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ADDRESSEE: (Name,Organization, Address)	FROM: (Name,Organization,Address)	
Devorah Adler	Peggy Rahn HCFA-Medicaid Bureau 7500 Security Blvd. Baltimore, Md.21244-1850	
Phone: ( )	Phone: (410) 786-3284	FAX: (410) 786-3252
TOTAL PAGES: (Cover +17)	ADDRESSEE'S FAX NUMBER: (202) 456-5557	DATE: 11/23/98

REMARKS:

as requested, attached
is the 3/3/97 GAO report
re: Medicaid + GME payments

GAO

United States
General Accounting Office
Washington, D.C. 20548

Health, Education and Human Services Division

B-276272

March 3, 1997

The Honorable John R. Kasich
Chairman, Committee on the Budget
House of Representatives

Subject: Medicaid: Graduate Medical Education Payments

Dear Mr. Chairman:

The federal government, primarily through its Medicare program, is the largest single payer to teaching hospitals for the costs they incur training medical residents.[1] Medicare makes graduate medical education (GME) payments based on specific formulas applied uniformly to all qualifying teaching hospitals. GME payments cover the period of formal clinical training that follows graduation from medical school during which new physicians–medical residents–are prepared to practice in a chosen specialty area. This training usually occurs in teaching hospitals and is supervised by faculty physicians. To operate and maintain such physician training programs, teaching hospitals incur direct and indirect costs. In fiscal year 1996, Medicare GME payments totaled an estimated $6.7 billion.

States may also choose to pay for GME through their Medicaid programs, and these expenses are supposed to be shared with the federal government. However, unlike Medicare, for which the amount of GME payments is well documented, not much is known about Medicaid's support of GME. For this reason, you asked us to provide you with information on (1) existing studies that estimate overall Medicaid expenditures for GME; (2) the amount of Medicaid GME payments for the 10 states with the largest overall Medicaid expenditures, and the basis for determining these payments; and (3) how Medicaid and Medicare coordinate their GME payments to avoid duplication.

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[1]The Department of Veterans' Affairs and the Department of Defense also contribute to graduate medical education. In addition, while private insurers usually do not make payments specifically designated for graduate medical education, part of the amount they pay may, in fact, be used for education.

To answer these questions, we reviewed available literature on GME and Medicaid and contacted Medicaid officials from the 10 states with the largest total Medicaid expenditures in fiscal year 1995. These 10 states accounted for close to 60 percent of total Medicaid expenditures during this period. We discussed hospital reimbursement methodologies with officials from the Health Care Financing Administration (HCFA) and these 10 states. We also obtained from these states estimates of Medicaid GME payments for the most recently available time period.[2] Finally, we obtained and reviewed the 10 states' Medicaid plans and discussed with state and HCFA officials how Medicare and Medicaid GME programs are coordinated.[3] We performed our review between December 1996 and February 1997 in accordance with generally accepted government auditing standards.

In summary, although the exact amount of Medicaid GME payments is unknown, two studies estimated these expenditures at about $1.3 billion and $2.2 billion in fiscal year 1995. We also found that 8 of the 10 states with the largest overall Medicaid expenditures in fiscal year 1995 provided support to teaching hospitals for costs associated with GME. These states used different methods to calculate their GME payments, and their annual estimated expenditures for GME, which they generally considered rough approximations, ranged from a low of $17 million to a high of $870 million. Regarding whether programs coordinate their GME payments, HCFA officials told us that HCFA does not determine whether Medicaid GME payments duplicate those made by Medicare. On the other hand, officials from the eight states told us that their payments were intended to cover Medicaid's share of GME. We could not independently determine from the documents reviewed if duplication exists because states' plans often did not contain sufficient detail explaining their Medicaid GME payment systems.

BACKGROUND

The direct medical education (DME) costs of providing GME include salaries and fringe benefits for residents and teaching physicians, the cost of conference and classroom space, the cost of equipment and supplies used for instructional

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[2]The states we contacted operate on a variety of calendar and fiscal years. Therefore, the data they reported often cover different time periods.

[3]Each state operates its Medicaid program under a state plan that HCFA must approve for compliance with current Medicaid law and regulations. Among other things, these plans describe how the state reimburses medical providers.

purposes, and allocated overhead costs. Indirect medical education (IME) costs are the higher patient care costs that teaching hospitals are thought to incur because of such factors as increased diagnostic testing, increased number of procedures, higher staff ratios, and increased recordkeeping associated with training.

Medicare and most state Medicaid programs make payments to teaching hospitals for GME. Other payers generally agree to pay hospitals a given amount for each service provided with no explicit recognition of GME. Hospitals may include the cost of GME when determining their prices for these services. Medicare DME payments are based on hospitals' fiscal year 1984 identified DME costs, while Medicare IME payments are calculated based on hospitals' ratio of residents to beds as well as Medicare prospective payment rates.

In contrast, states are free to design their own Medicaid hospital payment systems, and significant variation exists among them. As with Medicare, some states specifically recognize both DME and IME costs in their payment systems. Other states, while not designating a specific GME payment, base their payments to hospitals on cost data that reflect GME costs. In these states, isolating the actual amount of GME payments is often difficult.

Some states also pay managed care organizations a capitated rate for Medicaid beneficiaries' care. Depending upon how the capitated rate is determined, a portion of it may be for GME. Determining this amount with precision, however, is often difficult.

PRIOR ESTIMATES OF TOTAL MEDICAID GME PAYMENTS

While the total amount of actual Medicaid payments for GME is not readily available, recent estimates indicate that the combined payments for DME and IME are substantial. HCFA does not track individual states' or nationwide Medicaid expenditures on GME. However, the Intergovernmental Health Policy Project (IHPP) and the National Association of Children's Hospitals estimated

fiscal year 1995 expenditures for Medicaid GME. These estimates differ considerably: they are about $1.3 and $2.2 billion, respectively.[4]

TOP 10 STATES' MEDICAID GME PAYMENTS

We contacted the 10 states with the highest overall Medicaid expenditures in fiscal year 1995 and asked them to provide us with the amount of Medicaid funds paid to teaching hospitals for GME. We found that eight states reimbursed teaching hospitals for a portion of their resident training costs; their estimates of GME payments for their most recently available calendar or fiscal year ranged from at least $17 million to $870 million. These amounts, however, typically represented rough estimates, and officials from these states were often unable to identify their Medicaid programs' total GME expenditures. (The enclosure that accompanies this letter describes the amounts of, and methods used for, determining the 10 states' Medicaid GME payments.)

Estimating state-specific or nationwide Medicaid GME expenditures is difficult for several reasons. First, neither Medicaid law nor regulations requires states to report the amount paid for GME. Also, a number of states include GME with other costs when determining their payment rates to hospitals treating Medicaid patients. Thus, states may be unable to identify the portion of their payment attributable solely to GME. Further complicating efforts to compile such an estimate is the fact that some states have recently changed their Medicaid GME payment systems.

Most of the eight states that paid Medicaid GME based their reimbursement at least in part on Medicare GME payment principles. Medicare makes separate DME and IME payments to teaching hospitals according to uniformly applied formulas. The Medicare DME payment is calculated using each hospital's fiscal year 1984 DME cost per resident, adjusted for inflation.[5] The payment is further adjusted to reflect the hospital's current number of full-time-equivalent residents and Medicare's share of total inpatient days. The Medicare IME

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[4]An official associated with the IHPP survey characterized its $1.3 billion estimate as conservative because of the methodology used. Further, neither estimate includes the amount of GME payments typically made to managed care organizations as part of their capitated payment.

[5]Payments are determined for the hospital's cost-reporting period beginning on or after October 1, 1983, but before October 1, 1984.

payment is an adjustment to the rates paid under Medicare's prospective payment system that is based on a formula that includes a hospital's ratio of total medical residents to total beds.[6]

Several of the states we reviewed modify the Medicare formulas to determine their Medicaid GME payments. For example, in lieu of using the DME cost per resident from fiscal year 1984, New York and Michigan use 1981 and 1989, respectively, as their base years. Similarly, Ohio modifies the Medicare IME formula by substituting a higher multiplier when calculating its Medicaid IME payment. This change results in a higher IME payment than if the Medicare formula were followed exactly. Further, not all states make specific payments for both types of GME. Seven of the eight states reimburse teaching hospitals for both DME and IME costs, while one state reimburses these hospitals for DME costs only.

The two states we contacted that do not specifically recognize GME in their Medicaid hospital payment methods may support teaching hospitals in other ways. California's Medicaid program does not make separate GME payments to teaching hospitals. However, because Medicaid reimbursement rates are negotiated with each hospital on the basis of its costs, those hospitals that may have higher costs because of teaching programs could receive higher Medicaid reimbursements. Also, although Illinois eliminated specific Medicaid GME payments to hospitals in state fiscal year 1996, it continues to support the higher costs of teaching hospitals by paying some of these hospitals higher rates for certain procedures or through lump sum payments for a number of specialty services.

COORDINATION WITH MEDICARE GME

Officials from the eight states that paid Medicaid GME told us that their states' Medicaid payments were intended to pay for Medicaid's share of the costs associated with training physicians. This is similar to Medicare GME payments, which are intended to compensate hospitals for Medicare's share of these costs. Because some beneficiaries qualify for both Medicaid and Medicare,

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[6]In 1989, we reported on problems with the IME formula (Medicare: Indirect Medical Education Payments Are Too High, GAO/HRD-89-33). The Prospective Payment Assessment Commission has since reported that Medicare IME payments are still too high.

however, it is possible that they could be counted twice in arriving at the amount of a hospital's GME payments.

HCFA's review of state Medicaid reimbursement plans does not include a determination of whether Medicaid GME payments duplicate those made by Medicare. Rather, HCFA reviews state reimbursement plans that include GME to determine whether GME reimbursement is reasonable, is linked to Medicaid services or some other proxy for Medicaid's share of hospital operations, and remains within certain statutory limitations. Because the state plans we obtained did not always include sufficient detail about counting beneficiaries eligible for both Medicaid and Medicare, we could not always determine whether Medicaid GME payments duplicated those of Medicare.

AGENCY COMMENTS

We provided a draft of this report to HCFA program-level officials, and we have incorporated their technical suggestions where appropriate.

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As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this letter until 30 days after its date. At that time, we will send copies to the Secretary of Health and Human Services and other interested parties.

If you have any questions about the matters discussed in this letter, please call me on (312) 220-7600. Staff who contributed to this review include Paul Alcocer, Susan Thillman, and Daniel Lee.

Sincerely yours,

Leslie G. Aronovitz
Associate Director, Health
Financing and Systems Issues

Enclosure

ENCLOSURE ENCLOSURE

STATE ESTIMATES OF MEDICAID GME EXPENDITURES AND RELEVANT REIMBURSEMENT METHODOLOGIES

CALIFORNIA

California does not make specific reimbursements to teaching hospitals for GME through its Medicaid program.

ENCLOSURE ENCLOSURE

FLORIDA

Period Covered: State fiscal year 1996 (07/1/95 to 06/30/96)

Estimated GME Expenditures:

Fee-for-service:

Direct medical education:	No estimate
Indirect medical education:	No estimate
Disproportionate share hospital program[7]	$17.9 million
Managed care:	No estimate
Total GME expenditures:	At least $17.9 million

Payment Methodology

The Florida Medicaid program pays six teaching hospitals in the state, which must meet several qualifying criteria, quarterly payments for GME as part of its Disproportionate Share Hospital (DSH) program. The total amount these six hospitals receive is based on legislative appropriations and is allocated among them according to a statutory formula. In addition, all teaching hospitals are reimbursed for GME to the extent that direct medical education (DME) and indirect medical education (IME) costs are included in the daily rates paid to them by the state. The state, however, has never calculated the GME component of these rates. Similarly, although GME is included in the capitated payments the state makes to managed care organizations, the state has never tracked this amount and is unable to provide an estimate of what the total GME amount is.

[7]Besides payments to reimburse medical providers for services rendered, states are required under DSH to make additional Medicaid payments to hospitals that serve large numbers of Medicaid and other low-income patients.

ENCLOSURE

ENCLOSURE

ILLINOIS

Beginning in state fiscal year 1996 (7/1/95), the Illinois Medicaid program stopped specifically reimbursing teaching hospitals for GME. Previously, the state had reimbursed teaching hospitals for both DME and IME costs. In its last year of funding, the Medicaid program reimbursed teaching hospitals an estimated $165 million for GME. This estimate does not include the amount of GME payments made to managed care organizations as part of their capitated payments.

ENCLOSURE ENCLOSURE

MASSACHUSETTS

Period Covered: State fiscal year 1995 (10/1/94 to 9/30/95)

Estimated GME Expenditures:

Fee-for-service:

Direct medical education:	$25.0 million
Indirect medical education:	$0
Managed care:	No estimate
Total GME expenditures:	At least $25.0 million

Payment Methodology

The Massachusetts Medicaid program specifically reimburses hospitals for DME costs only. The DME payment is calculated each year using each hospital's reported GME costs and Medicaid's share of total discharges. The state makes DME payments to hospitals as per-discharge add-ons. Although the capitated rates paid to managed care organizations are calculated using historical data that include GME costs, GME costs have never been distinctly identified.

ENCLOSURE

ENCLOSURE

MICHIGAN

Period Covered: Calendar year 1995

Estimated GME Expenditures:

Fee-for-service:

Direct medical education:	$ 84.3 million
Indirect medical education:	82.0 million
	$166.3 million
Managed care:	$45.0 million
Total GME expenditures:	$211.3 million

Payment Methodology

The Michigan Medicaid program reimburses hospitals for both DME and IME, using an approach modeled largely on the Medicare formulas. The DME payment is based on 1989 costs, adjusted each year by a hospital market basket index, and Medicaid's share of inpatient bed-days. DME payment for recipients with dual Medicaid/Medicare eligibility is specifically excluded. The DME payment is a cost-settled, add-on that is paid twice monthly to the hospitals. The IME payment is included in the states' diagnostic-related group (DRG) and daily payment rates and is approximately 55 percent of the Medicare IME

formula.[8] Capitation rates for managed care organizations incorporate all health care costs, including those for GME.[9]

[8]Under the state's DRG system, the payment rate is based on each patient's diagnosis. Each case is classified into one of a number of diagnosis-related groups.

[9]Michigan has announced an entirely new GME reimbursement system that is to be implemented on 7/1/97. The new plan, which will abandon cost-based formulas, will be a prospective payment system with fixed amounts for each hospital based on costs established in the 1996 cost reports. Separate payments will be made for primary care training programs, and grant awards will be made to a consortium of teaching hospitals, universities, and health maintenance organizations (HMO) for innovative training programs that involve managed care. Michigan will also "carve out" the GME component from the capitated rates.

ENCLOSURE ENCLOSURE

NEW JERSEY

Period Covered: Calendar year 1997

Estimated GME Expenditures:

Fee-for-service:

Direct medical education:	$12.8 million
Indirect medical education:	25.2 million
	$38.0 million
Managed care:	$30 million to $40 million
Total GME expenditures:	$68 million to $78 million

Payment Methodology

The New Jersey Medicaid program reimburses all teaching hospitals in the state for GME. To create the pool of funds from which these Medicaid GME payments are drawn, New Jersey applies DME and IME formulas to the state's major teaching hospitals.[10] These formulas are modeled largely on the Medicare formulas, substituting Medicaid statistics for Medicare statistics. Funds from this pool are then distributed periodically to all teaching hospitals in the state on the basis of their respective Medicaid utilization rates and number of medical residents. These funds are subject to cost settlement each year. Payment for GME is also included in the capitated rates paid to managed care organizations, but it is not specifically identified.

[10]New Jersey defines a major teaching hospital as having 45 or more full-time-equivalent medical residents in the 1993 Medicare audited cost report.

ENCLOSURE ENCLOSURE

NEW YORK

Period Covered: Calendar year 1996

Estimated GME Expenditures:

Fee-for-service and managed care:

Direct medical education:	$370 million
Indirect medical education:	$500 million
Total GME expenditures:	$870 million

Payment Methodology

The New York Medicaid program reimburses hospitals for services on the basis of a per-discharge rate with an add-on for DME. The DME payment is based on each hospital's 1981 cost report adjusted yearly to reflect rising costs. The IME reimbursement is an adjustment to payments for Medicaid services based on the same formula used by Medicare, with one exception. The state revised its Medicaid IME formula in 1991 and now determines IME reimbursement on the basis of the number of residents and interns at each hospital in 1990, adjusted for the type of medicine they practiced. For example, primary care specialties are generally assigned a weighting factor of 1.5, while the specialties of emergency and preventive medicine are assigned a factor of 1.1. New York also subtracts a GME component from the capitation rates paid to managed care organizations and pays this amount directly to the teaching hospitals. [11]

[11]On January 1, 1997, New York eliminated its hospital rate-setting system for Blue Cross, HMOs, commercial insurers, self-insured funds, and private payers. Under the former system of state-set hospital reimbursement rates, private payers contributed about $1 billion to GME. The reform essentially halves the guaranteed contribution of the private payers and creates a pooling mechanism to distribute these funds. If no further changes are made to the Medicaid program, its GME payments should remain relatively steady for the next several years.

ENCLOSURE ENCLOSURE

OHIO

Period Covered: State fiscal year 1995 (7/1/94 to 6/30/95)

Estimated GME Expenditures:

Fee-for-service:

Direct medical education:	$52.9 million
Indirect medical education:	$98.2 million
Managed care:	No estimate
Total GME expenditures:	At least $151.1 million

Payment Methodology

The Ohio Medicaid program reimburses hospitals for both DME and IME. The DME payment is based on each hospital's Medicaid cost report from 1985-86 adjusted yearly to reflect rising costs. The IME reimbursement is an adjustment to payments for Medicaid services based on the Medicare formula, except that Ohio maintained a multiplier of 2.0 when Medicare reduced its multiplier to 1.89. Both DME and IME payments are subject to a test of reasonableness, adjusted for case mix and then by the DRG relative weight, and paid jointly as an add-on to the DRG reimbursement amount. Payment for GME is included in the capitated rates paid to managed care organizations, although an estimate of this amount was not provided.

ENCLOSURE

ENCLOSURE

PENNSYLVANIA

Period Covered: Calendar year 1996

Estimated GME Expenditures:

Fee-for-service:

Direct medical education:	$42.8 million
Indirect medical education:	No estimate
Managed care:	No estimate
Total GME expenditures:	At least $42.8 million

Payment Methodology

The Pennsylvania Medicaid program reimburses acute care teaching hospitals for both DME and IME. The DME payment is based on each teaching hospital's 1984-85 Medicaid medical education costs, subject to annual limits. The payments are made monthly as prospective payments. Reimbursement for IME costs is included in the Medicaid rates paid to each teaching hospital. The state is unable to quantify the IME portion of this rate. Payment for GME was historically included in the capitated rates the state paid to managed care organizations. Beginning in calendar year 1997, however, the state has begun "carving out" the GME portion of the capitated rates and will pay this amount directly to the teaching hospitals.

ENCLOSURE ENCLOSURE

TEXAS

Period Covered: State fiscal year 1995 (9/1/94 to 8/31/95)

Estimated GME Expenditures:

Fee-for-service:

Direct medical education:	$38.2 million
Indirect medical education:	No estimate
Managed care:	$0.5 million
Total GME expenditures:	At least $38.7 million

Payment Methodology

The Texas Medicaid program reimburses each hospital for Medicaid services on the basis of a hospital-specific "standard payment rate," which includes both DME and IME. The DME payment is determined using similar methods to those used for Medicare, substituting Medicaid's utilization rate for Medicare's. IME costs are not specifically identified but are included in the standard payment rate, which is based on each hospital's reported costs. Also, payment for GME is included in the capitated rates the state pays to managed care organizations.

(101527)

NACHRI

(1) Children's hospitals would be outpatient facilities

$ from Medicare

(2) only do ~~DME~~

caps reflect principles in ~~BBA~~ ($330 initial) Δs reflect ~~BBA~~ cap & admin issues

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Bill Young: supportive
Dingell
Moynihan
Kennedy

Harkin? N.
Specter ?

419.

GRADUATE MEDICAL EDUCATION AND CHILDREN'S HOSPITALS

- **Number of hospitals and distribution of resident FTE.**

	CHILDREN'S TEACHING HOSPITALS	OTHER TEACHING HOSPITALS
NUMBER OF HOSPITALS	57	1,004
RESIDENT FTE	4,623	74, 851
RESIDENT FTE PER HOSPITAL	74.8	74.6
RESIDENT FTE PER BED	0.38	0.19

- **Total and operating margins by hospital type** (1995 HCRIS).

	CHILDREN'S TEACHING HOSPITALS	OTHER TEACHING HOSPITALS
TOTAL MARGIN	7.9%	4.7%
OPERATING MARGIN	-6.3%	-3.4%

- **Formulas currently used by Medicare to distribute GME funds**

Direct Medical Education (DME) :
(Per Resident Amount * Resident FTE)(Medicare inpatient days / total number of inpatient days)

Indirect Medical Education (IME):
$((1 + (\text{total number of residents/total number of beds})^{.405}) - 1)^{1.6}$

- **Kerrey proposal formulas for distribution of GME funds**

Direct Medical Education (DME):
(Per Resident Amount * Weighted average of Resident FTE)

Indirect Medical Education (IME):
(Per Resident Rate for IME * Total Resident FTE)

- **Projected Cost of the Kerrey Proposal**

The Kerrey proposal limits payments to $100 million in FY 1999 and $285 million in FY 2000 through FY 2002, for a 5 year total of $955 million. This table indicates the impact of the bill without the cap on expenditures.

	DME	IME
PER RESIDENT AMOUNT	$76, 817	$70,812
PAYMENTS	$216,854,391	$244,867, 896
TOTAL EXPENDITURES	$461, 722, 287	

MCAid GME
incentives for others?

block grant mechanism?
Operating margins
marketplace is Ding
operating margins so low
as relative?

Packard Foundation → pediatric Comm.

cannot bank on July bc DSH careful { ① endowment income
② ~~DSH~~

Check jurisdiction

pool of childrens hospitals
53 eligible
10 specialty hospitals
43 others 58% lose $ pt care
10% total margins lose
Boston
Pittsburgh

core business
treating hospitals

average
$5–6 million/year — DGME only.

