 1998). A recent study on physician geographic distribution and patient population revealed that non-physician clinicians, such as physician assistants, nurse practitioners and certified nurse-midwives, are more likely to care for the underserved in rural areas and Health Professional Shortage Areas than physicians (Grumbach et al., 2003). International Medical Graduates (IMGs) are more likely to train and locate in rural areas than USMGs (Fink et al., 2003).

Various interventions have been introduced at state and national levels to influence the geographic distribution of physicians, including education initiatives (i.e., promoting family medicine and rural residency tracks) and economic incentives (i.e., Medicare Incentive Payments of 10 percent supplement to usual fee scale and Medicaid bonus fees). COGME's Tenth Report (1998) called for further investment in the National Health Service Corps and similar programs than offer loan forgiveness and scholarships to those who agree to serve in underserved

areas. The National Health Service Corps has been criticized over the years because of its relatively low long-term retention rate after the fulfillment of participants' obligations (GAO, 1995; Pathman et al., 1992), but it is also clear that a significant number of physicians, 40-50%, remain in or fairly close to their original assignment site for many years after their assignment and provide a substantial amount of obligated and nonobligated community service (Cullen et al., 1997; Rosenblatt et al., 1996; Porterfield et al., 2003). A review of 69 state programs concluded that, compared with young nonobligated generalists, physicians serving obligations to state programs practiced in demonstrably needier areas and cared for more Medicaid and uninsured patients (Pathman et al., 2004). Nonetheless, these programs have not yet been able to adequately increase the physician distribution toward rural and underserved areas (Shugarman & Farley, 2003).

A variety of factors play an important role in residents' choice of practice location, and GME financing cannot effectively address them alone, but it can create incentives in coordination with other policy levers. For example, although pre-medical factors of rural upbringing and specialty preference have been shown to be strongly correlated with recruitment of physicians to rural areas, exposure to training in underserved areas such as rural rotations, particularly during residency, were also strongly correlated with practice location in an underserved area (Tavernier et al., 2003; Brooks et al., 2002; Woloschuk & Terrant, 2002; Rabinowitz et al., 2001).

There is also considerable variation across states in both the number of residents in training and physicians in practice. There are 34 physician residents per 100,000 population in the United States but the average ranges from a high of 60 physician residents/100,000 population in the Middle Atlantic Region (NY, NJ, and PA) to a low of 18 physician residents/100,000 population in the Mountain Region (AZ, CO, ID, MT, NV, NM, UT, WY) (JAMA, 2005). On average (across 50 states and D.C.), only about 47 percent of physicians practice in the state where they received their GME training (Henderson et al., 2003). While some states "export" physicians and others "import" physicians who received their

GME training in other states, there is still considerable variation in physician supply. The number of physicians in practice per 100,000 population ranges from a high of 265 in New York (which also has the highest number of residents/100,000 population [77] to a low of 150 in Wyoming (which has among the lowest residents/1000). This finding, as well as others, seems to lead to the conclusion that states do not function as self-contained markets and thus, may not have much influence in affecting physicians' geographic distribution.

Specialty distribution. Specialty mix is another area of concern from a policy perspective. The national ratio over the last decade has remained relatively constant at one-third generalists and two-thirds specialists, which falls short of the 50 percent target recommended by COGME's Third Report (GAO, 2003; COGME, 2005). This target appears reasonable for the immediate future, especially in light of demographic and epidemiological trends predicting rises in incidence and prevalence of comorbidity and chronic conditions such as obesity in the U.S. population. Interest in primary care, however, does not appear to be increasing. A recent survey of residents shows that the number of family medicine residents who are graduates of US medical schools decreased by about 40 percent since mid 1990s, when market forces appeared to have reduced specialty residency training and increased primary care residency training (Brotherton et al., 2005; Grumbach, 2002).

Residents' choice of specialty depends on a several factors, both economic and non-economic,²³ of varying importance and with different

²³ Research on specialty choice identifies a multitude of factors, both economic and non-economic, motivating the choice: perception of controllable lifestyle (Schwartz et al., 1990; Dorsey et al 2003); personality (Zeldow and Daugherty 1991); personal fit (Burack et al, 1997); race and gender (Brotherton 1995); future income (Osborn 1993, Kassebaum and Szenas 1994, Kiker and Zeh 1998, Thornton and Esposto 2003); opportunities to work with new technology, and faculty advisors (Osborn 1993, Kassebaum and Szenas 1994); prospect of annual vacations, length of residency, and defined weekly work schedules (Thornton and Esposto 2003); relative income expectations, expected malpractice premium cost, location of practice, length of residency, type of medical school attended, score on the science problems section of the MCAT, predictable working hours, and perceived prestige of the specialty

effects on residents interested in primary care, residents interested in non-primary care, and those in debt.²⁴ As in geographic distribution, GME financing alone cannot effectively address these factors, but it can play a role in creating incentives in coordination with other policy levers.

Educational goals. The educational goals of medical and graduate medical education are derived from physician workforce and national health care goals. With the national goal of improving quality in health care and anticipating needs of the 21st century population, the Institute of Medicine has articulated a new vision for health professions education:

"All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics." (IOM, 2003c)

The impetus for multidisciplinary training in clinical education comes from the reality that physicians face once they are in practice, when they are often asked to work in teams to support patients with chronic conditions (IOM, 2001). While it represents a departure from the traditional mode of care and training - characterized by isolation, hierarchical structure, and specialization - multi-disciplinary training must become the norm as the proportion of patients with chronic conditions grow rapidly with the aging population in the 21st century. And as evidence-based medicine gains ground in medical education and training, residency programs are also being subject to evaluation and

(Kiker and Zeh 1998). McKay (1990) found that residents are most responsive to changes in relative expected hours worked, fairly responsive to changes in relative expected earnings, and quite unresponsive to changes in the relative length of the training period.

²⁴ Research has also shown that the factors that are reported by primary care and non-primary care residents as most influential in the choice of specialty differ (Fincher et al, 1992, Osborn 1993, Burack et al, 1997). Indebtedness, which was described in the section above on Costs and Benefits to Residents, has been shown to lead to the choice of surgery and support specialties (Kassebaum and Szenas 1993, Kiker and Zeh 1998) but also has been found to be less significant than a number of other factors (Bazzoli 1985, Brotherton 1995) and overall has shown a mixed impact, perhaps in part because of its interaction with length of residency and expected future income (Colquitt et al 1996).

accountability by measurable outcomes, such as the six general competencies that all residents ought to acquire, regardless of discipline, as identified by ACGME. The competencies cover all aspects of practice, including patient care, evidence-based medicine, quality improvement, communication skills, professionalism, and a system-based approach (ACGME, 2006).

Additionally, the clinical care shift towards outpatient and ambulatory settings and away from hospital settings will necessitate a parallel shift in residency training programs, which take place mostly within hospital settings (COGME, 1999b). Residents need opportunities to train in community settings that are similar to those in which they will eventually practice and need a broad range of experiences that expose them to the full continuum of care. While incorporating the shift toward ambulatory settings into graduate medical education may require significant financial and logistical changes, there is a general acknowledgement that community-based training opportunities should be expanded (COGME, 1999b).

FRAMEWORK FOR ASSESSING THE STRENGTHS AND WEAKNESS OF GME FUNDING SYSTEMS

A system of GME financing can be evaluated according to its ability to achieve five key objectives: equity, adequacy, efficiency, accountability, and administrative feasibility. An ideally structured system of GME financing would link responsibility for financial support to those who benefit from the activities in equitable proportions, ensure that funding is adequate to support the quality of training that benefits current and future patients and the general public, and does so with maximum efficiency and accountability in an administratively feasible manner. We elaborate on these criteria below.

Equity

An *equitable* financing system would link financial support to those who benefit from those activities. It would be one in which the

support provided is commensurate with the benefits derived. The entities and individuals who bear the costs should derive a share of the benefits that is proportional to their contribution. Thus both the level of financial contribution and the structure of incentives by a particular funding source should be linked to the specific returns it will derive from its investment. In addition, it should encourage the distribution of funding such that the health care needs of the nation's entire population are met equitably, both with respect to the care provided by residents in training and the care they will provide in their future practice. In assessing whether a current or proposed GME financing system is equitable, we would ask the following questions:

- Are GME costs equitably borne by those who benefit: providers, residents, patients and insurers, and the general public?
- Is federal funding distributed equitably to meet the nation's current and future health care needs?

Adequacy

An *adequate* system of funding for GME would be one that supports the training needs of the physician workforce. Adequate funding assures sufficient resources for high quality training of future physicians and presupposes a system that provides funding stable enough to enable teaching hospitals and program directors to invest in high quality training. An important limitation to any GME financing system in addressing adequacy is the uncertainty of determining the size and mix necessary for an adequate workforce. In assessing the adequacy of a GME financing system, we would ask the following questions:

- Are funding levels sufficient, stable, and predictable enough to provide high quality training for physicians needed in the future?
- Is public support sufficient to enable teaching institutions to be competitive on price and quality with non-teaching hospitals and maintain fiscal solvency?
- Does the system provide sufficient support for innovation that improves training?

Efficiency

An *efficient* financing system would be one that promotes the delivery of effective educational models at an economical price to meet desired goals. It would encourage effective educational models that promote improved ways to meet current and future health care needs by creating appropriate incentives for developing the competencies that lead to high quality care. It would enable teaching institutions to maintain fiscal solvency and compete on price and quality by subsidizing higher costs attributable to educational activities without supporting inefficiencies. In assessing the efficiency of a GME funding system, we would ask the following questions:

- Does the system support the number of residency positions needed to meet future workforce needs and encourage an appropriate distribution of physicians by specialty and practice location?
- Do the funding incentives encourage high quality programs that develop needed physician competencies at the most economical cost?

Accountability

A system of GME financing should foster *accountability* for the proper use of funds. It would hold recipients of Federal and State funds accountable for producing specialists of the quality and number needed to support public goals in an efficient and effective manner. It would encourage transparency in the allocation and use of funds and foster mechanisms that will respond to needs of the health care system, as a whole, with respect to the total number of residency positions in different specialties and the geographic distribution of specialists. In assessing the accountability of a financing system, we would ask the following questions:

- Is there transparency in the allocation and use of public funds?
- Is there on-going monitoring and evaluation of the system's progress in meeting educational and workforce goals?
- Are there consequences for residency programs that do not use public funds properly?

Administrative Feasibility

A practical approach to reforming the current GME funding system would be one that is feasible in the transition and in its long-term operability. The administrative burden and overall costs of reform should be commensurate with the gains. In assessing the feasibility of alternative funding systems, we would ask the following questions:

- How easily can the changes necessary to implement the new system be implemented?
- Are the public funding policies clear, understandable, and feasible to implement without undue reporting burden or unnecessary changes in arrangements between GME sponsors and their affiliated training sites?
- Is the funding system sufficiently flexible to address different educational models and specific workforce needs without requiring special policies?
- What are the administrative costs in relation to the total funds?

SUMMARY

The primary beneficiaries of GME are the residents themselves, and the general public, who benefit from the positive externalities generated by GME. GME providers, patients, and payers may derive a quantifiable monetary benefit, as well. With regard to these last three types of beneficiaries, however, it is difficult to distinguish the benefits of GME from the benefits of the availability of specialized care, although significant research has been and continues to be conducted in this area.

Since there are general public benefits from the externalities produced by GME, a public subsidy may be justified. Ideally, that subsidy should be separate from any premium that public insurance payers (e.g., Medicare, Medicaid) pay for the availability of specialized care, uncompensated care and research. To the extent a public subsidy is needed, the funding should be aligned with the public benefits that are derived from GME. These include both workforce goals, such as the appropriate supply, specialty mix, and geographic distribution of the physician workforce, and educational goals, such as assuring that

physicians have the competencies and skills needed for the efficient delivery of high quality care.

A system of GME financing can be evaluated in its ability to achieve five key objectives: equity, adequacy, efficiency, accountability, and administrative feasibility. The principles and assessment framework developed in this chapter serve as the basis for evaluating the current system of GME financing as well as alternative models. In the next chapter, we present a brief description of the current system of financing for GME and evaluate it according to the concepts developed above.

3. CURRENT SOURCES OF FUNDS RELATED TO GME

In this chapter, we present an overall picture of the system of funding for GME in the U.S. in recent years and evaluate it according to the criteria presented in our framework in chapter 2. Our objective is to identify the various sources of funding, describe how the funds are allocated, and provide estimates of the amount of funding. In so doing, we provide a broad analysis of current support for GME and the relative importance of various funding streams.

DESCRIPTION OF CURRENT SOURCES OF FUNDS

The chapter begins with an overview of funding allocations from the primary public sources of funding for GME— namely, Medicare, Medicaid, federal facilities, the Children’s Hospitals Graduate Medical Education Payment Program (CHGME), and other GME funds administered by the Health Resources and Services Administration (HRSA). Next, we discuss the role of private payers in contributing support for GME. Next, we discuss other smaller sources of funding for GME. Last, we summarize the relative contributions of the various funding sources.

The purpose of the following sections is to provide a brief narrative overview of each funding source and an estimate of the amount of funding it provides. In each case, we describe the sources of information and the particular method we used to derive our estimates. Our estimates of the amounts of GME-related funding provided by different sources are based, in many cases, on rough approximations, and are therefore to be interpreted as such. In particular, our estimate of the private payer contribution is based upon debatable assumptions. Our primary goal in making these approximations is to obtain a broad sense of the relative importance of the different sources to overall support for GME. The most recent set of fairly complete estimates available were for FY 2003. Therefore, we use this year as the basis for our calculation of relative shares in the following sections.

Medicare

Medicare is the largest public financial contributor to GME and is the primary vehicle by which the federal government subsidizes graduate medical training.

Medicare's contribution is allocated through two programs: Direct Graduate Medical Education (DGME) and Indirect Medical Education (IME). Medicare's DGME payments are intended to cover the direct costs of residency training, consisting primarily of resident and faculty salaries, program administration costs, and other costs directly attributable to educational activities. When Congress established Medicare in 1965, it stated the following intention to provide at least a temporary subsidy to medical education:

"...education activities enhance the quality of care in an institution, and it is intended, until the community undertakes to bear such education costs 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" (House Report, 1965)

Medicare's IME payments to teaching hospitals are intended to subsidize the higher costs of patient care in these hospitals. The higher costs are generally considered due to both patient acuity levels and the presence of residents. Research has indicated that the severity of illness of patients in teaching hospitals is higher than that of other hospitals (Retchin, 1998; Bailey et al., 1999; Heisler et al., 2003) to a degree that is inadequately captured by DRG measures in the Prospective Payment System (Taheri et al., 2001). In addition, the presence of residents is believed to place demands on other staff. The rationale for the IME subsidy is summarized in the following statement from the report to Congress, "Hospital Prospective Payment for Medicare," in December 1982:

"The indirect costs of graduate medical education are the higher patient care costs incurred by teaching hospitals with medical education programs...It is also true that the mere presence of interns and residents in an institution puts extra demands on other staff

and leads to the existence of higher staffing levels. The process of graduate medical education results in very intensive treatment regimens...there is no question that hospitals with teaching programs have higher patient care costs than hospitals without" (Department of Health and Human Services, 1982, pgs. 48-49)

Medicare DGME and IME are calculated using different methods and are funded through different public revenue sources. Below, we describe each subsidy briefly and report our estimates; in the next chapter, we describe each subsidy in depth and explore shortcomings and possible refinements.

Medicare DGME: The Medicare DGME subsidy is based on a historic per resident amount updated for inflation, current numbers of residents and Medicare inpatient days as a percentage of total inpatient days. DGME payments are allocated between Medicare Part A (inpatient services) and Part B (outpatient services) trust funds. For the purposes of our estimates, we add Part A and Part B payments together. We estimate that total Medicare DGME payments for FY 2003 were \$2.5 billion. We base our estimates on Medicare data available on the Website of the Centers for Medicare & Medicaid Services (CMS) Cost Reports.²⁵ The data contain DGME payments to individual teaching hospitals in each year, including the carved-out portion of capitation payments to managed care organizations for Medicare managed care beneficiaries. We added these payments across all teaching hospitals to obtain an overall total.

Medicare IME: The Medicare IME subsidy consists of an add-on to per discharge payments for inpatient hospital services based on teaching intensity. We estimate that total Medicare IME payments in FY 2003 were \$4.9 billion. As with our estimate of total DGME payments, we obtained our estimate of total Medicare IME by adding these payments across all teaching hospitals in the Medicare Cost Report data available on the web.

²⁵ Retrieved from: <http://new.cms.hhs.gov/CostReports/>

Medicaid

Medicaid is the second largest public source of payments to GME. States dispense Medicaid funds. Unlike Medicare, Medicaid does not require the allocation of funds to GME or any particular method of allocation as long as the payments are related to patient care. Consequently, states are not uniform in allocating funding for GME. According to a survey sponsored by the American Association of Medical Colleges (AAMC), however, 47 states²⁶ and the District of Columbia (DC) provided Medicaid-based payments to GME in 2002: 29 states through fee-for-service programs only, one state (Tennessee) through its managed care program only, and 17 states and DC through both types of programs. Twenty-four states and DC made separate payments for DGME and IME, but nine states made no distinction between direct and indirect funds. Nearly half of these states (21) rely on DGME and IME formulas similar to those established by Medicare to calculate payments. In most cases (43 states), GME payments under Medicaid are distributed primarily to teaching hospitals – either as add-ons to per-case, per-diem rates (30 states and DC) or as separate direct payments (10 states) or both (5 states) - but several other variations in distribution mechanisms exist, and, in some cases, medical schools or non-hospital training sites are the recipients of payments (COGME 2004, Henderson 2003).

The total amount of Medicaid GME payments is difficult to quantify, mainly because of their inclusion alongside Medicaid disproportionate share (DSH) payments and within managed care rates. For FY 2002, the AAMC survey estimated that total Medicaid payments for DGME/IME were between \$2.5 and \$2.7 billion (Henderson 2003). Updating for inflation leaves these estimates at \$2.5 to \$2.8 billion, respectively for FY2003.²⁷ Since budgetary pressures on Medicaid expenditures have caused some states to constrain GME payments, it is difficult to assume that an increase in hospital payments correctly

²⁶ Only Illinois, Kansas, and South Dakota did not support GME under Medicaid in 2002.

²⁷ We multiplied the 2002 estimates by 1.0226, the ratio of the CPI-U inflation factors for 2003 to 2002.

transforms the 2002 contribution to the 2003 contributions. We use the lower estimate of \$2.5 billion for the purpose of gaining a rough estimate of the overall Medicaid contribution. Since state Medicaid funds are matched more or less equally by federal funds, approximately half of that total comes from the federal government.²⁸

Federal Facilities

Department of Veterans Affairs.

As part of its mission, the Department of Veterans Affairs (VA) provides patient care to veterans and supports research and medical education (Wasserman et al., 2001). These missions are funded through the Veterans Health Administration (VHA) by means of the Veterans Equitable Resource Allocation (VERA) system instituted in 1997 to improve the allocation of congressionally appropriated health care funds to the Veterans Integrated Service Networks (VISNs). A RAND study of VERA found that although the Veterans Affairs Medical Centers (VAMCs) with residency training programs had higher costs, there were several perceived benefits to having these programs (Wasserman et al., 2001). Academic affiliations enable VA hospitals to recruit and retain high quality physicians, enhance the quality of care through faculty current in state-of-the-art medical care, improve access to specialized services, benefit from patient care services provided by residents, and increase research opportunities.

In 2004, 111 VAMCs were involved in GME programs as the primary clinical site (1), the sponsoring institution (6), or as a participating organization (104) (JAMA, 2005). The VA funds about 8,700-8,900 residents each year, or about 9 percent of all residency positions (Advisory Committee, 2005) and serves as a training site for about 28,000 residents annually (Office of Academic Affiliations).

²⁸ The Federal Medical Assistance Percentages (FMAP)-i.e., the rates at which the federal government matches state funds-vary somewhat by state. However, as a general rule, approximately half of total Medicaid funds within a state come from the federal government.

In FY 2003, the VHA paid \$397 million for stipends and benefits to residents (Personal Communication, 2/10/2006, Office of Academic Affiliations, Veterans Health Administration). In addition, the VERA system provides education support to VISNs with training programs by distributing a predetermined lump sum (e.g., \$41,202 for FY 2001) (Wassermann et al. 2001) multiplied by the number of residents in the program, which totaled \$358 million in FY 2003 (VA 2003). These funds are similar to the Medicare IME funds, in that the amount is based on the number of residents, but supports other educational activities as well. The total VA budgeted amount for GME programs in FY 2003 was \$755 million.

Department of Defense

Three branches of the Department of Defense (DoD) - Air Force, Army, and Navy - run their own graduate medical education program but participate in a Joint Service Graduate Medical Education Selection Board and collaborate in workforce forecasts. For 2004, a total of 38 military institutions across the three branches were involved in GME as the primary training site (5), the sponsoring institution (24) or as a participating institution (9) (JAMA, 2005). The DoD funds approximately 3,000 residency positions annually; in FY 2004, DoD funded 3,026 in military teaching hospital programs and sponsored 337 residents in civilian training programs for a total of 3,363 residents (Personal communication, 2/15/06, GME representatives from the Air Force, Navy, and Army). A breakdown of residents by military branch and by in-house and civilian can be found in Appendix B.

DoD pays each trainee a salary as an active officer through a military pay account. Most trainees are paid at an 03 pay-grade with less than 2 years of active duty. For 2004, this corresponded to \$3,018.90 per month (Defense Finance and Accounting Service, 2004), or \$36,226.80 a year. For our calculations, we added 28% to this figure to

account for fringe benefits,²⁹ for a total of \$46,732.57. Thus, for 3,363 residents in FY 2004, the DoD paid roughly \$157 million in salaries and benefits.

However, this contribution to DGME training does not include other direct costs of residency training to the military treatment facility are built into base operational and management budget of the facility and are not identified separately.³⁰ To capture an estimate of the full DGME cost, we use the national per resident average, inflated to 2004,³¹ and multiply it by the number of DoD-funded residents for FY 2004, 3,363, for a total of \$275 million for DoD DGME payments in that year. We then deflate this number to provide a rough estimate of \$268 million for FY2003.³² This represents a very rough estimate of DoD funding for GME in military treatment facilities that does not take into account indirect costs.

Children's Hospital GME Payment Program (CHGME)

Because children's teaching hospitals have low Medicare utilization rates and thus do not receive the same level of Medicare support for GME as other teaching hospitals, a bipartisan effort in 1999 established funding to support GME activities in these hospitals.³³

²⁹ 28% is the mean ratio of benefits to stipends for 2003-2004 for all respondents of the 2004 AAMC Survey of Housestaff Stipends, Benefits, & Funding.

³⁰ The military treatment facilities adopt a Medicare-like system when billing third party payers, including an IME adjustment to the rate (Uniform Business Office). For example, TRICARE follows a Medicare-based payment methodology to pay for civilian care of military beneficiaries, and these payments include educational subsidies for discharges from civilian teaching hospitals.

