THE IMPACT OF MEDICARE GRADUATE MEDICAL EDUCATION FUNDING ON RURAL HOSPITALS

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INTRODUCTION

There is now widespread agreement across academic, professional, and policy circles that the U.S. is over-producing physicians. Since 1991, virtually every policy-level body addressing workforce reform has called for reductions in the number of residents in training and has included recommendations to reduce or modify Medicare payment formulas as a means of accomplishing these reductions. Medicare is the single largest payer providing explicit Graduate Medical Education (GME) funds, with payments totaling nearly $6.5 billion in 1995. Mandated reductions in Medicare GME funding would help meet deficit reduction and Medicare solvency objectives while potentially alleviating the nation's physician surplus.

Any policy that attempts to reduce the number of residents nationwide may have a more pronounced negative impact on rural hospitals than on urban ones which typically do not have comparable physician recruitment and retention problems. For rural hospitals, residency programs may be a recruitment tool, as it is thought that resident training programs in rural hospitals increase the likelihood that residents will choose to locate in rural areas upon completion of their training (Bowman and Penrod, 1997). In addition, residents may represent a source of inexpensive labor, and may also function as relief workers for otherwise overworked local physicians. Thus, it is possible that a reduction in the number of residents in rural hospitals would negatively affect the ability of hospitals and surrounding communities to recruit and retain physicians.

In order to assess the importance of medical residents to rural hospitals, and to predict the possible impact which would result from reductions in Medicare GME payments, this working paper addresses the following questions:

- What is the level of Medicare GME funding received by rural hospitals?
- What trends can be seen in payment levels in recent years?
- What effect have Graduate Medical Education programs had on rural hospitals' ability to hire and retain staff physicians?
- What effect would the elimination of Medicare GME payments have on the size and viability of existing GME programs in rural hospitals?

BACKGROUND

The American system of medical education consists of two major stages of training following undergraduate education. The first stage is medical school, which consists of combined classroom and clinical training. The second stage is several years of post-graduate medical education (GME) in an accredited residency or fellowship program. At least one year of GME is required before a physician is eligible to be fully licensed to practice medicine. Successful completion of the entire residency program in a specialty, including fulfillment of any associated requirements such as passage of medical board examinations, allows a physician to be certified by the relevant medical specialty board.

Graduate Medical Education programs have traditionally been based in teaching hospitals. At present, 85% of the approximately 1,000 institutions sponsoring accredited programs are hospitals (American Association of Health Plans, 1997). GME programs have been supported primarily by payments for patient care services from all payers, because the costs of such programs are incorporated into the hospital's price structure. Medicare's GME payments are structured as an add-on to the standardized per-case payment rates, and represent an important source of funding upon which some facilities may rely to remain viable (Council on Graduate Medical Education, 1992; 1996).

Medicare began providing financial support for GME from its inception in 1965, "in recognition of the obligation to support the legitimate costs incurred for training, to provide Medicare beneficiaries access to care in the teaching setting, and also in recognition of the general public value of GME and the teaching institutions that provide it, which are essential parts of the infrastructure for quality health care in this country." (Institute of Medicine, 1997). Medicare (and, in some states, Medicaid) is now the only payer with explicit mechanisms to support GME programs.[1]

Under Medicare's Prospective Payment System (PPS), GME funding is provided in the form of one or both of the following two payments — Direct Medical Education (DME) payments and Indirect Medical Education (IME) adjustments. Direct Medical Education payments are intended to help cover the direct costs of operating a GME program. Direct costs include resident salaries and benefits, the salaries of supervising physicians, the cost of office space, and other overhead. DME payments are per-resident amounts based on a hospital's historical per-resident costs from Fiscal Year (FY) 1984, updated to account for inflation by using the current year's Consumer Price Index for Urban Areas. Medicare funds a portion of the total cost per resident FTE based on the proportion of Medicare patient days to total patient days in each teaching hospital. In FY 1996, DME payments to teaching hospitals totaled about $2.2 billion (Institute of Medicine, 1997).

Indirect Medical Education payments are made in the form of adjustments to a hospital's Diagnosis-Related-Group

[1] The exact amount of Medicaid payments is unknown, although they have been estimated to be between $1.3 to 2.2 billion in Fiscal Year 1995. (GAO/HEHS-97-77R) This working paper will not consider these payments, but will only focus on Medicare.