DME $80–95 M

grant prog thru ~~HRSA~~ — it's okay b/c it's a short term proposal.

$$DGME = (PRA)(FTE)\left(\frac{MC\ inpat\ days}{total\ inp.\ days}\right)$$

$$IME = \left(\left((1 + IRB\ ratio)^{.405}\right) - 1\right)^{1.6}$$

Medicare discharge.

The Balanced Budget Act of 1997: Implications for Graduate Medical Education

James A. Reuter, Sc.D. Institute for Health Care Research and Policy Georgetown University

October 1997

EXECUTIVE SUMMARY

The Balanced Budget Act (BBA) of 1997 has significant implications for Medicare's support for graduate medical education (GME). The federal government spends more than $7 billion annually to subsidize the training of physicians and nurses. In 1997 alone, Medicare will pay teaching hospitals some $6.8 billion for their intern and residency programs. Given the level of support, any marked changes in Medicare policy will have a major effect on these programs, the institutions that conduct them, and the makeup of the physician work force.

That care in teaching hospitals is costlier than similar care elsewhere is commonly accepted. Costs related to the hospitals' training mission are partly responsible. Academic health centers (AHCs)—teaching hospitals with close affiliations with medical schools—and other teaching hospitals have long used patient care revenues to finance much of this mission. Traditionally, they have covered these expenses by charging private insurers more than the actual cost of care.

But that picture is changing. In today's increasingly competitive health care marketplace, health maintenance organizations and other types of managed care plans are aggressively pursuing lower payment rates and directing their enrollees to non-teaching, lower-cost community hospitals. The higher expenses of AHCs and other teaching hospitals put them at a competitive disadvantage in negotiations with managed care plans. Consequently, they have been losing market share for managed care patients.

So that these hospitals may continue to provide training for the next generation of physicians, many observers have suggested that support for this activity should be separated from patient care revenues. By providing a stable source of funding, this change should permit teaching hospitals to compete on a level playing field with their non-teaching counterparts.

The Balanced Budget Act helps to do just that, phasing out Medicare support for GME from premiums paid to managed care plans and paying it directly to teaching hospitals that care for Medicare managed care patients. This policy could be a model for financing graduate medical education that could be replicated across all types of insurers.

Another major concern addressed in the BBA is Medicare's influence over the numbers and types of physicians being trained. Despite a broad consensus that there are too many physicians in general and too many specialists in particular, Medicare support for GME has remained open-ended. By creating economic incentives for hospitals to expand their training programs, this policy has been a major contributor to oversupply in the physician work force.

The BBA includes amendments that will change these incentives. One caps the number of residents for whom Medicare will provide support. Another creates a system of incentive payments that will encourage teaching hospitals to downsize their training programs.

Finally, the BBA includes various savings provisions that will reduce payments to hospitals. In some cases, these provisions are focused directly on Medicare's subsidies to teaching hospitals. These include reductions in the indirect medical education adjustment (IME)($5.6 billion over five years) and elimination of the disproportionate share and IME amounts carved out of the premiums Medicare pays to managed care plans ($4 billion over five years), the net effect is to reduce the subsidies that teaching

① prospectively

② MC payment
Who MC share
more for direct
than anyone
else but no indirect

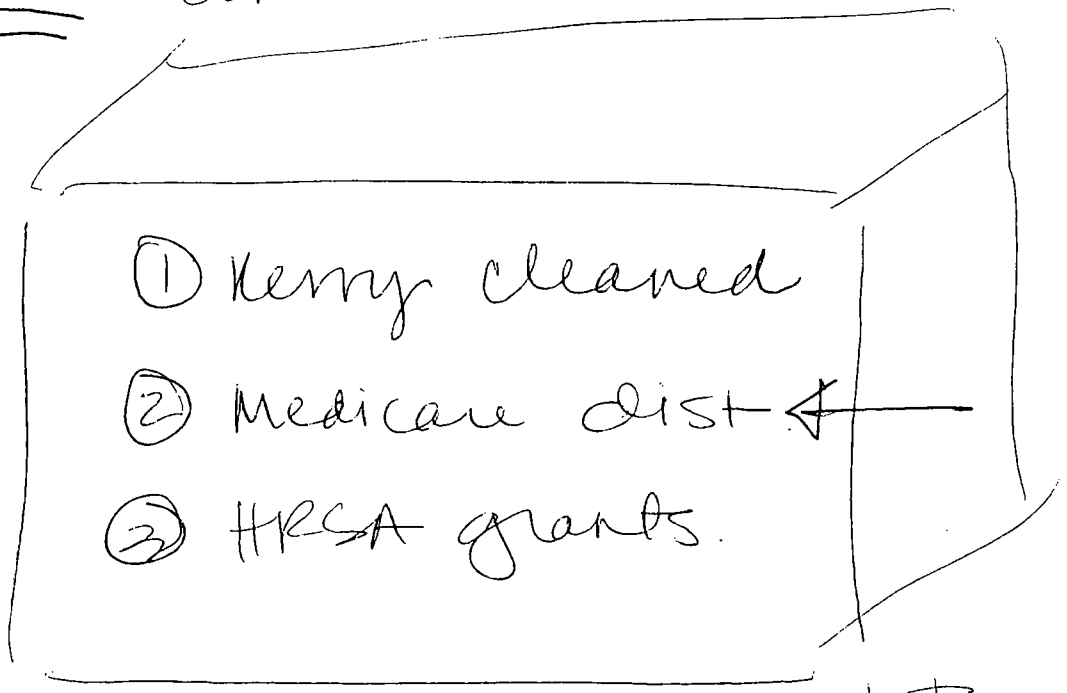
Kerrey proposal
① cap up front; ② pro
rata adjustment from
day one; ③ share issue;
④ limit # residents.

LARGER ISSUE OF GME INTERACTION

effective date
2001

margine
data

Demo consortium



I Bkgrnd
what they say
II However,
more complicated
empirical evidence
III OPTIONS

OPTIONS FOR PROVIDING GRADUATE MEDICAL EDUCATION FUNDS TO FREESTANDING CHILDREN'S HOSPITALS

NOTE: All of these options except Option Four will be funded through a capped mandatory grant program.

Option 1: Modify the Kerrey proposal to provide reimbursement for those GME costs associated with providing care to publicly insured patients.

Under the Kerrey proposal, funds are distributed to children's hospitals based upon a formula resembling the Medicare formula currently used to determine GME reimbursement. The Kerrey proposal provides the children's hospitals with DME reimbursement based on a flat per resident amount, without consideration for the percentage of their expenditures associated with providing care to Medicare or Medicaid patients. This option would modify the DME formula in the Kerrey legislation to ensure that the children's hospitals only received reimbursement for the portion of their DME expenses associated with providing care to Medicare and Medicaid patients. The Kerry proposal distributes IME payment as an average payment per resident. Indirect medical education is paid as a percentage add-on to the payment for a Medicare discharge. Under this option, we would modify the Kerry proposal to provide an IME adjustment to the payment made for a Medicaid patient. This option would also have the Secretary prospectively limit the funds disbursed to the amount appropriated, rather than recover overpayments retrospectively.

Option 2: Eliminate IME reimbursement from the Kerrey proposal.

The Kerrey proposal requires the Federal government to provide approximately $76,000 per resident for DME costs alone. This is as much as we presently provide to other teaching hospitals for both their direct and indirect medical education costs. The proposal could be modified to exclude reimbursement for IME and reimburse for only DME costs. This would provide the children's hospitals with the commensurate funding they are seeking while making limited changes to the Kerrey proposal. The proposal would include a provision that would require the Secretary to prospectively limit the funds disbursed to the amount appropriated. Funds could be placed in an account that would close when tapped out, or the Secretary could hold back a percentage of each hospital's funds to protect themselves from going over the cap and having to recoup funds. This option would perpetuate the flaw in the DME formula.

Option 3: Require Medicare to disburse GME funds based on a flat, per resident amount.

This proposal would provide children's hospitals with graduate medical education funding according to a flat, per resident amount adjusted for geographic variation

in health care costs that would be determined by HCFA and disbursed through the current GME reimbursement system used by HCFA. The amount of funding an institution received would be dependant solely on the number of residents it had enrolled. There would be a cap on the amount of funds that could be disbursed. This is a simpler formula than the Kerrey proposal and essentially has the same distributional effects. However, the children's hospitals may prefer the formula to resemble the one used to distribute funds to other teaching hospitals.

Option 4: **Create a discretionary grant program to provide GME funds through the PHS.**

This option could use either the Kerrey formula or the flat, per resident distribution formula. Alternatively, it could require children's hospitals to submit an application to receive a GME grant. Potential grantees would submit a summary detailing the extent of their financial need, an overview of their curriculum and training, and their previous experience in providing graduate medical education. Based on Federal review of the grant proposal, hospitals could receive different levels of funding.

National Association of
Children's Hospitals

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Deborah

MEMO

N • A • C • H

TO: Barbara Woolley, Office of Public Liaison

FROM: Pete Willson, N.A.C.H. PW

DATE: January 23, 1999

SUBJECT: **Background Information on N.A.C.H.'s Federal Advocacy Issues**

Barbara, at Ann's request, I am sending to you the attached one page summary of the different federal policy issues our member hospitals are asking us to work on this year. I would be happy to provide additional information that you or Mrs. Clinton's staff might like to have.

In general, our advocacy agenda is organized around legislation that addresses the four missions of the children's hospitals: clinical care, education, research, and public health advocacy devoted to children's unique health care needs.

This agenda reflects the issues of our overall membership, of which only about one-third are children's teaching hospitals with their own Medicare provider numbers. For that subset of our membership, who will be attending the meeting with the First Lady next week, GME is unquestionably their top priority. They would be happy to discuss only that issue with her.

However, if Mrs. Clinton would like to discuss other issues, I would say that the two of greatest interest are managed care consumer protection standards, specific to children's unique health care needs, and increasing federal investment in pediatric research. In particular, N.A.C.H. and the children's hospitals are advocating:

- **Managed Care Standards for Children** Any consumer protection legislation should include the protections for children in Sen. Reed's and Rep. Morella's "Children's Health Insurance Accountability Act," which includes access, appeals and information requirements specific to children's needs. We are encouraged that a growing number of bills in Congress are including these provisions.

- **Pediatric Research** N.A.C.H. and member hospitals have strongly supported the "Pediatric Research Initiative Bill," by Sens. DeWine and Kennedy, which would establish a multi-year authority for the pediatric research initiative in the office of the NIH director, which the Appropriations Committees created two years ago. Its purpose is to make pediatric research a higher priority among all institutes of NIH.

Summary

1999 N.A.C.H. FEDERAL ADVOCACY AGENDA

Recommended by the N.A.C.H. Public Policy Council

January 1999

#1 Strengthening Children's Health Coverage

- ***Medicaid***: Pursue a three-track agenda: (1) continue to oppose reductions in future Medicaid spending; (2) continue to advocate appropriate implementation of the "Kerrey/Strickland" amendment that provides protections for children with special needs in mandatory Medicaid managed care; and, (3) work toward a long-term Medicaid disproportionate share hospital (DSH) advocacy strategy.

- ***Private Sector Managed Care***: Continue to use a children's managed care bill to build support for improving the health care quality of children as part of any legislation Congress considers to regulate the quality of care in managed care plans.

- ***State Children's Health Insurance Program (SCHIP)***: Advocate effective implementation of and improvements to SCHIP, including improved outreach, enrollment and data collection.

#2 Strengthening Investment in Pediatric Graduate Medical Education

- ***"Interim" Funding***: Continue to advocate "interim," commensurate federal GME support – $285 million annually – for children's teaching hospitals with their own Medicare provider numbers. Funding would be "interim" until Congress enacts comprehensive GME reform.

- ***Long-Term GME Reform***: Continue to advocate for comprehensive GME financing reform for all teaching hospitals, including commensurate GME support for children's hospitals.

#3 Strengthening Investment in Pediatric Innovation and Research

- ***Pediatric Biomedical Research***: Continue to promote increased appropriations for the NIH pediatric research initiative and other efforts to boost NIH support for pediatric research.

- ***Pediatric Outcomes Research***: Continue to advocate for legislation to designate and increase appropriations for pediatric health services research, including outcomes research.

- ***Pediatric Public Health Research***: Advocate additional Centers for Disease Control and Prevention (CDC) funding for research on pediatric public health, such as infection control.

#4 Strengthening Public Health Protections

- ***Poison Control***: Continue to support the development, introduction, and enactment of $27.6 million in funding for our nation's poison control centers.

- ***Child Abuse and Neglect***: Advocate additional resources for prevention activities such as the Healthy Families America (HFA) initiative and for research and training.

- ***Gun Safety***: Advocate firearms safety measures for children, such as mandatory safety clips.

- ***Anti-Smoking Initiatives***: Advocate legislation to reduce children's tobacco consumption, reduce their environmental exposure to tobacco, and target new tobacco tax revenues to children's health care.

National Association of
Children's Hospitals

THE NEED FOR COMMENSURATE FEDERAL GME FINANCING FOR FREESTANDING CHILDREN'S HOSPITALS

September 23, 1998

Children's Teaching Hospitals at a Glance

Freestanding children's hospitals are hospitals that serve primarily children and do not share a Medicare provider number for purposes of third party payment with another institution. In 1998, there are 55 such institutions nationwide, consisting of 45 acute care children's hospitals and 10 children's long-term specialty hospitals. These hospitals include the leading pediatric medical centers in the country.

Like other teaching hospitals and, in particular, academic medical centers, children's hospitals tend to treat the most severe, costly cases, while supporting high quality research and teaching programs. An increasingly competitive health care market dominated by managed care tends not to recognize these differences. Moreover, unlike adult teaching hospitals, children's hospitals have few Medicare patients, and therefore receive almost no federal graduate medical education (GME) funding for their residency positions. Caught in a financial vise between the pressures of market competition and the demands of teaching, research and high quality care programs, some dimensions of the children's hospitals' mission will begin to suffer.

Children's hospitals were established to provide centers for medical care that put the needs of children foremost. From the beginning, they have provided family-centered care, delivering the full range of services needed to care for the child and to support the family throughout the child's course of treatment. They have provided health professionals experienced in the care of children, who recognize that a child's illnesses, treatments, and health care needs are often significantly different than adults. And, they have provided regional centers for highly specialized pediatric care. Since few children require such care, these regional centers are often essential to assuring its availability.

The children's hospitals have assumed three major missions – patient care, research and teaching -- all devoted to children's unique health care needs. They are committed to providing quality health care for all children, regardless of their families' ability to pay. Today, on average, almost 50 percent of the patient care that freestanding children's hospitals provide is for low income children, either those covered by Medicaid or those who are uninsured. More than 75 percent of the inpatient care provided by children's hospitals is devoted to children with one or more chronic conditions.

The acute care children's hospitals offer the complete range of patient care services for children, from inpatient to ambulatory care. They are regional and national referral centers for very sick children, often serving as the only source for many critical pediatric services. They also serve as the major source of pediatric care in many of their service areas and are often the largest providers of primary care to youngsters in their communities, with clinics serving area neighborhoods.

It is their commitment to children and the close tie between their patient care, research and teaching that truly set these hospitals apart. As major teaching hospitals, they train a substantial portion of our

401 Wythe Street, Alexandria, VA 22314
(703) 684-1355 Fax (703) 684-1589

An Affiliate of the National Association of
Children's Hospitals & Related Institutions

country's pediatric workforce – more than 25 percent of all pediatricians and over half of many pediatric subspecialists, as well as a substantial number of required pediatric rotations for many other residency programs. As academic medical centers devoted to children, they have developed "bench to bedside" research environments that have led to scientific discoveries, which, in turn, have helped to set the standard for pediatric care and research around the world. The freestanding children's hospitals and their affiliated pediatric departments account for one-quarter of all National Institutes of Health (NIH)-sponsored pediatric research.

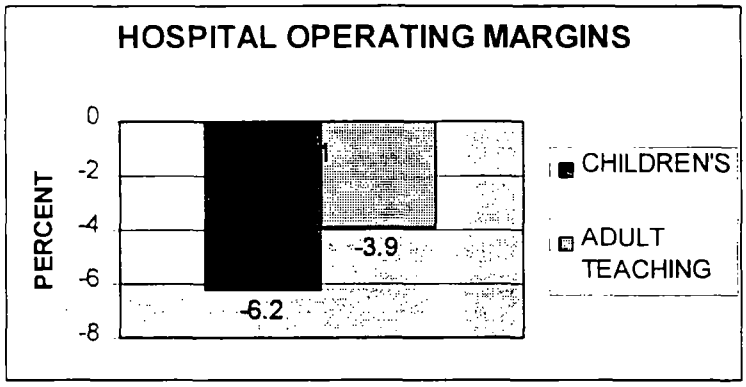
Current Challenges

The rapid expansion of a competitive marketplace driven primarily by price is posing significant challenges for all health care providers. Children's hospitals face many of the same problems of other "safety net" providers and teaching hospitals. They care for a significant portion of the low-income, vulnerable population that often requires special consideration. They maintain essential community and critical care services, whose costs are never fully covered. And, they provide a higher level of complex care to more severely ill patients than other institutions. (See attached "Indicators...")

The higher costs resulting from the greater staffing and equipment needs of pediatric care make the last point an even greater problem for the freestanding children's hospitals. For example, a child under age two can require on average 40 percent more nursing care per hour of an inpatient stay in a hospital than an adult inpatient will require. These differences in cost are increasingly unrecognized by a more competitive medical marketplace.

For teaching hospitals, no challenge is greater than their growing inability to recover the costs of GME. Medicare has become the mainstay of GME funding as Medicaid's moves to managed care have resulted in fewer states paying even the direct costs of GME. Other, private payers are increasingly unwilling to support GME costs at all. For the freestanding children's hospitals, with only a very few Medicare patients – children with end stage renal disease -- the GME financing issue is critical.

Even as children's hospitals maintain, and often increase, pediatric market share, their patient care revenues are falling short of covering their patient care costs. A significant percentage of this loss, half or more in many cases, is attributable to unreimbursed GME costs. This is reflected in children's teaching hospitals' operating margins, which are substantially lower than other teaching hospitals. According to 1995 Hospital Cost Report Information System (HCRIS) data, children's hospitals' operating margins were negative 6.2 percent, on average, compared to negative 3.9 percent for other teaching hospitals. GME losses per hospital run in the millions of dollars per year and cannot be sustained.



Data reported to the National Association of Children's Hospitals and Related Institutions (NACHRI) suggest that freestanding children's teaching hospitals' net patient revenues in FY1996 accounted for about 94% of total operating expenses. The freestanding children's hospitals' total margins still remain

sound in most cases, because they and their trustees have devoted themselves to building resources to assure the hospitals' future and missions. However, operating margins that continue at this negative rate eventually erode endowment income, as increasing proportions of charitable contributions and endowment income must be diverted simply to cover operating margin deficits.

Endowment income and charitable contributions vary widely among institutions, but their intended purpose is typically the same:

- They support both primary and specialty care services for children who have inadequate or no health care insurance, as well as related services that often are needed to ensure that children of low income families have access to the services they need, such as transportation and social services.

- They provide the investments in start-up and uncovered indirect costs, which research programs must have, and they support unsponsored research, which funds new investigations, serving as a source of funds for creative research topics.

- They support essential facilities maintenance and improvements, which often are an important part of the hospital's overall efforts to remain competitive with other facilities.

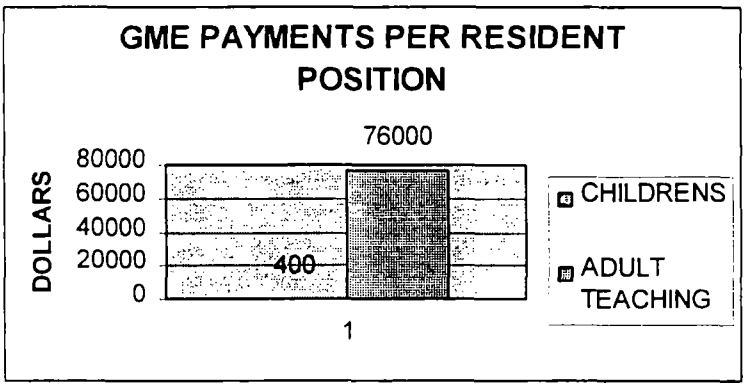
- They support community services, including services for children for which reimbursement often is inadequate or non-existent, such as child abuse treatment, child life, and poison control centers.

- They make possible many of the hospitals' efforts to promote the health and well-being of all of the children of the community, not just their patients, such as public education programs for car seat and seat belt safety, motorcycle and bike helmet safety, immunizations, hot water and pool safety, firearms safety, children abuse prevention, and more.

Often, these resources are significantly restricted for specific purposes. The demands on this income have never been greater, particularly at a time when the hospital industry overall is experiencing a significant decline in philanthropic support in recent years, according to the Association for Healthcare Philanthropy. And, often, the hospitals possess neither the flexibility nor the capacity to create or sustain donor or operating income endowments to support GME.

Finding a Solution

The National Association of Children's Hospitals (N.A.C.H.) has long supported a broad-based financing system for graduate medical education, an approach that could include our nation's freestanding children's hospitals. If such a broad-based system is not imminent, however, the children's hospitals must seek an interim solution.



The current system of financing GME has created a serious inequity for these institutions. Competitors either have no academic missions or they receive federal support for GME through Medicare in combined direct and indirect medical education payments. Based on the most recent HCRIS data, teaching hospitals overall receive on average over $76,000 per resident a year from Medicare, while the freestanding children's hospitals receive less than $400, on average. However unintended it may be, this huge difference in federal support creates a dramatic competitive disadvantage for these children's hospitals.

Providing a level playing field for GME for the freestanding children's hospitals would enable them to remain competitive in an increasingly tight market, allow them to offer a better value for the consumer, and prevent fragmentation of pediatric services. For some of the freestanding children's hospitals, this is an issue of immediate, serious financial concern. For others, it is an issue of diverting other critical resources to GME. For many, decisions to reduce residents are being made.