³¹ The historic national per resident average is \$68,464 (HCFA 2001); we then inflated it by 1.0313 for the January 1, 2004, cost reporting period, and used the result, \$81,628, for our calculations (AAMC email and phone correspondence, 4/12/06).

³² We deflated the estimate by .97, the ratio of the CPI-U inflation factors for 2003 to 2004.

³³ First enacted as part of the Healthcare Research and Quality Act of 1999 (P.L. 106-129), the Children's Hospitals Education and Research Act of 1999 authorized the Health Resources and Services Administration (HRSA) to administer the CHGME program for 2 years. The program was

The determination of CHGME funding follows the general framework of the Medicare methodology. Unlike Medicare GME payments, however, funding is not an entitlement but requires annual appropriations. Two thirds of the appropriations go toward IME and one third toward DGME (American Medical Association, 2006). A small amount of the appropriations is used for administrative costs and the remainder is given to children's hospitals in explicit payments. For FY 2003, \$290 million was appropriated (Department of Health and Human Services, 2005), \$13.5 million was used for administrative costs, and \$276.5 million was explicitly paid to 61 children's hospitals (Health Resources and Services Administration, 2003).

The President's FY 2007 budget, released on February 6, 2006, proposes a major cut to the CHGME budget, from approximately \$300 million to \$100 million. In the past, Congress has consistently allocated \$100 million more to CHGME than recommended by the President's budget, but this represents the most significant cut ever proposed for CHGME in a President's budget. (National Association of Children's Hospitals, 2006).

Other Health Resources and Services Administration (HRSA) Programs

Primary Care Residency Training Programs: The federal funds for Primary Care Residency Training Programs are authorized under the Public Health Service Act, Title VII, Section 747, and administered through HRSA. Grants have been awarded to approved residency or internship programs in family medicine, general internal medicine and/or general pediatrics for planning, development, operational, or participatory (including provision of financial assistance) purposes. In FY 2005, there were 36 grantees from 20 states, according to HRSA's website. Recent changes introduced in the FY06 budget, however, have cut the

reauthorized for an additional 5 years as part of the Children's Health Act of 2000 (P.L. 106-310) (Enzi, 2005). In 2005, the Senate passed a bill to reauthorize CHGME for another 5 years, to 2010, but the bill has yet to pass the House. However, CHGME has been authorized for FY 2006 and 2007.

primary care medicine and dentistry programs by 54 percent. As a result, the agency has informed all primary care grantees that it will continue existing grants but will not accept applications for new grants or grant extensions.³⁴

For our purpose in estimating the past HRSA primary care grant contribution, we use the FY 2004 numbers in absence of FY 2003 amounts. The total for FY 2004 for both family medicine and general internal medicine/general pediatrics was approximately \$16.7 million. (Personal communication, HRSA March 16, 2006)

Table 3.1 HRSA Primary Care Residency Program Funding

Year	Family Medicine	General Internal Medicine/ General Pediatrics
FY 04	\$13,467,000	\$3,237,000
FY 05	\$12,820,000	\$4,350,000

Source: Personal communication, HRSA March 16, 2006.

Geriatric Academic Career Awards: The Geriatric Academic Career Awards program, administered by HRSA, was established by Congress in the Health Professions Partnership Act of 1998 to support career development of geriatricians in junior faculty positions who are committed to training clinical geriatrics. The grantees, who must be affiliated with institutions that support their career development, must provide clinical training in geriatrics to interdisciplinary teams of clinicians. Recipients are awarded \$50,000 (in 1998 dollars, adjusted with cost of living increases each year), and awards are made for a five-year period. In FY 2005, 12 new awards were made. The FY06 budget eliminated funding for all geriatric education programs, however, including the Geriatric Academic Career Awards, and grantees have been

³⁴ Information supplied through correspondence with the AAMC.

informed that their funding will be discontinued immediately.³⁵ The FY 2003 funding amount for the Geriatric Academic Career Awards is estimated to be \$820,000, bringing our estimate of total funding for other HRSA programs in FY 2003 to approximately \$17.5 million.

Private Payers

Estimating private payer contributions to GME programs is difficult and controversial for many reasons. First, it is unclear whether the private payer payments to GME providers actually compensate these providers for GME, itself. It is likely that private payers intend to compensate GME providers only for the patient care that these institutions provide – in accordance with their mission – and that higher payments to teaching institutions reflect the perceived value of the care provided in these institutions. As mentioned in our conceptual framework in the prior chapter, private payers may be willing to pay higher rates to teaching hospitals because these institutions provide care that cannot be found in other institutions, either through technological monopolies or improved services associated with teaching, or because their clients value access to teaching hospitals and are more willing to subscribe to insurance plans that provide this access.

Second, even if private payers perceive a value to the presence of GME in hospitals, their contributions to support it are implicit in their payments and are not explicit. Several sources report that payment-to-cost ratios for private payers are considerably greater than 1.0 (Dobson et al. 2006, Mayes & Lee 2004). Thus, whether intentional or not, it is reasonable to assume that private payer payments cover the costs of teaching activities associated with their beneficiaries.

One rough means of approximating the private payer share of funding for GME is to make use of research that estimates the cost of the educational mission, as distinguished from the cost of the other missions associated with teaching institutions, and to multiply these

³⁵ Information supplied through correspondence with the AAMC and from the Website of the Bureau of Health Professionals.

estimates by the private payer share of costs in teaching hospitals. Koenig et al. (2003) develop a methodology³⁶ to estimate both "all-payer" funding levels to cover costs in teaching hospitals versus non-teaching hospitals and the costs of teaching versus other mission-related activities within teaching hospitals. For the year 2002, they estimate that total mission-related costs of teaching hospitals amounted to \$27.2 billion, and that \$10.2 billion were attributable to DGME, \$6.2 billion were attributable to IME, and the rest were attributable to research and stand-by capacity needed to provide highly specialized care to medically complex patients. Their measures, although based upon a set of assumptions that could be debated, are the best estimates currently available upon which to base a calculation of a private payer share of GME funding. They estimate that total funding for the educational mission amounted to \$16.4 billion in 2002. Inflating this estimate to obtain a 2003 estimate yields a total cost estimate of \$16.8 billion.³⁷

From other sources, we obtained an estimate of the private payer share of costs in teaching hospitals of 43 percent.³⁸ Applying this percentage to the overall estimate of educational mission related costs in teaching hospitals yields a rough estimate of \$7.2 billion for the private payer costs that go to GME in FY2003. Since this estimate is based on analyses of costs and not payments and since payment-to-cost ratios are generally higher for private payers than for other types of payers, it may represent an underestimate of the total contributions of private payers for GME activities.

³⁶ Their estimates are based on a multivariate regression examining the effect of teaching, research, and standby capacity (measuring specialized care) on all payer inpatient costs per case exclusive of DGME costs and a separate estimate of all payer DGME costs using cost report data available through the CMS Hospital Cost Report Information System (HCRIS).

³⁷ This number was obtained by multiplying the estimate of \$16.4 billion by 1.0226, the CPI-U ratio for converting 2002 to 2003 prices.

³⁸ The estimate of 43 percent was obtained through email correspondence with analysts who had based their analysis on AHA survey data for 2003.

Other Sources of Funding for GME

In addition to the primary funding sources discussed above, teaching hospitals rely on a variety of other sources to support their residency training programs. These sources in the aggregate contribute only a small percentage of total funding, but the importance of particular sources, such as state appropriations, varies by type of ownership.

We used the AAMC Survey of Housestaff Stipends, Benefits, and Funding (AAMC 2003) to gain a sense of the extent of GME funding obtained from other sources. According to the survey respondents (205 members, or about half, of the Council of Teaching Hospitals (COTH)), the vast majority (87.4%) of funding for resident stipends and benefits came from patient revenues/general operating funds, but about 9.5 percent of resident stipends and benefits were funded through state and municipal appropriations (2.4%), physician fee revenue (1.3%), medical school university funds (1.4%), endowment income (0.1%) and other sources (4.3%). Given the fact that these estimates were based upon a 50% response rate of only COTH members, we did not create estimates of these sources of funding.

Another minor yet controversial source of funding for GME not captured in the AAMC survey is support from pharmaceutical and device manufacturers. For example, in 2004 the American Academy of Dermatology announced a pilot program in which money donated by the Academy, pharmaceutical companies, and other interested parties will be pooled together to fund 10 new dermatology residencies slots at 10 different institutions for the July 2006 match (Kuehn, 2005). Although supporters of the program welcome the funding, critics fear that pharmaceutical companies may influence the allocation of resources in a manner that best protects and supports the market for their products. This type of support for GME is relatively rare, however, and we have no revenue estimates for it. In addition, we lack estimates of the contributions of other relatively minor sources of funding for GME, such as philanthropic organizations.

Relative Contributions of Different Funding Sources

Our estimates of total funding from each source are summarized in Table 3.2. Our primary goal in making these approximations is to obtain a broad sense of the relative importance of the different sources to overall support for GME, but these comparisons are to be interpreted as merely suggestive.³⁹

Table 3.2 Approximate GME Total Funding Amount by Source for FY 2003 (in billions of dollars)

Funding Source	Funding Amount (in billions of dollars) for FY 2003
Medicare DGME	2.5
Medicare IME	4.9
Total Medicare	7.4
Medicaid	2.5
Department of Veterans Affairs	0.8
Department of Defense (DoD)	0.3
CHGME	0.3
Other HRSA	0.2 ⁴⁰
Total Public	11.5
Private payer	7.2
Total funding related to GME	18.7

³⁹ It is important to note that these estimates vary considerably in the degree to which they can be considered valid and reliable. Our estimates of funding levels from each source were derived from secondary data and the literature. In some cases, we contacted knowledgeable individuals for supplemental information. In several cases, we built the estimates from analyses that contained rough approximations and were based on assumptions. Whereas the estimates of Medicare funding, for example, were drawn directly from Medicare Cost Report data for FY2003 and are therefore close to actual GME-related payments, the estimates of the private payer share of funding is based upon a set of debatable assumptions.

⁴⁰ From both FY 2003 and FY 2004 numbers.

ASSESSMENT OF THE CURRENT GME FINANCING SYSTEM**Equity**

Under the evaluative framework laid out in Chapter 2, the following questions should be asked in assessing the equity of the current GME financing system:

- Are GME costs equitably borne by those who benefit: providers, residents, patients and insurers, and the general public?
- Is federal funding distributed equitably to meet the nation's current and future health care needs?

Most non-government-operated GME programs are funded through teaching hospital patient care revenues. While patients may benefit from GME, residents are among the primary beneficiaries, and the broader public benefits from positive externalities associated with GME. Thus, the current system could be seen as placing an undue burden on those who pay for hospital services and is less equitable than alternatives that would broaden the base for federal funding. The system also raises equity issues for teaching hospitals. Since they must rely on patient care revenues to support educational activities, teaching hospitals must charge higher prices than non-teaching hospitals, and this may affect their ability to compete effectively for market share. Further equity issues are raised for non-hospital training sites that generally are not direct recipients of educational subsidies but incur costs that may or may not be reimbursed through teaching hospitals.

An important question is whether the educational subsidies are equitably borne by various payers for hospital care. The question is difficult to answer because Medicare and Medicaid GME payments are explicit while educational payments from private payers are implicit. In our earlier rough estimation of the private payer contribution, it appeared that in the aggregate they are bearing at least their share of GME cost. However, substantial variation is likely across markets in the willingness of private payers to pay higher amounts to teaching hospitals than to non-teaching hospitals. Thus, the equity of payments from private payers depends on the market and the relative strength of teaching hospitals and payers in price negotiations.

As will be explained in Chapter 4, Medicare is paying less than its proportionate share of DGME costs. The reasons for this are generally tied to a policy rationale to either constrain the rate of growth in Medicare payments or align DGME payments with workforce goals. With respect to IME payments, MedPAC estimates that Medicare's payments are more than twice the estimated cost relationship between teaching intensity and cost per case (MedPAC, 2003). The estimate would be even lower if MedPAC accounted for other public missions such as DRG severity, research and uncompensated care in the estimation.

Using Medicare as the primary federal funding source means that the educational subsidies vary according to a hospital's Medicare share. Low Medicare utilization in children's teaching hospitals was addressed by establishing the CHGME program, which distributes support to children's hospitals without regard to payer mix. However, other hospitals with low Medicare utilization, including some public teaching hospitals with disproportionately high Medicaid and charity care patient loads - and correspondingly low Medicare utilization - are disadvantaged. Cromwell et al. (2005) simulated Medicare 2001 payments and found that hospitals with fewer than 20% of their inpatient days attributable to Medicare patients received an average subsidy of \$47,124 per resident while those with 40% or more Medicare utilization received an average subsidy of \$127,850.⁴¹ The underlying issue, however, is the equity of relying on Medicare - or any payers - to support GME and other public missions instead of providing subsidies when appropriate through a broader-based funding mechanism.⁴² Further, using only the Medicare IME subsidy to

⁴¹The DGME subsidy is directly related to Medicare inpatient utilization. The IME subsidy also depends on teaching intensity and because the number of residents is inversely correlated with Medicare days, the subsidy is lower than it would be if the payment did not take payer mix into account.

⁴² It is problematic to assess whether Medicaid GME payments are equitable without evaluating these payments in concert with an evaluation of the adequacy of both fee-for-service and managed care payments for hospital services and additional payments for serving a disproportionate share of low-income patients. Such an evaluation is beyond the scope of this report.

fund the other public missions does not result in an accurate allocation of support for these other missions. As we discussed in Chapter 1, there is considerable variation across teaching hospitals in their level of participation in the other missions and distributing all support for these missions through the IME adjustment underpays some hospitals and overpays others for the other public missions.

Adequacy

Under the evaluative framework laid out in Chapter 2, the following questions should be asked in assessing the adequacy of the current GME financing system:

- Are funding levels sufficient, stable, and predictable enough to provide high quality training for physicians needed in the future?
- Is public support sufficient to enable teaching institutions to be competitive on price and quality with non-teaching hospitals and maintain fiscal solvency?

Ideally, an assessment of the adequacy of the current financing system would utilize information on both future workforce needs and the costs of GME and its funding sources. However, there is no national consensus regarding future physician workforce needs. Moreover, the myriad of arrangements and the joint production of education, patient care, and research in teaching hospitals make it difficult to determine both costs of residency training programs and the sources of funding to support those programs (Anderson et al., 2001; Gbadebo & Reinhardt, 2003; Guterman, 2003; Newhouse & Wilensky, 2001). As a result, it is difficult to assess the adequacy of the current system in meeting future workforce needs.

One indication of the overall adequacy of current GME financing is changes in the size of residency programs since the Balanced Budget Act of 1997 (BBA) was enacted. Despite the limits the BBA established on the number of residency positions that would be funded through the Medicare program, the number of residency programs and resident slots has continued to grow. For the 1997-8 academic year, there were 7,861 programs and 98,143 filled resident positions (JAMA, 1998). For the 2005-6 academic year, there are 104,721 residents in 8,174 programs; 49

programs withdrew and 244 programs were newly accredited (ACGME 2006). The continued growth in the number of residents despite the Medicare limits on funded positions suggests that current funding has been sufficient to stimulate some increases in the number of residents. However, if a significant increase in the total number of resident physicians is needed to meet workforce requirements in 2020, the Medicare limits may inappropriately constrain expansion of residency training programs.

With regard to stability and predictability of funding, both Medicare and Medicaid funding has been relatively stable and predictable as mandatory spending programs, but both remain susceptible to continued budgetary pressures. For Medicare, the issue is the solvency of the Part A Trust Fund and the aging of the population; for Medicaid, the rapid growth of Medicaid expenditures poses a continuing challenge for state budgets.

During the 1990's with the growth of managed care, there was concern that the inpatient hospital-based methodology for Medicare and Medicaid subsidies might erode if care continued to shift to ambulatory settings. This is because the IME subsidies are based on program discharges, and, as care shifts to ambulatory settings, these per discharge IME payments are not made.⁴³ However, the number of Medicare and Medicaid discharges has steadily increased over the period 1997-2004. In states that have not adopted a GME carve-out, the continued growth of Medicaid managed care could affect Medicaid GME funding levels.

Private payer support is market-driven but payment-to-cost ratios indicate that payers have continued to be willing to pay for the higher costs of care in teaching hospitals. Payment-to-cost ratios fell during the 1990's but have been increasing since 2000 as teaching hospitals

⁴³ The increase in Medicare discharges as the population ages, however, is likely to offset some or all of the IME losses created by the shift in care to ambulatory settings. DGME is not affected the same way because the Medicare payment is based on the proportion of inpatients that are covered by Medicare.

have been able to negotiate more favorably with health plans (MedPAC 2005). In 2003, the private payment-to-cost ratios for major and minor teaching hospitals were 1.12 and 1.18, respectively.⁴⁴ While lower than the private payer payment-to-cost ratio for non-teaching hospitals (1.25), the ratios suggest that private payer support, on average, is adequate. Additional analysis is needed to investigate how these ratios might vary based on competition within a teaching hospital's market area.

Another measure of the adequacy of the payment rates is the total margins for teaching hospitals.⁴⁵ Interpreting this information is problematic since the total margins are affected by a hospital's payer mix, and in particular, uncompensated care loads. Figure 3.1 shows that average margins for major teaching hospitals have declined since 1997 and have been consistently lower than the average margins for minor or non-teaching hospitals.

⁴⁴ The payment-to-cost ratios were obtained through email correspondence with analysts who had based their analysis on AHA survey data for 2003.

⁴⁵ Defined as $(\text{total revenues} - \text{total costs}) / \text{total revenues}$.

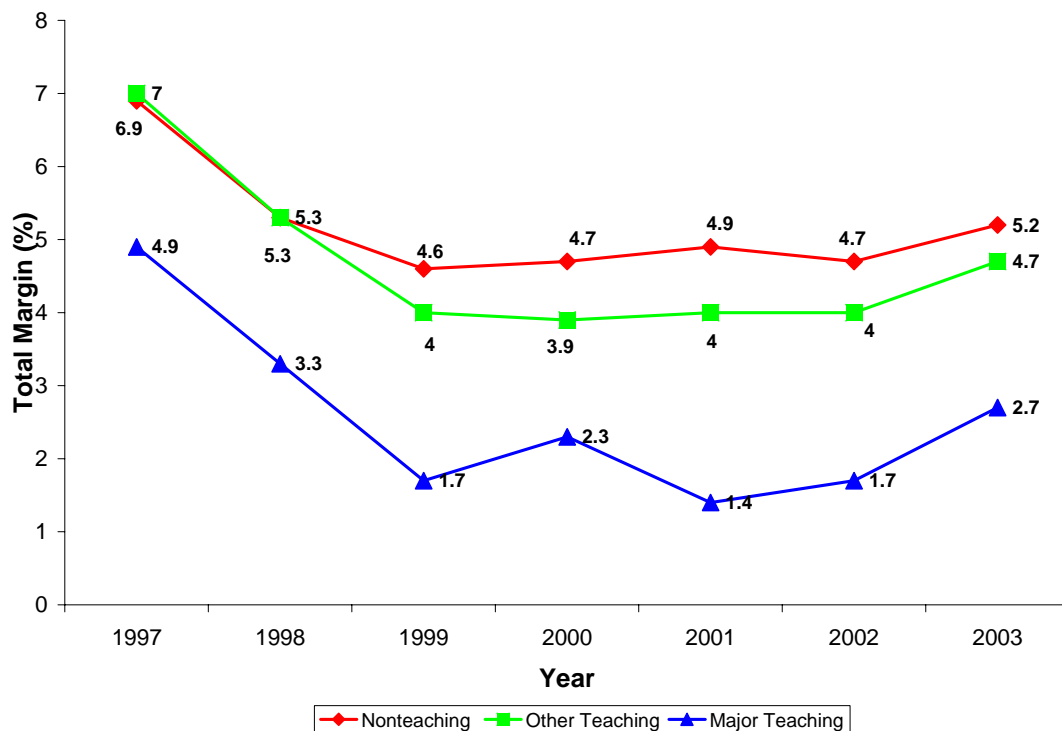


Figure 3.1 Hospital Total Margin, by Teaching Status 1997-2003

(MedPAC 2005, p. 22)

Presenting total margin in these three categories masks the differences in margin by ownership. As seen in Figure 3.2, the average margins for public teaching hospitals are significantly lower than for private public hospitals. The lower margins reflect differences in payer mix. Public teaching hospitals have higher uncompensated care and Medicaid caseloads and lower Medicare and private pay caseloads, and therefore receive smaller educational subsidies. In this regard, Cromwell et al. (2005) estimated the average 2001 Medicare IME and DGME subsidy per resident was \$61,327 for governmental hospitals compared with \$117,101 for private non-profit hospitals.

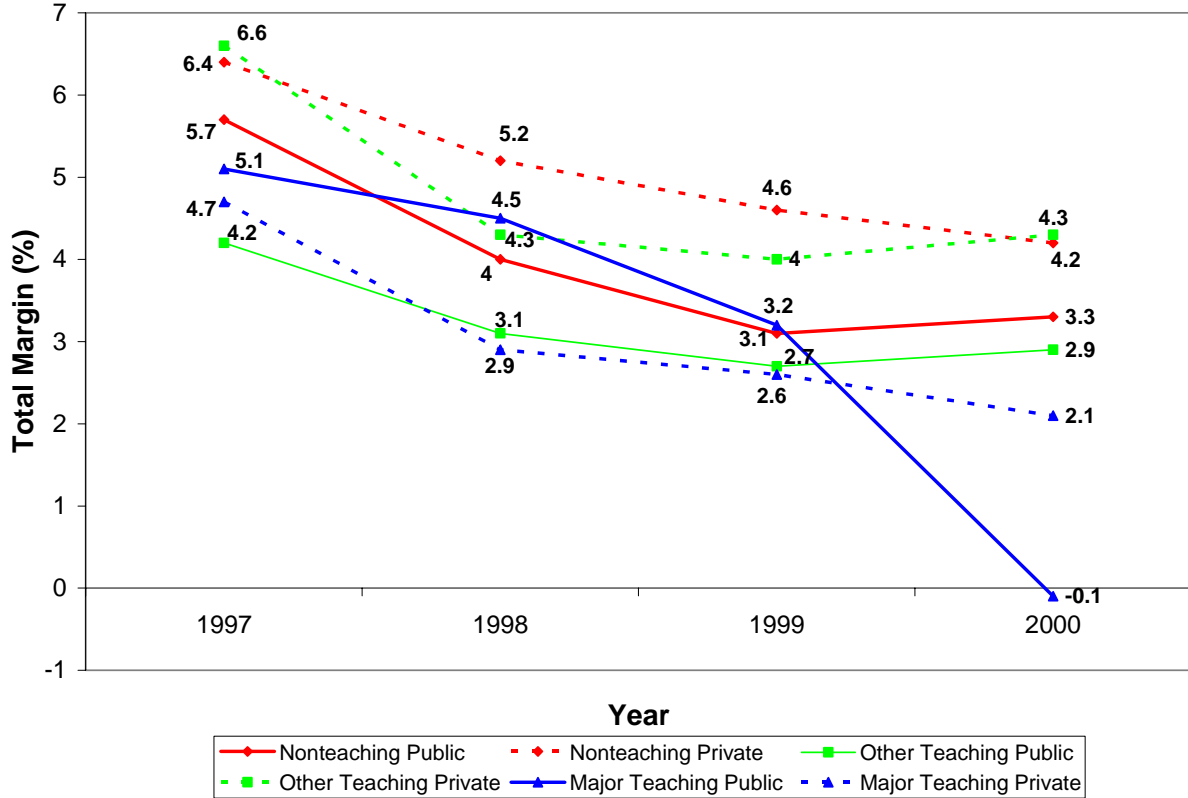


Figure 3.2 Total Hospital Margins by Ownership, 1997-2000

(MedPAC 2003, pg., 279)

Efficiency

The question of the efficiency of current financing is closely linked to the question of adequacy. Funding should be adequate for the efficient production of a high quality workforce that meets the needs of the future workforce. In assessing the efficiency of a GME funding system, the following questions are relevant:

- Does the system support the number of residency positions needed to meet future workforce needs and encourage an appropriate distribution of physicians by specialty and practice location?
- Do the funding incentives encourage high quality programs that develop needed physician competencies and encourage high quality patient care at the most economical cost?

