Residency Education

Accounting for Graduate Medical Education Funding in Family Practice Training

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Background and Objectives: *Medicare provides the majority of funding to support graduate medical education (GME). Following the flow of these funds from hospitals to training programs is an important step in accounting for GME funding.* Methods: *Using a national survey of 453 family practice residency programs and Medicare hospital cost reports, we assessed residency programs' knowledge of their federal GME funding and compared their responses with the actual amounts paid to the sponsoring hospitals by Medicare.* Results: *A total of 328 (72%) programs responded; 168 programs (51%) reported that they did not know how much federal GME funding they received. Programs that were the only residency in the hospital (61% versus 36%) and those that were community hospital-based programs (53% versus 22%) were more likely to know their GME allocation. Programs in hospitals with other residencies received less of their designated direct medical education payment than programs that were the only residency in the sponsoring hospital (-45% versus +19%).* Conclusions: *More than half of family practice training programs do not know how much GME they receive. These findings call for improved accountability in the use of Medicare payments that are designated for medical education.*

(Fam Med 2002;34(9):663-8.)

For more than 30 years, Medicare has provided funding to support graduate medical education (GME) in the United States.[1] This support comes in the form of (1) payments for direct medical education (DME) costs such as resident and faculty salaries and (2) indirect medical education (IME) adjustments to Medicare reimbursements for the additional patient care costs associated with teaching. In 2000, DME and IME together accounted for $7.8 billion in payments to academic medical centers and community teaching hospitals.[2] Concern over rising Medicare costs led to the passage of the Balanced Budget Act (BBA) of 1997, which reduced GME payments and contributed to financial crises for many academic medical centers.[3,4]

After examining Medicare support of GME, Congress and the Medicare Payment Advisory Commission called for increased accountability in GME payments.[2,5] Because Medicare GME payments are made to the sponsoring hospitals rather than directly to the residency programs, it is difficult to assess whether these funds are used for their intended purpose. It has been speculated that many hospitals use the GME payments to cover other operating costs in addition to GME.[6,7] Others have argued that training programs, or the trainees themselves, should be the beneficiaries of GME funds.[2,7-9] Given that so little is known about the use of GME funds for intended purposes, and that policy changes are being made without this information, studies of the flow of Medicare GME payments from teaching hospitals to training programs are sorely needed. Using a national survey of all family practice residency programs and data from Medicare cost reports, we assessed residency programs' knowledge of the GME funding allocated to their program budget and compared it with the actual amounts paid by Medicare to the sponsoring hospital.

We hypothesized that many family practice residency program directors would not know how much Medicare GME funding their hospitals received for the residents in their program. We also hypothesized that family practice residencies that are the only training programs in their sponsoring hospital would be more likely

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to know their GME allocation than those in hospitals with multiple residency programs. Because rural hospitals are dependent on Medicare payments, and BBA reductions may affect family practice training programs in these hospitals, we were particularly interested in the GME funding for rural training programs.[10-13]

Methods

The University of Washington Rural Health Research Center, the Robert Graham Center for Policy Studies in Family Practice and Primary Care, and the Association of Family Practice Residency Directors collaborated to conduct a survey of family practice training programs.

Instrument

A 16-item questionnaire was developed to examine the influence of the BBA on family practice training programs. Family practice residency directors were asked, "How much did your sponsoring hospital(s) credit your program's budget report for the DME and IME payments they received through the Medicare program during the last available fiscal year?" Respondents also reported the location and number of full-time equivalent (FTE) residents at each of their sponsoring hospitals. The questionnaire was reviewed by the University of Washington-affiliated family practice residency network directors and modified accordingly before use.

Procedures

Questionnaires were mailed to the 476 family practice residency programs listed in the 1998 American Academy of Family Physicians (AAFP) *Directory of Family Practice Training Programs*. Two subsequent mailings were conducted to nonrespondents, and investigators personally contacted the remaining nonrespondents.

Data Analysis

The survey responses were matched with data from sponsoring hospitals in the fiscal year 1997 Centers for Medicare and Medicaid Services (CMS) public user file of institutional Medicare hospital cost reports. This permitted direct comparison of actual GME (DME + IME) payments per resident FTE to each primary sponsoring hospital. We then multiplied this payment rate by the number of family practice FTEs reported by the training program and added the primary care supplement of 5.6% to our calculation of DME.[14] Programs were classified as community- or university-based programs by the program structure identified in the 1998 AAFP directory. Programs that responded that urban-underserved or rural training was a "very important" program objective were classified as having an urban-underserved or rural emphasis, respectively. These categories were not mutually exclusive. Using the programs' zip codes, we classified their geographic location by rural-urban commuting area codes (RUCA).[15] Military programs (n=13), which do not receive Medicare GME, programs in Puerto Rico (n=6), and closed or inactive programs (n=4) were excluded from the analyses. A total of 434/453 (96%) programs responded to the survey, although not all of these programs responded to the GME questions.