The field of pediatrics cannot afford the risk of freestanding children's hospitals being forced -- by a federal GME funding policy tied largely to patients they do not serve -- to reduce or abandon their academic missions. Not only do they train a significant portion of the nation's pediatric health professionals, most of whom are in primary care, they provide this training in an environment where residents can experience the entire range of pediatric care. It takes a substantial pediatric patient population to provide this range. In addition, the hospitals' academic programs provide the underpinning of their research programs and contributions to the advancement of pediatric medicine. Eliminating their teaching programs would fundamentally alter the missions of these institutions.

Because of the significance of this problem, not just for the affected children's hospitals but for the entire field of pediatric medicine and the future pediatric workforce, the American Academy of Pediatrics, Association of American Medical Colleges, Association of Medical School Pediatric Department Chairs, Conference of Boston Teaching Hospitals, Utah Medical Education Council, and National Association of Children's Hospitals strongly support efforts to provide commensurate federal direct and indirect medical education support for freestanding children's teaching hospitals, including interim support until comprehensive GME financing reform is achieved.

Request to The Bipartisan Commission and MedPAC

As the National Bipartisan Commission on the Future of Medicare and the Medicare Payment Advisory Commission consider their recommendations to Congress on graduate medical education, N.A.C.H. asks that the freestanding children's hospitals be included in the deliberations. Currently, proposed bipartisan legislation in the House and Senate, the "Children's Hospitals Education and Research Act," H.R.3855 and S.2049, would provide federal GME funding to the children's hospitals on an interim basis – two to four years -- prior to the achievement of any broad-based reform. (See attachment "Support for...")

N.A.C.H. would appreciate the opportunity to assist the Commission in assessing both interim and long-term approaches to equitable GME financing for these institutions.

Indicators of Financial Status of Children's Teaching Hospitals with Their Own Medicare Provider Numbers

The following data on the performance of freestanding, acute care children's teaching hospitals for FY 1996 were reported to the National Association of Children's Hospitals and Related Institutions (NACHRI). The reporting hospitals represent the largest of the nation's children's teaching hospitals with their own Medicare provider numbers.

Safety Net Service

Because they are devoted to caring for all children, regardless of economic or medical condition, children's hospitals are major providers of care for children who rely on Medicaid. Over the three most recent fiscal years for which data are available, children's teaching hospitals on average devoted nearly half of their care to children of low income families – 42% Medicaid and 6% bad debt/charity. The balance included 1% Medicare, 2% other government, and 49% commercial/direct employer coverage.

Medicaid, Bad Debt, and Charity:
48% of Gross Revenues

Because of their volume of service to children of low-income families, children's hospitals are often the recipients of significant Medicaid disproportionate share (DSH) payments. However, even with DSH payments, Medicaid reimbursement still falls far short of the cost of caring for Medicaid patients. Medicaid reimbursement, including DSH payments, averaged only 81% of expenses. *Without* DSH payments, Medicaid reimbursement averaged only 74% of expenses.

Medicaid and DSH Reimbursement: 81% of Costs
Medicaid *without* DSH Reimbursement: 74%

Financial Performance

While children's teaching hospitals, on average, operate in the black, they do so only marginally. Total Net patient revenues fell short of their total operating expenses -- about 94% of total operating expenses.

Net Patient Revenue/Total Operating Expenses: 94%

Case Mix Intensity

Compared to other hospitals, children's teaching hospitals have significantly greater case mix intensity. Children's teaching hospitals' case mix index averaged 1.47, compared to 1.29 for all teaching hospitals, and 0.74 for community hospitals.

Case Mix Index for Children's Teaching Hospitals: 1.47
Case Mix Index for All Teaching Hospitals: 1.29
Case Mix Index for Community Hospitals: 0.74

Summary

The federal government subsidizes graduate medical education (GME)--the training of medical residents--in amounts that are expected to exceed $6 billion for fiscal year 1995. The bulk of those subsidies are payments that the Medicare program makes to teaching hospitals (hospitals with residency training programs). Medicare's GME payments are projected to grow to more than $7.5 billion in 2000. That annual figure is a substantial amount of money for a controversial program--or really, a pair of programs--that pay more to a teaching hospital the more residents it has. Given current concerns about both the federal budget in general and the solvency of Medicare in particular, this is an opportune time to reevaluate the arguments for and against those GME payments and to consider various policy options.

Types of Medicare GME Subsidies

The Medicare program makes payments for graduate medical education to the approximately 1,200 U.S. teaching hospitals through two significant programs: direct graduate medical education (DME) payments and the indirect medical education (IME) adjustment, which is sometimes called the indirect teaching adjustment. DME payments to a teaching hospital are based on Medicare's share of the hospital's inpatient days, the direct costs per resident that the hospital incurred during a year in the mid-1980s (those costs have, in general, been updated for inflation), and the number of residents training at the hospital.

In contrast, IME payments to a teaching hospital are calculated as an adjustment to the payments that Medicare makes to a hospital for inpatient services provided to Medicare beneficiaries. In other words, if two otherwise identical hospitals each admit a Medicare beneficiary for the same diagnosis, the teaching hospital will receive a higher payment than the nonteaching hospital. And the percentage add-on increases as the teaching hospital's ratio of residents to beds grows.

DME and IME payments result in a substantial marginal subsidy for each hospital resident. The Congressional Budget Office's analysis of data from the Health Care Financing Administration indicates that for hospitals in the middle of the distribution in terms of subsidies per resident, an additional resident means that the hospital receives between $58,000 and $102,000 (in 1993 dollars) more in annual payments. About one-fourth of the teaching hospitals receive more than $102,000 annually for adding another resident, whereas about one-fourth of the hospitals receive less than $58,000 for one more. (For almost all residents who are beyond five years of residency or beyond the minimum number of residency years to be eligible for specialty board certification, the analogous range is about $47,000 to $86,000.) Clearly, both the absolute size of the subsidy per resident and the variation in subsidies among hospitals are substantial.

Average stipends for residents range between about $30,000 and $38,000 per year depending on the resident's years of experience. Fringe benefits add an average of 18 percent to the stipend, resulting in an average range of compensation of between about $35,000 and $45,000. Thus, the average stipend and fringe benefits of residents are less than the marginal DME and IME subsidies for more than three-fourths of the nation's teaching hospitals. An additional benefit to the hospitals from hiring residents is the value of the patient care services that residents provide. Additional costs that hospitals incur can include the time of the teaching staff that is taken up in training residents, payments to the teaching staff, overhead costs related to residency training, and the costs of extra tests or slower services because of the use of residents.

Trends in the Number of Residents

The number of medical residents in the United States has generally been increasing. The number of residents grew from 83,000 in 1988 to 102,000 in 1993. Because the number of graduates of U.S. medical schools has remained approximately constant, much of the growth in the number of residents comes from foreign medical school graduates (FMGs) who fill hospital residency positions in this country. Between 1988 and 1993, the number of FMGs grew from 14 percent of the total number of residents to 23 percent. Over 60 percent of the growth in the number of residents can be attributed to increases in the number of FMGs who are training in the United States. (Previous experience suggests that most FMGs who train here will eventually practice here.)

Should the Government Maintain the Current GME Subsidies?

Whether the federal government should subsidize GME is a controversial issue. At a theoretical level, neoclassical economic reasoning would lead to questions about the need for government intervention to promote residency training. That line of argument proceeds as follows. Residents are receiving training and experience that will enable them to become competent, well-paid physicians. For an economically efficient level of training to result, the individual who will benefit from the training in the form of higher future earnings should pay the costs of it. In the context of the residency, a trainee pays for the costs that the hospital incurs by accepting a stipend that is lower in value than the services the resident provides. Whether costs are "direct" or "indirect" is a superficial distinction--those combined costs can be implicitly paid by the residents in the form of stipends that fall short of the value of their services. GME subsidies, by increasing the apparent value of residents to the hospital beyond their actual value in providing services, encourage more training of residents than would otherwise occur. By that line of argument, valued medical services provided by residents to Medicare beneficiaries should be paid for by Medicare, but training-related costs should not.

The subsidization of the supply of physicians through GME payments by the federal government seems to be poorly coordinated with emerging trends in the marketplace. Many experts believe that the growth of managed care in both the private and government-provided insurance markets will lead to (or perhaps has already led to) a situation in which the demand for physicians, especially non-primary care physicians, falls relative to the supply. Yet the presence of the subsidies encourages larger increases in the number of physicians than would otherwise occur.

The arguments in favor of continuing GME payments revolve around the consequences of reducing or eliminating the subsidies. GME subsidies constitute a significant portion of the revenues of teaching hospitals: for private major teaching hospitals, GME payments are more than 7 percent of total hospital revenues, and for smaller teaching hospitals, GME subsidies are about 2.4 percent of revenues. Significant reductions in those payments could bring about a drop in the activities and services that teaching hospitals provide. Both the number of residents and the years of training of the typical resident might fall compared with what they would otherwise have been. Services might be curtailed in other areas besides the training of residents. Research, investment in new technologies, access for Medicare enrollees, medical school resources, and care for indigent people might all be reduced as a consequence of cuts in GME payments.

Because resident physicians become the trained doctors of the future, GME policy plays a role in determining the future characteristics of the medical workforce and the health care industry in the United States. Whether and, if so, how GME policy should be used to manipulate the shape and size of the future stock of physicians is another contentious issue.

Policy Options

Options for changing the financing of GME reflect a variety of policy goals including changing the level of federal expenditures, altering the future number of primary care (as opposed to more specialized) doctors, encouraging efficient amounts of training for new physicians, providing sufficient access to care for Medicare beneficiaries, encouraging medical research and development, and providing for the care of indigent people. Possible options range from modifying payments within the current structure of Medicare GME subsidies to more radical changes.

- *Reduce the IME subsidy.* This option would more closely align payments to teaching hospitals for inpatient services provided to Medicare beneficiaries with the costs that are correlated with training residents. However, residency training would probably be curtailed, and other services of teaching hospitals might decline.
- *Alter GME subsidies further in the direction of paying teaching hospitals relatively more for primary care residents.* This change would encourage more primary care training. Whether that shift turned out to be an appropriate direction would depend on the validity of forecasts of a greater demand or need for primary care services.
- *Form an all-payer GME fund.* This approach could maintain revenues for teaching hospitals while decreasing the amount of money coming from Medicare. However, it amounts to substituting one form of government-imposed financing for another.
- *Replace the current structure of the subsidies with a voucher system.* This option could lead to greater flexibility in the site of residency training, which opponents of the present system have argued is biased toward hospital-based training. The impact of such a sweeping change is highly uncertain.
- *Set quotas on the number and types of residency positions, and use the potential loss of GME funds as an enforcement mechanism.* This approach could increase the speed with which the medical workforce adjusts to reach the primary care proportions advocated by some workforce experts. Quotas could, however, lead to a mismatch between the actual workforce and future demands for physicians' services.
- *Replace DME and IME payments with subsidies targeted more specifically toward the public goods that the government wishes to sponsor.* This change would reduce the incentive to increase the future supply of physicians but lessen the possibility that the weight of the declines in GME payments would fall on indigent care, research, or access to care for Medicare beneficiaries.

Chapter One

Introduction

Federal payments related to training resident physicians are expected to exceed $6 billion for fiscal year 1995.(1) The bulk of those graduate medical education (GME) payments flow directly to teaching hospitals through the Medicare program.(2) (Teaching hospitals are hospitals that have residency training programs.)

Many occupations involve a period of general training--much of it on the job--in which the young adult pays for the various costs of that training in the form of low rates of pay or outright tuition payments. What makes medical training unusual is the substantial amount of federal funds that subsidize the general post-medical school training of physicians. The vast majority of graduates of U.S. medical schools receive residency training subsidized by federal dollars. Furthermore, that subsidization extends to graduates of foreign medical schools--many of whom are foreign citizens--who fill a significant proportion of residency positions that are supported by federal subsidies.(3)

Questions about the logic behind federal subsidization of residency training and the sheer size of the subsidies have led observers to suggest that the government review its current GME policy. Such a review appears to be especially relevant in an era of growing concern over both the fraction of the economy's resources that is devoted to medical care and the fiscal strains on the federal budget generally and the Medicare program in particular.

Changes in federal policy toward residency training would affect the size and characteristics of the future physician workforce. Thus, GME policy will necessarily affect the future mix, cost, availability, and quality of medical care. A number of private-sector institutions and individuals including doctors, hospitals, insurers, managed care organizations, employers, and consumers will also be affected by GME policy decisions. This study examines trends in the size of the physician workforce and the distribution of specialties within it and describes the economic forces, including federal GME policies, that help to determine the workforce's shape. The study also presents options for addressing several health care issues through changes in GME policy.

Background

Some historical background helps explain why federal subsidization of medical residency training was once so readily accepted but now is increasingly questioned. In the early 1960s, the medical sector of the U.S. economy bore little resemblance to the medical sector of today. No large, federally sponsored medical insurance programs covered elderly or indigent people, and the health care economy as a whole was much smaller.

The mid-1960s was a time of sweeping government intervention in the health care industry. The Congress enacted legislation creating Medicare and Medicaid, and those programs brought about a large increase in the demand (or willingness to pay) for medical services. Not only did the government take on a substantial role in subsidizing the demand for medical care, but it also provided support on the supply side. That support included payments to medical schools for increasing the size of their classes and an acceptance by the Medicare program that it should pay some share of the costs for residency training. (At that time, many people held the view that an increase in the number of physicians was desirable.)

As the end of the century approaches, the past 35 years can be characterized as a period of remarkable successes for which the nation has incurred high costs. Elderly people in the United States are covered by Medicare. Particular groups of low-income people are covered by Medicaid. Today, the number of fully trained patient care physicians for every 1,000 people is about 1.8, compared with around 1.1 in the mid-1960s.(4) Substantial advances in medical technology have occurred. But costs have also been noteworthy. National health expenditures are now about 14 percent of the nation's gross domestic product--more than double their share of 30 years ago, which stood at 5.9 percent. The fraction of the federal budget that goes toward health care is now almost 20 percent.

A number of questions claim the attention of today's health policymakers. One concern is whether too many of the economy's resources are being used to provide medical care. Several issues relate to the supply of physicians' services. How many physicians should be in training? What kinds of physicians, in terms of specialty, should be trained? How can the distribution of physicians among urban, suburban, and rural areas be altered?

Even critics who have different philosophical and political perspectives may conclude that the number of physicians being

trained is excessive and that overtraining may be a problem. Arrangements for financing medical residency training contribute to those views. Critics with a free-market perspective argue that if general training is worthwhile, the benefits, which will flow to the doctor in the form of higher future income, will outweigh the costs of training, which are paid by the young doctor in the form of low income during residency and difficult working conditions.(5) Such critics maintain that GME subsidization distorts market signals by making training appear less costly than in fact it is. According to that line of argument, it follows that too many doctors receive too much training.

Critics with a planning perspective support targets for the medical workforce based on assumptions about the number of different kinds of specialists that are required to fill the medical needs of the population. Such critics argue that there are too many doctors and that they are too highly specialized. Although these critics would reject a free-market approach in the medical care sector, they too would tend to question the merits of current GME policy. GME subsidization encourages a greater supply of physicians than would otherwise result. Furthermore, because the Medicare subsidies go exclusively to teaching hospitals, decisions about the site of training may be distorted by that financial incentive. Critics of current policy contend that such distortions have kept training away from ambulatory, primary care settings and reinforced its presence in more specialized and more technologically costly settings. As a result, current GME policy is not consistent with the goals of a smaller, less specialized physician workforce.

The Physician Workforce

The characteristics of today's workforce of fully trained physicians represent the cumulative decisions of many previous cohorts of medical residents. The future composition of the workforce depends on the makeup of the pool of physicians who are already trained and on the decisions made by current medical residents and future cohorts of residents about the specialties they will pursue. The workforce is also shaped by the characteristics of immigrating physicians.

The Mix of Physicians in Primary Care Versus Non-Primary Care Specialties

The relative balance of physicians in primary care specialties versus non-primary care fields continues to be an area of concern among health policymakers. Although no clear-cut definition of "primary care" exists, characteristics that tend to be associated with the concept of a primary care physician include being a point of first contact for a patient with the medical care system and providing routine examinations and vaccinations. Another distinction that people sometimes make is that primary care physicians are less oriented toward procedures (such as surgical interventions) than are non-primary care physicians. Yet another characteristic that is sometimes associated with primary care specialties is the breadth of patient problems that such physicians handle. Some people might argue that a primary care physician is one who engages in a broad range of activities, whereas a non-primary care doctor is one who treats only a narrow range of illnesses.

The above set of plausible characteristics for defining primary care is somewhat unsatisfactory because certain physicians will fit some of the attributes but not others. Nonetheless, a widely accepted view is that general practice, family practice, general internal medicine, and general pediatrics are primary care specialties; obstetrics and gynecology might also belong in the primary care category.(6)

Over the past three decades, the general trend has been a decline in the fraction of fully trained physicians who are in primary care specialties. In 1965, 51 percent of doctors involved in patient care were in the primary care fields of general practice, internal medicine, and pediatrics. Obstetrics and gynecology accounted for a further 6.3 percent of trained doctors. Surgical specialties (including general surgery) accounted for 21 percent of the workforce; other non-primary care specialties and subspecialties of internal medicine and pediatrics accounted for 21 percent as well.(7)

Today, most fully trained physicians do not consider a primary care specialty to be their principal activity. The primary care fields of general practice, family practice, general internal medicine, and general pediatrics account for 34 percent of all fully trained physicians who are involved in patient care. Obstetrics and gynecology accounts for a further 6.5 percent. The remainder of the trained physician workforce is divided as follows: surgical specialties including general surgery, 19 percent; other non- primary care specialties including anesthesiology and radiology among others, 29 percent; and the subspecialties of internal medicine and pediatrics, 11 percent (see Figure 1).(8)

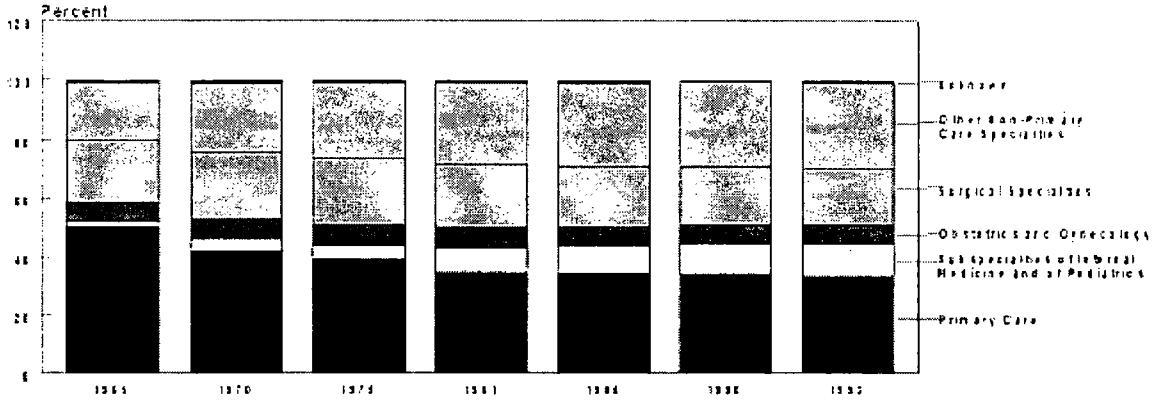
The fraction of the stock of fully trained physicians who actually spend some of their practice doing primary care exceeds the 34 percent who categorize themselves as primary care physicians. Physicians are self-categorized based on the specialty in which they spend the greatest amount of time in their practice; however, some physicians also report practice hours spent in specialties other than their principal one. In 1992, 47 percent of physicians reported some practice time in a primary care specialty.(9)

Physicians in some specialties could make a transition into primary care more readily than physicians in others. Doctors who practice the subspecialties of internal medicine or of pediatrics have done residency training in general internal medicine or pediatrics and then received further education in a subspecialty area. In principle, those physicians could move into primary care practice because they have already received formal training in a primary care specialty. But whether subspecialists reconfigure their practices toward primary care depends on the future marketplace for health care services and whether the

relative returns from primary care practice rise sufficiently to encourage such changes. Many of these subspecialists already spend some of their time practicing primary care. Over 75 percent of subspecialists in internal medicine and about 65 percent of subspecialists in pediatrics report spending some hours of their practice in a primary care specialty.

The degree of concern arising over the relative number of primary care physicians may depend on how rigidly one defines a primary care practitioner. As Figure 1 indicates, the fraction of physicians with a primary care specialty as their principal specialty has declined since 1965. If, however, one also includes subspecialists of internal medicine and of pediatrics on the grounds that they are *potential* primary care practitioners, the picture looks somewhat different. The combined fraction of actual and potential primary care practitioners fell from 1965 to 1975 but has since remained approximately constant. Moreover, the fraction of doctors who spend some time doing primary care significantly exceeds the fraction who call primary care their principal practice activity.

Figure 1.
Distribution of Fully Trained Physicians Engaged in Patient Care, by Specialty, Selected Years, 1965 Through 1993



SOURCE: Congressional Budget Office calculations based on data from American Medical Association (AMA), *Distribution of Physicians in the U.S.* (Chicago: AMA, 1967 and 1971), *Physician Distribution and Medical Licensure in the U.S., 1975* (Chicago: AMA, 1976), and *Physician Characteristics and Distribution in the U.S.* (Chicago: AMA, 1982, 1986, 1992, and 1994).

NOTES: Data are for fully trained physicians who are actively engaged in patient care; that is, the data exclude residents and those fully trained physicians who are employed in professional activities other than patient care (for example, administration or medical research). The specialties of physicians are self-reported and refer to the principal specialty practiced by the doctor. Osteopaths are not included.