(DRG) payment to reflect the added patient care costs associated with teaching hospital settings. These "indirect" costs are believed to result from additional testing, unsponsored research, or greater patient acuity. IME payments are determined by using a formula based on the ratio of the number of a hospital's full-time equivalent residents to its number of beds, applying an adjustment factor that is derived from econometric modeling of hospital cost functions. The IME adjustment increases the DRG payment for each Medicare admission by approximately 7.7% for each 10% increase in the resident-to-bed ratio. For FY 1996, IME adjustment accounted for just over 6% of Medicare's total PPS operating payments, totaling roughly $4.3 billion (Institute of Medicine, 1997).

The two components of Medicare GME payments are not necessarily paid to the same hospital. DME payments are made to the institution which incurs "all or substantially all" of the resident's stipend and benefit costs. If a rural hospital hosts a resident on rotation from a larger sponsoring program, but the larger program continues to underwrite the stipend costs of the resident, then the DME payment will be made by Medicare to the sponsoring program. In contrast, IME payments are made to the hospital where the resident is rotating, regardless of funding arrangements for that resident's stipend.

Prior to the recently enacted Balanced Budget Act of 1997 (Public Law 105-33), Medicare GME supplemental payments were open-ended. Hospitals with accredited training programs were able to increase the number of residents in any specialty and Medicare payments (both DME and IME) increased accordingly, so long as the training positions were approved by the appropriate accreditation body for that specialty.

ROLE OF GME FUNDING IN MEETING RURAL COMMUNITIES' HEALTH NEEDS

While the ratio of people to physicians in the United States as a whole has fallen from 724 in 1965 to 375 in 1995, rural communities have not benefited equally from this shift. The percentage of patient care physicians practicing in non-metropolitan areas has fallen continuously over the last 25 years to its present level of 11%. At just over 20%, the proportion of all Americans living in non-metropolitan areas is almost double the proportion of all patient care physicians practicing in these areas. Given this existing disparity in physician supply, the value of programs which can attract physicians to rural areas of the country is clear (RUPRI, 1997b).

GME programs located in rural areas may help counteract rural provider shortages by attracting medical residents and physicians to rural communities. Bowman and Penrod (1997) found that increases in the number of months of required rural experience by Family Medicine residents increases the proportion of graduates eventually practicing in rural communities. The importance of ensuring the continued viability of rural GME programs is underlined by the finding that physicians who begin practice in urban areas seldom move their practices to rural communities in future years (West et al, 1996).

METHODS

Two data sources are analyzed in this working paper. First, Medicare GME payment levels received by all hospitals located in non-metropolitan counties are determined through analysis of the Health Care Financing Administration's (HCFA) Hospital Cost Report Information System Minimum Data Set (HCRIS), which is the electronic copy of hospitals' Medicare cost reports. Hospitals located in nonmetropolitan counties were identified by the Metropolitan Statistical Area (MSA) code on the HCRIS file. The data are aggregated by HCFA according to the PPS year in which the hospitals' fiscal cost reporting year begins. Thus, the PPS XI file (federal fiscal year 1994) contains cost reports for all fiscal years beginning sometime between October 1, 1993 and September 30, 1994. To establish trends in payments over time, we present five consecutive years of data.

It is important to note that most of the HCRIS data has not been audited. Across the five years of data included in this analysis, 57% of the cost reports contained hospital data "as filed" by the provider, prior to review or correction by HCFA's Fiscal Intermediaries. Two hospital reports with clearly inconsistent data were excluded from our analysis.

Under normal circumstances the Fiscal Intermediary (usually a health insurance company under contract to HCFA) will perform a math check on the Cost Report prior to forwarding it to HCFA. A more detailed review of the filed report, however, will not occur for another twelve to eighteen months. If an HCRIS tape is created soon after the close of the federal fiscal year, the majority of reports included on that tape will contain data that has not been reviewed. Over the past ten years HCFA has required an increasing number of internal consistency checks to be programmed into all approved cost report software, which has reduced the incidence of more obvious inconsistencies and missing data elements. Other errors in the data due to faulty reporting by the provider, however, cannot be identified. Mistakes may be more common among smaller rural facilities that are unfamiliar with the rules for teaching hospitals.