Currently, there is no systematic national articulation of physician workforce goals (i.e. supply, specialty mix and geographic distribution) that can be used to gauge the efficiency of the current system of GME funding. The system is bound to be inefficient in producing the right number and mix of physicians unless these goals are articulated nationally.

Since there is considerable debate regarding the numbers of physicians needed in 2020, we are unable in this analysis to determine whether the "right" number of physicians is being trained. At the margin, Medicare funding policies both create incentives to maintain residency positions and restrain the growth of new residency positions. In the absence of the BBA constraint on the number of funded positions, Cromwell et al. (2005) estimated that the average marginal effective wage for a resident (stipend + fringe benefits - IME and DGME subsidies) is \$57,236, assuming that adding one or two residents would have little impact on either patient care costs or the costs of the residency training program. This would provide an incentive to increase or expand residency positions up the BBA limit. For a residency program at the BBA cap, the marginal effective wage for a resident would be much higher: the resident's stipend and benefits (assumed to be \$40,000 + 25% fringe benefits) without any Medicare GME subsidies and could deter the growth needed expansions in residency programs. This analysis suggests that Medicare policies are likely to have a significant impact on program sponsor decisions regarding the number of residency positions.

While we cannot examine the supply issue in depth, we can examine whether there has been progress in meeting long-standing objectives to improve the geographic distribution of physicians and increase the proportion that are primary care specialists. As noted in Chapter 2, there is considerable variation across states and regions both with respect to the number of physicians and resident physicians. The Medicare limits on the number of positions eligible for funding impede the growth of residency training programs in areas with expanding population and physician shortages. Despite special policies to protect rural residency tracks, little training continues to take place in rural areas. Cromwell et al. (2005) found that the number of residents in

rural training programs increased by 27% between 1996 and 2001, but this was only an increase of 274 residents. Rural teaching hospitals had priority in the reallocation of the residency positions but lost rural residency slots during the reallocation because of unfilled slots. The five states with the highest number of resident physicians per 100,000 population at 55-78 (New York, Massachusetts, Rhode Island, Connecticut, Pennsylvania) gained almost 800 residency slots in the reallocation process while the states with the lowest number (2-8) of resident physicians per 100,000 population (Montana, Idaho, Alaska, Wyoming, Nevada) received fewer than 30 residency slots.

Since 1997, the number of primary care and obstetrics and gynecology residency programs and residents has decreased relative to non-primary care programs (see Table 3.3) and the percentage of positions filled by U.S. medical school graduates has declined. Thus, it appears that these objectives have not been met.

Table 3.3 Number of Programs and Residents by Specialty (1997-1998 and 2004-2005)

Type of Residency Program	No. of Programs		No. of Residents		% Resident Positions Filled with US Grads	
	1997 / 1998	2004 / 2005	1997 / 1998	2004 / 2005	1997 / 1998	2004 / 2005
General Internal Medicine	415	387	21,714	21,332	59.4	52.8
General Pediatrics	216	204	7,613	7,811	74.1	69.3
Family Practice	489	469	10,501	9,373	86.8	51.7
Obstetrics and Gynecology	264	252	4,881	4,703	93.7	74.4
Other Specialties and Subspecialties	6,477	6,934	53,434	58,072	71.9	74.1
Total	7,861	8,246	98,143	101,291	73	71.7

Sources: JAMA (1998 and 2005).

In addition, it is important to consider educational goals of GME, as well as the workforce goals discussed above, and any related unintentional consequences, such as failing to create incentives for innovative approaches while facilitating inefficiencies. As discussed in Chapter 2, two important educational goals are increased community-based training and collaborative learning.

A commonly articulated educational goal has been to increase community-based training. Requirements for ambulatory training imposed by the accrediting bodies have been a major force in this regard, but Medicare's hospital-based funding policies have served as a disincentive to rotate residents to non-hospital training sites. BBA provisions to encourage increased ambulatory training have been problematic and since 2000, there has actually been a decrease in the percentage of time PGY1 residents spending in ambulatory training sites for primary specialties and obstetrics and gynecology, with the exception of Geriatric Medicine (FP) (see Table 3.4). We deal with this issue in greater depth in Chapter 4.

Table 3.4 Change in % of Training in Hospital and Non-hospital Settings

Specialties	Average Percent of Training by Setting			
	Hospital Outpatient Clinic		Non-hospital ambulatory Care	
	2000	2004	2000	2004
Family Practice	20.5	19.8	15.7	14.5
Geriatric Medicine (FP)	34.7	33	13.3	22.8
Internal Medicine	22.6	22.1	11	8.7
Pediatrics	39.9	37.2	11.7	10.5
Obstetrics and Gynecology	33.1	29	11.8	8

Sources: COGME (2000) and the American Medical Association's FREIDA Online (2006).⁴⁶

⁴⁶ <http://www.ama-assn.org/ama/pub/category/2997.html>

A related educational goal has been to increase collaborative or multi-disciplinary learning. Again, the reliance on hospital-based funding to support residency training programs and the direct link between the number of residents and Medicare funding levels have impeded the growth of these programs and some restructuring of federal subsidies may be needed (IOM 2001).

Accountability

In assessing the accountability of a financing system, we would ask the following questions:

- Is there transparency in the allocation and use of public funds?
- Is there on-going monitoring and evaluation of the system's progress in meeting educational and workforce goals?
- Are their consequences for residency programs that do not use public funds properly?

Under the current system, there is transparency in how the Medicare and Medicaid funds are allocated to support GME activities because the subsidies are made using a formula-based approach. However, there is no single recipient for the funds for a particular program since payment is made through patient care payments to the teaching hospitals that are affiliated with the teaching program and there is no accounting for the total costs of operating the programs or the funds received to support them. At the teaching hospital level, patient revenues are fungible and there is no direct accounting for how the funds are used.⁴⁷ Further, program sponsors do not have external accountability for decisions regarding the size and composition of residency programs other than those that might be imposed by the accrediting organization.

⁴⁷ The Medicare cost report collects aggregate data on GME spending for resident salaries and stipends and for other costs but these data are not audited since they do not affect Medicare DGME payments because of the per resident payment rates. Medicare also collects resident counts on the Medicare cost report and providers submit information on the time residents spend on various rotations but these data are used primarily to determine and audit Medicare payments rather than to assess where residents are being trained.

With regard to workforce goals, unlike many countries, there is no formal allocation of residency positions (see Chapter 5). Further, there is no single national organization charged with the responsibility and resources to monitor physician supply and distribution issues or assess system performance in meeting public policy goals. The closest approximation is COGME, which was authorized by Congress in 1986 to provide an ongoing assessment of physician workforce trends, training issues and financing policies and housed within the Health Resources and Services Administration. However, COGME's authorization expired in 2002 and since then it has had a year-to-year existence without the staffing or resources to carry out its original mandate. COGME's current charter from the Secretary of Health and Human Services expires September 2006.

Residency sponsors are accountable to the accrediting organization for the quality of the training programs, but outcome-based evaluations are at an early stage of development. A key outcome for measuring program quality is the percentage of residents who become board-certified. However, residents are not required to seek certification after completion of specialty training and this measure needs to be supplemented by others in assessing the quality of the educational program.

Administrative Feasibility

In assessing the feasibility of alternative funding systems, we would ask the following questions:

- How easily can the changes necessary to implement the new system be implemented?
- Are the public funding policies clear, understandable, and feasible to implement without undue reporting burden or unnecessary changes in arrangements between GME sponsors and their affiliated training sites?
- Is the funding system sufficiently flexible to address different educational models and specific workforce needs without requiring special policies?
- What are the administrative costs in relation to the total funds?

In terms of administrative feasibility, the current system is mixed. Because Medicare and most Medicaid payments are formula-based and linked to patient care costs, the calculation of funding amounts is generally straightforward and administrative costs are low relative to total funding. However, over time, mechanisms added to increase responsiveness to workforce goals have made Medicare GME funding increasingly complex and difficult to administer and, in the case of community-based training, have required changes in arrangements between GME sponsors and their affiliated training sites. The administrative complexities of the current Medicare policies are discussed in greater detail in the next chapter (Chapter 4). Grants, such as HRSA programs, have more flexibility to address specific educational and workforce priorities, but they require higher administrative burden. Although public funding agencies have devised formulas for determining their level of support for GME activities, no formal public mechanism has been devised to determine the total costs of operating a GME program.

4. POTENTIAL REFINEMENTS TO MEDICARE GME POLICIES

An alternative to making major changes in the way GME is financed would be to refine the current Medicare GME payment policies to improve progress toward the criteria of adequacy, equity, efficiency, accountability, and administrative feasibility.⁴⁸ Some potential refinements are specific to either DGME or IME and others are relevant to both. We first discuss the issues specific to the DGME per resident amount and to the IME payment formula and then discuss two issues relevant to both DGME and IME: limits on the number of residents and how payment is made for time spent by residents in non-hospital training sites.

One other issue that is relevant to both DGME and IME is the Medicare managed care carve-out that the BBA established. Due to concern over the growth of Medicare managed care and subsequent loss of Medicare GME payments and the need for a level playing field for teaching hospitals in competing for Medicare patients, the BBA provided for a "carve out" of a portion of Medicare capitation payments to managed care organizations and for direct DGME and IME payments to teaching hospitals based on their services provided to Medicare managed care beneficiaries (Oliver 2001). In theory, this would allow teaching hospitals to compete more effectively with non-teaching hospitals for Medicare managed care beneficiaries and provide stable funding for GME activities. The impact of this carve-out has yet to be evaluated and it will not be addressed here.⁴⁹

Our discussion of the current Medicare GME financing policies and potential refinements covers policy changes since the implementation of

⁴⁸ To the extent that states follow Medicare-like methodology, these refinements may be applicable. We do not treat Medicaid GME explicitly because it is a state-administered program and our focus is on federal GME policy.

⁴⁹ However, one serious issue with the carve-out is whether or not it has been appropriately reflected in a reduction to the Medicare managed care rates.

the BBA. This includes those changes made by the Medicare, Medicaid, and SCHIP Balanced Budget Refinement Act of 1999 (BBRA), the Medicare, Medicaid, and SCHIP Benefits Improvement and Protections Act of 2000 (BIPA), and the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (MMA), as well as administrative changes. We used the annual notices updating the prospective payment system in the *Federal Register*, related CMS documents, and letters and summaries by the AAMC as our main sources of information, and we supplemented them with relevant literature and discussions with key informants.

DGME FORMULA

The Medicare DGME payment is based on a historic per resident amount (PRA), updated for inflation, multiplied by both the weighted number of full-time equivalent (FTE) residents working in the hospital (including hospital outpatient sites and certain non-hospital ambulatory sites) and the hospital's Medicare share of total inpatient days (i.e., the ratio of Medicare inpatient days to total inpatient days).

$\text{Medicare DGME payment} = \text{PRA} \times \text{FTE residents} \times \frac{\text{Medicare Inpatient Days}}{\text{Total Inpatient Days}}$

A brief guide to which residents are counted and how they are counted may be found in Figure 4.1.

Medicare then allocates its DGME payments to hospitals between Part A and Part B trust funds based on the relative share of the hospital's costs attributable to Medicare patients that are for inpatient services (Part A) and outpatient services (Part B), respectively. Medicare Part B DGME payments also can go directly to qualified non-hospital sites, such as federally qualified health centers and rural health clinics, for training residents. However, minimal payments have been made directly to non-hospital sites.

Figure 4.1 How Are Residents Counted?

Maximum 1.0 FTE. If a full-time resident spends all time that is part of the approved training program in the hospital complex or qualified non-hospital site, the resident is counted as 1.0 full-time equivalent (FTE). No resident may count as more than 1.0 FTE.

Partial FTEs. A resident will count as a partial FTE based on the proportion of time worked at the teaching hospital and qualified non-hospital sites relative to the total time worked in a full-time residency slot. Part-time residents and residents who rotate to other hospitals and settings count as partial FTEs (i.e., .75, .25, etc.).

Initial Residency Period. Residents in their initial residency period, defined generally as the minimum number of years of formal training required for initial board eligibility in a specialty, are counted as 1.0 FTE by Medicare while residents beyond their initial residency period are weighted by 0.5 FTE.

Cap. For allopathic and osteopathic residents, the unweighted FTE count may not exceed the unweighted FTE count in the hospital's most recent cost reporting period ending on or before December 31, 1996.

Rolling Average. The resident count is based on a rolling average of the hospital's weighted FTE count.

- The resident count is based on the current cost reporting period and the preceding two cost reporting periods (a 3-year rolling average).
- The rolling average includes residents in dentistry and podiatry.

There are three major DGME specific issues: variation in the hospital-specific PRAs, different PRAs for primary care and other specialties, and duration of training for which DGME payment is made. Issues related to the limits on resident counts and ambulatory training will be discussed later since they also apply to IME.

Per Resident Amount

Policies

The Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA) established hospital-specific PRAs based on a hospital's allowable GME costs for FY 1984 base year period divided by the number of residents in the FY 1984 base period. These hospital-specific PRAs are then trended forward to current year costs by an inflation factor. Each teaching

hospital has two different PRAs, a lower one for non-primary care residents and a higher one (by 6%) for primary care residents,⁵⁰ due to a two-year freeze on inflation updates to the non-primary care PRA in FYs 1994 and 1995 (Rich et al., 2002).

The BBRA and BIPA modified the PRA system by setting a floor and ceiling PRA based on a calculated, "locality-adjusted," weighted national average PRA,⁵¹ and adjusting each hospital's combined primary and non-primary PRA accordingly. The national average for cost reporting periods beginning July 1, 2005 is \$85,734.⁵² Under current law, the floor is 85% of the national average PRA and the ceiling is 140% of the PRA. Hospital PRAs that are less than 85% of their locality-adjusted national average PRA are raised to the floor. Hospital PRAs that are greater than 140% of their locality-adjusted national average PRA are frozen through FY 2012 (*Federal Register*, 2004).

According to AAMC analysis, 505 (46%) of the approximately 1,100 teaching hospitals in the U.S. benefit from the floor. Approximately 130 hospitals had their PRAs frozen due to the ceiling (Moy, 2001).

Shortcomings and Refinements

Variation. Despite the floor and ceiling, hospital-specific PRAs still vary widely, both interstate and intrastate, and regardless of shared characteristics among hospitals. Most of this variation is attributed to variation in the compensation of supervising physicians and overhead costs, rather than resident salaries and fringe benefits

⁵⁰ Primary care specialties in this PRA differential include family medicine, general internal medicine, general pediatrics, preventive medicine, geriatric medicine, osteopathic general practice, and obstetrics/gynecology.

⁵¹ The national average PRA is based on hospital cost reports ending in FY 1997 divided by the number of residents at each hospital for the 1997 base year inflated to current year costs by the relevant consumer price index for all urban consumers (CPI-U). The dates used for inflation vary among hospitals depending on their cost reporting periods. To reflect differences in labor costs across areas and thus create the "locality-adjusted" factor, the national average PRA is then multiplied by the geographic adjustment factor for the physician fee schedule area where the hospital is located.

⁵² AAMC staff personal communication, 4/12/06.

(COGME 2000, Oliver 2001). Some degree of variation in PRAs may be expected and appropriate, due to differences in cost of living, the quality of the training program, the type and level of specialty training, and the type and intensity of patient care. However, the existing variation has been shown to exceed any variation attributable to these factors and, furthermore, the PRAs vary without a consistent cause (Anderson 1996, Iglehart 1999, MedPAC 2000, COGME 2000, Oliver 2001). Because PRAs are based on costs in 1984, some of the unexplained variation has been attributed to factors that existed then, such as a larger number of volunteer staff and different hospital accounting practices (Anderson 2001, Oliver 2001), and may no longer reflect differences in GME costs.⁵³

The issue central to the discussion of variation in PRA is equity, in that similar hospitals that incur the same costs should receive similar PRAs. Reducing the variation would make the payments more equitable. Replacing the hospital-specific PRA with a national PRA has been proposed and would eliminate all variation (Anderson, 1996; National Academy Press, 1997; Rich et al., 2002). Another, smaller-scale effort to reduce variation has been to raise the floor to 100% of the locality-adjusted national average PRA; since BIPA, there have been numerous bills proposed in Congress to do so.⁵⁴

A second but related issue is that the PRAs do not reflect current costs. Cost increases have outpaced the inflation adjustments, particularly for those hospitals with a low PRA in the base period (COGME 2000). Updating the hospital-specific PRAs to current costs

⁵³ Of note are the accounting differences between private and state facilities. In private facilities, faculty's full salaries were incorporated into DGME and the hospital wage index while in public facilities, faculty had supplemented incomes from independent practices and the state contributed to salaries through direct appropriations.

⁵⁴ The most recent bill was introduced in the 109th Congress in November 2005 by Representatives Ron Lewis (KY) and Clay Shaw (FL). Former bills include HR 4371 (109th Congress; Lewis); HR 1517 (107th Congress; Shaw; formerly HR 5089, 106th Congress; Shaw); S. 135 "Direct Graduate Medical Education Improvement Act of 2001" (107th Congress; Feinstein); HR 5005 "Direct Graduate Medical Education Equity Act of 2000" (106th Congress; Bilbray); HR 2989 "Medicare Teaching Hospital Equity Act of 1999" (106th Congress; Tanner).

would address the inaccuracy of relying on 20-year-old cost estimates. However, substantial variation would likely remain, especially because costs have not been audited since the PRA began and there may still be inconsistencies in cost reporting policies.

If a national average PRA were adopted, the current national average PRA could be used or it could be re-determined based on more current cost data. A national PRA based on current cost would be more equitable but would result in considerably higher Medicare expenditures.⁵⁵ However, the variation in all GME Medicare payments will not be completely eliminated even if one standard PRA is adopted; payments to hospitals also vary because DGME relies on Medicare's share of inpatient care days.

Primary care differential. The two different PRAs for primary and non-primary care were intended to encourage primary care training and constrain the growth of specialty positions (Rich et al., 2002). The differential, however, is fairly minimal at 6%, and there is no evidence that it has been effective. In addition, since teaching hospitals receive Medicare GME payments in a lump sum, it is difficult for incentives such as the PRA differential to influence decisions at the program sponsor-level on how many resident positions should be offered in primary care versus other specialties. At the same time, the two different PRAs create administrative complexity.

Although the current primary care differential is not effective, PRA specialty differentials could potentially provide an opportunity to influence residency training, especially if combined with policies for the initial residency period (discussed below). To do so, there would first need to be a decision about what public benefit or workforce goal should be fostered; e.g., primary care and other specialties and subspecialties in shortage. Once the desired goal is identified, there could then be a decision about whether incentives could be introduced effectively to influence the appropriate supply. The effectiveness of

⁵⁵ In 1997, GME costs were already nearly one-third (33%) higher than the per resident amounts (COGME, 2000).

the PRA differentials would depend on making them substantial and linking them to the initial residency period policies, on having accurate workforce projections, and on the impact on the administrative complexity of using different PRAs in the DGME formula. Further discussion of creating incentives with the PRA is found in Chapter 6.

Initial Residency Period

Policies

As described above, the PRA is multiplied by the *weighted* number of full-time equivalent (FTE) residents. Residents are weighted based on the number of years they have been residents. Residents in their initial residency period, defined as the minimum number of years needed to achieve first board eligibility or five years, whichever is less, are weighted as 1.0 FTE (See Table 4.1). Residents who are no longer in their initial residency period or have completed five or more years of residency training, whichever is less, are weighted as 0.5 FTE. Like the differentiated PRAs for primary and non-primary care residents, this policy was intended to constrain the growth of subspecialty positions, believed to be in oversupply especially in contrast to primary care positions (Rich et al, 2002; MedPAC, 2001).

Table 4.1 Initial Residency Period Limitation

Residency type	Initial residency period limitation (No. of years)	
	Allopathic ⁵⁶	Osteopathic ⁵⁷
<i>Allopathic/Osteopathic</i>		
Emergency Medicine	3	4
Pediatrics	3	3
Preventive Medicine	3	-
Family Practice	3	2
Geriatric Medicine	4	3
Internal Medicine	3	3
Geriatric Medicine	4	2
Pathology (Anatomic or Clinical/Both)	3/4	4
Obstetrics and Gynecology	4	4
Anesthesiology	4	3
Radiology (Diagnostic)	4	4
Dermatology	4	3
Ophthalmology	3	3
Physical Medicine and Rehabilitation	4	4
Psychiatry & Neurology	4	3
Surgery (General, Orthopedic, Plastic)	5	4
Urology	5	-
<i>Podiatry</i>	2	
<i>Dentistry</i>		
General Dentistry	1	
Pediatric Surgery	2	
Oral Surgery	4	

Under COBRA, the initial residency period was based on the resident's specialty in his or her first year of internship or residency. However, some specialties require a resident to first complete a clinical base year, often in a general specialty, as a prerequisite and many subspecialties require an entire general specialty program as a prerequisite. Since originally the methodology was only based on that first year, the combined, full length of the period necessary for board certification in the intended advanced specialty was not accounted for. A series of legislative changes have resulted in changes to count residents as 1.0 FTE in certain medical subspecialties (child neurology and geriatrics) that require prior generalist training.

⁵⁶ (ACGME, 2006)

⁵⁷ (American Osteopathic Association, 2006)

(AAMC Summary and Analysis, 2001; *Federal Register* 2004). In addition, residents in programs that require a clinical base year (such as radiology, anesthesiology, and dermatology) will have their initial residency period based on the specialty program of the second year if the resident matches for advanced specialty training at the outset of the residency training.⁵⁸ Residents in transitional year programs, which have no associated specialty and thus no initial residency period, will not establish an initial residency period until they have matched or entered an advanced program for their second year (*Federal Register* 2005).