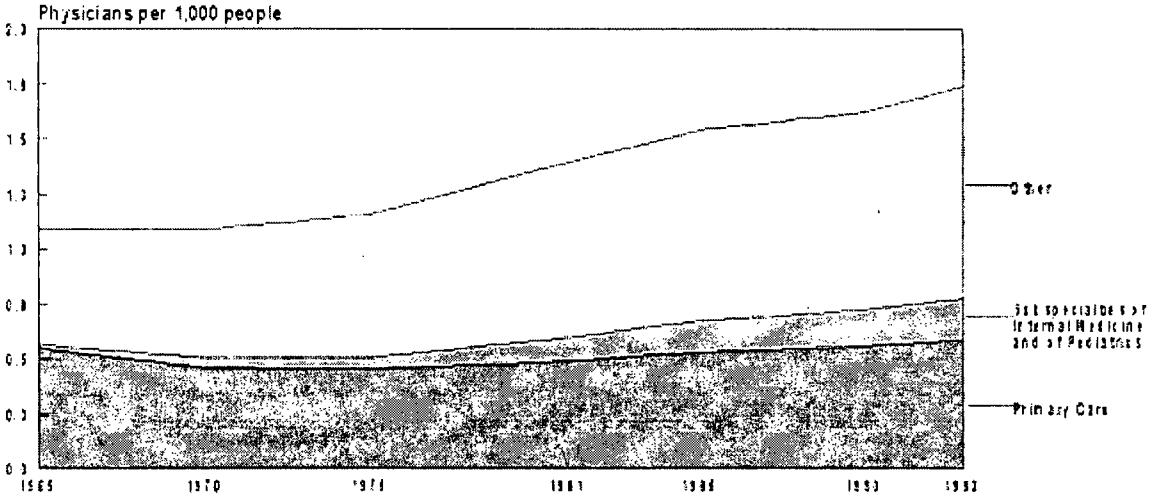
Data for 1990 and 1993 are as of January 1. Data for all other years are as of December 31. See Appendix Table A-1.

Most of the growth in the number of fully trained physicians who are involved in patient care has been concentrated in the non-primary care specialties (see Figure 2). The number of primary care physicians--strictly confined to the specialties of general or family practice, general internal medicine, and general pediatrics--per 1,000 people grew only slightly between 1965 and 1993. The larger set of doctors that includes subspecialists who have trained in internal medicine or pediatrics grew somewhat more, from just under 0.6 per 1,000 people in 1965 to 0.8 in 1993.

The Geographic Distribution of Physicians

Although the number of doctors per 1,000 people has risen substantially over time, a number of geographic locales--in rural and some urban areas--are still characterized as having an inadequate supply of physicians. An extreme example of an underserved area is a county with no doctor. Since 1976, the fraction of people living in such counties has barely changed. In 1976, 4.3 percent of U.S. counties did not have an active physician providing patient care; the population in those counties was 0.23 percent of the total U.S. population. In 1993, 4.8 percent of U.S. counties did not have an active physician, and the population in those counties was 0.22 percent of the 1993 U.S. population.

Figure 2.
Fully Trained Physicians Engaged in Patient Care per 1,000 People, by Specialty, Selected Years, 1965 Through 1993



SOURCE: Congressional Budget Office calculations based on data from American Medical Association (AMA), *Distribution of Physicians in the U.S.* (Chicago: AMA, 1967 and 1971), *Physician Distribution and Medical Licensure in the U.S., 1975* (Chicago: AMA, 1976), and *Physician Characteristics and Distribution in the U.S.* (Chicago: AMA, 1982, 1986, 1992, and 1994).

NOTES: Data are for fully trained physicians who are actively engaged in patient care; that is, the data exclude residents and those fully trained physicians who are employed in professional activities other than patient care (for example, administration or medical research). The specialties of physicians are self-reported and refer to the principal specialty practiced by the doctor. Osteopaths are not included.

The "Other" category comprises fully trained physicians practicing in the specialties of obstetrics and gynecology, surgery, and other non-primary care fields.

Data for 1990 and 1993 are as of January 1. Data for all other years are as of December 31. Data are plotted at the intervals shown. See Appendix Table A-2.

The Path of New Physicians into the Trained Physician Workforce

After graduating from medical school, a new physician typically enters a residency training program centered at one of the approximately 1,200 U.S. teaching hospitals. The "major" teaching hospitals--those with resident-to-bed ratios of at least 0.25--are less than one-fourth of the teaching hospitals but train about two-thirds of the residents. Besides the approximately 15,500 annual graduates of U.S. medical schools, the cohort of first-year hospital residents includes over 6,500 doctors who attended a non-U.S. medical school. Some of the latter doctors are U.S. citizens who received their medical education in another country, but about 80 percent of the foreign medical graduates (FMGs) who train as medical residents in the United States are foreign citizens. The fraction of medical residents who are FMGs has climbed from 14 percent in the 1988-1989 training year to 23 percent in 1993-1994. Approximately 70 percent to 75 percent of those FMGs are expected to eventually enter the physician workforce in the United States.(10)

Residency training ranges from three to about seven years depending on the specialty or subspecialty. The primary care fields have shorter training periods; the surgical subspecialties tend to have longer ones (see Figure 3).

Because of the sequential nature of decisions to enter some fields, a census of first-year residents is not a clear indicator of that cohort's ultimate distribution among the various categories of medical practice. For example, based on the behavior of the cohort entering training in 1987, only 36 percent of the residents who spend their first year of residency training in general internal medicine end their training in that specialty. The other 64 percent of such residents finish their post-medical school training in a subspecialty of internal medicine, such as cardiology, endocrinology, or gastroenterology, or in another specialty, such as neurology or ophthalmology. Similarly, only 58 percent of residents who start in general pediatrics end their training as general pediatricians. Much of the gap is accounted for by those who decide to enter a subspecialty of pediatrics. In contrast, some fields show a high degree of predictability based on the first-year cohort: for example, 97 percent of those who start in family practice residencies finish their residency training as family practitioners.

Although the fraction of residents training in a primary care specialty or a subspecialty of a primary care specialty appears to have grown since 1965, several qualifications apply to that apparent trend (see Figure 4). Before 1969, official certification in family practice did not exist. Today, three-year residency programs in family practice are well established. Thus, the apparent growth in family or general practice residents between 1965 and 1980 may reflect the introduction of the three-year family practice option rather than an increased propensity for young doctors to enter primary care. Another point is that because of data limitations, internal medicine and its subspecialties are lumped together. As a result, it is impossible to isolate

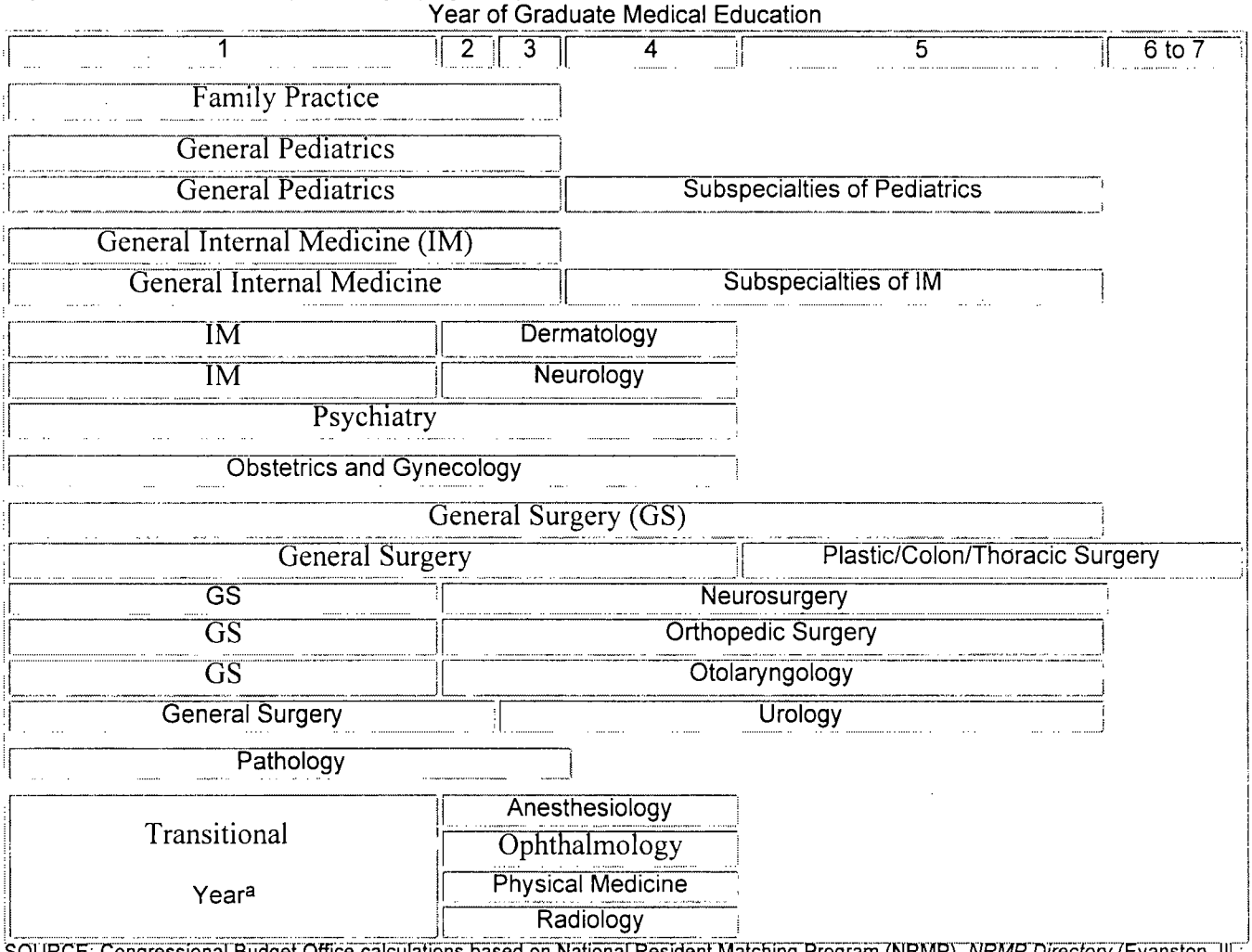
the fraction of residents who are training in a strictly defined primary care specialty.

Several noteworthy patterns in the shares of residents in different fields have emerged over the past 30 years. Between 1981 and 1993, the fraction of residents in family or general practice has declined, but it was almost constant between 1990 and 1993. The proportion of residents in a much more inclusive group of potential primary care physicians (including internal medicine and pediatrics and their subspecialties) grew from 41 percent in 1981 to 48 percent in 1993.

Recent Cohorts of Trainees

The cohort of doctors who began their residency training in 1992 is projected to roughly match the current population of fully trained doctors in terms of their distribution among specialties. If the transition patterns of the 1987 cohort of first-year residents are repeated in the 1992 cohort (almost all of whose members will have completed their graduate medical education by 1999), 33 percent will enter the workforce of trained physicians in the primary care fields of either family practice, general internal medicine, or general pediatrics. (In comparison, in 1993, 34 percent of the workforce of fully trained patient care physicians had a principal primary care specialty.) Six percent of the 1992 cohort would be expected to enter obstetrics and gynecology, and the remaining 61 percent would enter non-primary care fields.(11)

Figure 3.
Typical Patterns of Residency Training, by Specialty

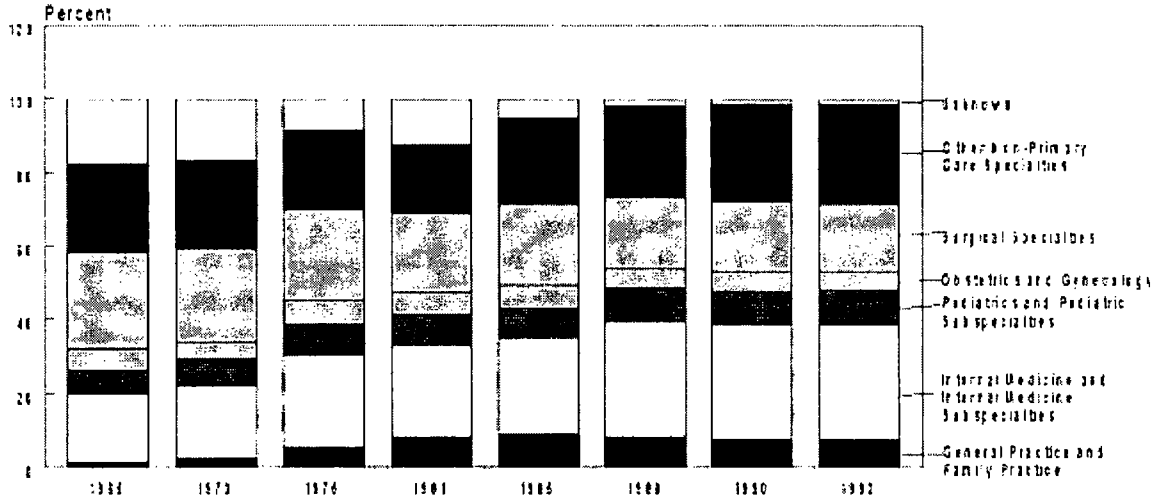


SOURCE: Congressional Budget Office calculations based on National Resident Matching Program (NRMP), *NRMP Directory* (Evanston, Ill.: NRMP, various years); American Board of Medical Specialties (ABMS), *ABMS Annual Report and Reference Handbook--1994* (Evanston, Ill.: ABMS, 1994); and American Medical Association (AMA), *Directory of Graduate Medical Education Programs* (Chicago: AMA, various years).

NOTE: These paths are only representative of training patterns for the different specialties, and not all fields are shown. In addition, many of the specialties above have subspecialties that entail additional years of training but are not included in this illustrative figure.

a. The transitional year is one during which the resident develops basic clinical skills.

Figure 4.
Distribution of Residents by Specialty, Selected Years, 1965 Through 1993



SOURCE: Congressional Budget Office calculations based on data for 1965 through 1985 from American Medical Association (AMA), *Distribution of Physicians in the U.S.* (Chicago: AMA, 1967 and 1971), *Physician Distribution and Medical Licensure in the U.S., 1975* (Chicago: AMA, 1976), and *Physician Characteristics and Distribution in the U.S.* (Chicago: AMA, 1982 and 1986); and on data for 1988 through 1993 from the American Association of Medical Colleges.

NOTES: Comparisons between the earlier and later years shown above must be made cautiously because specialties are unknown for a large proportion of residents in the earlier years and the three-year family practice residency was a new option in the 1970s. In addition, different data sources were used for the earlier and later years.

The "Unknown" category includes residents in a transitional year (a year of basic clinical training).

Osteopathic doctors in M.D. residency programs are included in the data. Data appear in Appendix Table A-3.

The projected percentages given above may be faulty to the extent that economic incentives alter the likelihood that a resident who is training in a particular field during a particular residency year will either continue in that field or move to training in another field for the next year. Such patterns are not fixed, and they are likely to respond to changes in the economic incentives of teaching hospitals or residents. Those alterations could result from modifications in government policy or changes in the private marketplace for physicians' services.

The Federal Government's Role in Shaping the Physician Workforce

Federal policies may affect the number of physicians and their distribution among specialties by altering the economic incentives faced by both the people and the institutions that are or may be involved in medical training. The people include medical students (those trained in both U.S. and foreign medical schools), medical residents, and potential medical students. The institutions include medical schools and teaching hospitals as well as health maintenance organizations (which have the potential to become more involved in training activities). In the context of graduate medical education for physicians, policies aimed at residency training and policies that affect the economic rewards from practice in the different specialties can influence the size and composition of the physician workforce. Because the magnitude of the effects of various policies on the physician workforce is uncertain, this study confines itself to assessing the direction of those effects.

Medicare Payments to Teaching Hospitals

The most apparent federal funding of GME comes through the Medicare program. Under current law, the federal government, through Medicare, provides about $6 billion per year in subsidies related to the graduate medical education of physicians. The Medicare subsidy program has two parts: the direct graduate medical education (DME) subsidy and the indirect medical education (IME) teaching adjustment (see Box 1). The DME payment is based on the number of residents

training at the teaching hospital, the typical costs that hospital incurred for training a resident physician in a period roughly corresponding to fiscal year 1984 (adjusted for inflation), and the Medicare patient load of the hospital. DME payments, which for 1994 amounted to almost $2 billion, are intended to cover Medicare's share of the direct costs--such as residents' stipends (or salaries) and fringe benefits, salaries for teaching personnel, and overhead--of residency training programs.(12)

The IME teaching adjustment is a subsidy to teaching hospitals in the form of a percentage add-on to the reimbursement for each Medicare patient admitted to the hospital. The percentage adjustment increases with the resident-to-bed ratio. The adjustment is approximately 7.7 percent for going from a resident-to-bed ratio of zero to 0.1; however, the marginal adjustment falls as that ratio continues to rise (see Box 1 for the exact formula). Thus, a teaching hospital that has a resident-to-bed ratio of 0.1 receives an additional payment equal to 7.4 percent of the Medicare diagnosis-related group (DRG) payments to that hospital for inpatient hospital services provided to Medicare beneficiaries.(13) A hospital with a resident-to-bed ratio of 0.2 receives an additional payment equal to 14.5 percent of Medicare DRG payments to the hospital. These "indirect" medical education payments amount to about $4 billion annually.

Supporters of IME payments view them as an attempt to reimburse teaching hospitals more than nonteaching hospitals because the costs of teaching hospitals are generally greater. Advocates cite a number of reasons, not all of which are related to teaching, to justify the payments. The reasons given for teaching hospitals' higher costs include the larger number of tests ordered by residents and other inefficiencies caused by residents' lack of experience, the greater severity of the cases such hospitals treat, the need to be at the forefront of technology and research, and the provision of more uncompensated care and care for indigent people.

The Size of GME Payments in Total Hospital Revenues

GME payments constitute a significant percentage of the revenues of teaching hospitals. For all teaching hospitals, total GME payments account for almost 4 percent of total revenues (see Table 1 on page 12). (Total hospital revenues include patient revenues from all sources as well as donations, income from investments, and governmental appropriations.)

How significant GME subsidies are in relation to total hospital revenues varies among different categories of teaching hospitals. Private major teaching hospitals obtain more than 7 percent of their revenues from Medicare GME payments. In comparison, public major teaching hospitals get just over 4 percent of their revenues from such payments, and other teaching hospitals receive only about 2.4 percent. Perhaps the difference between major teaching hospitals and other teaching hospitals is not surprising since major teaching hospitals have more residents and therefore receive more in GME payments. Other categories of hospitals for which GME payments constitute at least 4.5 percent of total revenues include disproportionate share teaching hospitals in large urban areas, teaching hospitals with more than 400 beds, and teaching hospitals in the New England and mid-Atlantic regions.

Box 1.
Medicare's Subsidies for Graduate Medical Education

The Medicare program provides teaching hospitals with two kinds of subsidies that are based on the size of their graduate medical education programs. Those payments are called direct graduate medical education (DME) payments and the indirect medical education (IME) adjustment.

Direct Graduate Medical Education Payments

For its DME payment, a teaching hospital receives an amount equal to the product of three factors: its "Medicare patient load," its adjusted number of full-time-equivalent (FTE) residents, and its allowed amount per resident.

The hospital's Medicare patient load is the fraction of its total number of inpatient days that Medicare beneficiaries represent.

- The adjusted number of FTE residents is calculated by considering each resident in an approved training program based at the hospital, calculating the degree to which that resident is in the program full time, and then multiplying by an adjustment weight. The weight equals 1.0 for residents who are in their "initial residency period" (IRP) and who have not been in training for more than five years.1 (Residents in geriatric fellowships may receive a weight of 1.0 for two additional years.) Other residents receive a weight of 0.5. Graduates of foreign medical schools must have passed a competency exam to be counted toward DME payments.
- The allowed per-resident amount differs among hospitals. It is based on the direct graduate medical education costs per resident incurred by the hospital in a period roughly corresponding to fiscal year 1984, increased by 1 percent and updated for changes in the consumer price index for urban consumers (CPI-U). For fiscal years 1994 and 1995, only residency positions in primary care and in obstetrics and gynecology receive the CPI-U update.

Indirect Medical Education Adjustment

The additional amount Medicare pays to a teaching hospital equals the hospital's total Medicare diagnosis-related group (DRG) payments for inpatient services multiplied by a factor that is calculated according to a specific mathematical formula:

$$IME = DRG\ payments \times 1.89 \times [(1 + \{\text{resident FTEs/ beds}\}^{.405}) - 1].$$

Under the formula, the hospital's payments increase with the resident-to-bed ratio (the ratio of the number of FTE residents in approved training programs who work in the hospital to the number of beds). A hospital receives approximately 7.7 percent more in payments for each 0.1 increase in the ratio of residents to beds. The various provisions that reduce the weight of many residents in the calculation of DME payments do not apply to the count of FTEs that is used to calculate the indirect adjustment.

Other Payments

Medicare's payments to hospitals for capital-related costs also include an adjustment that gives larger payments to hospitals that have more residents. Those payments are quite small in comparison with DME and IME payments and are not discussed in this study.

Illustrative Examples

The table at right shows the relevant information for calculating the marginal subsidy per resident for three different teaching hospitals. The marginal subsidies from the DME and IME programs combined appear in columns 7 and 8. Column 7 shows the additional payments for adding another resident who is in the initial residency period but who has not exceeded five years of residency training. Column 8 applies to a resident who either is beyond the initial residency period or has trained for more than five years.

Several interesting points emerge from these actual examples.

- The marginal subsidy drops for residents who are beyond the initial residency period (column 8 versus column 7) because the DME regulations give such residents a weight of 0.5 instead of 1.0. The marginal subsidies fall by less than half because IME payments make no distinction between residents within or beyond the initial residency period and those payments constitute a substantial portion of the marginal subsidies.
- Hospital 1 has a large marginal subsidy because it has a very large DME per-resident amount, an average Medicare patient load (Medicare days divided by total days), and average diagnosis- related group payments for a teaching hospital.
- Hospital 2 has a marginal subsidy near the median despite the fact that it has a small DME per-resident amount. The large Medicare patient load of hospital 2, along with its high level of total DRG payments, which are probably the result of its sizable fraction of Medicare patients and the fact that it is a large hospital, helps boost its marginal subsidy.
  Hospital 3 has a relatively small marginal subsidy, even though it has a large DME per-resident amount. A small Medicare patient load and a low level of DRG payments hold down the marginal subsidy for hospital 3. The low level of DRG payments probably reflects both the small Medicare load and the fact that the hospital is small for a teaching hospital.

1. The initial residency period is the minimum number of years of residency training to be eligible for board certification in a particular specialty.