The sample had 95% power to detect differences of 20% in the DME amounts. Chi-square and *t* tests were used to determine the statistical significance of differences with SPSS® (version 10.0, SPSS Inc, Chicago).

Results

Response Rates

Of the 453 residency programs that were within the scope of this study, 328 (72%) responded to the questions regarding GME. A total of 160 programs (49%) reported the amount of GME they were credited by their sponsoring hospital. Some programs reported their total GME; others reported only their IME or DME. A total of 168 programs (51%) reported that they did not know how much GME they were credited by their sponsoring hospital. Respondents did not differ from nonrespondents in program type, being the only residency in their hospital, rural emphasis, or rural location (Table 1). Nonrespondents were more likely to have an urban-underserved emphasis.

Awareness of GME Allocation

Community hospital-based programs were significantly more likely to know their GME allocation than university hospital-based programs were (53% versus 22%) (Table 2). As we hypothesized, programs that were the only training program within their hospital were significantly more likely to report knowing their GME allocation (61% versus 39%) (Table 2).

A total of 177 (39%) programs rated rural training as "very important," and 161 (36%) programs rated urban-underserved training as "very important." Residency programs with a rural emphasis were significantly more likely to know their GME allocation (57% versus 44%) (Table 2). There was no significant relationship between the importance of urban-underserved training to the residency program and knowledge of GME funding (47% versus 49%) (Table 2).

Amount of GME Allocation

Community hospitals received significantly more GME funding per FTE than university hospitals ($107,092 versus $82,702) (Table 3). There was no significant difference in the amount of GME per FTE paid to hospitals whose training programs knew their GME allocation and those who did not (mean GME per FTE $107,389 versus $108,183) (Table 2). The amount of

Table 1

Characteristics of Respondents and Nonrespondents to GME Questions

	Respondents	*Nonrespondents*	P *Value**
Total	328	125	
Community-based program (%)	88	84	.33
University-based program (%)	13	16	—
Only residency in hospital (%)	51	47	.47
Rural emphasis (%)	40	45	.39
Urban-underserved emphasis (%)	35	48	.02
Rural location (%)	8	6	.39
Mean program GME per FTE	$107,809	$92,684	.06

GME—graduate medical education
FTE—full-time eqivalent
* Chi-square and *t* tests as appropriate

GME funding paid to hospitals whose family practice programs reported that rural training was "very important" did not differ from other hospitals. Hospitals whose programs reported that urban-underserved training was "very important" received significantly less GME per FTE than other hospitals ($92,370 versus $112,725) (Table 3). After removing university hospitals from the analysis, this difference persisted ($96,948 versus $114,761, *P*=.04).

Programs were allocated less total GME (DME + IME) than the total amount of GME paid by Medicare to their sponsoring hospital (mean difference [$847,461], 95% confidence interval [CI] [$1,762,025] - $67,102). This result was not surprising because IME is paid directly to hospitals for patient care costs. The reported DME, however, should have been close to the amount paid by Medicare since it is designated for the direct costs of training.

Of the 160 programs that reported their GME allocation, 104 programs reported the amount of DME they were credited by their sponsoring hospital. As a result of missing data in the CMS cost report and survey, we were only able to compare the reported DME amounts with the actual DME paid by Medicare for 78 of the 104 programs (75%). The reported amounts of DME did not vary much from the actual amount of DME paid by Medicare (Figure 1). The mean difference was [$74,444] (95% CI [$187,172] - $38,284) and was not statistically significant (*P*=.19).

However, programs in hospitals with other residency programs were allocated significantly less DME than the amount of DME paid by Medicare, when compared to programs that were the only residency in their sponsoring hospital (percent difference, -45% versus +19%, *P*=.001) (Table 3, Figure 2). This difference persisted after excluding university-based programs from the analysis.