Shortcomings and Refinements

The recent changes in the initial residency period definition to credit the initial base year and transitional years have increased the equity of Medicare support for the affected specialty programs but have added to administrative complexity without effectively influencing physician specialty mix. An alternative that would reduce the administrative burden would be to replace the initial residency period with a maximum number of years for which the resident (regardless of specialty) could be weighed as 1.0 FTE, after which the resident would either be weighed as 0.5 FTE or not counted. A policy decision would be needed regarding the appropriate maximum number of years. Three years would guarantee funding for all required years of training for the primary care specialties such as family practice, internal medicine, and

⁵⁸ When a resident enters a clinical base year before pursuing advanced training and the entire period is counted as an initial residency period, the MMA determined that the non-primary care PRA would be applied toward the entire period even if the first year is spent in a primary training program (*Federal Register* 2004). The Association of American Medical Colleges (AAMC) and other parties support the changes made but continue to advocate for a "second year" policy in which the initial residency period is based on the specialty of the second year regardless of whether, or when, the resident matches to an advanced specialty program (AAMC letter to CMS, 2005). CMS counters that such a policy would require a legislative change by Congress (*Federal Register* 2005).

pediatrics. Four years would incorporate a few other specialties that might be high priority, such as obstetrics and gynecology. While this policy would reduce administrative complexity, it would not increase training in some specialties or subspecialties that are in need or demand (e.g., geriatrics). Efforts to address these shortage specialties would reintroduce complexities (although a rule that residents in specific specialties or subspecialties always count as 1.0 FTE regardless of how many years the resident has trained would be simpler to administer than current policies).

The 0.5 FTE weight for residents beyond their initial residency period was created to encourage primary care training as opposed to subspecialty training (Rich et al., 2002). Deciding how long to fund residents is a question of workforce goals and public benefits. With regard to workforce goals, the Medicare Payment Advisory Commission (MedPAC) concluded that the Medicare program is too blunt an instrument to be used to achieve workforce supply and distribution objectives and recommended that residents count as 1.0 FTE through completion of residents' first specialty or combined program and subspecialty if approved. MedPAC would have not have counted residents with additional training.

With regard to weighing the public benefits relative to the benefits residents and providers derive from training, the more advanced subspecialty fields require more years of training but may not be as critical to a healthy population as other specialties. Residents with more training increase their contribution of service relative to the cost of their training and reduce the net costs of training. Teaching hospitals may be more inclined to train such residents for the value of their work. Further, residents in these subspecialties will generally realize higher lifetime physician incomes, thus creating an incentive for residents to pursue these subspecialties. Thus, even if the weighting factors are not an effective influence on specialty mix, they may be more consistent with the public benefits derived from most subspecialty training than a full 1.0 weighting.

Workforce goals could be linked to the duration of training funded. For example, to build in flexibility while keeping the administrative

burden low, policies could be implemented that would pay DGME only for residents in particular specialty training programs or only pay for the full duration of the residency of particular training programs. The 0.5 weight could be used for part of or the whole duration of specialty training that is not considered a workforce priority or the weight could be further reduced or eliminated.

IME FORMULA

The Medicare program pays a pre-determined fixed amount per discharge for inpatient stays based on the diagnosis-related group (DRG) to which the patient is assigned. The indirect graduate medical educational (IME) subsidy is an add-on to the DRG payment rate and is intended to compensate for higher patient care costs attributable to teaching activities. The specific formula used to calculate the IME adjustment factor relies on the hospital's intern-and-resident-to-bed ratio (IRB),⁵⁹ which serves as a proxy for teaching intensity, and a Congressionally-mandated multiplier. The formula is traditionally described in terms of a certain percentage increase in payment for every 10-percent increase in the IRB. Consequently, IME is dependent on a hospital's number of residents, number of inpatient beds, and on the multiplier. As mentioned in the DGME discussion above, the number of residents is important for both DGME and IME, and consequently will be discussed later in this chapter, while the multiplier and the IRB will be discussed here.

$$\text{Medicare IME Payment} = \text{Multiplier} \times [(1 + \text{IRB})^{0.405} - 1]$$

⁵⁹ The IRB is measured as the ratio of the number of unweighted FTE interns and residents to the number of inpatient beds (subject to many regulations about which and how beds may be counted). The BBA implemented a one-year lag, in which a hospital's IRB for the current year is limited, or capped, by its IRB the previous year. The payment formula for capital-related costs uses average daily census instead of beds in the denominator.

IME Multiplier

Policies

The Congressionally-mandated multiplier has been the subject of much debate since the IME adjustment was first implemented when Medicare adopted a new inpatient hospital prospective payment system in 1983. The Department of Health and Human Services estimated an empirical cost per case increase of 5.79% with each 10% increase in the IRB. However, this percentage was doubled to 11.59% after a Congressional Budget Office analysis predicted a significant negative impact on the majority of teaching hospitals. (Oliver, 2001) Since then, there has been a gradual attempt to decrease the adjustment to the analytically justified amount, but the deduction has been delayed multiple times by BBRA, BIPA, and MMA.⁶⁰ The final reduction currently scheduled, 5.5% for FY 2008 and beyond, is still twice as much as the most recent analytically justified estimate; MedPAC estimates that teaching hospitals experience a 2.7% increase in cost per case with each 10% increase in the IRB.⁶¹

Shortcomings and refinements

By exceeding the analytically justified level, the IME adjustment creates several problems. First, because the average IME subsidy exceeds average resident wages (Cromwell et al., 2005), it may unduly influence decisions on the size of residency programs and encourage hospital inefficiencies. Second, the excessive IME adjustment imposes an unjustified burden on Medicare trust funds. Third, the IME adjustment is an inefficient way to subsidize for higher patient care costs attributable to non-teaching social missions. As discussed in Chapter 1, there is considerable variation in the extent that teaching hospitals are involved in research, specialized care, and uncompensated care. Because teaching is an imperfect predictor of involvement in these other missions, an empirical estimation of the teaching effect on patient care

⁶⁰ There have also been various legislative attempts to freeze the decrease in the IME adjustment; the most recent was the American Hospital Preservation Act of 2004 (S. 2876; 108th Congress; Hutchinson), a successor to acts of the same name for 2003, 2002, and 2001.⁶⁰

⁶¹ However, the MMA did mandate that MedPAC's 2.7% IME adjustment be used for the MMA's redistributed residency slots, discussed below.

costs should control for these other factors and separate funding streams should be established for them consistent with the public benefits they provide. If the IME adjustment is appropriately reduced to the level attributable to the higher patient care costs associated with teaching activities, it will be important to consider support for the other missions. In particular, changes in the IME adjustment would need to be accompanied by improvement in the Medicare subsidies for low-income patients to specifically account for uncompensated care.

IRB

Policy

The Medicare prospective payment system for inpatient services uses two different measures of teaching intensity in determining the IME adjustment. The payment formula for operating costs uses an intern-and-resident-to-bed ratio (IRB). The payment formula for capital-related costs uses an intern-to-average daily census ratio. In both formula, the total number of residents working at the hospital (and, as discussed in further detail below, certain ambulatory settings) are counted.

Shortcomings and refinements

The IRB causes high administrative complexity because of the various regulations about what beds count and when such beds count. Further, two hospitals with the same patient load can have different IME adjustments because of differences in occupancy rates. Average daily census is the average number of people served on an inpatient basis on a single day. The measure is less vulnerable to manipulation and is a better measure of the resident involvement with patients. Both measures, however, incorporate a disconnect between counting all resident time in patient care activities in the numerator while using only an inpatient statistic in the denominator. The disconnect represents a trade-off between accurately paying for the higher costs associated with inpatient care and avoiding the creation of a disincentive to train residents in outpatient settings. A single Medicare IME adjustment should be considered based on total (operating and capital) inpatient costs per discharge and alternative measures of teaching intensity should be

evaluated, along with a re-examination of whether an adjustment is needed for outpatient services.

LIMITS ON NUMBER OF RESIDENTS

Policies

When the BBA was enacted, there were concerns about an oversupply of physicians (American Association of Colleges of Osteopathic Medicine et al., 1996). As an effort to control Medicare expenditures in a way that was consistent with workforce goals, the BBA placed limits, or caps, on the number of FTE residents that each hospital could claim for Medicare DGME and IME payments by each hospital. The BBA limit is based on the number of FTE residents from the hospital's cost report for the period ending on or before December 31, 1996. Dental and podiatry residents were excluded from the limits. Adjustments were made for new programs, displaced residents, and primary care residents on maternity, disability, or other approved leave⁶² (*Federal Register*, 2001). Both the BBRA and MMA modified the limits to facilitate rural residency training programs.⁶³ The BBA also allowed some flexibility within the caps by establishing ground rules for Medicare GME Affiliated Groups, in which

⁶² New programs are allowed to operate for three years before the limit is set at the highest number of residents the program had during that time, multiplied by expected number of years to complete the program (*Federal Register*, 1999). Up to a maximum of three primary care residents on leave is allowed per hospital.

⁶³ The BBRA provided for a 30% expansion of rural hospitals' resident limits and made adjustments to the resident limits of urban hospitals, which were later again modified by CMS regulations. Any urban hospital with a separately accredited approved medical resident program in a rural area in which the resident spends two-thirds (April 1, 2000-October 1, 2003) or half (after October 1, 2003) of the duration of the program at a rural hospital or non-hospital site, may be added to the standard resident limit up to the established "rural track FTE limitation." Any time spent at a rural non-hospital site can be counted if the urban hospital incurs "all or substantially all" of the training costs (see discussion on non-hospital training sites below). (*Federal Register*, 2001 and 2003).

member hospitals with a written affiliation agreement can pool and redistribute their resident slots as desired.⁶⁴

The MMA's Medicare Resident Limit Redistribution Program is an example of another attempt to address the limitations on flexibility that the caps created. This program redistributed "unused" resident slots by reducing the caps of hospitals with resident counts below their resident caps by 75% of the difference, based on the most recent cost report ending on or before September 30, 2002, and redistributing them to hospitals that applied for additional slots (maximum of 25 per hospital) based on a "Demonstrated Likelihood Requirement."⁶⁵ Priority for additional slots was given to rural hospitals; rural hospitals with fewer than 250 acute care inpatient beds as of September 30, 2002, were exempt from any reduction. Hospitals participating in a Medicare GME Affiliated Group were considered in the aggregate first and then individually for any reductions.

During 2005, approximately 3,000 slots were made available for redistribution and 1,800 programs at 540 hospitals requested 7,000 slots. Rural hospitals saw a net loss of resident slots, although every rural hospital that requested additional slots got them. Hospitals in large urban areas gave up the most slots. (Croasdale, 2005; CMS,

⁶⁴ CMS has implemented several regulations on the affiliated groups. One issue was whether hospitals starting their initial teaching program post-1996 could join an affiliated group. After initially ruling that no hospitals with new teaching programs (post-1996) could enter agreements, CMS then modified its rule to allow such hospitals to participate on the condition that it results in positive adjustments to the new urban hospital's cap (*Federal Register*, 1999 and 2005) instead of a reallocation of the new hospital's slots to hospitals that had established programs in 1996. CMS also clarified that upon dissolution of the Agreement, member hospitals must revert to their original limits rather than agree to permanent changes to their limits (*Federal Register* 2002). The MMA's redistribution program stipulates that redistributed slots may not be shared among Medicare GME Affiliated Group members (*Federal Register*, 2004).

⁶⁵ The "Demonstrated Likelihood Requirement" mandated that hospitals demonstrate that the extra slots will be filled within three cost reporting periods beginning on or after July 1, 2005 by starting a new program, expanding an existing program, or having a resident count that exceeds their current cap.

2005b). It is too early to determine the implications or success of the redistribution but from the number of requested slots, it is evident that the demand for resident slots is greater than the supply of funded slots stipulated by the BBA.

Shortcomings & Refinements

The limits set forth in the BBA have serious implications for both workforce and educational objectives. The limits are based on historic FTE resident levels that may not reflect current or future workforce needs and that favor traditional GME sites over GME sites in states with population growth. In addition, family practice programs were arguably at a disadvantage at the time the limits were established. Family practice was a relatively new specialty then and on average, two out of five of its residency programs were the sole programs in hospitals, thus limiting the ability to shift resources to it from other programs. Most importantly, however, 10% of the ambulatory settings to which one third of family practice residents rotate at any one time are non-hospital sites. Because only time spent in hospital-affiliated settings was counted toward the limit, an estimated 250-350 family practice residents training in non-hospital settings in 1996 were not included in the BBA's set limits (Davis 2000).

Educational interests may be negatively affected by the limits because program directors have less flexibility to rotate residents to sites based on the quality of the educational program. Various policies followed the BBRA that were designed to provide relief from the limits. However, these policies, such as the rural residency slots and reallocation of slots, are administratively complex and will become increasingly unwieldy over time.

The limits were adopted with two goals in mind: control the growth of residency training programs and control Medicare expenditures. Recent projections of future workforce needs suggest that controls on resident growth, at least with respect to most specialties, may no longer be desirable. The limits should be reconsidered based on a careful assessment of physician supply and distribution needs and workforce projections. The Medicare limits vest "entitlement" in existing programs

without regard to current workforce needs. At a minimum, there is a continuing need for being able to redistribute slots and reallocations in the future should be directed at improving specialty mix and regional distribution (states with lower resident physician-population ratios given higher priority). With respect to controlling Medicare expenditures, policies regarding whether to continue to limit the number of funded positions should be considered in conjunction with other policy decisions. For example, current incentives to increase resident slots will be significantly diminished if the IME adjustment is set at the analytically-justified level for the teaching effect on inpatient costs. For DGME, decisions are needed on the specialty differential and initial residency period. If these policies reflect Medicare policy objectives, the limits may be unnecessary. If the main purpose of the limits becomes to control Medicare expenditures, a new national PRA could be determined budget neutral to current expenditure levels when the limits are eliminated. In future updates, the PRA could be adjusted both for inflation and resident growth (with some allowance for desired growth) so that total expenditures increases are controlled.

TRAINING IN NON-HOSPITAL SETTINGS

Policies

Prior to the BBA, a teaching hospital was allowed to receive DGME payments for the time spent by residents training in non-hospital settings, such as freestanding clinics, physician offices, and nursing homes, as long as the time was spent in activities related to patient care under an approved medical residency program and the hospitals incurred "all, or substantially all" of the training costs. The BBA allows teaching hospitals to receive IME as well as DGME payments for such residents, provided the same three criteria are met. The intention of this change was to encourage residency training in community settings that would reflect the types of settings in which the resident would later practice. The loss of IME revenue when residents rotated to non-hospital settings had acted as a disincentive for community-based training rotations.

CMS had not elaborated on the definition of "all or substantially all" of the GME costs until it issued its rule implementing the BBA provision for IME. In this rule, CMS expanded the definition of "all or substantially all costs" to include both the residents' salaries and fringe benefits and the portion of the cost of teaching physicians' salaries and fringe benefits attributable to DGME (i.e., based on the teaching physician's salary and time devoted to resident activities). CMS also required a written agreement between the hospital and non-hospital setting that stated the compensation amount. (*Federal Register*, 1999).

An issue in implementing the provision has been how volunteer physicians at the teaching sites should be treated in determining whether the teaching hospital is incurring "all or substantially all" costs. In CMS' view, the relevant issue is not volunteerism per se but whether or not there is a cost to the non-hospital site for the supervision of residents by physicians. According to CMS, the only time no cost is associated with supervision is when the physician's compensation at the non-hospital site is based solely on the number of patients treated for which the physician bills, rather than a predetermined compensation amount for his/her time that does not vary with the number of patients (*Federal Register*, 2004; CMS, 2005a). This is consistent with the approach taken in the construction of the per resident amounts, when it was assumed that teaching physicians' compensation for teaching is in proportion to the time spent in that activity relative to other activities.

The CMS position affected whether the ambulatory non-hospital training continued to qualify for DGME as well as for the new IME support. In response to the controversy over defining "all or substantially all" costs, the MMA established a one-year moratorium on teaching hospital disallowances for family practice residents training at non-hospital sites. In addition, the MMA mandated that the Office of Inspector General (OIG) issue a report on the topic. In its report, the OIG recommended an extension of the moratorium but CMS did not concur because the agency did not believe it had the authority to do so (CMS, 2004).

Shortcomings and Refinements

The OIG report⁶⁶ identified five payment alternatives for consideration, some of which mirror proposals made by others. Three of the alternatives direct funding to the teaching hospital and then mandate some transfer of funds to the non-hospital site.

- One alternative is to maintain current regulations and clarify both the definition of direct teaching costs, in particular the treatment of volunteer time and the substitution of non-monetary incentives,⁶⁷ and the definition of non-hospital settings.
- Another alternative is for CMS to redefine "all or substantially all" of the training costs as the residents' salaries and fringe benefits and other costs as determined and agreed upon by each teaching hospital and non-hospital setting.⁶⁸
- The third alternative of this type would be for CMS to determine a percentage of each teaching hospital's PRA to serve as a proxy for the non-hospital site's teaching and overhead costs. This percentage of the PRA would be paid by the teaching hospital to

⁶⁶ The OIG report estimated that 9% of the total resident FTEs for the academic year ending in 2004 was spent in non-hospital settings and that 37,100 residents rotated to a non-hospital setting. Of the 120 non-hospital sites visited, 79% had at least one physician who said they had voluntarily supervised residents and had received no compensation and had not been pressured into volunteering. At 22% of these sites the teaching hospital offered various non-monetary incentives for volunteers, such as CME credits, academic appointments, and access to resources. In terms of noncompliance, the OIG found that 21% of agreements between teaching hospitals and non-hospital sites were not in writing and 86% made no mention of financial compensation for supervisory physician costs. For seven non-hospital settings, the schools of medicine, rather than teaching hospitals, compensated supervisory physicians.

⁶⁷ CMS did state in regulations that non-monetary, in-kind compensation, such as continuing education credit, office space, and library access, could be made as part or all of the payment to non-hospital setting but did not describe how such costs could be quantified. (*Federal Register*, 2004).

⁶⁸ Senator Snowe proposed two bills, in 2003 and 2005, which also advocated for a determination of costs by agreement between the teaching hospital and non-hospital setting.⁶⁸ A host of organizations, including the Association of American Medical Colleges and the American Medical Association, issued a joint letter to CMS advocating for this OIG alternative.

the non-hospital site in addition to paying the residents' salaries and fringe benefits.

OIG's two other alternatives redirect the flow of DGME funds; one directs DGME to non-hospital settings and the other directs it to the supervisory physicians at non-hospital settings. In the first, non-hospital settings would then be responsible for paying the resident's salary and fringe benefits, the supervisory teaching costs, and overhead costs for the time spent by the resident at that setting. Although administratively burdensome, it could encourage non-hospital setting participation in residency programs. The last alternative does not address reimbursement of residents' salaries and fringe benefits or overhead costs, but presumably the hospital would pay these costs.

Both CMS and OIG and others appear to agree on the need for federal funding policies to encourage training in non-hospital sites. However, as discussed in Chapter 3, the percentage of training in ambulatory setting has not increased since the BBA was implemented. This means that Medicare is paying more for non-hospital ambulatory training than it was paying previously but the higher payments have not been influential in increasing ambulatory training. Another possible way to encourage such training is through the accreditation process. ACGME and its respective Resident Review Committees,⁶⁹ by requiring a certain number of hours spent in a non-hospital, outpatient or community setting, may provide sufficient regulation and incentive to address the need to increase such training. The OIG report provided support for this claim; at 97% of the hospitals visited, officials indicated that the BBA had not resulted in an increase in the number of residents who rotate to non-hospital settings but that the driving force for the training had been the requirement set by ACGME and the Resident Review Committees. However, these accreditation stipulations may not require that the hospital go

⁶⁹ The ACGME has 27 residency review committees (one for each of the 26 specialties and one for a special one-year transitional year general clinical program). Each residency committee comprises 6 to 15 volunteer physicians appointed by the ACGME's member organizations and the appropriate medical specialty boards and organizations. (ACGME, 2006).

outside its own outpatient sites, thus not leading to an increase in resident training in non-community-based sites. Furthermore, the current federal regulation does not encourage hospitals to choose non-hospital sites over their own ambulatory sites.

TOWARD MORE RATIONAL MEDICARE POLICIES

Medicare's policies to support GME have become increasingly complex through efforts to control expenditures consistent with workforce goals. The policies have added to administrative burden without influencing workforce supply and specialty distribution and have raised equity issues. Arguably, the excessive IME adjustment has also distorted the market for resident physicians.

There are two policy directions that might be considered in refining the Medicare policies. The first direction would be to emphasize that Medicare's purpose is to pay for patient care provided to Medicare beneficiaries. This approach would reflect the arguments advanced by MedPAC that patient care payments are not an effective vehicle for achieving workforce goals and that separate more targeted approaches are needed for this purpose. As far as IME refinements are concerned, this policy direction would suggest that the IME adjustment be re-estimated to capture the teaching effect on inpatient costs per case while controlling for other missions and that the measure of teaching intensity be reconsidered in the re-estimation. The BBA IME provision for counting residents in ambulatory settings should be reconsidered as inappropriate as an inpatient payment adjustment that is not achieving its intended purpose. The reductions in IME funding should be accompanied by appropriate adjustments for other social missions, particularly uncompensated care through refinements in Medicare's disproportionate share payment policies.

With regard to DGME, this policy direction would reduce administrative complexity by eliminating the rules on weighting and initial residency periods that have generally been ineffective in influencing workforce specialty mix. Consistent with other inpatient and outpatient payment parameters, a single national PRA would be substituted for the hospital-specific PRAs and apply to all funded

positions. Total Medicare DGME expenditures could still be controlled, but through an aggregate limit rather than hospital-specific limits. Alternatively, DGME costs could be folded into an IME-like adjustment as recommended by MedPAC (which is discussed more fully in Chapter 5).

The other policy direction would be to place greater emphasis on Medicare's role as the primary support for GME and align Medicare payments with workforce goals. The IME adjustment would be refined as discussed above but Medicare's funding policies for DGME would be more aggressively aligned with the public benefits derived from GME. Adopting this approach would require a clear articulation of national physician workforce goals and the development of Medicare DGME funding policies that are consistent with those goals. As a prudent purchaser, Medicare would explicitly fund only those specialties and programs that generate the most public benefits and would eliminate other funding. A national PRA would replace the hospital-specific PRA but differentials that reflect variations in the net costs of different programs could be established. The policies would not be unlike those discussed next in Chapters 6 and 7 with respect to alternative DGME financing mechanisms. The chief difference is that there would be less flexibility in the Medicare policies since the GME support would still be linked to Medicare patient care payments.

5. RANGE OF MODELS FOR FINANCING GME

The previous two chapters assessed the strengths and weaknesses of the current system for financing GME and of an enhanced version of the current system. This chapter describes and assesses a range of alternative approaches to GME financing.