Examples	Beds (1)	Resident FTEs (2)	Medicare Inpatient Days (3)	Total Inpatient Days (4)	DME Per-Resident Amount (Dollars) (5)	DRG Payments (Thousands of Dollars) (6)	Additional DME/IME Payments for Another Resident in the IRP[a] (Dollars) (7)	Additional DME/IME Payments for Another Resident Beyond the IRP[a] (Dollars) (8)
Hospital 1	310	23	35,098	81,214	106,273	23,761	102,092	79,128
Hospital 2	670	7	78,897	150,202	38,737	53,289	80,877	70,704
Hospital 3	145	26	9,288	32,803	95,912	6,550	58,448	44,870

SOURCE: Congressional Budget Office calculations based on data for 1993 from the Health Care Financing Administration.

NOTES: Payments are figured on an annual basis and in 1993 dollars. Hospital 1 has a marginal subsidy value for residents in the initial residency period at approximately the 75th percentile of the distribution among teaching hospitals. Hospital 2 has a marginal subsidy value for IRP residents near the median. Hospital 3 has a marginal subsidy value for IRP residents at around the 25th percentile.

For residents who have exceeded five years of training (with certain exceptions), the numbers in column 8 rather than column 7 would apply.

a. This column represents the sum of additional DME and IME payments.

Table 1.
GME Payments as a Fraction of Total Revenues of Teaching Hospitals, 1993 (In percent)

Category	DME Payments	IME Payments	DME Plus IME Payments	Percentage of All Teaching Hospitals
All Teaching Hospitals	1.3	2.6	3.9	100
Teaching Status[a]				
Major teaching, public	1.2	3.0	4.2	7
Major teaching, private	2.4	4.8	7.2	15
Other teaching	0.8	1.6	2.4	78
Disproportionate Share[b]				
Large urban	1.6	3.1	4.7	38
Other	0.9	2.2	3.1	26
Non-Disproportionate Share	1.0	2.3	3.3	36
Type of Control				
Voluntary	1.3	2.7	4.0	81
Proprietary	0.8	1.6	2.5	7
Government	1.1	2.5	3.5	12
Number of Beds				
1-100	0.8	1.2	2.0	7
101-200	0.8	1.4	2.2	21
201-400	1.0	2.1	3.1	44
Over 400	1.5	3.2	4.7	29
Urbanization				
Large urban	1.5	3.0	4.5	60
Urban	0.9	1.9	2.8	35
Rural	0.8	1.8	2.6	5
Geographic Region[c]				
New England	1.7	4.0	5.7	7
Mid-Atlantic	2.1	3.3	5.4	22
South Atlantic	1.1	2.4	3.4	13
East North Central	1.2	2.7	4.0	21
East South Central	0.8	1.9	2.7	5
West North Central	1.0	2.1	3.1	9
West South Central	0.6	1.6	2.2	8
Mountain	0.6	1.6	2.2	4
Pacific	1.7	1.9	2.6	11

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration (HCFA) for a sample of almost 1,000 teaching hospitals.

NOTES: Total hospital revenues include patient revenues from all sources as well as donations, income from investments, and governmental appropriations.

GME = graduate medical education; DME = direct graduate medical education; IME = indirect medical education adjustment.

a. A "major" teaching hospital is one with a resident-to-bed ratio of 0.25 or greater.

b. A disproportionate share hospital is one that qualifies for a payment adjustment because it serves a relatively large volume of low-income patients.

c. The regions noted here are as defined by the Bureau of the Census.

Policies That Affect the Demand for Medical Care

In addition to Medicare payments that are linked to residency training, other federal government policies affect the market for medical residents. Medical residents provide patient care in teaching hospitals; thus, government policies that encourage the purchase of hospitalization insurance boost the demand for hospital services and hence the demand for medical residents. Such policies operate both directly (providing hospital insurance through Medicare and Medicaid) and indirectly (subsidizing the purchase of private hospitalization insurance through the favorable tax treatment of employment-based health insurance premiums).(14) In addition, Medicare and Medicaid policies on fee schedules and coverage affect the rewards to various specialties and, in turn, the number of residents who seek to practice in those specialties.

Loan Policies

The payment provisions of student loans may also affect the specialty a resident chooses. The longer a resident who has obtained a student loan (for either undergraduate or medical school education) is permitted to defer repayment because of being in training, the greater is the incentive to continue the residency period and move into a non-primary care field. Evidence indicates that residents with large debts who were permitted to defer repayment throughout their training were more likely to enter fields with longer residency periods than residents who had smaller debts. In contrast, some residents with large debts who had to begin repaying loans during their residency tended to choose fields with shorter residency training. That evidence suggests that repayment provisions may influence the proportion of residents who choose training in the primary care specialties.(15)

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1. In this study, the general term "resident" also includes "interns" and "fellows." In the past, "intern" was used to describe individuals who were in their first year of training after medical school. The use of the term "fellows" varies among specialties. In some fields trainees in subspecialty programs are called "fellows"; in other fields they are called "residents."
2. Besides the Medicare subsidies for GME, the Department of Veterans Affairs and the Department of Defense fund residency programs in federal hospitals. Outlays for those programs were less than $1 billion annually in the early 1990s. At an even lower level are Public Health Service grants that assist some primary care training programs.
3. Some publications have replaced the term "foreign medical graduate" with the term "international medical graduate."
4. In this study, "fully trained physician" refers to a physician who is no longer a medical resident. A "patient care" physician is one whose principal activity involves the diagnosis or treatment of patients as opposed to activities like administration or research. The physician counts reported here are based on American Medical Association counts of doctors of medicine (M.D.s). Schools of osteopathy, whose graduates receive a doctor of osteopathy degree, produce about 5 percent of a more broadly defined physician workforce.
5. The term "general training" means that the resulting knowledge and skills will continue to be useful to trainees after they have left the residency program and the particular institution at which they were residents.
6. Other observers argue that nurse-practitioners and nurse-midwives play an important role in providing primary care services and could play a greater role in the future. See Linda H. Aiken and Marla E. Salmon, "Health Care Workforce Priorities: What Nursing Should Do Now," *Inquiry*, vol. 31, no. 3 (Fall 1994), pp. 318-329.
7. The specialty counts of fully trained physicians are self-reported and refer to the principal specialty practiced by the doctor. The specialty category was unknown for about 1 percent of the doctors.
8. The specialty category is unknown for the remaining 1 percent of trained physicians.
9. Phillip R. Kletke, "Primary Care Versus Nonprimary Care Physicians: A False Dichotomy?" *Physician Marketplace Report* (Chicago: American Medical Association, Center for Health Policy Research), April 1994.
10. See Fitzhugh Mullan, Robert M. Politzer, and C. Howard Davis, "Medical Migration and the Physician Workforce: International Medical Graduates and American Medicine," *Journal of the American Medical Association*, vol. 273, no. 19 (May 17, 1995), pp. 1521-1527.
11. These calculations appear in David A. Kindig and Donald Libby, "How Will Graduate Medical Education Reform Affect Specialties and Geographic Areas?" *Journal of the American Medical Association*, vol. 272, no. 1 (July 6, 1994), pp. 37-42.
12. In some contexts, "DME" includes payments to hospitals to support training of nurses and other paramedical personnel. In this study, the term refers only to payments for the training of physicians. The payments for nonphysician training are many times smaller than the DME subsidies for physicians.
13. The DRG payments are the payments that Medicare makes for inpatient hospital services. Medicare pays a predetermined rate for each inpatient stay based on the patient's admitting diagnosis.
14. See Congressional Budget Office, *The Tax Treatment of Employment-Based Health Insurance* (March 1994).
15. See Gloria J. Bazzoli, "Medical Education Indebtedness: Does It Affect Physician Specialty Choice?" *Health Affairs*, vol. 4, no. 2 (Summer 1985), pp. 98-104.

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Chapter Two

Economic Factors That Affect the Characteristics of the Physician Workforce

A variety of economic factors from a number of sources within the health care sector influence the composition of the physician workforce. The demand for residents' services by teaching hospitals has an effect at the level of the training site. Farther downstream one finds the demand for the services of fully trained physicians by consumers. These demands originate with consumers, but they also reflect the type of insurance arrangement that consumers and their employers have, as well as the coverage and reimbursement policies of government-provided insurance.

Residency training is a time of investment for a young physician, who will be able to earn a higher future income as a result of those efforts. The residency period adds to the proficiency of the young physician through hands-on patient care under the supervision of the teaching staff, and it is a requirement for eligibility for board certification in the various specialties.(1) Some analysts have argued that because residency training is a form of general training that can be useful elsewhere, employers such as teaching hospitals do not have a financial incentive to absorb the costs of that training. In contrast, the young doctor does have the incentive to make such an investment. In return for training and a stipend (or salary), residents provide patient care services for the hospital. Any difference between the value of a resident's services to the hospital and the stipend (and fringe benefits) that the resident receives can be thought of as a "tuition" payment for the other costs that the hospital incurs in providing training. Those costs include both direct and indirect costs.(2)

Standard economic analysis suggests that in some sense, residents implicitly pay for the training costs that they impose on the hospital, regardless of the size of graduate medical education subsidies to teaching hospitals. That implicit payment equals the gap between the value of the resident to the hospital, which includes the resident's value in patient care and in GME subsidies, and the stipend (and fringe benefits) paid to the resident. If GME subsidies were increased, teaching hospitals would seek to hire more residents because their value to the hospital would have risen. Because the increased demand for residents would put pressure on the market for such trainees, residents' stipends might increase. Nevertheless, residents would still pay for their training in a certain sense. The training costs (other than the stipends and fringes) imposed on the hospital (including its direct costs, such as salaries for the teaching staff, and overhead costs, plus any increase in operating costs related to the use of a less experienced physician) would be "paid for" by the difference between the resident's value to the hospital (including the value of the subsidy) and the stipend (and fringes).(3) In addition, if GME subsidies were increased, more residents would be training than if the subsidies were smaller.

The available evidence suggests that the level of Medicare GME subsidies to teaching hospitals is an important factor influencing the overall number of residents. No rigorous, quantitative analysis of the impact of Medicare GME subsidies per se has yet been conducted, but an econometric study of the demand for residents shows that teaching hospitals' behavior is consistent with economic theory.(4) That theory predicts that subsidy formulas like those used to calculate direct graduate medical education payments and indirect medical education teaching adjustments will result in greater demand for residents than would otherwise be the case because the GME payments increase the residents' value to the hospitals. Despite the fact that the number of U.S. medical school graduates has been roughly constant for the past decade, a trend toward an increasing number of residents is apparent. Such a change can be explained in part by a rise in the number of residents in the United States who are graduates of foreign medical schools. Another source of change may be an increase in the length of residency training for the typical medical school graduate.

Effects of Medicare GME Subsidies on the Number of Residents

The available evidence suggests that the incentives to teaching hospitals to hire residents are so strong that the total number of residents continues to grow (see Table 2). Teaching hospitals typically get much more in Medicare GME subsidies for hiring another resident than they pay in stipends and fringe benefits to the resident. Among teaching hospitals in 1993, the annual subsidies for an additional resident varied widely: from about $58,000 at the 25th percentile of the distribution to about $102,000 at the 75th percentile (see Figure 5).(5) Residents' compensation was much lower. In 1993, stipends for third-year residents taken from a sample of teaching hospitals ranged from $30,360 at the 25th percentile to $34,760 at the 75th. Adding fringe benefits--typically 18 percent of the stipend--brings the range of residents' total compensation to between $35,800 and $41,000.(6) And those differences between marginal subsidies per resident and compensation per resident do not even account for the value to the hospital of the patient care services that residents provide.

The presence of residency training programs also imposes costs on hospitals besides the stipends and fringe benefits of the residents. The teaching staff takes time to instruct and oversee residents, for which they may or may not receive a salary. The hospital may also incur other training-related costs in the form of overhead expenses, additional tests ordered by residents, or slower provision of services when residents are involved. The net value of a resident to a hospital includes all such benefits and costs: the value of the services residents provide plus the value of Medicare GME subsidies, minus the various costs of having residents (including the costs of the stipend and fringe benefits).

Continued Growth of Residency Programs

Over the past several years, residency programs have generally grown, and the level of stipends has risen after adjusting for inflation. A number of factors including GME subsidies may have played a role in that growth. The number of first-year residents grew by more than 14 percent between 1988 and 1993. The number of residents in all years of training grew by more than 23 percent over the same five years.

Table 2.
First-Year and Total Residents by FMG Status, 1988, 1990, and 1993

Category	1988	1990	1993
	Number of Residents		
First-Year Residents			
Non-FMG	17,348	17,634	17,118
FMG			
Citizen	1,289	1,427	1,152
Noncitizen	2,204	3,636	5,595
Subtotal	3,493	5,063	6,747
Total	20,841	22,697	23,865
All Residents			
Non-FMG	71,235	75,870	78,578
FMG			
Citizen	4,329	4,990	5,165
Noncitizen	7,227	10,999	18,592
Subtotal	11,556	15,989	23,757
Total	82,791	91,859	102,335
	As a Percentage of All First-Year Residents		
Non-FMGs	83.2	77.7	71.7
FMGs			
Citizen	6.2	6.3	4.8
Noncitizen	10.6	16.0	23.4
Subtotal	16.8	22.3	28.3
Total	100.0	100.0	100.0
	As a Percentage of All Residents		
Non-FMGs	86.0	82.6	76.8
FMGs			
Citizen	5.2	5.4	5.0
Noncitizen	8.7	12.0	18.2
Subtotal	14.0	17.4	23.2
Total	100.0	100.0	100.0

SOURCE: Congressional Budget Office using data from the Graduate Medical Education Tracking Census of the American Association of Medical Colleges.

NOTE: FMGs are graduates of foreign medical schools. Osteopathic doctors in M.D. residency programs are included in the data.

The total number of residents for every 1,000 people in the country generally grew throughout the 1965-1993 period and

especially after 1980 (see Figure 6). The number of general or family practice residents per 1,000 people remained approximately constant after 1985. But the rather inclusive group of potential primary care practitioners continued to grow both in absolute terms and in the number of such physicians per 1,000 people.

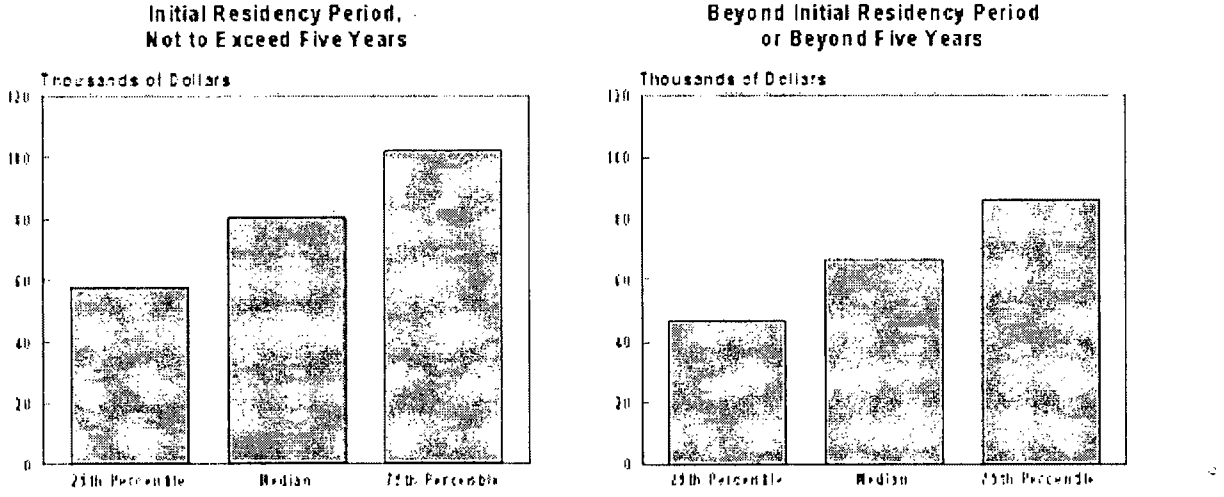
Foreign Medical Graduates as the Marginal Supply Source

Foreign medical graduates constitute an increasing fraction of medical residents. Since the size of the classes graduating from U.S. medical schools has been essentially constant, ranging between 15,100 and 16,400 since 1980, the principal source of additional residents is FMGs. In 1993, FMGs made up about 28 percent of first-year residents compared with about 17 percent in 1988.

The Linkage Between the Markets for Residents and for Fully Trained Physicians

Besides the fact that resident physicians become the trained physicians of the future, another important link exists between the market for hospital residents and the market for the services of fully trained doctors. Namely, the incomes of trained physicians provide incentives to young doctors that affect the number of new physicians who choose to enter the respective specialties. For example, an increase in demand for the services of primary care physicians will increase the income of such physicians and also increase the number of young doctors who choose primary care residencies. Likewise, the total supply of new physicians (regardless of specialty) depends on the return from the investment in medical education relative to other potential careers. Certainly, nonfinancial factors, including differences in individual preferences and abilities, affect the number of people who choose to become doctors and who choose various specialties. But as long as some individuals place some weight on financial considerations, the number of entrants into a particular field will increase if the expected income in that field rises.

Figure 5.
Distribution Among Teaching Hospitals of Marginal Subsidies per Resident from Medicare, 1993

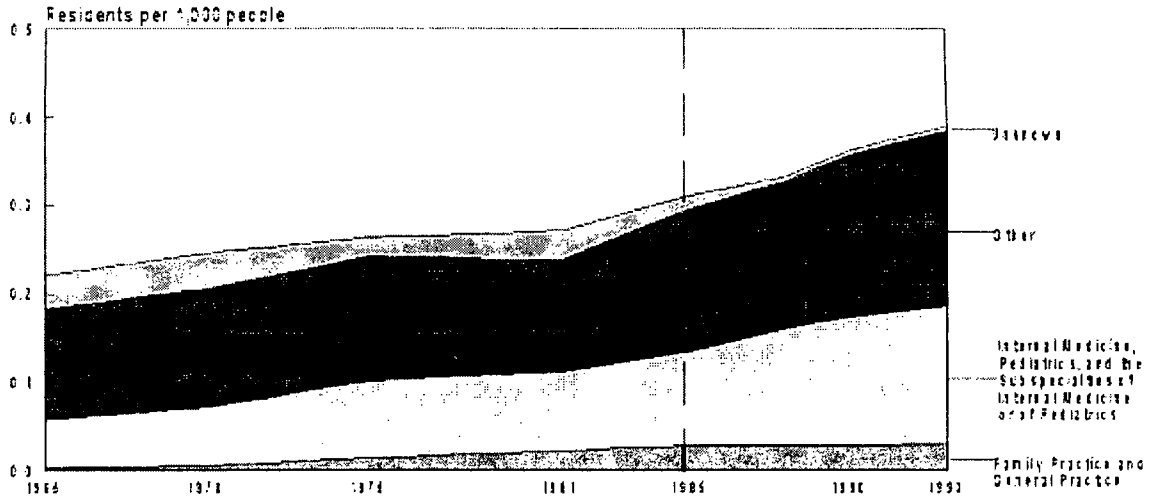


SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration.

NOTES: Marginal subsidy refers to the additional annual direct and indirect graduate medical education payments by Medicare that are made to a teaching hospital for adding another resident.

The initial residency period is the minimum number of years required for eligibility for board certification in a particular specialty.

Figure 6.
Residents Engaged in Patient Care per 1,000 People, by Specialty, Selected Years, 1965 Through 1993



SOURCE: Congressional Budget Office calculations based on data for 1965 through 1985 from American Medical Association (AMA), *Distribution of Physicians in the U.S.* (Chicago: AMA, 1967 and 1971), *Physician Distribution and Medical Licensure in the U.S., 1975* (Chicago: AMA, 1976), and *Physician Characteristics and Distribution in the U.S.* (Chicago: AMA, 1982 and 1986); and on data for 1988 through 1993 from the American Association of Medical Colleges (AAMC). The dotted line in the figure indicates the shift from the AMA to the AAMC data.

NOTES: Comparisons between the earlier and later years shown above must be made cautiously because specialties are unknown for a large proportion of residents in the earlier years and the three-year family practice residency was a new option in the 1970s.

The "Other" category comprises residents in the specialties of obstetrics and gynecology, surgery, and other non-primary care fields. The "Unknown" category includes residents in a transitional year (a year of basic clinical training).

Osteopathic doctors in M.D. residency programs may be included in the data.

Data are plotted at the intervals shown. See Appendix Table A-4.

This linkage between the residency market and the market for the services of trained physicians implies the existence of multiple policy options for reaching the same workforce goals. It also increases the possibility of following contrary policies in the two markets. For example, a policy that reduced GME subsidization of residency positions in non-primary care specialties would by itself encourage an increase in the proportion of primary care residents and ultimately an increase in the proportion of trained primary care practitioners. However, if the Medicare fee schedule was adjusted to increase the relative compensation for surgical services, that policy by itself would encourage relatively greater entry into non-primary care fields. The overall effect of the two policies on the future physician workforce would depend on the relative strength of the counterincentives.

Because the private sector accounts for almost two-thirds of payments to physicians, changes in the patterns of demand in that sector may outweigh policy adjustments by the federal government. Evidence suggests that the increasing prevalence of managed care insurance plans, especially the tightly managed forms of health maintenance organizations (HMOs), may be increasing the relative demand for primary care versus non-primary care physicians.

The Market for Resident Physicians

In this market, teaching hospitals obtain the labor services of resident physicians, who take on greater responsibility for patient care over the course of their residency training. In return, resident physicians receive training from the teaching staff of the hospital and a stipend (or salary). The stipends of resident physicians are substantially lower than the typical income of a fully trained physician. In 1993, the average stipend of family practice residents, who typically undergo three years of residency training, was about $31,000; the average net income after practice expenses for fully trained general or family practitioners was $116,800. Likewise, investment in surgical training opens the way for much higher future earnings. In 1993, the average stipend of general surgery residents, who typically train for five years, was about $33,000, whereas the average income, net of practice expenses, for fully trained general surgeons was $232,700.(7)

Demand Factors. The demand for hospital residents in general and for hospital residents in different specialties is shaped by the insurance and demographic characteristics of the patient population, epidemiological factors, the equipment and technologies available at hospitals, the reimbursement policies of private and government payers, the goals of hospitals

(which may include such objectives as providing care to indigent people or being at the forefront of new medical innovations), and the subsidies to hospitals for GME. Some of those influences represent private market forces, and others are governmental in nature.