In addition to the use of cost report data, this study draws upon the results of a survey of rural hospitals with residency programs. In late summer and fall of 1997 we identified all hospitals located in nonmetropolitan counties which reported receiving Medicare GME payments in PPS

years 11 and/or 12 and currently host one or more residents. There were 68 hospitals which met these criteria. All 68 hospitals were contacted by telephone and asked to participate in the study. Copies of the survey were faxed to a variety of hospital or program administrators, all of whom were in one of the following senior administrative positions: Chief Executive Officer or President, Vice President, Director of residency or Medical Education program, Chief Financial Officer, and Chief Operating Officer. Follow-up calls were made either at mutually agreed upon times or, if no set time was established, within one week of the hospital's receipt of the faxed survey. Unless administrators preferred to complete the surveys on their own and fax them back to the study site, information was recorded on blank surveys during the follow-up calls and processed for analysis. This procedure resulted in a total of 33 hospitals providing information to complete the surveys, for an overall response rate of 49%.

Respondents to our survey represented hospitals that were larger, on average, than those from which we could not get a response. Hospitals included in our data tended to have more beds, more residents, and receive more Medicare GME payments than the hospitals which did not respond. We believe that some of the nonresponding hospitals may have had a small number of residents at one time but currently do not have training programs.

HOSPITAL COST REPORT FINDINGS

Analysis of the HCRIS data for all non-metropolitan hospitals reveals that the number of rural hospitals receiving any Medicare GME payments is small, and, as shown in Table 1, has not grown appreciably over the five studied years.

A wide range of sizes are represented among the 70 nonmetropolitan hospitals that received Medicare GME payments in PPS Year 11. Although rural hospitals receiving payments are most likely to have between 101-200 beds (39%), both very small and very large hospitals are represented: 14% have fewer than 50 beds, 18% have 50-100 beds, 24% have between 201-400 beds and 4% (three hospitals) have more than 400 beds.

Similarly, the hospitals identified in PPS Year 11 are located in rural towns of all sizes. Less than half are located in towns with populations of more than 20,000 (27% are in towns with 20,001-30,000 residents and 17% are in towns with more than 30,000 residents).[2] Residents are being trained in the smallest rural towns: 19% of rural hospitals that received Medicare GME payments are located in towns with less than 5,000 people, 19% in towns with 5,000-10,000 people, and 19% in towns with 10,001-20,000 people.

The majority of rural hospitals receiving Medicare GME payments in PPS year 11 are not-for-profit or governmental (Figure 1). This proportion has remained unchanged over the course of the period considered for this working paper (PPS Year 7 - 11). Nonmetropolitan for-profit hospitals are less likely than not-for-profits to receive Medicare GME payments; while only 4 percent of the hospitals receiving GME payments are for profit, these hospitals account for 11 percent of all hospitals located in nonmetropolitan counties.

The number of residents reported in rural hospitals receiving GME funding fluctuated across the five PPS years studied (Table 2). A substantial number of the residents reported in each year are accounted for by three institutions with very large programs: Mary Hitchcock Memorial Hospital in New Hampshire, West Virginia University Hospitals in West Virginia, and Geisinger Medical Center in Pennsylvania. For example, in PPS year 7, 540 of the 975

Table 1 **Number of Hospitals Located in Nonmetropolitan Counties that Receive Medicare GME Funding**

	PPS Year 7[1]	PPS Year 8	PPS Year 9	PPS Year 10	PPS Year 11
DME and IME payments	44	44	51	55	51
DME payments only	4	7	4	4	7
IME payments only	16	12	6	9	12
Total Hospitals	64	63	61	68	70

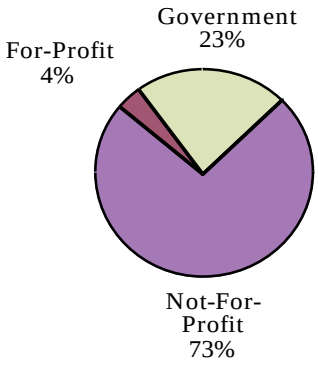
[1]PPS Year 7 includes all Medicare cost reports for fiscal years beginning between 10/1/89-9/30/90. PPS Year 8 includes 10/1/90-9/30/91; PPS Year 9, 10/1/91-9/30/92; PPS Year 10, 10/1/92-9/30/93; and PPS Year 11, 10/1/93-9/30/94.

Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

[2] Population estimates were obtained from the 1991 Commercial Atlas & Marketing Guide. Rand McNally, 122nd Edition, Chicago, 1991.

Figure 1

Type of Control of Nonmetropolitan Hospitals that Receive Medicare GME payments



Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

residents were participating in one of the three largest training programs in rural America. Therefore, the mean number of residents in each hospital is substantially greater than the median, with the median giving a more accurate portrayal of the typical size of residency programs in rural hospitals.