RANGE OF ALTERNATIVES FOR FINANCING GME

To identify a broad range of alternatives that might be considered for financing GME, we considered several sources:⁷⁰

- Prior proposals for GME financing reform;
- Medicaid GME programs;
- GME financing systems in other countries; and
- Financing systems for training other health professions and professions with a clinical or field component to their advanced education

PRIOR PROPOSALS FOR GME REFORM

Prior proposals for GME reform have mainly consisted of all-payer models (Medical Education Trust Fund, 2002; All-Payer Graduate Medical Education Act, 2001; COGME, 2000; American Association of Colleges of Osteopathic Medicine et al., 1997; Commonwealth Fund, 1997; Pew Health Commission, 1995 & 1998; PPRC, 1997; Schwartz et al., 1993). Other recommendations that focus on funding sources are folding DGME into IME (MedPAC, 1999; Newhouse & Wilensky, 2001) and suggestions for DGME to become an appropriation (Breux-Thomas, 1999). Recommendations that

⁷⁰ We also reviewed a variety of U.S. federal social programs to ensure that all possible federal funding alternatives were identified. We found that most U.S. social programs are funded by discretionary federal funds and use funding mechanisms identified in our scan of funding mechanisms for advanced professional training programs and current federal sources of GME funds. One mechanism of note is that funds can be divided into types of costs each funded by different sources; in particular, administrative costs of a program can be funded by one source, such as the state, and the deliverable good or service can be funded by another source, such as the federal government. Two examples of this are the Women, Infants, and Children (WIC) program (United States General Accounting Office, 2000) and Food Stamps (United States Department of Agriculture, 2006).

focus on the funding recipients include a voucher system (Commonwealth Fund, 1985; American Medical Association, 1996; Pew Commission, 1998), or the use of intermediate funding entities (e.g., educational consortia) (National Academy Press, 1997; COGME, 1997).

As shown in Table 5.1, the all-payer models share many features; most of them put some limitation on the number of international medical graduates to be funded, tax private health insurance premiums to create available funds, recalibrate GME costs to current levels, and use Medicare formulas with some modification. All models include both IME and DGME payments in their all-payer fund except the 1997 Consensus Statement by several organizations, which recommended an all-payer trust fund for DGME only. The Physician Payment Review Commission (PPRC), one of the MedPAC predecessor agencies, also made this same recommendation (PPRC, 1997). In its 1993 report, the PPRC also made several other recommendations in addition to calling for all-payer funding, based on a conclusion that there was a need to slow the growth of the total number of physicians:

- a congressionally set limit on the total number of funded residencies
- a federal body that would determine the distribution of these slots by specialty
- use of accrediting bodies to base funding on educational quality
- transitional financial relief to teaching hospitals that lose residents but still must meet essential service needs

(Schwartz et al., 1993).

Table 5.1 All-Payer Reform Proposals

All-Payer Title & Year		Limits on number and/or type of funded residents	Source of Funding	Eligible Recipients	Vehicle for Fund Allocation
Pew Health Professions Commission	1995	Cap number of funded positions at 110% of U.S. medical school graduates and eliminate funding for non-resident IMGs.	Uniform tax on all health insurance premiums.	All entities providing clinical education for physicians, including consortia	Medicare formulas used but with one uniform per resident amount and historical IME revenues (instead of intern/resident-to-bed ratio).
	1998		Per capita assessment on health care plan enrollees.		
Commonwealth Fund (1997)		Reduce funding in accord with reducing the number of 1st year training positions to 110% of U.S. medical school graduates.	Health insurance premium tax.	Teaching hospitals	Medicare formulas used. Recalibration of teaching costs.
Consensus Statement (AACOM et al., 1997)		Limit federal funding of residents to number sufficient for U.S. medical school graduates.	Tax on premium for DGME only (IME would continue to be funded by Medicare).	(DGME only) Entities that incur cost of GME or designated consortia	Medicare formulas used.
COGME (2000)		No support for new exchange visitors (J-1 visa).	Modest charge of private insurance premiums.	(IME): Hospitals and other clinical training sites as appropriate	Medicare formulas used but reduce IME multiplier to analytically justified level.

			(DGME): Program sponsors.	Recalibratio n of teaching costs
Health Care Workforce Trust Fund⁷¹ (2001)	Requires HHS to establish a plan to reduce the number of first year training positions to 110% of U.S. medical school graduates.	1% tax on all private insurance premiums.	Teaching hospitals	Medicare formulas used but reduces IME multiplier to 4.8% starting FY 2003 and uses one national wage- adjusted average PRA.
Medical Education Trust Fund⁷² (2002)		1.5% tax on all insurance premiums	Teaching hospitals and medical schools	Medicare formulas used. Recalibratio n of teaching costs.

MedPAC is an independent federal body established to advise the U.S. Congress on issues affecting the Medicare program, including graduate medical education.⁷³ In 1999, MedPAC recommended the elimination of DGME and the addition of a "teaching hospital adjustment" to the IME payment, which would be reduced to the analytically-justified level. MedPAC explained that both DGME and IME payments represent patient care costs; for example, residents' stipends - considered by some as strictly education-related costs - are viewed as payment for patient care provided as they learn. Residents are willing to accept lower wages, and thus bear some educational training costs, in exchange for skills acquired while providing care that will allow them to earn more in the future or achieve greater job satisfaction.

⁷¹ All Payer Graduate Medical Education Act. HR 2178, 107th Congress, Cardin; formerly HR 1224, 106th Congress, Cardin

⁷² Medical Education Trust Fund Act of 2001 / 2002, S. 743 / HR 4856, 107th Congress, Reed / Lowey; formerly S.210, 106th Congress, Moynihan.

⁷³ The Balanced Budget Act of 1997 replaced the PPRC, and the Prospective Payment Assessment Commission, with the Medicare Payment Advisory Commission (MedPAC).

Like MedPAC, the GME Work Group of the National Bipartisan Commission on the Future of Medicare also considered a change for DGME, but instead of folding it into IME, the Breaux-Thomas proposal (1999) recommended that DGME should be taken out of Medicare and be subjected to either mandatory entitlement or multi-year discretionary appropriation. The separate funding pool created would then be distributed using the same methodology as the current DGME payments. The National Bipartisan Commission failed to reach consensus on this proposal or any others and did not issue a final report (COGME, 2000).

Other proposals kept DGME and IME separate but focused either on the residents or other entities, such as educational consortia, as the recipients of the funding. In a voucher allocation of GME funds, GME reimbursement would be given to graduates rather than training sites; the graduate would be issued a voucher and allowed to choose any accredited program, based on quality or other program characteristic so that payments follow the resident to the training site. In this market system of vouchers, sites could potentially compete in such areas as quality for residents. The number of vouchers could be determined by providing one for everyone who requested one, by taking a percentage of U.S. medical school graduates (100-110%), by estimating workforce need, or by a variety of other mechanisms. The voucher system could allow for reimbursement to various training sites and novel training arrangements like educational consortia. There would be challenges to the ability to budget and to the continuity of funding for teaching institutions.

MEDICAID PROGRAMS

As discussed in Chapter 3, as of 2002, the majority of states and the District of Columbia made Medicaid fee-for-service payments for GME to teaching hospitals using Medicare-like methodologies, and 17 states and the District of Columbia also provided carve-out funds from Medicaid managed care payments for GME (See Figure 5.1). Thus, most Medicaid GME payments suffer from the same shortcomings as Medicare GME payments. However, several alternative methodologies and funding mechanisms have been proposed and implemented recently, as some states struggle to better align funding flows with state-specific needs.

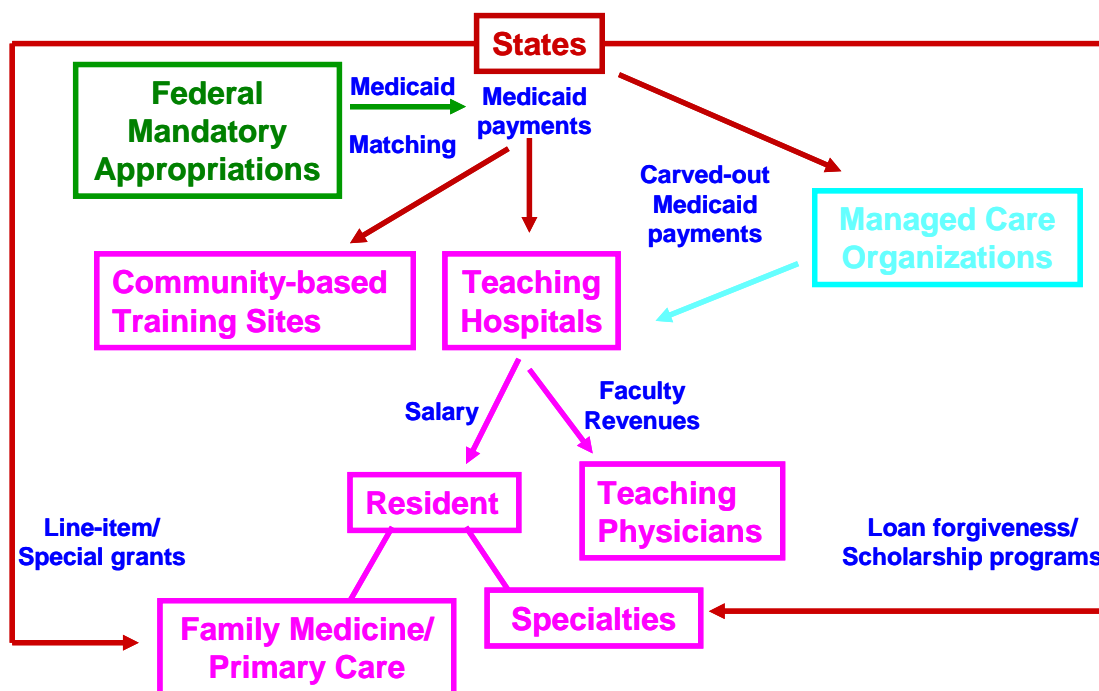


Figure 5.1 Example of Medicaid GME Financing System

Several states have chosen to link GME funding with state workforce needs, thus enhancing the efficiency of the state use of funds, and to supplement Medicare and Medicaid GME financing with additional funding. As of 2002, 10 states have targeted Medicaid GME payments that are linked directly to state health workforce needs, such as encouraging certain specialties and improved geographic distribution (Henderson, 2003). In addition, nearly all states have scholarship and loan forgiveness programs targeted to placing primary care professionals in medical underserved areas, more than 40 states have created special grant programs for family physician training, and half of states specify appropriations for family practice education (COGME, 2004).

A few states have taken even further steps; four examples - Michigan, Minnesota, New York, and Utah - are described in detail in Appendices E, F, G, and H, respectively. Three of these states (NY, UT, MN) have multiple-payer trust funds in which there is a dedicated funding pool for GME comprising a mixture of Medicaid, Medicare, state, or private payments. These multiple-payer trust funds are highly equitable because funding of GME is distributed to all parties that benefit from GME. These states have increased the adequacy of their GME

funding by drawing upon other sources of funding, such as the tobacco settlement fund and cigarette tax in Minnesota or by leveraging additional federal matching funds or state discretionary funds to support specific workforce goals, e.g., rural/underserved areas, in Michigan and Utah. All of these states' innovations required Medicare and/or Medicaid waivers and reports and thus require more documentation and greater accountability than the traditional Medicaid GME system. While it is too early to ascertain the effectiveness and applicability of most state initiatives, we briefly comment on their potential for broader adoption below.

Use of weighted/incentivized formulas (MI & MN). This approach is a slight departure from the Medicare-like weighted formulas, in that the weights are determined to achieve specific workforce, quality or fund-adequacy goals of each state. Michigan, for example, uses weights to encourage specialization in primary care and in-state practice post-residency. Minnesota bases funding formula on actual direct costs of training. Since these state modifications are designed to correct locally-undesirable effects of the national Medicare-like methodology, adoption of a national formula would not be feasible. But each state could modify funding formulas to achieve individual state policy goals, given that evidence on effectiveness can be established.

Use of grants as incentives for creative programs or workforce goals (NY, MI, MN). An alternative to weighted and incentivized formulas, especially when funding is limited, is to use competitive grants as HRSA does with primary care and geriatric training awards. New York, Michigan and Minnesota have experimented with competitive grants to encourage innovation, primary care training, and other targeted policy goals. Use of grants allows for greater accountability and documentation, but also additional administration.

Council that oversees GME (UT, MN). Central coordination of GME in Utah appears to be useful in understanding the costs of clinical training and the workforce needs of the state, and research and analysis conducted by the Minnesota MERC Advisory Committee helps create and inform legislation. A council could also take on the responsibility of fund allocation, based on the information gathered through the analysis of costs and workforce needs. Utah is

experimenting with a multiple-payer mechanism that channels funds to training programs based on actual costs of IME. The U.S. currently does not have such a body at the national level. A national central agency for GME could take on some or all of the Utah Council's functions, although it may be more efficient and accurate to do so at the state level. A GME council may be more easily integrated in some states than others, since the size and complexity of the GME system varies greatly by state.

Channeling funds to sponsoring institutions (MN). Channeling funding to sponsoring institutions in Minnesota allows for greater accountability and for some specific objectives to be linked to funding. Although the sponsoring institutions must pass on 90% of these funds to training sites based on a set formula, they are allowed to determine their own allocation process for 10% of the funds. Such a process may incorporate criteria for quality, performance, and other outcomes related to education. Channeling funding to sponsoring institutions at the national level could also increase accountability and allow the federal government to leverage certain objectives, since all approved residency programs have a sponsor who has ultimate responsibility for operating the residency program.⁷⁴ This change may not be significant for many programs that are sponsored by hospitals, but would change the flow of funds in those instances where there is a non-hospital sponsor.

SYSTEMS IN OTHER COUNTRIES

We investigated the systems for funding GME in five developed countries⁷⁵ - Australia, Canada, Germany, New Zealand, and the United Kingdom - chosen based on recommendations by ASPE and key informants,

⁷⁴ A sponsoring institution may be a university, a medical school, a hospital, a medical school, an organized health care delivery system, a consortium (two or more organizations that have come together to pursue a common objective, i.e., GME).

⁷⁵ We also researched Japan but decided not to include it because of the difficulty in assessing it fully; in 2004 it began undergoing significant reform of its graduate medical education system, increasing funding to four times that in 2003 and shifting from an apprenticeship-like model to a more formal education model. (Inoue & Matsumoto, 2004; Otaki, 1998).

comparability to the U.S., and availability of information. We will discuss Canada, Germany, and New Zealand in depth, as these three countries offer the most relevant and interesting models and adequately cover characteristics found in Australia and the United Kingdom.⁷⁶

Generally, international systems for financing GME have limited applicability to the U.S. system because of the high complexity and contextual nature of national health care systems. Most developed countries have government-funded or social health insurance programs and private insurance plays a smaller role in financing than in the United States. In addition, the selected countries publicly fund all or most of undergraduate medical education and, most importantly, four of the countries we examined (Australia, New Zealand, Canada, and the United Kingdom) limit the number of medical school graduates based on workforce needs, which then determines the number of residency training slots. In contrast, market forces determine the number of medical school graduates in the U.S. and residency training slots are not limited to U.S. medical school graduates.

Although the selected countries do have far fewer graduates of medical school than the U.S., thus creating differences in scale and logistics, they actually have more per 100,000 population than the U.S. This number does not, however, capture the number of residents in graduate medical education in these countries because it does not account for international medical graduates.

Table 5.2 Approximate Number of Medical School Graduates, Total and Per 100,000

Country	Approximate Number of Medical School Graduates per year (2005)	Approximate Number of Medical School Graduates per 100,000 population (2005) ⁷⁷
Australia	1,300	6.5
Canada	1,800-2000	5.6-6.3
Germany	7000 ⁷⁸	8.5

⁷⁶ See Appendix C and D for diagrams of the GME financing systems in Australia (Dowton et al., 2005; Lenin, 2005; Bain, 2005) and the United Kingdom (Gainey, 2005).

⁷⁷ Assumed populations: Australia (20 million), Canada (32 million), Germany (82 million), New Zealand (4 million), UK (60 million), U.S. (298 million).

New Zealand	280	7.0
United Kingdom	4,000	6.7
United States	16,000	5.4

Source: Key informants, Lennon (2005), European Observatory (2004), Heard & Crockard (2005), Barzansky & Etzel (2005).

Despite the limitations described above, international models offer valuable insights for GME financing policies and offer specific elements that could be applicable to the U.S. GME financing system. These elements and their applicability will be discussed below following reviews of the GME financing in Germany, New Zealand, and Canada.

Germany. Medical trainees in Germany accept a reduced wage as providers of patient care and employees of hospitals in exchange for education. Some of the costs of graduate medical education, in terms of high patient care costs, administrative overhead, and teaching physician salaries, are borne by other parties, private and public. Sickness funds⁷⁹ and private insurers indirectly support education through paying higher patient care costs to teaching hospitals and, along with regional physicians' associations, are also obligated to finance half of the salaries for general practitioners trainees during their office-based training period (2-3 years).⁸⁰ These indirect contributions are similar to the higher patient-care costs already paid by private payers in the U.S., but no similar explicit contribution by private providers and payers exists in the U.S. In addition, German states (länder) are responsible for the budgets of hospitals and thus also indirectly subsidize, to a degree, higher costs due to education, similar to Medicaid GME and public hospitals, but the subsidies are not explicit.

GME funding in Germany is not tied to workforce needs; there is no limit on medical school students and no restrictions on the number of trainees, or even any regulations on the length or sequence of training

78 Only able to find number per 100,000 for 2001 (from that, calculated total number).

79 Third-party payer in social health insurance system, covering the community as a whole or sections of the population.

80 The other half of the trainee's salary is supposed to be covered by the employee but usually the trainee only receives the half paid by the private sector.

beyond the required completion of a catalog of procedures, which is dependent on assignment to necessary rotations and procedures subject to the whim of supervisors. However, workforce needs are addressed somewhat, and indirectly, in the physician job market. Since 1993, the federal social code book has stipulated that new practices may not be open in defined areas where supply exceeds 110% of the average number for a given specialty in each area (European Observatory on Health Systems, 2004).

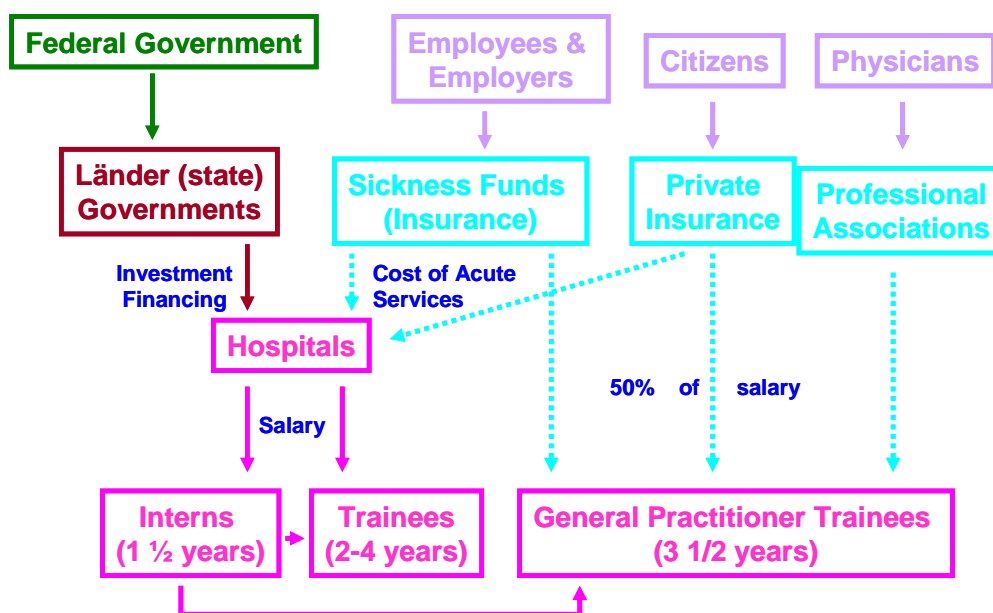


Figure 5.2 Germany's GME Financing System

New Zealand. GME funding in New Zealand is provided entirely by the national government, same as in the United Kingdom.⁸¹ New Zealand has a specific government agency, the Clinical Training Agency (CTA), devoted to monitoring, evaluating, and funding GME for all residents.⁸² The CTA guarantees full funding for each medical school graduate, offers partial support in the second year, and currently bases its funding of specialty residents on historic amounts and some workforce

⁸¹ GME is considered a core activity, rather than a discretionary appropriation, of the National Health Service in the United Kingdom.

⁸² The United Kingdom has a similar agency while Australia has one focused only on the oversight of general practitioner residents.

needs, limited by budget constraints. It hopes to shift to only workforce needs once its Workforce Needs Assessment Model⁸³ is complete. The CTA is responsible for extensive accountability and for accreditation; hospitals are reimbursed by the agency from a list of specified costs for training, the agency maintains training specifications for each specialty and audits hospitals to ensure adherence and quality are maintained, and the agency has the power to move slots from hospital to hospital based on each hospital's ability to provide training. The U.S. does not have any entity like the CTA, although some of the CTA's functions are covered by a variety of entities, such as ACGME, CMS, and HRSA.

Like Germany, New Zealand (as well as Australia and the United Kingdom) has a separate, distinct flow of funding to general practitioner training in community-based practices. New Zealand also provides additional support to those second-year residents who work at a rural practice as compared to those who remain in the hospital setting.

(Ministry of Health, 2004; European Observatory on Health Care Systems, 2001).

⁸³ A forecasting model that provides the following: an estimate of service demand, information on the demographic and geographic distribution of the workforce, factors that will influence the workforce in the future.

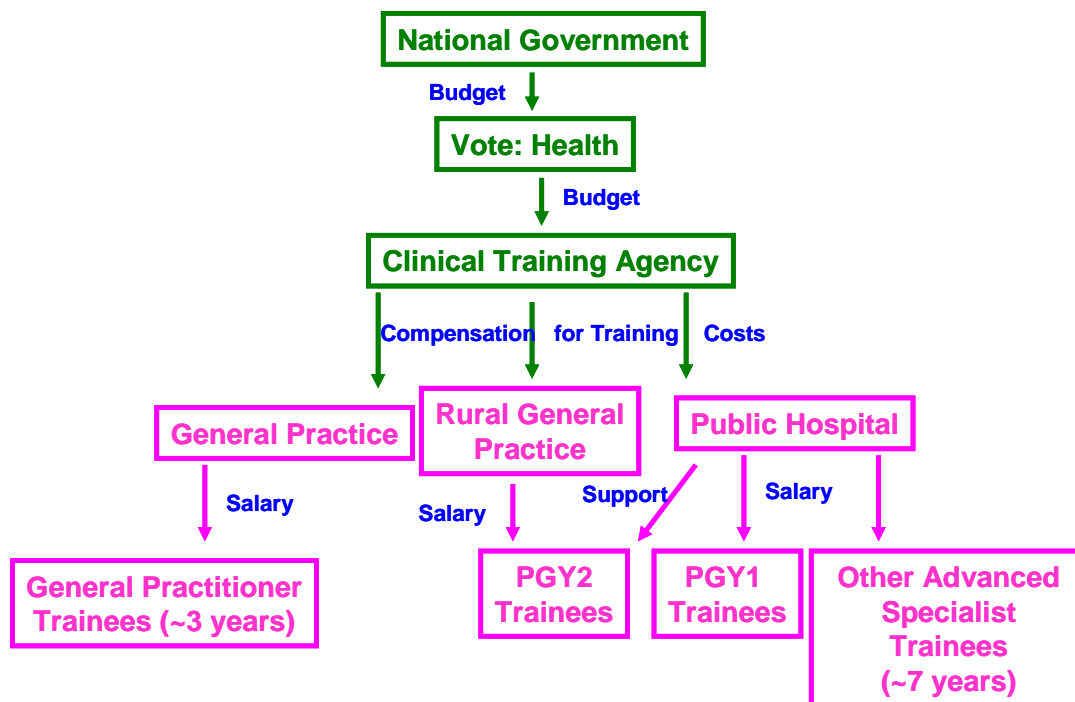


Figure 5.3 New Zealand's GME Financing System

Canada. In Canada, similar to Australia, funding is provided primarily by the provinces (or states) and is determined through negotiations among the provinces and the federal government based on historic amounts, workforce need (underestimated), and lobbying by physicians and various medical associations. In the U.S., the states play a much more minor role and funding is determined by formula rather than negotiation. Canada guarantees GME funding for every Canadian medical school graduate (1:1) but in reality, the provinces often increase funding to cover international medical graduates (IMGs) in part because of their persistent lobbying. In Canada, similar to the U.S., nearly a quarter of residents are IMGs.