The aging of the population is a demographic factor that has increased the demand for hospital services and thus the demand for hospital residents. The effect of the aging population on demand has been further augmented by the presence of the Medicare program, which provides hospital insurance to almost all of the nation's elderly people. The demand for hospital residents has probably been amplified still more by the formulas used to calculate federal payments to hospitals for residency training (see Box 1 on page 10). Those formulas yield marginal subsidies per resident that exceed $100,000 for a number of hospitals.

Supply Factors. The distribution of the supply of resident physicians among specialties responds to the incentives to enter the various fields. Both the salary obtained while a resident and the expected stream of income once one becomes a fully trained physician have an effect on the number of residents who enter training in a particular specialty.(8) Other characteristics--the expected hours of work, the number of years in training, and the availability and payment terms of loans--also have some impact. Estimates suggest that a 1 percent increase in the income of fully trained doctors in a particular specialty (after adjusting for hours worked) relative to average earnings in all specialties will increase the fraction of residents training for that specialty by between 0.3 percent and 0.6 percent.(9)

The Market for the Services of Trained Physicians

The forces that determine the demand for and supply of the services of fully trained physicians determine the incomes of trained physicians. In turn, those incomes provide a signal to young physicians about the rewards that they can expect in various fields. Thus, the demand and supply forces in the market for trained physicians' services affect the distribution of new residents among the various specialties or among aggregate groups of specialties such as primary care versus non-primary care.

Grouping specialties as either primary care or non-primary care is convenient, but the demand for particular specialties within each subset may move in different ways. For example, technical innovations and increases in enrollment in managed care plans may reduce the demand for inpatient care. As a result, physicians in specialties like anesthesiology may experience a reduction in the demand for their services and hence a reduction in their income, whereas specialties that have adopted new outpatient surgical techniques, like orthopedic surgery, may see increased demand for their services. Both of those specialties are within the non-primary care subset, yet the demands for their services may move in opposite directions.

Demand Factors. The demand for the services of fully trained physicians is shaped by the amount and type of insurance coverage of the population and its demographic characteristics, epidemiological factors, available technology, and the reimbursement and coverage parameters of both private and government insurers. An example of a demographic influence on the demand for certain types of physicians' services would be a decrease in the population of women of child-bearing age. That decrease would lessen the demand for the services of obstetricians and ultimately reduce the demand for primary care practitioners who dealt with children, such as pediatricians. Over time, one would see a relative decline in the number of such practitioners as fewer residents chose such specialties and older practitioners retired.

An example of a governmental influence on the demand for certain types of physicians' services would be an expansion of Medicaid coverage for pregnant women and children. Unless reimbursement levels were set so low that no providers were willing to serve the newly covered beneficiaries, such an expansion of coverage would increase the demand for the services of obstetrician/gynecologists and of pediatricians. Although women and children who became insured as a result of the Medicaid expansion would obtain more of those kinds of services than they would otherwise, their competing demands for services would make access to such practitioners more difficult for other consumers. One would also see a strengthening of fees and income for those practitioners. Over time, those impacts would dwindle as relatively more residents received training in and ultimately entered the relevant specialties.

Implications of the Growth of Managed Care. The market for private health insurance is experiencing a rapid change from traditional fee-for-service or indemnity insurance plans to various forms of managed care organizations. That shift toward managed care represents a demand-side influence that may affect the relative income of physicians in different specialties and, in turn, the distribution by specialty of future cohorts of trained physicians.

In 1992, approximately 20 percent of privately insured people were in HMOs, which are among the most tightly controlled of the managed care arrangements. Managed care represents a smaller fraction of the Medicare sector than of the sector for private health insurance; however, managed care is becoming somewhat more popular among Medicare beneficiaries. Medicare's risk-based HMO enrollment has grown from less than 4 percent of beneficiaries in 1990 to about 7 percent.(10)

Managed care organizations are generally viewed as less costly than traditional fee-for-service arrangements because they exercise greater control over the medical expenditures of their enrolled populations through a variety of techniques. Those mechanisms include selective contracting with providers who agree to accept discounted prices for their services, reimbursement methods that give doctors less incentive to provide services than under fee-for-service plans, and other

management techniques that reduce hospital stays and visits to specialists.

Increased use of managed care, as well as technological changes in the direction of less inpatient care, implies a shift in the relative demands for different types of specialists. Managed care organizations use relatively more primary care physicians than are represented in the physician population as a whole. One study of staffing patterns found that the fraction of primary care physicians in samples of several HMOs varied between 41 percent and 48 percent of their total physician workforces. In contrast, the proportion of primary care physicians in the entire nonfederal population of patient care physicians is only about 36 percent.(11) That study suggests that if 40 percent to 65 percent of Americans were receiving care from a managed care network in 2000 and everyone had some type of insurance, there would be a surplus of over 150,000 physicians, almost all of whom would be in non-primary care specialties.

For several reasons, the evidence cited on the implications of managed care for changes in the composition of the workforce might overstate the magnitude of future changes in demand away from non-primary care physicians. First, the conclusions of that study depend on assumptions about the extent of managed care in 2000. Other analysts may argue that the growth of HMOs will not be as great as the study's author has assumed. Second, physicians and consumers who are most comfortable with HMO staffing patterns may be the first to join HMOs. As HMOs and other managed care plans expand to cover more of the market, those plans might have to adapt their staffing patterns to become more attractive to consumers who have not yet joined such plans. In that way, managed care staffing patterns might drift toward the more traditional patterns seen under conventional insurance. Third, if the expansion of managed care increases the demand for primary care physicians, those doctors will become more expensive (particularly in the short run), and managed care organizations may desire relatively fewer primary care doctors than was the case when managed care was less prevalent.

Despite these caveats, if the trend toward managed care continues in either the private or the government-provided insurance sector, one would expect a relative decline in the income of non-primary care physicians, although the particular non-primary care specialties may have quite different experiences.(12) Over time, as the supply of newly trained residents responded to the relatively greater demand for primary care services, the direction of change in relative incomes could eventually reverse itself as the stock of physicians became oriented more toward primary care.

Working in a counterdirection to those trends is one that seeks to prevent managed care organizations from determining the shape of their workforce. Some state legislatures have passed laws that may hinder the ability of managed care organizations to cut costs and also limit the relative shift in demand toward primary care specialties. For example, "any willing provider" (AWP) laws require a managed care organization to accept into its network any physicians who agree to the plan's terms for participation. Mandatory point-of-service (MPOS) options require managed care organizations to permit their enrollees to receive medical care from providers who are outside the organization; some, albeit reduced, payments are made for such services from the insurance pool. These kinds of laws might reduce an organization's control over the delivery of medical care to its enrollees and dilute control over the composition of the pool of physicians within the managed care organization.(13)

Supply Factors. The supply of trained physicians' services depends on the size and composition of the existing pool of trained physicians, the inflows of newly trained physicians and immigrant physicians, and the outflows of retiring physicians. Besides outright retirement, some doctors may move to part-time practice or to non-patient care activities such as administration or research, which would effectively change the available supply of trained physicians' services. In addition to residency stipends and future expected income, other factors that affect the flow of new physicians and the total supply of physicians' services include incomes in alternative professions, the size of the population of young adults who could become physicians, the incomes available from medical practice in other countries, immigration laws, and governmental decisions about the subsidization of undergraduate and graduate medical training and about loan assistance to medical school students.

These supply-side forces along with the demand-side ones discussed above jointly determine the amount of the different types of services that are provided as well as the incomes of the various types of physicians. In turn, as discussed earlier, the residents who choose from among the different specialties respond to those incomes. Hence, a number of different nongovernmental and governmental factors can influence the number and types of hospital residents and ultimately shape the future physician workforce. (See Box 2 for a summary of those factors.)

Speed of Adjustment of the Physician Stock

Changes in the relative mix of primary care and non-primary care physicians in the workforce of trained physicians necessarily take a long time. Each year, the number of newly entering physicians is only about 4 percent of the total stock of active doctors. As a result, it can take a number of years for changes in the makeup of cohorts of newly trained physicians to affect the makeup of the total physician workforce.

For example, assume that the fraction of newly trained physicians who would practice in primary care suddenly increased to 66 percent, nearly double the current proportion. A simple calculation, based on the assumptions that the absolute size of the physician workforce stays constant and the youngest physicians replace the oldest ones, who retire, shows that it would take more than 12 years for the fraction of trained physicians in primary care to rise from one-third to one-half.

Some caveats are necessary in regard to that illustrative calculation, however. The calculation might overstate the length of time the workforce needs to adjust because the example assumes that newly trained residents are the only source of new primary care doctors. But before their subspecialty training, medical or pediatric subspecialists have typically undergone the same training as general internists or pediatricians, respectively. If those subspecialists moved into primary care activities, the fraction of primary care physicians would grow to almost 45 percent. Decisions by some trained subspecialists to practice primary care, decisions by some non- primary care physicians to retrain in primary care, and changes in the relative retirement rates of primary care and non-primary care providers are all factors that could speed up the adjustment of the workforce relative to the calculation discussed above.

Yet despite those qualifications, the calculation holds several general lessons for policymaking in relation to the medical workforce. If one accepts the argument that the current fraction of primary care physicians is far too small, a large increase in the proportion of residents in primary care would be necessary to avoid a long period of adjustment to the new goal. Those observers who favor an activist stance toward the medical workforce might defend such a policy against those who take a skeptical view of policymakers' abilities to forecast future workforce needs. The activists would argue that even if one aimed at an inappropriate target for the final composition of the workforce, a workforce imbalance would not appear quickly because it would take a number of years for any policy to have large effects on the composition of the total workforce. Of course, the other side of this coin is that if one reaches an inappropriate balance or size of the workforce, it takes a number of years to correct the error. Yet another tack might be to question the point of activist workforce planning, given both the potential for error in forecasts of future demand and the long time before such alterations in the cohorts of residents would have an effect.

Box 2.
Factors That May Influence the Number and Types of Residents

A number of factors may affect the demand for and supply of residents. Likewise, numerous factors may affect the market for trained physicians' services. Because the supply of residents responds to the incomes they expect as fully trained doctors, all of the factors that affect the demand for and supply of trained physicians' services will affect the supply of residents.

Some of those factors are governmental in origin; others are not. In many cases, a factor may evade easy classification and could be considered both governmental and nongovernmental in nature.

	Nongovernmental	Governmental
Factors That Affect the Demand for Residents	Size of the population	Medicare's direct graduate medical education payments
	Age distribution of the population	Medicare's indirect teaching adjustments
	Consumers' incomes	Medicare/Medicaid managed care policies
	Consumers' education	Income supplements to subgroups of consumers
	Other demographic characteristics	Provision of insurance including decisions as to who is covered and what services and technologies are covered
	Epidemiological factors	Medicare/Medicaid reimbursement schedules
	Consumers' and employers' decisions about insurance coverage	Tax treatment of employment-based health insurance
	Insurance innovations such as managed care	Laws and regulations that affect the insurance industry in general and managed care in particular
	Research activities and technological advances	Subsidization of biomedical

		research
Factors That Affect the Supply of Residents and the Future Supply of Trained Physicians' Services	Incomes of fully trained physicians	Policies toward FMGs
	Incomes in other professions relative to those in medicine	Programs aimed at encouraging primary care practice
	Educational attainment of young adults	Subsidization of medical school training
	Size of the young adult population	Subsidization of premedical school training
	Number of potential FMGs	
	Working conditions	
Factors That Affect the Demand for Trained Physcians' Services	Size of the population	Medicar/Medicaid reimbursement schedules
	Age distribution of the population	Medicare/Medicaid managed care policies
	Consumers' incomes	Income supplements to subgroups of consumers
	Consumers' education	Provision of insurance including decisions as to who is covered and what services and technologies are covered
	Other demographic characteristics	Tax treatment of employment-based health insurance
	Epidemiological factors	Laws and regulations that affect the insurance industry in general and managed care in particular
	Consumers' and employers decisions about insurance coverage	Subsidization of biomedical research
	Insurance innovations such as managed care	
	Research activities and technological advances	
Factors That Affect the Current Supply of Trained Physcians' Services	Current Stock of trained Physicians	Policies toward FMGs
	Number of potential FMGs	Programs aimed at encouraging primary care practice
	Physicians' incomes in other countries relative to their incomes in the United States	
	Working conditions	

NOTE: FMG = foreign medical graduate.

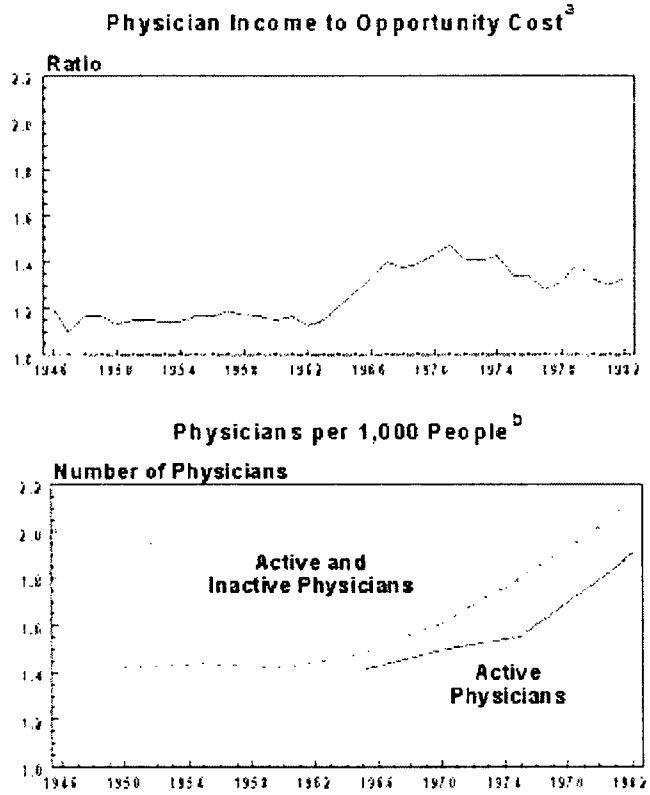
Historical Evidence

The pattern of behavior observed during the late 1960s and the 1970s after the introduction of Medicare, Medicaid, and their precursor programs illustrates the response of the supply of physicians to economic incentives.(14) The historical evidence is consistent with the view that the introduction of those government insurance programs brought about a surge in demand for physicians' services. That surge led to an increase in physicians' income and in the rate of return on medical education from the mid-1960s to the early to mid-1970s.

To understand the incentives facing potential physicians, economists consider the relationship between physicians' earnings and the "opportunity costs" of becoming a physician. The opportunity cost of being a physician is calculated by considering the income that a doctor could have earned had he or she pursued the career of a typical college graduate. In addition, the total opportunity cost includes the direct costs of tuition for medical school and takes into account the cost of beginning one's career several years later than a typical college graduate.(15)

The income-to-opportunity-cost ratio for physicians began growing in the early to mid-1960s and peaked near 1.5 in 1971. That strong economic incentive brought about a predictable supply response (see Figure 7). The number of physicians surged, a response that was amplified by paying subsidies to increase the size of medical school classes. An additional component of the supply response was pressure for entry by foreign-trained physicians. During the 1971-1981 period, the returns on investing in medical education began to decline toward their earlier levels as the stock of physicians swelled.(16) Nonetheless, the income-to-opportunity-cost ratio remained high in comparison with its levels prior to the mid-1960s, which indicates that medicine continued to be a financially rewarding field. That observation is consistent with the continued entry of new, young physicians into the workforce and the continued growth in the number of physicians per 1,000 people.

Figure 7.
Relationship of the Ratio of Physician Income to Opportunity Cost and the Number of Physicians per 1,000 People, 1946 Through 1982



SOURCE: The data for the ratio of physician income to opportunity cost were adapted by the Congressional Budget Office (CBO) from Monica Noether, "The Growing Supply of Physicians: Has the Market Become More Competitive?" *Journal of Labor Economics*, vol. 4, no. 4 (October 1986), pp. 503-537. The data for the number of physicians per 1,000 people are CBO calculations based on data from American Medical Association (AMA), *Distribution of Physicians in the U.S.* (Chicago: AMA, 1967 and 1971), *Physician Distribution and Medical Licensure in the U.S., 1975* (Chicago: AMA, 1976), and *Physician Characteristics and Distribution in the U.S.* (Chicago: AMA, 1983); and from the Bureau of the Census.

a. The ratio is the mean U.S. physician income to the total opportunity cost of becoming a physician. The total opportunity cost of being a doctor is defined as the level of annual physician income that would bring about equality between the present value of net earnings as a

doctor and the present value of earnings of a college graduate.

b. Resident physicians are included in the data series; osteopaths are not. From 1950 through 1980, data are plotted at five-year intervals.

The growth of the health sector since the mid-1960s appears to have been spurred by the introduction and expansion of the Medicaid and Medicare programs (and precursors of those programs), which subsidized the demand for medical care. Those significant demand-side subsidies have been combined with such supply-side subsidies as payments to medical schools for increasing class sizes and GME payments to teaching hospitals. The number of physicians is probably greater than would have been the case in the absence of those government policies.

Foreign medical schools provide a pool of graduates who can augment the stock of practicing U.S. physicians beyond the supply capacities of U.S. medical schools. In 1970, about 14 percent of fully trained physicians in patient care were FMGs. By 1980, the fraction of such doctors had grown to almost 20 percent, and in 1993 that fraction was almost 23 percent. Foreign medical graduates represent an increasing fraction of the stock of trained physicians as well as an increasing proportion of medical residents.

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1. Board certification establishes that an individual has met certain training requirements and passed examinations set out by the respective specialty boards. Board certification is not the same as a legal license to practice medicine. Hospitals may use board certification, among other criteria, in decisions about whether to extend staff privileges.
2. See William D. Marder and Douglas E. Hough, "Medical Residency as Investment in Human Capital," *Journal of Human Resources,* vol. 18, no. 1 (Winter 1983), pp. 49-64.
3. The value of residents to a hospital may go beyond the strictly pecuniary contribution of their services and the GME payments. For example, if a hospital valued the provision of care to indigent people, then a resident's value to the hospital would take account of the indigent care he or she provided.
4. See Robert H. Lee and Jack Hadley, "The Demand for Residents," *Journal of Health Economics*, vol. 4, no. 4 (December 1985), pp. 357-371.
5. The marginal subsidy figures given in the text are for residents in the "initial residency period" and not beyond five years of residency training (with minor exceptions). For residents who have gone beyond five years of training or beyond the years required for eligibility for board certification in their specialty, the marginal subsidies are smaller. Among teaching hospitals in 1993, the marginal subsidies for such residents were $47,000 at the 25th percentile, $67,000 at the median, and $86,000 at the 75th percentile.
6. See Association of American Medical Colleges (AAMC), *Council of Teaching Hospitals: Survey of Housestaff Stipends, Benefits, and Funding, 1993* (Washington, D.C.: AAMC, October 1993).
7. The resident stipend figures are based on Association of American Medical Colleges, *Council of Teaching Hospitals*. The physician income data are from the American Medical Association (AMA), *Physician Marketplace Statistics, 1994* (Chicago, Ill.: AMA, 1994).
8. Although a given hospital typically pays the same stipend to all residents, regardless of specialty, who are in the same year of residency training, the average stipend will still differ among specialty categories for several reasons. One is that different specialties have different training periods and hospitals pay larger stipends to residents who have completed more years of training. Thus, the typical surgical resident receives a larger stipend than the typical family practice resident. In addition, a number of hospitals allow program directors to pay residents additional amounts out of departmental funds. Differences among hospitals in the level of stipends can also be a source of variation in stipends by specialty because hospitals differ in the mix of their residency positions.
9. See Niccie L. McKay, "The Economic Determinants of Specialty Choice by Medical Residents," *Journal of Health Economics,* vol. 9, no. 4 (November 1990), pp. 335-357.
10. Risk-based HMOs are paid a fixed amount per Medicare enrollee. Cost-based HMOs are reimbursed by Medicare on the basis of the cost report they submit.
11. See Jonathan P. Weiner, "Forecasting the Effects of Health Reform on U.S. Physician Workforce Requirement: Evidence from HMO Staffing Patterns," *Journal of the American Medical Association*, vol. 272, no. 3 (July 20, 1994), pp. 222-230.
12. The income decline refers to relative changes in income, not changes in the ordinal rankings of incomes among sets of specialties. That is, the absolute level of primary care incomes would probably stay below surgical incomes even with shifts in demand toward primary care. All that would be necessary for some increase in the relative supply of primary care residents would be an increase in the ratio of primary care incomes to incomes in other fields.
13. Between 1984 and 1994, about a dozen states reportedly implemented some form of AWP or MPOS laws. The states differ as to whether the laws include HMOs or only apply to looser managed care arrangements.
14. Amendments to the Social Security Act in 1960, 1961, and 1962 provided for matching grants to the states for medical assistance to low-income elderly people. In 1965, Medicare and Medicaid were enacted.
15. Specifically, the total opportunity cost of being a doctor is defined as the level of annual physician income that would bring about equality between the present value of net earnings as a doctor and the present value of earnings of a college graduate.

Chapter Three

Policy Issues and Questions

Changes in federal policy regarding graduate medical education may have both budgetary impacts and effects relating to broad goals of public policy in the health sector. In terms of budgetary impact, direct graduate medical education payments are almost $2 billion per year and are projected to grow to over $2.5 billion annually by the end of the decade. Federal payments for the indirect medical education adjustment are about $4 billion per year and are projected to grow to almost $5 billion annually by the end of the decade. The broader goals that GME policy may affect include such issues as sufficient access to care, the cost-effectiveness of health care delivery, and the support of special activities undertaken by teaching hospitals.

GME subsidies, rather than directly affecting those broader goals, probably have their impact through several intermediate outcomes:

- The number and specialties of medical residents
- The number, specialties, and training background of future fully trained physicians
- The incentives for teaching hospitals to treat Medicare beneficiaries
- The overall financial resources of teaching hospitals

Opinions may differ concerning the best approach for affecting those outcomes. In addition, critics may disagree about targets for the outcomes in a world of limited resources.

Differences in opinion on GME policy will depend in part on different views about market incentives. Disagreements may arise over the degree to which students and young doctors are aware of or will respond to economic incentives. Policymakers may also disagree about whether the economic incentives transmitted through the marketplace are the proper signals to guide the allocation of resources.