Discussion

In this national survey of family practice residency programs, more than half of programs did not know how much Medicare GME funding was allocated to their program by their sponsoring hospital. It is likely that this percentage is even higher because more than 100 programs returned surveys but did not answer the GME questions, and the reason for nonresponse may have been lack of awareness of GME funding. Programs that reported they did not know their GME funding almost certainly received funding support but were unable to report how much. Programs were more likely

Table 2

Characteristics of Programs That Reported Their GME Funding*

	Programs That Reported GME	*Programs That Did Not Know GME*	P *Value***	*#*
Community-based program (%)	53	47	.0002	287
University-based program (%)	22	78	—	41
Only residency in hospital (%)	61	39	.00001	165
Other residencies in hospital (%)	36	64	—	158
Rural emphasis (%)	57	43	.02	130
Non-rural emphasis (%)	44	56	—	192
Urban-underserved emphasis (%)	47	53	.74	111
No urban-underserved emphasis (%)	49	51	—	213
Rural location (%)	62	39	.18	26
Urban location (%)	48	52	—	302
Mean program GME per FTE	$107,389	$108,183	.93	293
Mean program GME received	$2,186,729	$2,345,731	.82	204
Mean program DME received	$681,648	$610,574	.49	198

GME—graduate medical education
FTE—full-time equivalent
DME—direct medical education

* n=328
** chi-square and t-tests as appropriate

Table 3

Comparison of GME Reported by Programs With Amount Paid by Medicare

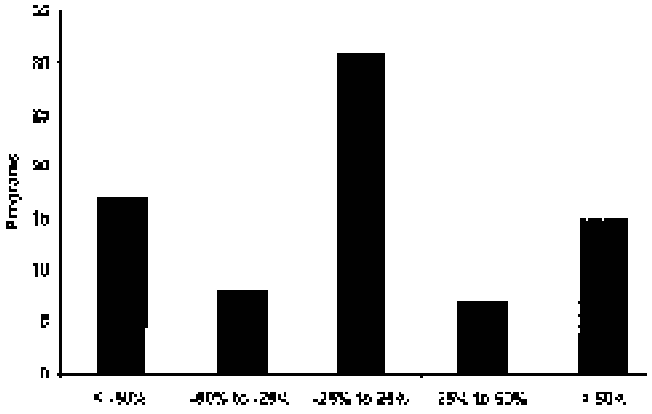
Type of program	*GME per FTE ($)*	#	*Difference Between Reported and Actual GME ($), n=111*	#	*Difference Between Reported and Actual DME ($), n=80*	#
Community-based program	107,092*	346	-848,070	106	-66,800	74
University-based program	82,702	54	-834,551	5	-215,848	4
Only residency in hospital	103,873	186	-762,304	73	42,130*	53
Other residencies in hospital	105,497	181	-1,075,631	36	-321,581	25
Rural emphasis	100,917	152	-1,193,739	53	10,998	37
Non-rural emphasis	107,320	224	-545,848	57	-155,019	40
Urban-underserved emphasis	92,370**	146	-2,072,683	32	-107,040	18
Non-urban emphasis	112,725	232	-359,688	78	-65,545	59
Rural location	101,998	27	-170,389	7	158,398	6
Urban location	103,921	372	-893,033	104	-93,847	72

GME—graduate medical education
FTE—full-time equivalent
DME—direct medical education

* *t* test, $P \leq .05$
** *t* test, $P \leq .01$

Figure 1

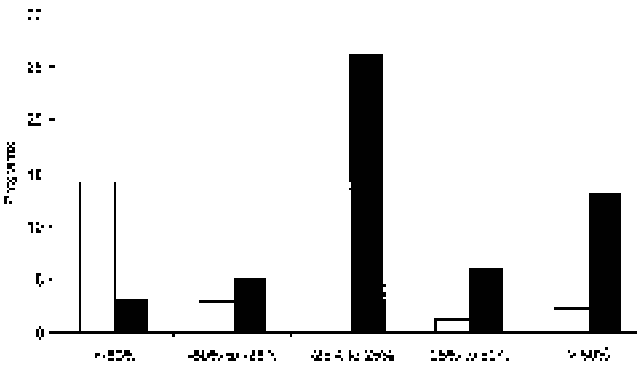
Percent Difference of Reported Amounts of DME Versus Actual Amount of DME Paid by Medicare*



* Figure 1 shows the percent difference between the amount of DME that programs (n=78) were allocated by their sponsoring hospitals and the amount of DME paid to the sponsoring hospital by the Centers for Medicare and Medicaid Services. The difference was not significantly different than zero.