Canada sends direct GME funds, for residents' and teaching physicians' salaries and teaching physicians, to the medical school and requires that all GME programs be based at a medical school, rather than hospital-based as are most programs in the U.S. Some funds also flow to the hospital and to community-based practices.

(Barer et al., 2005).

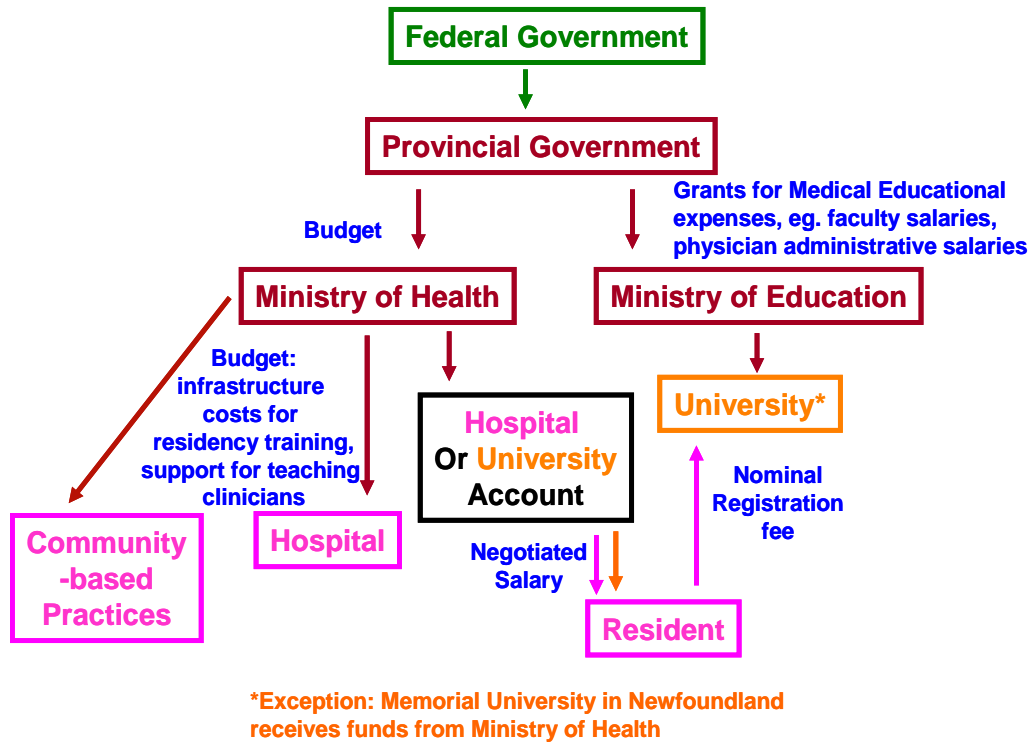


Figure 5.4 Canada's GME Financing System

Assessing International Mechanisms

In terms of equity in sharing the cost burden of graduate medical education among those who benefit, these international models contain examples of varying federal, state, and resident responsibility. In New Zealand and the United Kingdom, the national government bears nearly all the GME costs while in Canada and Australia, the burden is primarily on the provinces or states. In Germany, the entities that bear the most costs are hard to identify, because of the treatment of trainees as reduced-wage employees and the lack of explicit subsidies. Although Germany appears to be fairly equitable, there is no oversight of funding or consideration of workforce planning, so funding may be inadequate and inefficient and accountability is low, with no explicit funding or support for a formal education system. Funding in other countries is viewed as more or less adequate but countries struggle with efficiency in matching funds to workforce needs and to quality education. Accountability in Canada, United Kingdom, and Australia is very similar to the U.S. in terms of accreditation. New Zealand has the highest accountability because of its unique identification of

costs and training specifications that must be met for continued funding.

In the international models that we examined, we observed several funding-related mechanisms that are designed to achieve a range of GME objectives. While the feasibility of many of them is dependent upon the respective country's greater healthcare context, we consider the applicability of each mechanism below.

Central agency to oversee various aspects of GME, including funding (New Zealand, United Kingdom, Australia): a central coordinating body for GME appears to be effective in promoting standardization among training programs and ensuring quality through control of funding and/or residency slots. It also seems to help facilitate workforce planning in a coherent manner, as opposed to a scenario in which there is no coordination at the national level. The U.S. currently does not have such a body. ACGME is a private, non-profit organization that oversees quality of training only, while funding is controlled by various government agencies (CMS, HRSA, DoD, VA) and recommendations on workforce planning, training issues, and financing policies are made by COGME, which exists on periodic authorization and lacks necessary staffing and resources. In the U.S., a central agency could play an important role, especially in conducting and facilitating workforce planning. Given the sheer size of graduate medical training in the U.S., a central agency can serve as a coordinating/resource center for regional (e.g., state) efforts. It could also potentially be a conduit- in full or in part- for funding and accountability if DGME financing were reformed.

Limiting the number of medical school graduates/residency slots based on workforce needs (Australia, New Zealand, Canada, United Kingdom): On the surface, controlling the supply of physicians in training would be more effective in achieving workforce supply and distribution goals than relying on market forces to determine the number of graduates in the U.S. Such a mechanism may also ensure adequacy and stability of funding for needed training. Experience in these other countries, however, seem to indicate that estimating workforce needs is difficult, as discussed in Chapter 2, and that limits, particularly on medical school graduates, are not as effective

when there is a sizable number of international medical graduates (IMGs) being trained. The latter is the case in the U.S., where 26% of the residents are IMGs (Brotherton et al., 2005). In addition, implementation of this policy requires a national, centralized infrastructure and cooperation from public and private sectors that may be difficult to garner in the U.S.

Separate funding stream for general practitioner training (New Zealand, Germany, Australia, United Kingdom): Having a distinct flow of funds for general practice recognizes the differences in the nature of training generalists from specialists and facilitates workforce incentives for primary care, which is in acute shortage in many countries. General practitioner training tends to be more community-based and shorter in length, and training tends to be multi-disciplinary. In the U.S., community training is not facilitated under the current funding scheme, since most training funds flow to hospitals in the form of Medicare/Medicaid patient care payments and higher payment for primary care is indistinguishable in the aggregate payments. A reconfiguration of the funding mechanisms would be necessary to realize the benefits of a separate stream of funding for primary care.

Funding from regional physician associations (Germany): Financial and other contributions from regional physician associations can be beneficial for GME, in promoting advancement of specialties in need and fostering the sense of shared responsibility. In the U.S., however, the medical professional associations, organized by specialties and by state, do not necessarily have access to funds that can adequately support residency training at a large scale or a willingness to do so (certain specialty organizations do offer residents coverage of membership fees, funding for conferences, and relatively small monetary awards for financial need, research, or merit of \$1,000-10,000). Professional associations in the U.S. tend to have different objectives and business models than in the selected countries, and do not operate under the purview of a federal agency.

Administer and fund GME programs through medical schools (Canada): Administering GME programs through medical schools would enforce the educational aspect of GME training and enable standardization across

training programs (through affiliated universities). In the U.S., however, training occurs mostly in hospitals that are not affiliated with universities. It would be logistically difficult to redirect GME funding to medical schools, which would have to undergo major restructuring and coordination with hospitals to facilitate graduate medical education.

OTHER ADVANCED PROFESSIONAL EDUCATION PROGRAMS

For other advanced professional education programs, we identified other health professions and professions with a clinical or field component to their advanced education. From our search, we found four general, non-exclusive categories of financing. An apprenticeship model, in which the trainee accepts a reduced salary paid by the employer without federal or state subsidies while undergoing training and providing service in the field for several years, is common among several professions, including architecture (Association of Collegiate Schools of Architecture, 2006) and clinical psychology (Bureau of Labor Statistics, 2006a; West Chester University of Pennsylvania, 2006). The cost of education thus lies primarily on the resident but also on the employer. Other professions have advanced training integrated into formal, classroom education programs as either an internship course, e.g., social work (Bureau of Labor Statistics, 2006b; Council on Social Work Education; Adelphi University) or required clinic work, e.g., law school, that rely on funding from tuition.

There is a rich variety of targeted grants and loans available to such professions as pharmacists, nurses, and biomedical scientists from the Health Resources and Services Administration (HRSA) (Bureau of Health Professions, 2006), Department of Education, and private entities such as pharmaceutical companies, alumni organizations, and professional associations (American Association of Colleges of Pharmacy). Most of these grants are related to workforce goals. In addition to the grant programs while in the training program, the National Health Service Corps Loan Repayment Program is available for primary care nurses and physician assistants, dentists, and mental health professions, as well as physicians in family medicine, general pediatrics, general internal medicine, general psychiatry, or obstetrics/gynecology, in exchange for

a commitment to providing primary care service in a priority health professional shortage area for a minimum of 2 years (Bureau of Health Professions, 2006). Last, federal direct appropriations are available for advanced nursing practitioner training (American Association of Colleges of Nursing).

6. EVALUATION OF ALTERNATIVE FINANCING POLICIES FOR DGME

In this chapter, we examine alternatives for DGME financing along key dimensions: source and type of funds, level of funding, eligible recipients, fund allocation vehicle, and fund allocation policies. Our alternatives are drawn from the literature and the models that we highlighted in the last chapter. We will examine each dimension separately in this chapter; in Chapter 7, we will discuss how selected alternatives might be combined into alternative models for financing DGME. Our assumption is that payment for indirect teaching costs would continue through payments for patient care, including a Medicare IME adjustment.

Under the current system, most support for GME costs is provided through explicit payments from Medicare and Medicaid and implicit payments from private payers. Because Medicare is a formula-driven payment system and teaching hospitals have higher patient care costs, an explicit Medicare payment for IME is appropriate (with the refinements discussed in Chapter 4). As discussed in Chapter 3, there are several reasons why an alternative funding mechanism might be desirable for DGME.

- *Equity.* Using the Medicare program as the primary vehicle for federal DGME support raises two basic equity issues. First, broader-based funding would provide a better match of public benefits with public support. Second, teaching hospitals with high Medicare utilization receive relatively more federal support than low-Medicare volume institutions.
- *Adequacy.* Medicare and Medicaid payments for DGME are explicit. Other patient care payments implicitly support the remainder of DGME costs but the funding levels are affected by a hospital's payer mix and the impact of market competition on private payer payments. Further, concerns over the long-term solvency of Medicare trust funds periodically lead to proposals to reduce the level of Medicare funding.
- *Efficiency.* Paying for educational activities through patient care payments provides limited opportunities for federal support to

influence the supply and distribution of new physicians. Hospital staffing needs and financial considerations, including Medicare's explicit payments relative to the costs of replacing residents with other professional staff, weigh heavily in institutional decisions on the number and type of residency slots and rotations to other training sites. Alternative funding mechanisms would open the possibility of introducing stronger financial incentives to foster specific educational and workforce objectives.

- *Accountability.* Payments for residents in a single training program flow to multiple hospital training sites as patient care payments. This makes it difficult to determine both the total direct costs for operating the program and the federal subsidies to support the program. Teaching hospital patient care revenues are fungible and may be used to support the full range of activities. Accountability for how the funds are used could be more readily established when support is explicitly provided for GME programs than when it is included in patient care payments.
- *Administrative feasibility.* Medicare DGME payments have become increasingly complex as efforts have been made to address issues such as workforce needs and time spent at various training sites.

SOURCE AND TYPE OF FUNDS

A new mechanism to provide federal support for DGME programs would require both authorizing legislation and appropriations that would allow a Federal agency to incur obligations and to make payments out of the Federal treasury. The authorizing legislation may be annual, multi-year (e.g., HRSA CHGME and Title VII funds) or permanent (e.g., Medicare and Medicaid). Once a program is authorized, there are two basic types of federal appropriations: mandatory (or direct) spending and discretionary spending.

- Mandatory spending is a binding legal obligation of the federal government to provide funding. Mandatory spending programs, which include entitlements such as Medicare and Medicaid, account for about two-thirds of the federal budget. Spending levels are determined by formula and other criteria in the authorizing legislation rather than in the appropriations process.

- Non-defense discretionary spending accounts for less than one-fifth of the total budget and includes the CHGME program and other HRSA programs that support GME. Funding levels are generally determined through the annual appropriations process. However, funds obligated in a given year may be paid out over subsequent years.

The authorizing legislation would need to specify the source for the federal funds. Typically, discretionary spending programs are financed through general revenues. Mandatory spending could be funded through either general revenues (e.g., personal or corporate income taxes) or through specific-purpose revenues. For example, Medicare Part B expenditures are financed through a combination of premium and general appropriations while the Medicare Part A trust fund is supported by a payroll tax. The all-payer proposals would supplement Medicare and Medicaid funds with an assessment on health insurance premiums and the administrative expenses of self-insured plans.⁸⁴

Expanding the base of federal support beyond the Medicare and Medicaid programs is consistent with the notion that GME provides public benefits. A mandatory spending program provides more stable and predictable funding than a discretionary funding program. On the other hand, a discretionary spending program forces GME to compete with other public benefits and goods for scarce federal dollars and allows greater opportunity for policy judgment regarding the appropriate level of federal support.

The differences between the Medicare program and the CHGME program highlight the policy choices that might affect a choice between a mandatory spending program and a multi-year discretionary spending program (see Table 6.1). The CHGME program allows for greater control over the total federal dollars that will be expended to support GME, since the total dollars are fixed through the appropriations process. However, recipients must expend efforts each year to advocate for the desired level of funding and the funding is not guaranteed until the

⁸⁴ For example, see U.S. Congress, ``All-Payer Graduate Medical Education Act of 2001'' (HR 2178, 107th Congress, 1st Session) and ``Medical Education Trust Fund Act of 2002'' (H.R. 4856, 107TH Congress, 2nd Session)

appropriations are enacted. Under both the CHGME and Medicare programs, the formula used to allocate funds takes into account the hospital's number of residents and a per resident amount. Medicare's share of an individual hospital's inpatient days determines what its total Medicare payments will be. A particular children's hospital's share of the total residents reported by all children's teaching hospitals determines what its CHGME DGME payments will be. Thus, under both programs the actual amounts a hospital will receive cannot be determined until the end of the year and may fluctuate from year to year.

Table 6.1 Comparison of Medicare and CHGME Funding for DGME

Policy	Medicare	CHGME
Source of funds	Part A: payroll tax; Part B: premium and general appropriations	General appropriations
Authorization	Permanent	5-years
Funding level	Authorization specifies a payment formula; total payments dependent on actual number of residents and Medicare utilization	Authorization specifies the maximum appropriation and a formula for allocating available funds; total payments are determined in annual appropriations process
Amounts paid to individual providers	Formula determines the payment amounts for individual hospitals	Formula allocates available funds to individual hospitals

A permanent authorization establishing a DGME fund would provide the most stable and predictable funding for GME programs. Doing so would broaden the base for explicit DGME support to all persons who use the healthcare system and potentially insulate GME programs from Medicare and Medicaid budgetary pressures. Since private payers already implicitly support GME activities in their patient care payments, some offsetting reductions in the rates private payers negotiate with teaching hospitals might occur if all-payer funding is used to support the DGME fund instead of general revenues. Nevertheless, teaching hospitals in general and those in competitive markets in particular would benefit from a more level playing field. Those with high Medicaid/charity care caseloads would benefit the most since their

current support levels are more limited than providers with a high Medicare/private payer mix.

As discussed in the sections that follow, if a separate DGME fund were established - either through all-payer assessments or general revenues - policy decisions would be needed regarding the size of the fund, the entities that would be eligible to receive funds, and how the funds would be allocated.

SIZE OF THE FUND

An immediate issue would be how to calculate the initial size of the fund and the process for determining when changes in funding levels beyond inflation should be made. There are challenges to determining an appropriate funding level. These include the lack of consensus on the number of needed residency positions and whether medical schools will expand their programs to meet future workforce requirements, the lack of reliable information on the total and net costs of efficiently operating a residency training program, and the lack of an assessment of whether current federal subsidies are adequate given other sources of revenue such as non-Medicare patient care payments. Potential options for consideration include:

- Make the initial funding level budget-neutral to the current Medicare and Medicaid (federal share of) DGME payments. This option assumes that current levels are adequate and that the new mechanism would primarily improve the equity of how current subsidies are funded and allocated.
- Make modest increases in the funding to meet GME public policy objectives.
 - One reason could be to provide targeted funding for specific policy goals, such as innovative educational programs, or to fund the financial incentives discussed later in this chapter. Models for this might be the Michigan and New York incentive pools.
 - Another reason could be to recognize expansions in the number and size of particular residency programs. Current Medicare funding levels have been constrained by the 1986 resident levels and in the aggregate, there are over 20,000

more positions in 2005 than in 1986. The increased funding could be targeted toward programs for specialties in short supply or for geographic areas with lower physician/population ratios.

- o A third reason could be to provide explicit payments to community-based training sites. One of the difficulties in moving training into community-based sites has been the redistribution of funds from teaching hospitals to non-hospital community settings. One way to facilitate community-based training would be to provide additional funding rather than redistribute funding from teaching hospitals.
- Significantly increase the current subsidies to fund substantially all of the costs of efficiently operated residency programs that are consistent with workforce priorities. Most all-payer funding proposals would essentially pay hospitals their full per resident amounts.
- Revise the current subsidies to take into account the differing capabilities of teaching hospitals to cover the costs of operating a residency program. For example, the Minnesota MERC fund's allocation methodology pays more to programs with high Medicaid patient volume. While the starting point might be a national per resident amount, the amounts could be adjusted based on the estimated net costs of operating GME programs across different types of teaching hospitals or specialty programs. This option would be predicated on further research on the net costs of operating different GME programs.

ELIGIBLE RECIPIENTS

A limitation of using Medicare as the primary funding vehicle for federal support is that the funding needs to be linked to patient care activities and be paid to healthcare providers. A separate GME fund opens a range of possibilities for eligible recipients of federal funds, including educational consortia, residency program sponsors, individual healthcare providers, non-provider training sites such as school clinics, and the residents themselves.

Program sponsor. To emphasize the subsidy is for education rather than patient care, one option might be to pay the sponsoring institution for the residency program.⁸⁵ All approved residency programs have a sponsor who has ultimate responsibility for operating the residency program.⁸⁶ Because the sponsor does have the ultimate responsibility for the program, funding could be linked to specific objectives, outcomes, and performance measures. This could include educational objectives such as the proportion of time residents in different specialties would spend in community-based training, the amount of time teaching physicians would devote to supervising residents, the proportion of the sponsor's slots that would be offered for primary care, etc. New Zealand might offer a model as to how this approach might be used to establish more accountability for GME funds; hospitals are audited for training specifications and residency slots and corresponding funding may be moved from one hospital to another. For hospital-sponsored programs, paying the program sponsor would flow all the funds to the sponsoring hospital and would no longer allocate the funds among all hospitals participating in the program in proportion to the time the residents spend at each hospital. While the change may not be significant for many programs, it nevertheless provides a basis for establishing greater accountability for the receipt of federal funds. For programs with non-hospital sponsors, this approach would flow the funds to the entity that is responsible for the educational activity. Most often, this will also be the entity that bears the costs for operating the residency program. As a practical matter when this is not the case, the sponsor could be allowed to designate a recipient as long

⁸⁵ We do not believe flowing the funds to a medical school is a viable option. Unlike Canada, most residency programs in the United States are not sponsored by medical schools. Paying medical schools would disrupt current arrangements and may be difficult to justify unless there is substantial evidence that residency programs affiliated with medical schools have higher quality residency programs than hospital-sponsored residency programs.

⁸⁶ A sponsoring institution may be a university, a medical school, a hospital, a medical school, an organized health care delivery system, a consortium (two or more organizations that have come together to pursue a common objective, i.e., GME).

as the administrative process does not become burdensome and the accountability requirements are unaffected. Flowing the funds to the program sponsor may provide more leverage to emphasize the educational experience over service needs and to rotate residents to community-based settings.

Provider. Under the current system, Medicare payments flow to teaching hospitals even when the resident rotates to a non-hospital training site. This policy relies on the teaching hospital and training site to come to an agreement of how the costs will be shared. It entails the least administrative burden and most flexibility but has not been successful in increasing community-based training opportunities. This issue and alternative ways by which support could be allocated to improve funding for non-hospital training opportunities are discussed in Chapter 4. Generally, the alternatives provide for funds to follow the resident when training is provided in community-based clinical or non-clinical settings and to pay those sites directly based on the time spent by the resident in those settings. There is a danger, however, that the hospitals may be more reluctant to rotate residents to these sites if it results in fewer GME subsidies for the hospital. From an administrative viewpoint, paying each community-based training site is not likely to be feasible since many sites provide a relatively small amount of training.

Consortia. The ACGME defines a consortium as two or more organizations or institutions that have come together to pursue common objectives, i.e., GME. From a public policy perspective, paying regional consortia that consist of the teaching institutions within an area has significant appeal as a means to foster workforce planning and collaboration among the entities involved in GME and education of other health professionals. The problem is that with a few notable exceptions, operational consortia do not exist (COGME, 2000). Thus, initial funding policies would need to be designed to encourage consortia-building and perhaps reward residency programs that are part of a regional planning process, but it would not be feasible to limit funding to consortia. Ultimately, one long-term possibility would be to make block grants to consortia that would then allocate the funds among its members.

States. Another alternative would be to allocate educational subsidies to the states or to an independent state commissions charged with workforce planning that would then reallocate the funds to teaching institutions within the state. Involving the state in the allocation of educational subsidies might make the teaching institutions more sensitive to state workforce needs. Also, the allocation of federal funds could consider population and projected physician workforce needs as well as the current distribution of residency positions. However, GME has national public benefits and turning the distribution of funds over to the states could risk sacrificing national workforce goals and create inconsistent policies across states. Many states also sponsor residency programs through their universities and medical schools, raising potential conflict-of-interest issues for equitable allocation of funds between public and private institutions.