Despite the small number of rural hospitals that have Medicare GME-funded resident training programs, the amount of payment received by these hospitals is not insubstantial.[3] In PPS year 11, 70 rural hospitals received a total of over 80 million dollars (Figure 2). IME funding levels showed the greatest amount of growth during the time period studied, growing from roughly double the amount of DME funding in PPS 7 to almost triple the DME amount in PPS 11. As with the number of residents, a large portion of the payments are accounted for by the three largest programs, who received almost $47 million (58.5%) of the $80 million total PPS year 11 payments.

When looking at the mean payment per year of the three largest rural programs as compared to the remaining programs (Table 3), the uniqueness of these three programs becomes clear.

For most rural hospitals receiving GME dollars, these funds represent a very small percentage of the total amount payable for Medicare. The mean percentage fluctuates between five and six percent across the five years studied. However, for a very few nonmetropolitan hospitals, Medicare GME funds represented as much as 37% of total Medicare payable.

Total Medicare GME payments to hospitals in nonmetropolitan counties are not evenly distributed across the country. States in the northeast and the Great Lakes regions of the United States receive significantly larger amounts of GME funds than do those in the rest of the country (Figure 3). For Fiscal Year 1994, there were no nonmetropolitan hospitals in the southwest of the country, and very few in the Midwest that received Medicare GME funding at all.

By PPS year 11, over 25% of nonmetropolitan hospitals receiving Medicare GME funds were sole community hospitals.[4] In the same fiscal year, these hospitals received just over 8 million dollars from Medicare for GME, accounting for only 10.5% of total payments to hospitals in rural areas (Table 4).

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3 GME payments to rural hospitals are insubstantial relative to total payments. In PPS Year 12, only 1% of Medicare GME payments were made to rural hospitals.

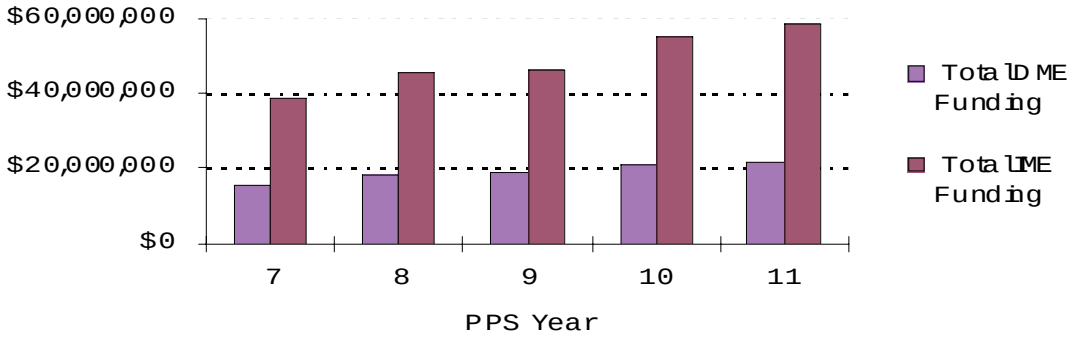
4 A Sole Community Hospital (SCH) is provided special payment protections as the sole source of inpatient services reasonably available to Medicare beneficiaries. SCHs are able to continue to receive payments based on their hospital-specific upated historical costs rather than on national DRG rates, if they choose to. A hospital is declared to be an SCH if it meets certain criteria contained in the 1972 amendments to the Social Security Act and modified in the OBRA 1987 Medicare amendments.

Table 2
Number of Reported Residents Funded by Medicare in Hospitals Located in Nonmetropolitan Counties

	PPS Year 7	PPS Year 8	PPS Year 9	PPS Year 10	PPS Year 11
Total Number of Residents	975	1,018	957	984	1,064
Mean Number per Hospital	15.5	16.2	15.7	14.5	15.2
Median Number per Hospital	5	5	5.3	4	3.6

Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

Figure 2: **Trend in Amounts of Medicare GME Funds received by Rural Hospitals**



Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

Table 3
Medicare GME Dollars Received by Rural Hospitals Stratified on Program Size