Figure 2

Percent Difference in DME, Family Practice Only Versus Multiple Residencies*



* Figure 2 shows the percent difference between the amount of DME that programs (n=78) were allocated by their sponsoring hospitals and the amount of DME paid to the sponsoring hospital by the Centers for Medicare and Medicaid Services. Dark bars are programs that are the only residency in their hospital. White bars are programs in hospitals with other residencies, which were allocated on average 45% less than the amount paid to their sponsoring hospital, $P=.01$.

to know the amount of GME they received if they were community hospital-based and if they were the only residency program in their hospital.

Although we were only able to examine CMS cost report data for 75% of the programs that reported their DME payments, in aggregate we found no statistically significant difference between the DME they reported receiving and the DME actually paid to the hospital by Medicare. Generally, it appears that these training programs received the DME paid by Medicare to their sponsoring hospital. However, separate analysis of family practice programs in hospitals with other residency programs revealed that they were allocated significantly less DME than the amount paid by Medicare. This finding suggests that family practice programs in hospitals with multiple training programs are at greater risk of having their DME funds diverted. More importantly, it raises the question of accountability for these public payments to teaching hospitals.

In general, there were not large differences between rural and urban training programs. Programs located in rural areas did not differ from urban programs in their knowledge of GME allocation or in their GME funding per FTE. Although GME does not tend to be a large part of their budgets, rural hospitals continue to be highly dependent on Medicare funding. In contrast, hospitals that sponsor programs with an urban-underserved emphasis received far less GME per FTE. This finding underscores the variability of GME funding that is often at odds with policy initiatives.

Limitations

These results are limited by our comparison of 1997 CMS data to the amount of GME funding reported by residency directors in 1999. Because of increasing GME payments, this comparison would have underestimated the amount of DME that the sponsoring hospitals actually received. We only examined the GME funding for each program's primary hospital and also restricted the calculation of expected GME funding to FTE residents in that primary hospital. Despite these potential biases, most training programs were allocated less than the amount paid to their sponsoring hospitals. We suspect that nonrespondents did not answer the GME questions because they did not know, and it is possible that nonrespondents biased the results. While the overall sample size was sufficient, the power was diminished in the smaller cells containing the DME comparisons. The primary findings, however, remain robust.

Conclusions

Should family practice training programs know the amount of GME funding, particularly DME, paid to and allocated by their hospitals? The Residency Review Committee requires that family practice programs demonstrate "a plan to ensure the fiscal stability of the program."[16] Adequate knowledge of the source of income is an important component of a program's budgetary planning. The broad ignorance of GME funding found in our study is less likely an indictment of residency directors' knowledge than of hospitals' willingness to disclose this information. Historically, it has been quite difficult for residency directors to find this information. Until this information was recently posted on The Robert Graham Center Web site, residency directors had to request this information from their hospital administrator or purchase the CMS public user files.[17] Our survey did not assess the impact of this closed accounting on family practice training programs. It is possible that hospitals allocate funds from other sources to cover training costs. Without hospital administrators' cooperation, these questions cannot be answered. More importantly, open accounting of the flow of these designated funds to teaching programs can reassure the public that these funds are being used appropriately. Against a background of wide variations in the amounts of GME payments to teaching hospitals, the utility of these payments is already under review.[2]

The lack of knowledge of GME funding most likely affects all specialties, not only family practice. In fact, family practice training may represent a "best-case scenario" because the majority of programs are located in community hospitals and hospitals where they are the only residency. In these hospitals, the training program's intimate relationship with the hospital may assure a complete allocation of DME funds. In addition, family practice program budgets are more accessible because family practice training programs are responsible for the financial operation of their family practice centers. In contrast, most specialty training occurs in university hospitals, where there are multiple residency programs, and the flow of GME funds can be more difficult to discern. Increased transparency of the allocation of GME payments could improve the effectiveness of this funding.

There is no doubt that the operating margins in teaching hospitals are dependent on their current sources of income, including Medicare GME payments. Teaching hospitals continue to be threatened by the BBA and the prospect of lower Medicare reimbursements. In a time of national debate about the value of GME funding, our findings contribute to the demand for better accountability of government funding that is intended to support graduate medical education.

Acknowledgments: This project was supported in part by the Robert Wood Johnson Clinical Scholars Program (Dr Chen).

This work was presented at the 2001 annual meeting of the North American Primary Care Research Group in Halifax, Nova Scotia.

We thank the American Academy of Family Physicians and all of the residency directors who completed the questionnaire.

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