Resident. Another option is for the GME fund to fund resident stipends through fellowships and/or to provide the resident with a voucher that a training site could use to claim amounts from the GME fund. There are several theoretical reasons why this approach might be attractive. First, it could be used to increase educational quality among program sites by creating competition for residents. However, considerable competition is already occurring through the NRMP for U.S. medical school graduates but less attractive programs are able to fill slots with international medical school graduates. The dynamics would change considerably if the voucher program were used to channel available funds consistent with workforce goals and vouchers were limited in number and awarded for specific types of residency programs or regions of the country. Second, a voucher program could be used to create positive incentives that might influence the resident's specialty choice or choice of residency program by providing a higher stipend for primary care and rural training tracks than other residency programs. Third, the voucher could be a mechanism to allow the money to follow the resident to community-based training sites. Considerable policy decisions issues and administrative burden would be involved in deciding how many vouchers would be awarded and to whom, where the vouchers could be redeemed, how the redemption process would operate, and what effect it would have on resident employment status.

VEHICLES FOR FUND ALLOCATION

Different vehicles could be used to allocate the funds. Funds could be allocated directly to eligible recipients. Most all-payer proposals assume that the allocation would be an entitlement using a Medicare-like formula to pay teaching hospitals, but funding through payer assessments does not necessarily mean that the funds need to be allocated through patient care payments. Another option, which is being used in Minnesota and Utah, would be to use a cost-based formula. Negotiated amounts would leave room to build institutional considerations such as payer mix and innovative educational models into the fund allocations, but would add burdensome administrative complexity for a national program. If funding were relatively limited, another option would be to use a competitive awards process to provide funding to meet specific workforce objectives along the lines of HRSA grant programs. Finally, the funds could flow indirectly to educational institutions through block grants to states or consortia of educational institutions.

ALLOCATION METHODOLOGY

Breaking the link between patient care payments and DGME funding provides greater opportunity to explore ways to use the DGME funds to achieve educational and workforce objectives. The allocation policies, or the rules that determine how funds are allocated to eligible recipients, will be an important factor in determining whether a new GME fund represents the status quo or improves the performance of GME programs in producing physicians with the skills and competencies needed to practice in the 21st century. Little improvement is likely if the change is merely from one federal "entitlement" to another. However, if funding rewards GME performance in meeting workforce and educational objectives, there is greater potential for change.

Efficient federal funding suggests that any educational subsidies should be consistent with national physician workforce objectives; put simply, the subsidies should support resident physicians whose training generates public benefits. The basic allocation formula should align federal subsidies with national public benefits.

As discussed in Chapter 4, current Medicare policies reflect workforce considerations⁸⁷ but have not been effective in influencing either the specialty positions that program sponsors offer or the specialty choices made by resident physicians. In part, this is because the incentives have not been sufficient, e.g., there is only a 6% differential in the PRAs for primary care and other residency programs. Strengthening the financial incentives by focusing them on specific workforce and educational objectives would better align federal support with public benefits. However, as we will discuss in Chapter 7, GME financing is only one of the factors that affect the quality of residency training and decisions on supply, practice location, and specialty. Other policy levers are needed to work in concert with GME financing if significant progress is to be made on workforce and educational objectives.

Our review of the literature and the state and international models (described in Chapter 5) suggests the types of incentives that federal funding policies might incorporate:

- *Improve quality of training programs.* Building on the requirements of the accrediting body for each specialty, performance measures could be established for goals that reward programs for performance that goes beyond the minimum standards required for accreditation. HRSA currently collects performance measures for the children's teaching hospitals but does not use them in its allocation methodology nor are hospital-level results made public. The AMA makes some performance indicators available through its FREIDA-on-line system. Financial incentives as well as public reporting should be considered as a mechanism to promote educational goals.
- *Regional workforce planning.* Targeted funding could be used to support consortia building. Fixed regional allocations might encourage more regional planning on how to meet workforce needs

⁸⁷ Higher PRA apply to primary care specialties than other specialties a, residents beyond the initial residency period count as 0.5, and there is a limit on the number of resident positions that will be funded.

and could be supplemented by higher allocations to those regional consortia that meet specified objectives or standards.

- *Increase primary care physicians.* To influence the supply of primary care physicians, it is important to consider both the sponsor decision regarding the size of the program and the resident choice of specialty. With regard to the program sponsor, the formula for allocating available funds could provide a significantly higher weighting for primary care specialties than other specialties (unlike the low current Medicare differential) and could eliminate or provide a much lower weighting for subspecialty training programs. This would be a less effective incentive for sponsors of multiple residency programs who are able to cross-subsidize revenues across their programs than it would be for sponsors who only operate family practice or other primary care programs. Incentives affecting resident choice of specialty could be established by creating a loan forgiveness program for residents choosing primary care specialties. A precedent for this is found in the National Health Service Corps and is supported by research indicating that students with higher debt tend to choose surgical specialties over primary care because primary care physicians face lower lifetime earnings (Kassebaum & Szenas, 1993; Kiker & Zeh, 1998). While worthy of consideration, this will have only limited effect unless other changes are made to make primary care more attractive to new physicians.
- *Improve geographic distribution of residency programs.* Financial incentives could be established to influence the geographic distribution of residency programs, which may have some effect as well on physician distribution. Expanded residency training programs in states with low physician/population ratios would increase the geographic equity of the GME subsidy and should also have some impact on disparities in physician-population ratios. Appropriate incentives would need to be developed consistent with total physician workforce needs and objectives for educational quality. Currently, a high percentage of rural residency positions are filled by IMGs. Incentives affecting USMG choice of

program location could be established by creating a loan forgiveness program for residents choosing rural residency tracks. Precedents for this incentive are found in the National Health Service Corps and in the Australian system, but, as is the case with specialty choice, the program will have limited effect unless adopted in concert with other changes to increase the attractiveness of practice in less populated areas.

7. ASSESSING ALTERNATIVE MODELS FOR DGME FINANCING

In this chapter, we have drawn upon the various mechanisms for financing DGME discussed in Chapter 6 to construct three models that illustrate different policy approaches that might be taken for federal support of GME programs:

- a market-based approach that does not try to affect physician supply and distribution or educational quality through federal funding policies;
- an incentive-based approach that attempts to influence GME educational and workforce goals through federal funding policies; and,
- a regulatory approach that explicitly aligns federal support with desired GME educational and workforce outcomes.

We have selected these models because they represent a continuum of potential roles for the federal government in GME financing, from no direct federal intervention in physician workforce policies to a regulatory approach that explicitly ties federal support to specific objectives. The approaches also represent a continuum of increasing public accountability for the quality of educational programs and for meeting workforce goals. The models are presented in order to focus attention on the strengths and weaknesses of each policy approach. They are not intended to foreclose an alternative that uses parts from each model. None of the models would dictate the number and distribution of residents in training programs; rather, they utilize different policy approaches to determine the level and type of DGME funding for GME activities that provide public benefits. They assume that Medicare would continue to pay for its share of higher patient care costs through a refined IME adjustment, as discussed in Chapter 4.

All three models involve a role for federal policymakers in monitoring performance and making recommendations on national and state policies. Federal policy might be most effective if it came from an organization designed specifically to focus on GME issues. Currently, responsibility for funding policies for GME programs is split between

the Centers for Medicare and Medicaid Services, for Medicare payment policies, and the Health Services and Resources Administration, for the CHGME and other grant programs. There may be a benefit in merging these policymaking functions into a single organization focused on promoting the public benefits of GME in return for federal funding. This organization could be housed within HHS or it could be an independent body, such as a commission. As discussed in Chapter 5, Australia, New Zealand, and the United Kingdom all have a central authority with oversight for workforce planning and funding. An advantage of having a commission, rather than vesting the authority directly with the Secretary of Health and Human Services (HHS), is that it provides for the involvement of representatives from the various stakeholder groups in GME: the accrediting organizations, institutional providers, physician and non-physician professional organizations, government health care programs and third-party payers, business and consumers, and researchers. The charter for the commission would be fairly similar to COGME's, but COGME has had neither the resources nor the stature of an independent commission with its own staff, resources and permanent authorization. In most respects, MedPAC serves as a model for how the commission might operate if its role is policy oversight only. However, depending on the GME financing model, the commission could have more than an oversight role and could assume direct responsibility for how some or all of the DGME funds are actually distributed. While the remainder of this chapter assumes that a commission would perform the oversight and policy-making functions, we recognize that these functions could be performed in an alternative way through expansion of the responsibilities of the Secretary of Health and Human Services.

We summarize key characteristics of each model in Table 7.1.

Table 7.1 Potential Policy Models for DGME Funding

Policy Approach	Potential Role for Federal Support				Role of Commission
	Policies for Total Supply	Policies for Specialty Mix	Policies for Geographic Distribution	Policies for Educational Quality	
Market-based	Model relies on the market to meet workforce goals				
	No DGME funding except through potential Medicare IME-like payment	Publicize workforce needs but no direct intervention	Publicize workforce needs but no direct intervention	Encourage ACGME's move towards outcome-oriented performance measures	Forecast needs and monitor supply; furnish information on market conditions
Incentive-based	Model relies on funding incentives to influence the market				
	Separate DGME funding with cap on total dollars that will be funded	Provide loan forgiveness for primary care; pay less for subspecialty training	Provide loan forgiveness for rural practices; pay more to areas with regional workforce planning	Pay-for-performance in meeting specific objectives	Same as above but also furnish information to evaluate performance measures and incentives
Regulatory-based	Model directly aligns federal support with the GME public benefits				
	Fund only positions that are consistent with forecasted needs	Fund only needed specialty positions	Account for physician maldistribution in the allocation process	Establish accountability standards as condition of payment	Same as above but also recommend funding levels and allocation policies

MARKET-BASED APPROACH

A "market-based" approach would rely primarily on the market to produce the physician workforce needed in the future in terms of supply and distribution. The quality of the educational programs would continue to be assured through the accrediting organizations. This approach reflects the premise that the resident pays for educational costs in accepting lower compensation and that any residual costs are higher patient care costs that should be financed through patient care payments. This option is consistent with the Medicare "patient care payment" policy direction outlined at the end of Chapter 4 in that there is no federal effort, either through Medicare or through a separate mechanism, to directly influence workforce policy.⁸⁸ The commission's role would primarily be to forecast workforce need, monitor supply, and to influence the market indirectly by making information on market conditions available to interested parties.

While the federal government would not attempt to directly influence workforce development, a separate policy decision would be needed on whether Medicare should include DGME costs in total patient care costs in determining the amount of an IME-like adjustment to compensate teaching hospitals for their higher costs. This is the approach MedPAC took in its 1999 report.

Adequacy. Funding requirements for the public benefits of GME cannot be determined without a better understanding of the net costs of residency training programs and future physician workforce needs. The market-based model would not preclude DGME costs being folded into Medicare payment rates through an IME-like adjustment. The initial adjustment level could be set budget-neutral to current DGME payments or at the analytically justified amount. As discussed in greater detail

⁸⁸ A "pure" market-based approach would not include any subsidies for GME activities, including subsidies for higher patient care costs. The market-based model that we discuss is not a pure market-based approach because Medicare's payments are formula-driven rather than market-driven and would include an explicit IME-like adjustment.

later in this chapter, further research is needed to understand what the analytically-justified payment would be.

If Medicare funding for DGME costs were reduced or eliminated at the same time the Medicare IME adjustment was reduced to its analytically justified level (as discussed in Chapter 4), the critical question is whether teaching institutions would be able to absorb the funding losses or whether their capacity to produce a highly competent physician workforce would be jeopardized. While this question cannot be answered without better information on the net costs of GME programs and future workforce needs, any loss of Medicare funding would put additional pressure on alternative sources of revenue, e.g., states and private payers, and on teaching institutions to increase efficiencies. A teaching hospital's ability to cover the lost revenue would depend in part on payer mix and commitment to the educational enterprise. The need to secure additional state funding might make program sponsors more responsive to state workforce needs. Those with high uncompensated care patient loads will have the most difficulty in covering the losses and any significant changes in Medicare support for GME would need to be accompanied by improvement in policies to support uncompensated care. Teaching hospital actions to cover the funding loss could include encouraging more voluntary teaching physicians, reducing resident salaries, and emphasizing service productivity over educational objectives - all of which could reduce the quality of residency training programs and the competencies of future physicians. Although quality could be monitored through the accrediting bodies, it may erode under this system.

An unintended consequence of this proposal is the possibility that residents may begin to bill for their services. Under current Medicare policies, residents in approved residency training programs are not permitted to bill Part B for any physician services that they provide to Medicare patients. The rule applies so that Medicare does not pay once for their services under the DGME payment and again under the physician fee schedule. Teaching physicians may be paid under the physician fee schedule for direct, identifiable services furnished by a resident under their medical direction. If Medicare did not recognize the costs

attributable to DGME in its payment formula, it is possible that residents would begin to bill for their services, since they would no longer be covered by Medicare through a DGME payment. This development would risk further emphasis on service productivity at the expense of educational considerations and could raise duplicate payment issues with teaching physicians supervising residents.

To avoid unintended consequences, any reductions should be gradually phased-in to allow teaching hospitals time to adjust to the reduced funding levels. Further, the impact of the funding reductions on the size and quality of residency programs should be closely monitored.

In summary, the question of funding adequacy cannot be answered without additional information on program costs and workforce needs. The adequacy of funding levels under this option relative to the status quo depends largely on whether DGME costs are paid through an IME-like adjustment for higher patient care costs and how the adjustment is structured. If an IME-like adjustment at the analytically justified level were substituted for the current Medicare DGME subsidy, funding may not adequately fully compensate teaching hospitals for the externalities of GME. In any event, the change would redistribute federal funds and should be phased-in to avoid unintended consequences. *Equity.* The equity of this approach depends on one's perspective concerning the nature of the DGME costs. If they are primarily patient care costs, and Medicare payment accounts for these costs through an IME-like payment, the market-based approach is at least as equitable as the current system because Medicare would continue to cover its share of higher patient care costs. However, if DGME costs are considered primarily educational costs that generate public benefits as we suggest in Chapter 2, this approach is less equitable than the other two options discussed in this chapter, which both provide for a broader base for federal support.

Efficiency. From the federal perspective, there is less opportunity to influence the composition and distribution of the future workforce if the Medicare funds lose their educational label and are folded into the payment rates. Under the market-based model, the commission's primary role would be to monitor the on-going performance of the GME system in

meeting future workforce needs. The commission would also play an important role in developing and publicizing projections of physician (and non-physician supply as it impacts physician supply), specialty mix, and geographic distribution. This information might influence decisions by program sponsors in deciding the size and composition of their specialty programs and decisions medical school seniors and residents make regarding specialty choice and practice location.

Accountability. Accountability for the quality of residency programs would continue through the requirements of the accrediting organizations. Because there would be no direct federal support for GME, there would be no additional accountability under the market-based approach for meeting workforce and educational objectives.

Administrative feasibility. Relative to the current system, this option would impose less administrative burden because the DGME-specific policies and rules would no longer be pertinent. The most significant challenge to implementing the system would be estimating the effect of operating a teaching program on hospital costs per case (see discussion below). Once the appropriate adjustment was determined, it could be built into the payment formula and should not require new payment mechanisms. Because the commission's role would be oversight only and would not directly affect how federal support is provided, the staff expertise and methodologies for estimating physician supply and distribution could develop over time.

INCENTIVE-BASED MODEL

The incentive-based model would use financial incentives to influence the market to become more aligned with physician workforce and educational objectives. A key design element would be to replace federal DGME subsidies through Medicare patient care payments with another funding source - either general revenues or special purpose funds such as all-payer funds. Breaking the direct link with Medicare patient care payments and clearly labeling the funding as a federal subsidy for DGME provides more flexibility to create direct financial incentives for residency programs that are designed to promote physician workforce and educational objectives. A second critical design element

would be to flow the funds to program sponsors rather than the teaching sites to strengthen the effect of the incentives and to establish better accountability for the receipt and use of the funds. Effective incentives and accountability are difficult to achieve when the funds flow to multiple entities for a single residency program.⁸⁹ A third element of the incentive-based model would be to establish specific outcome measures for residency programs and to reward performance. Flowing funds through the program sponsors is key to being able to measure and reward performance in achieving educational and workforce objectives.

Under the incentive-based model, the commission would perform the same functions as under the market-based model but add several other important functions:

- Evaluate and recommend potential performance measures
- Recommend aggregate funding levels
- Recommend policies for allocation of federal funds that would provide appropriate incentives for achieving workforce and educational goals.

Adequacy. Aggregate funding levels would be established that would provide both a base level of support for needed residency training programs and higher support to those that meet particular goals. Absent better information on the net costs of residency training and workforce needs, the initial funding levels might be based on current Medicare DGME levels or, if determined appropriate, they might be increased to achieve specific objectives as discussed in Chapter 6.

Equity. Assuming that the funding level approximates the public benefits associated with GME, broader-based funding, particularly through general revenues, would be more equitable than the current funding through the Medicare program. It is also more equitable than the current system regarding the distribution of federal support because

⁸⁹ A by-product of this design element would be the elimination of the hospital-specific components of the current system, namely, the limits on the number of resident slots eligible for funding and the PRAs.

Medicare utilization and hospital-specific rates would no longer be allocation factors.

Efficiency. Current Medicare DGME payment policies such as the specialty differential, initial residency period, and FTE limits have been ineffective in influencing supply and specialty mix. Potential incentives that could be built into the allocation formula are discussed in Chapter 6. Whether they will be more effective than the current system is uncertain, but the likelihood is higher because the funds will flow to the program sponsor with an explicit educational label instead of being sent to multiple teaching hospitals through patient care payments. Establishing specific performance measures and rewarding performance is also an untested but promising component of the incentive-based model.

Accountability. As previously indicated, a critical feature of the incentive-based model is holding the program sponsor that is responsible for operating the training program accountable for how funds are used to promote workforce and educational objectives consistent with the public benefits of GME.

Administrative feasibility. Implementing an incentive-based model poses administrative challenges. First, it requires establishing a consensus on workforce and educational objectives and which of those objectives should be promoted through incentives. Second, it requires changes in funding mechanisms, including: establishing a new federal source of funds, implementing a new funding mechanism to pay program sponsors and allowing time for program sponsors and their affiliated teaching sites to renegotiate their financial arrangements. Third, it requires developing metrics to measure performance in achieving workforce and educational objectives, establishing a data collection system (in coordination with the accrediting organizations) to collect and assess performance, and developing appropriate "pay-for-performance" methodologies.

REGULATORY-BASED MODEL

Under a regulatory-based model, federal support for DGME would be directly linked to workforce and educational goals. As was the case

with the incentive-based model, key design elements would be to replace federal DGME subsidies through Medicare with either general revenues or special purpose funds, to pay the funds directly to program sponsors, and to develop performance and outcome measures for GME. The difference between the regulatory-based model and the incentive-based model is that under the regulatory-based model, there would be an explicit decisions on how many residency positions would be funded in which specialties and which programs would receive funds.

The commission's role would be enlarged to provide specific recommendations - that could be binding or not- on which residency programs and slots that would be funded through federal subsidies. Under the current Medicare system, the limits on the number of residency positions that will be funded are based on hospital-specific residency levels in existence in 1996 rather than current projections of physician workforce needs; the regulatory-based model would change this by implementing aggregate limits based on physician workforce need projections. A methodology would then be needed to determine which positions would be eligible for funding if the residency positions offered in a particular specialty exceeded the number of desired positions. Explicit conditions for payment beyond having an approved residency program could be established, and quality and geographic considerations could be incorporated into the allocation policies.

Adequacy. Once a determination is made regarding the residency slots that should be funded consistent with the public benefits, an adequate funding level would reflect the net costs of operating those programs and might vary according to systematic differences in specialty training infrastructure costs. The funding would need to be sufficiently stable to support residency program decisions. One way this might be achieved is through multi-year commitments based on the number of first year residency slots being offered in a given year.

Equity. Federal support is most closely aligned with the public benefits of GME under the regulatory-based model than under the other models.

Efficiency. Assuming that the commission can accurately estimate projected workforce needed, the regulatory-based model is the most

efficient way to assure that the public benefits are generated because support would be limited to those positions that are consistent with workforce objectives. However, the methodologies needed to accurately forecast physician workforce needs in the future remain elusive given the fast pace of technological development and changes in the health care delivery system. In the course of just a few years, an anticipation of a surplus of physicians has changed to an expected shortage.

Accountability. The regulatory-based model could incorporate stronger accountability measures by making certain performance outcomes a condition for payment.

Administrative feasibility. Implementing a regulatory-based model poses similar challenges as the incentive-model but adds the additional challenge of determining which residency positions will be funded. It requires: establishing a fully functional commission, generating consensus on workforce supply and specialty mix, changing the financing mechanisms, determining funding levels through an evaluation of the net costs of different specialty programs, and establishing priorities for allocating funds to residency programs.

TOWARD A RATIONAL DGME FINANCING POLICY

The current system of providing explicit federal support for DGME through the Medicare trust funds does not appropriately match the federal funding source with the public benefits from GME. Given the broader public benefits from GME, a more appropriate approach would be to replace Medicare DGME support with broader-based funding while continuing to pay for higher patient care costs through a Medicare IME adjustment. The best match of federal support and benefits would occur if general revenues were used instead of Medicare trust funds to provide the federal support for DGME. The financing mechanism, however, would need to provide relatively stable support so that residency program sponsors would be able to anticipate federal funds that they will receive over a multi-year period.

There is presently a lack of consensus regarding whether physician supply will be sufficient to meet the health care needs of the population in 2020. Creating uncertainty regarding continued federal

support for DGME is unwise at a time medical schools and GME sponsors are wrestling with decisions on whether to expand their programs to meet future workforce needs. Changes in funding policies should occur gradually over time to allow program sponsors and affiliated teaching institutions time to adjust to any redistributions of funds. Any changes in aggregate funding levels and in fund distribution policies should be based on improved information regarding not only projected physician supply needs but also the net costs of GME.

A critical change in GME financing policies would involve directing funds to program sponsors. This would align funding ultimate responsibility for operating the residency program. Flowing funds to a single entity would create accountability for the receipt and use of federal funds to support educational activities. Federal funding equity would be improved since the amount paid would not be affected by Medicare utilization. Funding levels could be similar across comparable programs or, absent DSH reform, higher subsidies could be provided for training programs that occur in facilities with high uncompensated care loads and are unable to generate private pay revenues to pay for the higher costs associated with GME.

Paying the program sponsor should allow more effective use of financial incentives to influence the market. The incentives could be directed toward specific goals for a residency program (e.g., percentage of time residents spend in ambulatory settings), toward participating in a consortium that meets specific educational and workforce objectives, or toward the residents themselves in terms of a loan forgiveness program. Targeted funding could be used to address specific market dysfunction and promote innovative educational programs.

Ongoing monitoring of the financing system will be critical. The incentive-based model holds some promise as a mechanism to foster the production of a future physician workforce with the skills and competencies needed to meet the needs of the population. However, if an incentive-based approach does not prove effective, a more regulatory model may be needed to assure federal support produces public benefits.