Access to Care

Concerns about access to care are often raised in regard to particular subgroups of the population. Those subgroups include Medicare beneficiaries, indigent people, and people who live in geographic regions, such as rural areas or inner cities, that have few, if any, physicians.

GME policy may affect access to care through several mechanisms. The current formulas for GME subsidies are written in such a way that they offer incentives for teaching hospitals to both provide more services to Medicare beneficiaries and hire more residents. Changes in the formulas might alter teaching hospitals' incentives to treat Medicare beneficiaries. In the longer run, GME policy might affect access to care through its impact on the future supply of physicians. In the shorter run, policies that affect the number of residents could affect access to care in communities in which medical residents provide a significant amount of hospital-based patient care. Moreover, because changes in GME policy might affect the revenues of teaching hospitals, many services that teaching hospitals provide, including care for people who are uninsured and indigent, could respond to changes in the level of GME subsidies.

Medicare Beneficiaries

The current formulas for GME subsidies encourage teaching hospitals not only to employ more residents than they otherwise would but also to be more willing to provide services to Medicare beneficiaries. A hospital's DME payment is based on the product of its Medicare patient load, the allowed amount per resident, and the number of residents. As a result, a hospital's DME payments increase with its Medicare caseload. The IME formula bases payments on the product of the diagnosis-related group payments owed to a hospital for Medicare inpatient services and another factor that depends on the resident-to-bed ratio. Hence, a hospital's IME payments rise with its Medicare admissions (adjusted for diagnoses). It follows that changes in the DME or IME formula would alter the incentive to admit and treat Medicare patients.

Access to care for Medicare beneficiaries could be at risk if the government insurance program reimburses providers for services at lower rates than do private insurers. The fees for physicians' services that Medicare pays have been approximately

two-thirds of the level paid by private insurers.(1) For 1993, the payment-to-cost ratio for hospital services for Medicare patients is estimated to have been about 69 percent of the ratio for private payers.(2) Although in general, access does not appear to be a significant problem for Medicare beneficiaries, difficulties could develop if payment rates became sufficiently low.(3) GME payments may affect access because they provide an incentive for teaching hospitals to treat Medicare patients.

People Who Are Uninsured and Indigent

Providing medical care to poor people who are uninsured and who do not qualify for Medicaid coverage is one of the activities of teaching hospitals that may be viewed as a public good (see the discussion later in this chapter). Access to care for uninsured, indigent people may be affected by the level of GME subsidies for two reasons. First, since GME subsidies are a significant source of revenue for a number of teaching hospitals, changing the level of the subsidies would probably affect the amount of various services that teaching hospitals provide, including care for uninsured people. Second, to the extent that care for indigent people is provided by hospital residents, changes in subsidies could affect access for that group by influencing the number of residents available to provide such care.

Geographic Areas That Are Underserved

Standard economic theory predicts that a physician will locate in an area only if the benefits from living and working there are at least as great as those to be obtained in a different location. Abstracting from different amenities (for example, high-quality schools and social and cultural opportunities) available among locales and specific preferences for practicing in particular areas, one would expect that all communities that have doctors would have sufficient demand (or willingness to pay) so that each doctor in those communities earned at least a competitive return on his or her investment in a medical education. Communities will not have doctors if their level of demand is too low for a single doctor to earn an income equivalent to the income that could be made in locations that have physicians. Communities that have doctors will have enough of them to bid incomes (or, in economic terms, utilities) down to the level available in other locales that are being served.

This standard model of physician location makes clear why both general subsidies to physician supply (including GME subsidies) and more targeted attempts to encourage doctors to locate in underserved geographic areas (such as the National Health Service Corps) appear to have limited success. According to the model, if the supply of physicians increased, the number of physicians would increase in all the communities that already had physicians. The increased competition in those communities would bid down doctor's incomes (or utilities). Some formerly unserved communities would add physicians only if the incomes (or utilities) available in served communities became sufficiently low that settling in an underserved community appeared attractive. Therefore, it would not be surprising to find that the counties with the lowest levels of demand would continue to go without a physician even if the number of physicians in the country as a whole grew.

Indeed, the empirical observation that the number of counties with few or no physicians has been little changed by the appreciable increase in the physician-to-population ratio in the country as a whole is consistent with the theory. The model also implies that a policy that directly places a new physician in an area with a low physician-to-population ratio is likely to be offset eventually by the departure of another physician in that area for another market or by fewer physicians settling in that area in the future.(4)

An example of a factor other than government policy toward GME or toward physician supply that might affect the geographic location of doctors is the growth of managed care. Growth in that sector of the health care market might cause a shift in the distribution of some types of physicians toward less densely populated areas. For that shift to occur, two conditions must hold: the infiltration of managed care into a locale must squeeze down physicians' incomes in that area, and the entry of managed care organizations must be greater in more densely populated areas than in less densely populated ones--which is consistent with the view that scale economies are relevant in the formation of managed care networks. Under one plausible scenario, the entry of managed care into an area would result in higher incomes for primary care physicians and lower incomes for non-primary care physicians. Then, if managed care entry occurred to a greater extent in more densely populated areas, one would expect a tendency for primary care physicians to relocate toward more densely populated locales whereas non-primary care specialists would diffuse into less densely populated regions.

An approach for reducing the number of medically underserved areas is to raise the demand for medical services high enough in those locales for physicians to find them economically attractive. To the extent that amenities are fewer in underserved areas, the financial incentives must be even greater if physicians are to be attracted to practice in them. In areas with a significant population of uninsured or underinsured people, the government could provide or subsidize health insurance to increase demand, thereby making the area more attractive to physicians.

One way to subsidize the provision of medical care in such locales would be to offer an additional payment to physicians for each medical service they provide. The Medicare program already furnishes that kind of bonus payment--10 percent for services provided in what it terms "health professional shortage areas." The bonus program is relatively new; therefore, assessing whether the program has had a measurable impact on physicians' decisions about where to practice is premature. It might be the case that some regions are so sparsely populated, or have such low demand for medical care for reasons such as low incomes or lack of insurance, or are so lacking in amenities, that extremely large bonus payments would be needed to

draw a physician to those areas.

Cost-Effectiveness of Health Care Delivery

The cost-effectiveness of health care delivery in the future will be influenced by the size, specialty mix, and training of the future physician workforce. Today's residents are tomorrow's fully trained physicians; consequently, GME policy--through its impact on the characteristics of the residency pool--plays a role in cost-effectiveness. At a more subtle level, the style of practice of future physicians might be altered if GME policy changed in ways that affected the basic model and sites of postgraduate medical training. In a broader context, not only the physician workforce but also the size and characteristics of the nursing and allied health workforces will have an impact on cost-effectiveness.

One particular concern is that the current physician workforce is too oriented toward specialty practice to be compatible with emerging arrangements for managed care insurance. The question then becomes whether an activist policy toward the physician workforce can forecast future demands well enough to forsake relying on the market to determine the number and characteristics of physicians. Different philosophical and theoretical perspectives lead to different opinions about the appropriate policy to follow.

The Appropriate Number of Physicians

Some health policy experts have concluded that the United States has too many physicians.(5) Those claims are based on opinions about the appropriate number and types of physicians required to fill the basic medical needs of the population. Some people have also suggested that the growing number of physicians is a cause of rising medical expenditures and that reducing the number of physicians per 1,000 people would help to contain costs.

Some of the arguments underlying that view of a surplus of physicians are not consistent with a conventional economic approach to labor supply. The latter approach places more emphasis on the discretion of consumers regarding the desirable amount of medical care than does the more rigid approach of determining physician requirements. Some economists are likely to question whether the number of physicians is the fundamental cause of high levels of medical expenditures. Instead, a reasonable interpretation is that other underlying factors cause both large numbers of doctors and high levels of expenditures. Those factors include the incentive to use more services when those services are insured, the favorable tax treatment of employment-based health insurance, the fee-for-service nature of most government-provided insurance, and federal subsidies directed toward the supply of physicians. Conventional economic analysis would stress that in the absence of major noncompetitive factors or distortions, the market has the inherent ability to efficiently allocate people to jobs. Thus, if the number of physicians was excessive, the relative fees and incomes of doctors would fall, the medical profession would become less desirable to potential entrants, and the excess would be eliminated over time.(6)

Analysts with a medical requirements perspective and analysts with a market-oriented economic perspective work from widely different underlying assumptions, but both parties would generally conclude that the nation has more than the optimal number of physicians. The requirements, or planning, approach would base that conclusion on calculations of the number and types of doctors needed to provide what is viewed as appropriate medical care for the population. The market economics approach would base its conclusion on the existence of significant demand- and supply-side subsidies that have caused the medical industry to become larger than it otherwise would be.(7) (That is, the distortions that are present appear to work toward making the medical industry larger than optimal.) The two types of analysts would generally disagree on the proper policy response. For example, planners might argue for continuing the subsidies and imposing quotas on the number and types of residency positions. Market economists would argue for eliminating the subsidies and not imposing any legal restrictions on the number or types of positions.(8)

The Appropriate Mix of Physicians by Specialty

A number of experts have argued that there are too many non-primary care physicians relative to primary care physicians in the current workforce and that a large decline in the fraction of non-primary care residents is necessary to attain a more appropriate balance. Two principal arguments appear to underlie the desire to increase the relative size of the primary care medical workforce. One argument is that more primary care doctors are needed to fill a crucial "gatekeeper" role in managed care organizations and that such organizations represent the future of health care delivery. A second argument is that primary care physicians offer a cheaper, less technological, more preventive and holistic approach to the delivery of health services.

As noted earlier, some experts prefer an activist workforce policy and are skeptical of relying on market forces to determine the size and distribution of the nation's cadre of physicians. In their view, several good reasons support intervention by the government. Proponents of an activist policy argue that the inherently slow adjustment of the physician workforce makes it too costly to rely on market signals alone to encourage greater entry into primary care specialties. Another argument against using market signals is that young physicians are poorly informed about the marketplace for trained physicians. Therefore, only a minimal change in supply would occur in response to shifts in the demand for physicians' services. Market skeptics might also question the validity of demands by consumers for physicians' services. If consumers cannot judge what is best for them, relying on market signals based on consumers' demands for medical services would not tend to yield the

appropriate number or types of physicians.

However, the experts who argue for a dramatic increase in the relative number of primary care doctors may err for one of two reasons (or for both): they may be using incorrect forecasts, or they may be making inappropriate judgments about what consumers want. Some expert opinions depend on forecasts of future increases in the prevalence of managed care, including health maintenance organizations, in health care delivery.(9) Experts on the other side of the debate point out that previous forecasts of HMO growth have overestimated the actual rates. Another point of contention concerns the appropriateness of expert opinions in determining the correct balance of medical care needs. Consumers may prefer more highly technological, more interventionist, and more specialized medical care than the experts deem suitable.

Market-oriented economists would point out that the distribution of the supply of physicians among the different specialties will respond to economic incentives, which in turn will reflect the attitudes of consumers about the types of health care delivery systems that they prefer, given the costs of alternative systems. If managed care organizations that make less use of the services of specialists carry the day in the consumer marketplace, the incomes of non-primary care physicians will fall relative to those of primary care physicians, and relatively fewer young doctors will seek non-primary care training. However, free-market economists would warn that, because experts might either incorrectly forecast market trends or incorrectly determine what is best for consumers, it would be preferable to follow a neutral government policy regarding the entry of physicians into various specialties.

Many advocates of a market approach would agree that the government can assist the marketplace by providing information (to help overcome failures in the market for information). But they would also tend to argue that relying on the demands of imperfectly informed consumers is preferable to relying on the political process or a commission of experts to determine the number and types of physicians the country should have. The government could provide information to consumers, medical students, and young physicians and then allow them to make decisions in a free market.

Empirical evidence suggests that both the total supply of physicians and the distribution among specialties respond to changes in relative incomes. However, an interventionist policy may still have merit despite the existence of such evidence. For example, one may accept the view that students, residents, physicians, and hospitals respond to economic incentives; however, one may also view the response time as too slow or feel that consumers are inadequately informed and therefore that signals from the marketplace convey inappropriate incentives. Policymakers who subscribe to those views may argue for intervention by the government to alter the economic incentives. Such alterations might include paying relatively larger subsidies for primary care residencies than for residencies in other specialties or changing the fee schedule for Medicare to reward primary care activities relatively more than non-primary care activities.

The Appropriate Site for GME Training

The current system of GME subsidies to teaching hospitals may reinforce the traditional approach to GME centered at the hospital site--an approach that some experts have questioned. Many of the patient care activities of fully trained primary care practi-tioners occur in a nonhospital setting. But because non-primary care specialties have relatively more of their services associated with a hospital setting, the current mechanisms for GME financing may encourage more new doctors to focus on non-primary care specialties than if GME subsidies were also available to group practices outside of hospitals. Some industry experts have argued that HMOs find that newly trained primary care physicians have not developed adequate skills to work in an HMO environment because their training has used the hospital rather than the medical group practice as its principal focus.(10)

Hospital-based training has many advantages, however, and hospitals might remain the principal site of post-medical school training even if relative subsidies to the residency programs at teaching hospitals were reduced. The hospital, for instance, allows a resident to see more difficult and more severe cases and to see a variety of cases and procedures in one venue.

Special Activities of Teaching Hospitals

Because changes in the level of subsidies would affect teaching hospitals' revenues, other activities and services that they offer besides GME might be altered in response to changes in the generosity of GME payments. Indeed, the special activities and special services of teaching hospitals are cited as additional reasons for providing GME subsidies.

Economists classify some of those special activities as public goods--goods that, because their benefits cannot be restricted to those who purchase them, tend to be undersupplied in the absence of subsidies. The special activities of teaching hospitals in that regard may include engaging in research and development, treating and educating the public about communicable diseases, and providing care to indigent people.

Other special activities may include funding some medical school education and dealing with more difficult cases than are seen in other hospitals. A substantial amount of the revenues of medical schools is derived from patient care income generated at affiliated teaching hospitals; in addition, the facilities of some teaching hospitals are used for education at the

medical school level. Since GME payments affect the level of revenues of teaching hospitals and subsidize residency programs whose teaching faculty may also be affiliated with a medical school, the resources of medical schools are probably affected by GME subsidies. To the extent that some of the activities of teaching hospitals are seen as promoting the public welfare, policymakers could provide subsidies for those special activities specifically rather than indirectly supporting them through GME payments.

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1. See Physician Payment Review Commission, *Annual Report to Congress, 1995*, pp. 75-80.
2. See Prospective Payment Assessment Commission, *Medicare and the American Health Care System: Report to Congress* (June 1995), p. 21.
3. See David W. Lee and Kurt D. Gillis, "Physician Responses to Medicare Payment Reform: An Update on Access to Care," *Inquiry* (Fall 1994), pp. 346-353; and Physician Payment Review Commission, *Annual Report to Congress, 1994*, pp. 325-366.
4. See Joseph P. Newhouse and others, "Does the Geographical Distribution of Physicians Reflect Market Failure?" *Bell Journal of Economics,* vol. 13, no. 2 (Autumn 1982), pp. 493-505.
5. See the summary in Steven A. Schroeder, "Managing the U.S. Health Care Workforce: Creating Policy Amidst Uncertainty," *Inquiry*, vol. 31, no. 3 (Fall 1994), pp. 266-275. The groups that have concluded that there are too many physicians include the Council on Graduate Medical Education, the Bureau of Health Professions, and the Physician Payment Review Commission.
6. One theoretical viewpoint that places relatively more emphasis on the notion that the number of physicians is an underlying cause of higher levels of medical expenditures is the "demand inducement" theory. The basic idea is that doctors take advantage of consumer ignorance and respond to potential reductions in their own income by providing more services to their patients than they would otherwise. The empirical importance of demand inducement is controversial among economists who study the health industry.
7. At one time, it was thought that the number of physicians was being held at an artificially low level to boost physicians' incomes. Proponents of that view argued that licensing laws and limitations on the number of places in medical schools were the tools by which those artificial restrictions on supply were enforced. Under such a scenario, a market economist might have favored subsidizing the supply of physicians to offset the anticompetitive restrictions on that supply. Beginning in the 1970s, the market for the supply of physicians appears to have become more competitive (see Monica Noether, "The Growing Supply of Physicians: Has the Market Become More Competitive?" *Journal of Labor Economics*, vol. 4, no. 4 (October 1986), pp. 503-537). If immigration polices were altered to restrict further the entry of foreign medical graduates, arguments for offsetting anticompetitive restrictions on supply might become more relevant.
8. Market-oriented economists who are concerned with allocating resources efficiently might go even further. They might argue that if the distortions toward too large a medical industry, which arise from the tax treatment of employment-based insurance and subsidized government-provided insurance, cannot be eliminated, the distortions could be offset by taxing the "inputs" used to produce medical care. But it might be difficult and impractical to impose taxes in a neutral fashion across those inputs.
9. For example, see Jonathan P. Weiner, "The Demand for Physician Services in a Changing Health Care System: A Synthesis," *Medical Care Review*, vol. 50, no. 4 (Winter 1993), pp. 411-449.
10. For example, see Robert Gumbiner, "Perspectives of an HMO Leader," *Inquiry,* vol. 31, no. 3 (Fall 1994), pp. 330-333.

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Chapter Four

Policy Options

Policymakers have a number of options they could pursue with regard to Medicare graduate medical education policy.

The range of options is fairly broad: from modifying the formulas for the subsidies but maintaining the current basic structure of direct graduate medical education and indirect medical education payments, to more radical restructuring of government payments for GME, to ending federal GME subsidies.

All of the options have potentially significant consequences for access, cost-effectiveness, and the special activities of teaching hospitals, issues that were raised in Chapter 3. In addition, almost all of the options could be tailored to generate a number of budgetary outcomes, ranging from savings to increased spending. For example, modifying the GME formulas to encourage relatively more primary care residencies could be done in a budget-neutral fashion by increasing the DME or IME subsidies for primary care (or both) while decreasing the subsidies for other specialties. Alternatively, policymakers could produce budgetary savings by maintaining the current subsidies for primary care while reducing them for other specialties, or by reducing subsidies for all residencies but making the greatest reductions in subsidies for non-primary care. As another example, the option to end federal financing of GME could yield budgetary savings, but those savings would be smaller if the Congress enacted additional programs of direct subsidies for public goods produced by teaching hospitals (such as research and development or care for indigent people).

Modify the Current System of GME Financing

Several options are available for changing the mechanisms for federal financing of GME within the current structure of the DME and IME payment formulas. Those options all have potential effects on the size and distribution among specialties of the current pool of residents and on the future workforce of trained physicians. They could have impacts as well on the incentive for teaching hospitals to treat Medicare beneficiaries and the financial position of such hospitals.

Reduce the IME Teaching Adjustment

The government's Prospective Payment Assessment Commission (ProPAC) has suggested that the current IME subsidy be reduced to reflect more accurately those increases in teaching hospitals' costs that are associated with larger resident-to-bed ratios. Based on an analysis of recent data, ProPAC has recommended that the IME adjustment be reduced in phases from its current rate of about 7.7 percent to 4.5 percent, for a 0.1 increase in the resident-to-bed ratio of the hospital.(1) A decrease in IME payments would be expected to lead to fewer residents than teaching hospitals would otherwise have trained, although the effect of such a decrease on the mix of residents among specialties is not clear.

Ultimately, these changes would have some impact on the characteristics of the trained physician workforce. Teaching hospitals would probably also scale back some activities besides residency training, but predicting the magnitude and nature of other reductions in services is difficult. Access to care at teaching hospitals might be diminished, especially for hospitals at which residents provide a significant amount of care. Moreover, because the lower IME payments would have the effect of reducing what the hospital was paid for providing inpatient services to Medicare beneficiaries, teaching hospitals would have weaker incentives to serve Medicare patients than under the current formulas.

Change the Relative Subsidization of Particular Specialties

An option that would encourage relatively more residents than otherwise to enter primary care would be to alter the formulas for the IME and DME subsidies to pay relatively more to hospitals for primary care residents than for non-primary care residents. Be-cause the subsidies affect the value of residents to teaching hospitals, altering the formulas to increase the relative reward for filling primary care residencies versus non-primary care training slots would raise the demand by teaching hospitals for primary care versus non-primary care residents. The option could be implemented in a budget-neutral manner or as part of a package that would change the total amount of federal GME payments.

Over the long run, if no other changes occurred in the market for physicians' services, tipping subsidies more strongly toward primary care training would probably have several effects. In terms of access to care, consumers would have more access to primary care services and less access to non-primary care services. In terms of fees and physicians' income, primary care physicians would experience downward pressures on their fees and income relative to those of non-primary care physicians.

Thus, a policy of relative subsidization at the residency level would create some windfall gains for those who were already fully trained in non-primary care specialties and some windfall losses for those who were already fully trained in primary care.

All of those effects refer to comparisons with how the market would otherwise be (that is, in the absence of specific policy action). For example, if the trend toward managed care continued and brought with it an increase in demand for primary care services, the downward pressure on primary care fees from the subsidization of primary care residencies would be offset by the increased demand for primary care services. The net change in the income of primary care practitioners would depend on which influence turned out to be stronger.

The greater subsidization of primary care residencies would bring about a faster transition of the trained medical workforce to its increased primary care proportions than would otherwise have occurred. Also in evidence would be a lower path of primary care fees and income relative to non-primary care fees and income. However, during the transition period, primary care fees and income would grow relative to non-primary care fees and income if the increased demand for primary care services outstripped the effects on supply of greater subsidization of primary care residencies.

Reactions by the government to changes in demand for various services would also affect the incomes of different types of physicians and patients' access to different types of doctors. Suppose, for example, that the net effect of changes in the medical insurance market and favorable subsidization of primary care residencies turned out to put upward pressure on non-primary care fees as a result of the relatively smaller number of non-primary care practi-tioners. If the fee schedule for Medicare failed to incorporate the higher fees, increases in the income of non-primary care physicians would be held down--at the cost of potential problems in access for Medicare beneficiaries, who could experience a shortage of non-primary care providers. In contrast, if the net effect of changes in the insurance market and government GME policy put upward pressure on primary care fees, Medicare might have to raise its primary care payments to prevent a perceived shortage of primary care providers for Medicare beneficiaries.