Further research and analysis is needed before substantial changes could be implemented. This additional work, discussed throughout the report, includes developing:

- Improved methodologies to forecast future physician workforce supply and specialty mix needs and to disseminate this information to interested parties.
- A better understanding of the total costs and the net costs of residency training and the differences in these costs across specialties and types of program sponsors
- A better understanding of the costs and benefits of GME to providers, residents, patients and their payers, and the public and the current incentive structure.
- Outcome-based performance measures not only to assess the quality of the educational experiences but also to evaluate workforce objectives.

This chapter has focused on DGME and assumes that the Medicare IME adjustment would continue, but with refinements. Current Medicare IME policies have distorted the resident physician market and where residency training occurs. Consideration should be given to paying for higher patient costs at the analytically justified level for both inpatient and outpatient services provided by teaching hospitals. As noted in Chapters 1 and 4, further research is needed to improve understanding of key issues, including:

- The effect of each public mission on teaching hospital costs
- The effect of significant involvement in multiple missions on a hospital's cost structure
- Whether there are alternate formulations of the IME adjustment that would better measure teaching activity across inpatient and outpatient care.

Further, if the Medicare IME adjustment is refined to only account for the impact of GME on patient care costs, support for the other missions may be appropriate. In particular, refinements should be considered in the way DSH funds are distributed to support uncompensated care. Without DSH changes, changes in the IME formula may have adverse consequences for public teaching hospitals in particular. With respect

to the higher costs attributable to the availability of specialized care, additional research is needed to determine:

- The reason for residual unaccounted case mix after controlling for severity within the DRG payment system
- The extent to which the unexplained higher costs represent avoidable and unavoidable inefficiencies
- The contribution of differential pricing policies for specialized services relative to other services on unexplained case mix

GME FINANCING WITHIN THE BROADER HEALTH SYSTEM CONTEXT

The federal role in financing GME will be most effective in fostering workforce and educational goals if attention is also given to other factors within the health system that affect the educational environment and the choices that residents make regarding specialty and practice location. These issues should be taken into consideration in designing GME financing policies and, more importantly, in weighing whether significant changes in GME financing are warranted in the absence of other systemic change. The other aspects of the broader educational and health systems that need to be considered include:

- *80-hour limitation.* This limitation was implemented in July 2003 to reduce the risk of resident errors caused by fatigue (AAMC, 2003) but has implications for number of residents (and resident replacement costs), the length of residency programs, and community-based training opportunities.
- *Uncompensated care.* As noted earlier, teaching hospitals are part of the health safety net and in the absence of broader insurance coverage, changes in GME financing policies should be accompanied by better support for uncompensated care. Moreover, charity care negatively impacts on the income of physicians in private practice and affects the attractiveness of primary care and rural practices.
- *Physician payment reform.* The failure of payers to recognize the value of primary care and the differences in income potential between primary care and other specialties remains a barrier to the new physicians electing to practice in primary care. A

similar barrier exists for new physicians choosing to practice in rural areas, where low population density, poor economic conditions, and practice isolation pose hardships that are not recognized by either public or private payers. Even if a rural community is able to attract a new physician, retention is an issue. Unless these issues are addressed, GME financing incentives designed to influence resident choices will not be effective in the long run.

- *Health delivery system.* The current system of health financing and delivery emphasizes treatment for treatment for acute care episodes over patient-centered comprehensive longitudinal care. Support is needed for delivery system models that promote physician-directed interdisciplinary care for chronic conditions. Such models will improve quality, reduce costs, and increase the attractiveness of primary care specialties (ACP, 2006).

The federal government's policies for GME financing are an important factor in assuring an appropriate supply of physicians with the skills and competencies to meet the health needs of the population in the future. These policies can be better designed to align federal support with the public benefits of GME but must be supported by other changes in the financing and delivery system if they are to be effective.

APPENDIX A: DISCUSSION GUIDE FOR KEY INFORMANTS

- A. We need to establish criteria for evaluating the current system for financing GME and alternative financing systems. We would appreciate your thoughts on whether this set of criteria is appropriate, what are the most important considerations, and whether other criteria should be included (see attachment for definitions):
1. Adequacy
 2. Equity
 3. Efficiency
 4. Accountability
 5. Practicality
- B. How would you rate the current system for financing GME using these criteria?
- C. We are focusing on Medicare in particular since it is the largest explicit source of funds for GME.
1. What do you see as the major strengths and weaknesses of using Medicare to fund GME?
 2. How well do Medicare policies foster educational and workforce objectives?
 3. What refinements should be considered in Medicare policies?
- D. We are also interested in learning your perspective on alternative financing mechanisms for direct GME costs (resident stipends, teaching physician compensation, residency program administration, etc.) and whether particular models might be an improvement over the current system. We are looking at options in terms of:
1. Sources of funding
 2. Allocation mechanism
 3. Eligible recipients (states, educational consortia, individual educational institutions, individual training sites, residents)
- Models that have been considered in the past include:
- All Payer

- Discretionary Funding
- Apprenticeship with targeted discretionary funding
- Voucher

What incentives might be used under either the current system or an alternative system to improve educational quality and foster workforce objectives?

Criteria for Evaluation

A. Adequacy

Adequate funding assures sufficient resources for high quality training of future physicians.

- 1) Are funding levels sufficient, stable, and predictable enough to provide high quality training for physicians needed in the future?
- 2) Is public support sufficient to enable teaching institutions to be competitive on price and quality with non-teaching hospitals and maintain fiscal solvency?

B. Equity

An equitable system links financial support to those who benefit from those activities.

- 1) Are GME costs equitably borne by those who benefit: providers, patients and residents?
- 2) Is federal funding distributed equitably to meet the nation's current and future health care needs?

C. Efficiency

An efficient system promotes effective educational models at an economical price to meet desired goals.

- 1) Does the system support the number of residency positions needed to meet future workforce needs and encourage an appropriate distribution of physicians by specialty and practice location?
- 2) Do the funding incentives encourage high quality programs that develop needed physician competencies and encourage high quality patient care?
- 3) Does the system support innovation?

D. Accountability

Recipients of government funds should be accountable for producing needed public goods efficiently and effectively.

- 1) Is there transparency in the allocation and use of public funds?
- 2) Is there on-going monitoring and evaluation of the system's progress in meeting educational and workforce goals?

E. Practicality

Administrative burden and feasibility in the transition from the current system and in the operability of the new system should be commensurate with the benefits.

- 1) Are the changes necessary to implement the new system easy to facilitate within the current system?
- 2) Are the funding policies clear, understandable, and feasible to implement without undue reporting burden or unnecessary changes in arrangements between GME sponsors and their affiliated training sites?
- 3) Is the funding system sufficiently flexible to address different educational models and specific workforce needs without requiring special policies?
- 4) What are the administrative costs in relation to the total funds?

APPENDIX B: DEPARTMENT OF DEFENSE RESIDENTS

Number of Trainees in FY2004

Type of Resident ⁹⁰	Military Branch			TOTAL
	Army	Navy	Air Force	
In-house ⁹¹	1,367	776	883	3,026
Sponsored in civilian program ⁹²	69	121	147	337
TOTAL	1,436	897	1,030	3,363
Annual Cap as % of Budgeted End Strength (Cap for 2004)	31-32% (1350-1400)	25-26% (1000)	25% (900)	

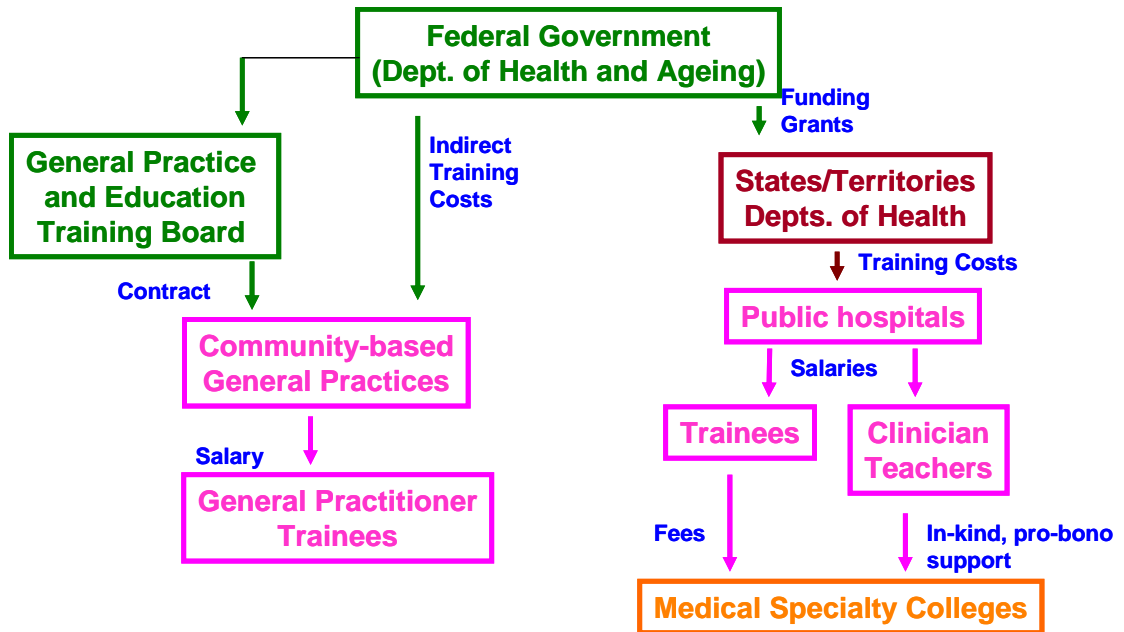
(Personal communication, 2/15/06, GME representatives from the Air Force, Navy, and Army)

⁹⁰ There is also a category of Deferred or Delayed Residents, defined as currently training (at no cost to military) who owe active duty to military once completed with training; either recipients of Health Professional Scholarships (owe 4 years) or ROTC undergraduates who went onto medical school first before completing service. These are not included here because the DoD does not fund their training.

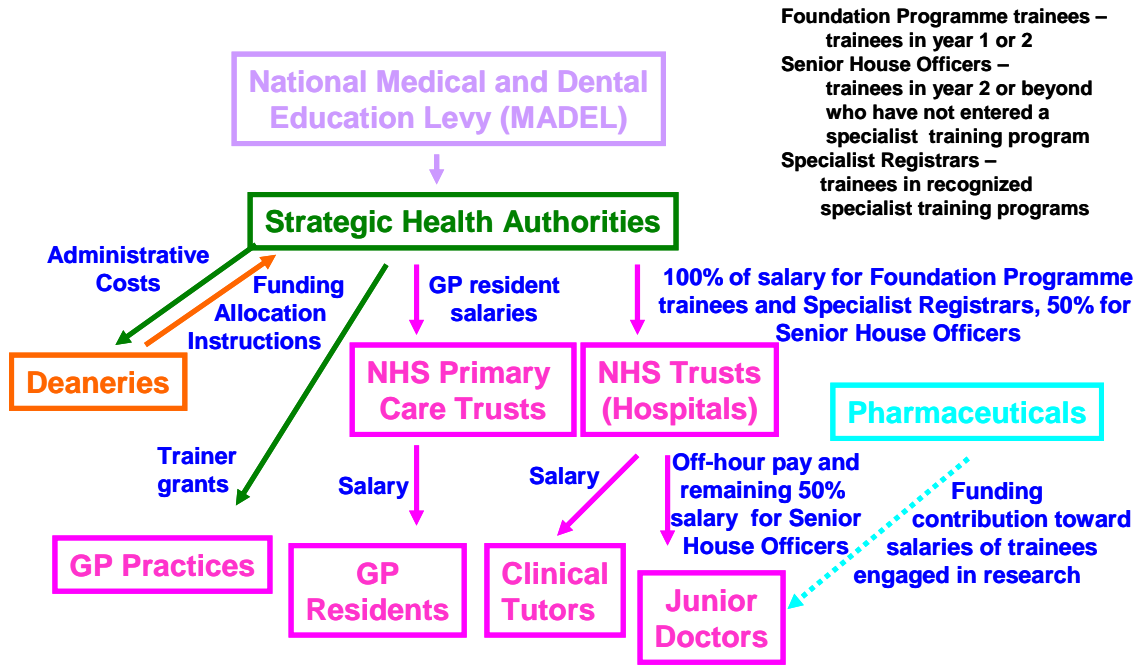
⁹¹ Most graduates of USUHS receive in-service training

⁹² Most trainees in civilian programs are on fellowship, i.e., having completed primary training and now training for a subspecialty, and do not spend any time at any military sites (some VA, but no military)

APPENDIX C: AUSTRALIA'S GME FINANCING SYSTEM



APPENDIX D: UNITED KINGDOM'S GME FINANCING SYSTEM



APPENDIX E: NEW YORK GME FINANCING

New York has a Council on Graduate Medical Education and a professional education pool funded by both Medicaid and commercial insurers in the State. All payers pay the same rate. Funds from the pool are distributed regionally based on a 1995 resident count and weighted to emphasize primary care. In 1997, the state set aside 10% of the Professional Education Pool, or \$54 million, to establish a GME Reform Incentive Pool, which distributes funds to approved GME consortia and hospitals for such items as reducing the number of residents, increasing primary care residents and training of such residents in ambulatory settings, and increasing the number of residents who are underrepresented minorities. There is not much evidence on the impact of the Pool so far, although there is some evidence that the cultural competencies component is making a difference. Hospitals have participated successfully; in 1999, 57 hospitals participated; in 1997, 31 hospitals, none of which were in the demonstration described below, received funding from the pool for reducing the number of residents. (COGME, 1999b).

A demonstration related to the goal of reducing the number of residents was the New York Voluntary Resident Reduction Demonstration. It required that participating institutions reduce their FTE resident count by 20-25% while maintaining the primary care resident stay at least at base year level. In return, the institution received transitional payments that maintained at first, and then gradually decreased funding to the appropriate level over several years. The New York Demo ran for six years, from 1997 to 2003, and only 7 hospitals completed the full demonstration. 49 hospitals in total participated at some point. Six⁹³ of the completing institutions demonstrated an average 28% reduction in residents over five years. All of these hospitals were safety net hospitals with low Medicare, high Medicaid, and high uninsured shares of bed days. Quality was maintained in all

⁹³ Data was not reported or available from the 7th institution for the last year.

completer hospitals; thus, there was no decrease in quality due to the reduction in residents. (Cromwell et al., 2005)

APPENDIX F: MICHIGAN GME FINANCING

Michigan has two pools of funds, the GME Funds Pool and Primary Care Pool, allocated by weighted formulas, and one competitive grant pool, the Innovations Grants Pool. The first two pools were established in 1997 to define Michigan's Medicaid contributions to GME, introduce accountability, and de-link Medicaid GME payments from inpatient claims by weighting funding by primary care residents and residents that stayed in Michigan post-residency. In addition, the Innovations Grants Pool was created in 2001 to encourage the development of creative, new health professions education programs. Grants are rewarded to projects that focus on the improved care and treatment of Michigan Medicaid patients and support outlined policy goals. Grants may be awarded for multiple-year periods. (Michigan Department, 2001).

The sizes of the pools are determined by an annual appropriation by the state legislature. For FY 2002, the GME Funds Pool was \$162.7 million and the Primary Care Pool was \$20 million; in FY 2005, the pools were reduced to \$144.4 million and \$17.75 million respectively (Michigan Department, 2005). Based on this appropriation, the amount distributed to each hospital from each Pool is then determined by the same formula but using different adjusted FTEs.⁹⁴

⁹⁴ The payment methodology described here was phased in over three years starting July 1, 2002. For the first year, GME payments were based three-quarters on the prior distribution and one-quarter on the new, revised formula. For the second year, the ratios were half and half, and for the third year, one-quarter to three-quarters. The 5% weighting of physician participation in MI Medicaid and board certification was not implemented until July 1, 2003.

For the GME Funds Pool, the unweighted FTE count, casemix, and inpatient days are used to calculate the adjusted FTE:

$$\text{FTEs} \times \text{Casemix}^{95} \times \frac{(\text{Hospital's MI Medicaid Titles V \& XIX Days}^{96})}{\text{Hospital's Total Days}} = \text{Hospital's Adjusted FTEs}$$

For the Primary Care Pool, the weighted FTE count for primary care physicians and hospital outpatient charges are used to calculate the adjusted FTE:

$$\text{FTEs} \times \frac{(\text{Hospital's Titles V \& XIX Outpatient Charges}^{97})}{\text{Hospital's Total Charges}} = \text{Hospital's Adjusted FTEs}$$

The adjusted FTEs above are then put into the following formula to determine the hospital's allocation for each pool:

$$0.05 \times \text{Annual Appropriation} \times \frac{[(\text{Hospital's Board Certified Physicians}^{98}) + (\text{Hospital's Physicians Participating in MI Medicaid}^{99})]}{(\text{Total Board Certified Physicians in MI}) + (\text{Total Physicians Participating in MI Medicaid})} + [0.9 \times \text{Annual Appropriation} \times \frac{(\text{Hospital's Adjusted FTEs})}{(\text{Total Adjusted FTEs})}] = \text{Hospital's Pool Distribution}$$

⁹⁵ Casemix = Total relative weights for all Medicaid admissions divided by the number of Medicaid Admissions during the period covered

⁹⁶ Includes fee-for-service and managed care days

⁹⁷ Includes fee-for-service and managed care outpatient charges

⁹⁸ Five-year rolling average of the number of residents who became board certified a minimum 3 years after completion of a residency program.

⁹⁹ Five-year rolling average of the number of residents who enrolled in MI Medicaid, as defined by receiving a minimum of \$2000 in payments from MI Medicaid, a minimum 3 years after completion of a residency program.

APPENDIX G: MINNESOTA GME FINANCING

At the direction of the state Legislature, the Minnesota Department of Health began studying changes in the financing of medical education and research in 1993. The Medical Education and Research Costs (MERC) Fund was established in 1996 to provide support in addition to the normal GME streams to the patient care training sites that host medical professionals¹⁰⁰ in clinical training activities. The intent was to compensate such sites for revenues lost because competition prevents them from shifting lost productivity cost to patients through higher patient charges. Sponsoring institutions (hospital, school, or consortium that supports accredited programs) must submit an application for MERC funds to receive funds that are then channeled to the programs' training sites. The MERC Advisory Committee conducts research on issues related to the financing of health professions education and the health professions workforce in Minnesota and works with the Department of Health to make legislative recommendations.

The MERC Fund was funded by the Legislature for the first time in 1997 with \$17.8 million (\$5 million from the General Fund, \$3.5 million from the Health Care Access Fund, and \$9.3 million in federal Medicaid funds). Since 1997, the financing for MERC has shifted several times, first to the medical education endowment established by the 1999 legislature with funds from the one-time tobacco settlement, and later in 2003 to a 2.5 cents per pack cigarette tax. Currently, funds for the MERC distribution come from cigarette tax revenues, a temporary transfer of funds from the Academic Health Center, a carve-out of medical education funds from the Prepaid Medical Assistance Program/Prepaid General Assistance Medical Care program (PMAP/PGAMC), and federal Medicaid matching funds obtained by the Department of Human Services.

¹⁰⁰ Including medical school students in clinical training and dentists, dental students, doctors of pharmacy, and chiropractors in clinical training.

In 2004, the MERC and PMAP/PGAMC distributions were combined into one distribution. Of the new combined pool, 90% is determined by a distribution formula that awards 67% of funds based on relative education volume (each site's adjusted clinical training costs divided by all sites' training costs) and the other 33% based on relative public program volume (each site's public program volume divided by all sites' public program volume). Training costs consist of three direct costs: trainees' salaries, stipends, and benefits, faculty salaries and benefits, and administrative or other allocated overhead costs. As of 2004, average clinical training cost per FTE for medical residents is calculated by using only the cost data from primary care programs (general pediatrics, general internal medicine, family practice). Indirect costs, such as those associated with reduced productivity and increased tests and procedures are difficult to estimate and thus are not included in the calculation of average training cost. Once determined, the funds go first to the sponsoring institution, which is then responsible for distributing the funds to the affiliated training sites based on each program's share of the site's training costs, as outlined in information provided by the state.

The remaining 10% of the combined pool is placed in a 'discretionary fund' for sponsoring institutions. This portion of the combined fund is distributed to sponsoring institutions based on the percentage of the formula-based fund that they received. In other words, an institution that received 10% of the overall pool would also receive 10% of the discretionary pool. The sponsoring institution can, at their discretion, choose to distribute these funds to training sites as they normally would (based on costs and public program revenue at each site), or they may develop their own criteria for awarding funds to clinical training sites. Whichever method is used, sponsoring institutions will be required to report annually to the Minnesota Department of Health detailing the rationale used to determine the funding method and the amount forwarded to each training site (Minnesota Department of Health; Blewett & Weslowski, 2000).

APPENDIX H: UTAH GME FINANCING

In 1997, the Utah State legislature created the Utah Medical Education Council, a quasi-governmental public commission¹⁰¹ consisting of representatives from all stakeholders in GME,¹⁰² to 1) protect current funding and seek additional revenue streams 2) obtain and managed federal Medicare and Medicaid waivers 3) build sound databases on Utah's current health care workforce 4) develop projections of future health care workforce 5) develop strategies for ensuring Utah has needed numbers and mix of health care professionals.

The Council currently receives and disburses all Utah Medicare DGME. Although it has the authority to do the same with Medicare IME and Medicaid GME, it has yet to do so. Teaching hospitals have not agreed to give up Medicare IME and the State's health department has not requested a waiver from CMS, which would allow the Council to receive a carve-out of GME funds from Medicaid. Some teaching hospitals have voluntarily committed any Medicaid funds remaining after resident stipends and benefits were paid to accomplish some of the Council's GME workforce goals, but others have instead used the funds for their bottom line. The Council does have a financial, five-year agreement with teaching hospitals (June 2004) in which each hospital contributes a portion of its Medicaid GME revenues to the Council's GME pool and a select few (Intermountain Health Care and two small teaching hospitals) contribute to the Council's administrative budget. The Council has also sought additional funding from other venues, such as an appropriation

¹⁰¹ As a quasi-governmental public commission, the Council's funds are protected from appropriation by the State legislature but the Council still has the authority to collect and handle a variety of information on workforce needs. The Council is also exempt from the state bidding system and pay scale so it is free to hire more quickly and pay market rates to hire expert staff.

¹⁰² The Council consists of a chair, the dean of the University of Utah's School of Medicine, and nine other voting members, consisting of one representative from each of the four institutions that sponsor a GME program, one representative of the health care insurance sector in Utah, and four representatives of the public.

from the State legislature for a rural incentive pool and a voluntary payment to GME from private payers.

The Council succeeded in increasing Utah's federal GME by using a regional resident database of Medicare cost reports, rather than individual teaching hospital cost reports, to discover undercounting of FTE resident counts by the teaching hospitals for 1996, the year BBA resident caps was based on. The Council has successfully saved a family medicine residency that has 15% of Utah's family practice training capacity, expanded a graduate dental residency program, and added a rural rotation to that dental residency. Planning for a physician rural training track is underway.

Utah is atypical in that it only has one medical school and a small number of teaching hospitals, but there are a few other states that may be able to use Utah as a model; for example, both Hawaii and Nevada have begun emulating Utah. (Taylor 2004)

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