Other options that would increase the relative number of residents in primary care while reducing federal outlays for GME include eliminating subsidies for non-primary care positions or ending such payments for residents beyond three years of training. The primary care specialties have the shortest residencies. Thus, if the IME and DME formulas were altered to pay hospitals only for residents who were in their first three years of residency training, that change would reduce what hospitals perceive as the net value of non-primary care residents. Such options, which imply an overall reduction in the extent of the Medicare subsidies for residency training, would lead to smaller hospital residency programs that were more disposed to primary care training than would otherwise be the case.

The disadvantages of this approach would be the decline in the number of residents at teaching hospitals, which might lead to a decline in the availability of medical services at such hospitals or increased costs for those services. It could also lead to a reduction in other outputs of teaching hospitals including care for indigent people. Some of the impact might be passed on to residents in the form of reduced stipends. Reductions in either type of GME subsidy would reduce the hospitals' incentive to treat Medicare patients.

Reduce or Eliminate GME Subsidies for Noncitizens

Yet another strategy to decrease GME payments within the current framework of subsidies would be to reduce or eliminate payments for residents who are not U.S. citizens. About one-fourth of all current residents graduated from foreign medical schools; the majority of those foreign medical graduates are not U.S. citizens, although most of them are expected to enter the trained U.S. physician workforce at some point.

Reducing or eliminating subsidies for noncitizens would probably result in fewer residents than otherwise, with the decrease primarily the result of fewer noncitizen residents than if the current system remained unchanged. A disadvantage of the policy is that it might lead to a two-tier residency system with a defined wedge between the stipends of citizens and noncitizens or to increased segregation of citizens into more desirable programs and noncitizens into less desirable programs. Again, potential problems with access and reductions in the services provided by teaching hospitals become an issue as they do under other policies that reduce the overall level of GME subsidies (unless, of course, other grants or payment programs replace the subsidies). Also, the future supply of physicians in this country would probably be smaller than otherwise, and FMG physicians might average less residency training than they would if the current policy was maintained.

Establish an All-Payer System to Finance GME

A policy that would continue to subsidize GME yet reduce the funding required for the Medicare program would be the formation of a GME fund supported by mandated payments from all insurers, both public and private. That approach would increase the cost of both employment-based and directly purchased health insurance and would probably encourage people, in a modest way, to buy less coverage. By raising the price of insurance, the policy would reduce slightly the take-home pay of workers with employment-based insurance. However, it would also allow Medicare to reduce its funding of GME with no loss in total GME payments to teaching hospitals. The policy would simply shift some of the government-imposed financing that is required to fund GME subsidies from the Medicare program to purchasers of private insurance and to other public

insurers.

One effect of an all-payer fund could be to weaken a teaching hospital's incentive to treat Medicare patients. That outcome could occur if the current subsidy formulas were maintained except for replacing Medicare's inpatient load and diagnosis-related group payments with the insured inpatient load and insured payments for inpatient hospital charges. In that case, dollars from the GME fund could be earned on all insured patients rather than on Medicare patients alone, which would dilute the incentive, inherent in the current system, to treat Medicare beneficiaries.

Payments to teaching hospitals from an all-payer fund would not necessarily have to retain the current or even modified financing formulas. For example, policymakers could use the all-payer fund to finance the more radical options discussed below.

Restructure the System of GME Financing

Other options represent more fundamental changes in the mechanisms by which the federal government provides assistance for GME. Two possibilities that come from different ends of the spectrum in terms of using market incentives to shape residency training are shifting to a GME voucher system or establishing quotas for residency positions by specialty.

Open Up the Market for GME by Offering Vouchers

One method by which the government could subsidize graduate medical training would be to offer vouchers to medical school graduates. The young doctor could transfer the voucher to a medical group or hospital as part of a contract in which the organization would provide training and a stipend to the resident in exchange for his or her services and payments from the federal government. An advantage of that approach is that it would subsidize post-medical school education at sites that appeared to offer the mode of training most relevant to the new professional's career. Young physicians would use market signals and expectations about future changes in the marketplace for physicians to make decisions about the specialty they wished to pursue and the kind of facility at which they wanted to receive training.

That approach would uncouple GME subsidization from teaching hospitals, which would have to compete with other entities such as group practices or health maintenance organizations that were willing to start their own training programs. Over the long run, teaching hospitals might remain the predominant providers of GME. However, if they remained so under a voucher system, it would probably be because of true advantages in the use of teaching hospitals for GME rather than because of a federal system that subsidized training only through those hospitals.

It is difficult to predict how specialty boards would react to such changes. The current requirements for board certification were shaped in a tradition of training centered at teaching hospitals that was reinforced by Medicare GME payments to such facilities. If the boards were reluctant to consider training at nonhospital sites as equivalent preparation, the GME system might remain essentially unchanged.

The disadvantages of a voucher approach would include potentially adverse impacts on teaching hospitals from reductions in their Medicare GME revenues. Another disadvantage would be the loss of the inherent incentives for teaching hospitals to treat Medicare patients that are built into the current formulas for the GME subsidies. In addition, because the voucher system is based on responses to market incentives, it depends on reasonably informed decisionmaking. Without adequate information, changing to a voucher system might result in responses by the workforce that were slower than some policymakers would find desirable.

Consequently, the argument that the government should provide or assist in providing information may be even more relevant to the voucher option than to other options. The federal government could inform medical or premedical students about trends and innovations in the market for physicians' services. Publications could update students on trends in physicians' incomes, employment opportunities for new physicians by specialty, and other changes in the nature of medical practice. Increasing the information available to students and residents could yield a faster supply response to changing conditions in the market than would otherwise occur. That quicker response would address concerns that the market adjusts too slowly or that participants in the market lack the information needed for relying on the marketplace to allocate the number and types of physicians.

Policymakers could vary several parameters within a voucher framework. They could set up the program to approximate current federal expenditures per resident or base the value of the vouchers on some other level of total expenditures. If the government wanted to influence the balance of the medical workforce among specialties, it could provide vouchers of different values or vouchers only for particular specialties. Citizenship could be considered a potential requirement for receiving a GME voucher (but not a requirement for receiving training).

Establish Quotas for Residency Positions

Quotas that designate the number and types of residency positions have been suggested as a means of increasing the relative numbers of primary care doctors and reducing the overall supply of physicians. One proposal that has been offered is to limit the total number of first-year residency positions to 110 percent of the number of annual graduates from U.S. medical schools and to set specialty quotas allocating half of the residency positions to primary care and half to non-primary care. Proponents of such measures point out that it takes many years for the composition of the workforce to adjust and that responses to financial incentives may not be sufficient for meeting their workforce goals. Proponents of letting market forces allocate the workforce would object to that notion, maintaining that quotas could lead to a workforce that was not configured according to the underlying desires of consumers or future market realities, which can be forecast only in a limited fashion.

A difficulty with using quotas is assigning the slots. If the number of new medical graduates who wish to enter a particular field exceeds the quota, the decision as to which graduates obtain the available positions might appear to be arbitrary. Under quotas, some committee or group would have to allocate the different kinds of specialty slots among the many teaching hospitals. Those decisions might also appear to be arbitrary, given that some hospitals would not be permitted to offer positions that otherwise they would offer.

Moreover, unless the quotas were coordinated with changes in the demand for physicians' services, they would lead to an increase in the relative incomes of fully trained physicians in the rationed fields--which could encourage people to try to get around the quotas. For example, if policymakers established a quota that effectively restricted the number of non-primary care residents but the projected shift in demand toward primary care services did not continue as expected, the result would be an increase in the relative incomes of non-primary care physicians. That situation would lead even more residents to want to enter non-primary care fields. Another source of pressure might come from fully trained foreign specialists. Such specialists might immigrate, which would not violate the quotas per se (since the quotas apply to residency positions) but would partly undo the goals of the quotas.

Another problem with using quotas is that the definitions of various specialties may change or be changed, especially in the face of economic incentives for doing so. Programs may label themselves in accordance with the quotas, but the actual content of training may instead resemble the way the market would have looked without quotas. For example, some "internal medicine" or "family practice" programs might begin to incorporate more subspecialty training if the demand for and returns from being a subspecialist remained high. In that fashion, the ultimate goals of advocates of quotas might be undone.

A policy restricting the total number of residency positions to limit the total number of physicians could face similar problems. Rationing of the limited slots could appear to be capricious with apparently qualified young physicians being turned away from residency training. If no reduction in demand for physicians' services occurred, physicians' incomes would increase more than they otherwise would have, and that would increase the number of young people competing for the limited number of slots. In addition, more fully trained foreign physicians would want to immigrate.

A positive or negative view of the immigration of already trained doctors that could result from a quota policy depends on one's perspective. Potential immigration (or the lack thereof) would be seen in a positive light if one believed that the quotas that had been set truly reflected the direction of the market in terms of future demand for physicians' services, and that quotas were needed to speed the adjustment of the workforce to that demand (since adjustment of the workforce would be faster with immigration than without it). Immigration would be viewed negatively if one supported quotas from the belief that market forces would not yield the appropriate number or types of physicians in the workforce. (Immigration would tend to undo movement toward the workforce goals that were the original basis for the quota policy.)

To enforce quotas, policymakers could make the receipt of funds (which could be called GME funds) contingent on a hospital's remaining within the residency quotas that it received. The financial positions of teaching hospitals could be maintained by keeping their levels of funding near the current real (adjusted for inflation) dollar values of GME payments. Alternatively, the policy could alter those funding levels--although in that case, possible effects on the services provided by teaching hospitals could not be ruled out. For example, the incentives of teaching hospitals to treat Medicare patients could be influenced by the funding formulas. Because the current GME formulas build in some incentive to treat Medicare beneficiaries, a change to, say, a lump-sum payment--with the condition that the hospital must remain within the quotas--would eliminate that particular incentive. The incentive might be maintained by keeping the formulas in current law but making them conditional on observance of the quotas.

End Federal Financing of GME

Eliminating federal financing of GME is yet another policy option. Estimates indicate that eliminating both DME and IME payments would reduce federal outlays below what they would otherwise have been by over $7.5 billion for fiscal year 2000 and over $8.5 billion for fiscal year 2002.

One argument in support of this option is that the hospitals that obtain the services of residents and the residents who receive training would be faced with the true costs and benefits of the services and training. That newfound clarity would lead to decisions about residency training that more accurately reflected the costs and benefits of providing and receiving it. In that spirit, Medicare's payment rules for physicians' services could be loosened to allow residents to bill for beneficial medical

services that they provide to Medicare patients. That policy, however, might introduce new questions about payment levels and qualification requirements for residents.

Eliminating the subsidies would also address the concern that there will be more physicians than is appropriate if the supply of physicians continues to be subsidized. If GME subsidies were reduced or eliminated, hospitals would be expected to demand fewer residents. Many FMGs who would have done residencies in this country and who would probably have become part of the future U.S. workforce of fully trained physicians might choose not to do so. Also, graduates of U.S. medical schools might receive less residency training than otherwise. The effects on access in the future to fully trained physicians in underserved locales would probably be very small for the same reasons that large increases in the total supply of physicians have caused minimal increases in such areas. However, the number of physicians per 1,000 people in locales that are already being served would be fewer than they would otherwise have been.

Eliminating GME subsidies (without other, offsetting changes) would significantly lessen the revenues of teaching hospitals and would bring about a reduction in some of their services. It is difficult to predict the particular impact on different services. Various public goods--such as providing care for indigent people, conducting research and development, and undertaking efforts to control infectious diseases --might be cut back in response to reducing or eliminating GME payments. Because teaching hospitals would have significantly weakened incentives to hire residents, they would attempt to fill fewer residency positions. Some of the impact would probably include lower residency stipends. Medical schools would also be affected because of their ties to teaching hospitals. In addition, teaching hospitals would have less incentive to serve Medicare patients, although easing restrictions on Medicare billings for physicians' services provided by residents might indirectly diminish that impact. Another alternative that would address reduced incentives to serve Medicare patients and lower revenues for hospitals would be to allow larger inpatient payments to hospitals that currently receive GME payments but to dispense with formulas like the present ones that relate additional payments to the number of residents.

To minimize adverse consequences, policymakers could gradually reduce GME payments over time according to a stated schedule. A gradual drop in the subsidies would allow teaching hospitals to plan and adjust their facilities and services to lower levels of revenue. Potential medical students would also be able to plan better: they would have the information that the subsidies were being reduced and the understanding that such reductions would probably result in lower residency stipends and fewer residency positions, as well as higher future incomes for trained doctors in the respective specialties, than would otherwise have been the case.(2)

Policymakers could also use more specifically targeted subsidies to encourage teaching hospitals to provide public goods and to deal with specific issues that now may be indirectly paid for through GME funding. Payments to providers for indigent care, research activities, and prevention of infectious diseases could be directed specifically toward those activities. If teaching hospitals indeed receive more difficult cases than other kinds of hospitals, further research could provide a basis for modifying the DRG system of reimbursing hospital services under Medicare. In addition, the concern that medical students and residents are uninformed about trends in the medical market could be addressed by increased efforts to provide such information.

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1. Prospective Payment Assessment Commission, *Report and Recommendations to the Congress* (March 1, 1995), pp. 41-42.

2. The Prospective Payment Assessment Commission has recommended that the reduction it proposes in IME payments, which does not call for ultimate elimination of the IME adjustment, be phased in and reevaluated over several years.

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Appendix

Supplementary Tables

This appendix contains tables that present the data used to construct Figures 1, 2, 4, and 6 in the text.

Table A-1.
Distribution of Fully Trained Physicians Engaged in Patient Care, by Specialty, Selected Years, 1965 Through 1993 (In percent)

Specialty	1965	1970	1975	1981	1985	1990	1993
Primary Care	50.5	42.2	39.3	35.1	34.6	34.4	33.8
Subspecialties of Internal Medicine and of Pediatrics	1.7	4.2	4.8	8.2	9.3	10.2	10.9
Obstetrics and Gynecology	6.3	6.8	6.8	6.8	6.4	6.6	6.5
Surgical Specialties	21.3	22.5	22.6	21.3	20.5	20.0	18.9
Other Non-Primary Care Specialties	19.6	23.0	25.6	27.6	28.1	28.4	29.1
Unknown	0.6	1.3	0.9	0.9	1.1	0.5	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Congressional Budget Office calculations based on data from American Medical Association (AMA), *Distribution of Physicians in the U.S.* (Chicago: AMA, 1967 and 1971), *Physician Distribution and Medical Licensure in the U.S., 1975* (Chicago: AMA, 1976), and *Physician Characteristics and Distribution in the U.S.* (Chicago: AMA, 1982, 1986, 1992, and 1994).

NOTES: Data are for fully trained physicians who are actively engaged in patient care; that is, the data exclude residents and those fully trained physicians who are employed in professional activities other than patient care (for example, administration or medical research). The specialties of physicians are self-reported and refer to the principal specialty practiced by the doctor. Osteopaths are not included.

Data for 1990 and 1993 are as of January 1. Data for all other years are as of December 31.

Table A-2.
Fully Trained Physicians Engaged in Patient Care per 1,000 People, by Specialty, Selected Years, 1965 Through 1993

Specialty	1965	1970	1975	1981	1985	1990	1993
Primary Care	0.55	0.46	0.46	0.49	0.53	0.56	0.59
Subspecialties of Internal Medicine and of Pediatrics	0.02	0.05	0.06	0.11	0.14	0.17	0.19
Other	0.52	0.59	0.65	0.79	0.87	0.90	0.96
Total	1.10	1.09	1.16	1.40	1.54	1.63	1.74

SOURCE: Congressional Budget Office calculations based on data from American Medical Association (AMA), *Distribution of Physicians in the U.S.* (Chicago: AMA, 1967 and 1971), *Physician Distribution and Medical Licensure in the U.S., 1975* (Chicago: AMA, 1976), and *Physician Characteristics and Distribution in the U.S.* (Chicago: AMA, 1982, 1986, 1992, and 1994).

NOTES: Data are for fully trained physicians who are actively engaged in patient care; that is, the data exclude residents and those fully trained physicians who are employed in professional activities other than patient care (for example, administration or medical research). The specialties of physicians are self-reported and refer to the principal specialty practiced by the doctor. Osteopaths are not included.

The "Other" category comprises fully trained physicians practicing in the specialties of obstetrics and gynecology, surgery, and other non-primary care fields.

Data for 1990 and 1993 are as of January 1. Data for all other years are as of December 31.

Table A-3.
Distribution of Residents by Specialty, Selected Years, 1965 Through 1993 (In percent)

Specialty	1965	1970	1975	1981	1985	1988	1990	1993
General Practice and Family Practice	1.6	2.6	5.6	8.4	9.2	8.6	7.8	7.8
Internal Medicine and Internal Medicine Subspecialties	18.5	19.6	25.2	24.6	26.0	30.8	31.1	31.0
Pediatrics and Pediatric Subspecialties	6.4	7.0	8.3	8.4	8.3	9.0	9.0	9.3
Obstetrics and Gynecology	6.0	4.9	6.3	6.3	6.1	5.6	5.5	5.3
Surgical Specialties	26.1	25.3	24.9	21.6	21.9	19.5	18.7	18.0
Other Non-Primary Care Specialties	24.0	24.1	21.5	18.4	23.4	24.7	26.3	27.2
Unknown	17.4	16.5	8.2	12.4	5.0	1.7	1.6	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Congressional Budget Office calculations based on data for 1965 through 1985 from American Medical Association (AMA), *Distribution of Physicians in the U.S.* (Chicago: AMA, 1967 and 1971), *Physician Distribution and Medical Licensure in the U.S., 1975* (Chicago: AMA, 1976), and *Physician Characteristics and Distribution in the U.S.* (Chicago: AMA, 1982 and 1986); and on data for 1988 through 1993 from the American Association of Medical Colleges.

NOTES: Comparisons between the earlier and later years shown above must be made cautiously because specialties are unknown for a large proportion of residents in the earlier years and the three-year family practice residency was a new option in the 1970s. In addition, different data sources were used for the earlier and later years.

The "Unknown" category includes residents in a transitional year (a year of basic clinical training).

Osteopathic doctors in M.D. residency programs are included in the data.

Table A-4.
Residents Engaged in Patient Care per 1,000 People, by Specialty, Selected Years, 1965 Through 1993

Specialty	1965	1970	1975	1981	1985	1988	1990	1993
General Practice and Family Practice	a	0.01	0.01	0.02	0.03	0.03	0.03	0.03
Internal Medicine, Pediatrics, and the Subspecialties of Internal Medicine and of Pediatrics	0.05	0.07	0.09	0.09	0.11	0.13	0.15	0.16
Other	0.12	0.13	0.14	0.13	0.16	0.17	0.18	0.20
Unknown	0.04	0.04	0.02	0.03	0.02	0.01	0.01	0.01
Total	0.22	0.25	0.26	0.27	0.31	0.33	0.36	0.39

SOURCE: Congressional Budget Office calculations based on data for 1965 through 1985 from American Medical Association (AMA), *Distribution of Physicians in the U.S.* (Chicago: AMA, 1967 and 1971), *Physician Distribution and Medical Licensure in the U.S., 1975* (Chicago: AMA, 1976), and *Physician Characteristics and Distribution in the U.S.* (Chicago: AMA, 1982 and 1986); and on data for 1988 through 1993 from the American Association of Medical Colleges.

NOTES: Comparisons between the earlier and later years shown above must be made cautiously because specialties are unknown for a large proportion of residents in the earlier years and the three-year family practice residency was a new option in the 1970s. In addition, different data sources were used for the earlier and later years.

The "Other" category comprises residents in the specialties of obstetrics and gynecology, surgery, and other non-primary care fields. The "Unknown" category includes residents in a transitional year (a year of basic clinical training).

Osteopathic doctors in M.D. residency programs are included in the data.

a. Less than 0.005 residents per 1,000 people.

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MEDICARE AND GRADUATE MEDICAL EDUCATION

September 1995

In fiscal year 1995, Medicare will make nearly $6 billion in payments that subsidize the hospital-centered residency training of physicians. Those payments are projected to grow to more than $8.5 billion in fiscal year 2002. Given the current strains on the federal budget in general and on the Medicare program in particular, the time seems right to review Medicare's support of graduate medical education (GME) for doctors. A new Congressional Budget Office (CBO) study, *Medicare and Graduate Medical Education*, summarizes the programs by which Medicare subsidizes training and discusses recent trends in the size and specialties of the workforce of fully trained physicians and the pool of residents. The study also lays out various options for federal GME policy.

Two significant types of Medicare payments, direct graduate medical education (DME) payments and indirect medical education (IME) adjustments, give teaching hospitals an incentive to hire more residents than they otherwise would. Both the magnitude of the subsidies and the variation among hospitals in the subsidy they receive per resident are substantial. In 1993, for residents in their first five years of post-medical school training who had not gone more than one year beyond the minimum number of training years to be eligible for board certification, the median marginal subsidy among teaching hospitals was about $80,500 per resident. About one-fourth of such hospitals received more than $102,000 for an additional resident, and about one-fourth received less than $58,000.

Over the 1988-1993 period, the number of residents grew by more than 23 percent, with most of that growth attributable to an increase in the number of graduates of foreign medical schools who were pursuing residency training in the United States. Previous experience suggests that most of those foreign medical graduates will ultimately practice here as fully trained physicians.

Observers from different vantage points find problems with the current arrangements for financing GME. Critics from a planning perspective argue that there are too many physicians and that the physician workforce is out of balance, with too great an emphasis on non-primary care. They point out that GME subsidies to teaching hospitals may encourage the training of even more young physicians and may skew that training away from primary care activities. Observers from a free-market perspective think that the GME subsidies distort the market and result in too much residency training.

The current GME subsidies to teaching hospitals, along with the non-primary care emphasis of the current physician workforce, may not accord with marketplace trends toward the increased use of managed care. But whether federal GME policy should attempt to actively "tune" residency training or remain neutral in terms of the specialties and training sites of residents is a contentious issue.

Medicare GME payments constitute a significant amount of the revenues of teaching hospitals, and altering the level of the subsidies might have an impact on services other than residency programs. DME and IME payments combined account for just under 4 percent of the revenues of teaching hospitals, although the distribution varies among different kinds of hospitals.

The study examines a number of options for changing federal GME financing. Approaches range from modifying the current financing formulas to more radical restructuring of the financing system.

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