	PPS Year 7	PPS Year 8	PPS Year 9	PPS Year 10	PPS Year 11
Three largest programs					
Total DME payments	8,554,642	9,222,242	9,509.477	9,771,762	10,093,509
Mean DME payment/hospital	2,851,547	3,074,081	3,169,826	3,257,254	3,364,503
Total IME payments	23,165,048	27,016,482	28,398,026	32,932,795	36,720,507
Mean IME payment/hospital	7,721,683	9,005,494	9,466,008	10,977,598	12,240,169
Remaining programs					
Total DME payments	7,203,231	8,662,117	9,721,947	10,752,513	11,329,042
Mean DME payment/hospital	160,072	180,461	186,961	192,009	205,983
Total IME payments	15,320,735	18,721,552	17,868,919	21,855,051	21,875,624
Mean IME payment/hospital	268,785	353,237	330,906	358,280	364,594

Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

Table 4
Sole Community Hospitals Located in Nonmetropolitan Counties that Receive Medicare GME Funds

	PPS Year 7	PPS Year 8	PPS Year 9	PPS Year 10	PPS Year 11
Number of sole community hospitals					
DME and IME payments	5	5	9	13	13
DME payments only	0	2	2	0	1
IME payments only	5	3	0	4	4
Total	10	10	11	17	18
Dollars Received					
DME	$1,234,731	$2,039,509	$2,633,386	$2,918,077	$2,540,028
IME	$2,688,858	$4,830,910	$5,428,925	$7,367,766	$5,913,006
Total Dollars	$3,923,589	$6,870,419	$8,062,311	$10,285,843	$8,453,034

Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

SURVEY FINDINGS

While analysis of the PPS information provided a picture of general trends in Medicare funding to rural hospitals across the country, the responses of those who participated in our survey provided interesting insight into the non-financial value of medical residency programs to rural hospitals and what responses might likely result from changes in payment levels to hospitals with these programs. The residency programs in the hospitals that responded to our survey ranged in size from one resident per year up to 254 per year. Across all 33 hospitals, 827 residents were reported as being in training in the most recent fiscal year, but 441 of these residents (53%) were accounted for by two programs. Most of the rural-based residency programs train primary care physicians—in our survey 547 residents were in primary care, 73 were in hospital based sub-specialties, 21 were in emergency medicine, 73 were in general surgery, and 113 were training in other disciplines.[5] With a very few exceptions, the residents were reported to work full time for 48-52 weeks of the year.

Thirty of the 33 surveyed hospitals reported that their residents also trained in non-hospital settings. There were a number of different non-inpatient training sites, including hospital affiliated ambulatory care clinics (17 programs), university affiliated ambulatory care clinics (6 programs), other free-standing ambulatory care centers (5 programs), health departments (5 programs), private physicians' offices (20 programs), and other unspecified settings (5 programs). In 13 hospitals there are plans to add new ambulatory sites in the next two years.

Residents in training at the surveyed hospitals were paid through a number of different financial arrangements. In general, physician trainees remain on the payroll of the institution that is sponsoring their accredited program. Nineteen of the 33 hospitals responding to our survey sponsored their own programs and incurred the resident stipend costs through their own payroll. Many rural teaching facilities, however, are acting as host sites for residents on rotation from larger programs. Some of these have contractual arrangements to reimburse the sponsoring institution for resident time spent in their facilities, but many do not. Some rural rotations are underwritten by state or other special funding agencies.

We asked the respondents to assess the impact of their facility's residency programs on a number of topics. Respondents could choose between "much better", "better", "neither better nor worse", "worse" and "much worse". In each of the areas about which we asked, the replies given by the administrators of the rural hospitals were overwhelmingly positive about the impact which their residency programs had on their facility (see Table 6). In fact, of the all the administrators interviewed about each of five areas, only one response indicated a perceived negative impact of physician training on some aspect of the facilities' operations.

[5] We defined primary care to include: family practice, internal medicine, obstetrics/gynecology, pediatrics, and general osteopathy. Hospital-based specialties include anesthesiology, radiology, and pathology.

In the area of quality of patient care, 66% of those interviewed said that the presence of residents at their facility resulted in better or much better care. One administrator believed the continual influx of new physicians in training ensured a flow of new ideas and training methods into his facility. Without these new caregivers, his rural facility would have found it more difficult to stay abreast of the wide range of new techniques and approaches to care that recent medical school graduates brought with them. In addition, sixty percent of the respondents stated that the patients' perception of the quality of care they received was better or much better as a result of the presence of the residents.

On-Call Hours

Excessive on-call hours during nights and weekends is a commonly mentioned concern of physicians practicing in rural communities, and one which may act as a significant obstacle to those considering settling in rural areas. Almost 60% of administrators interviewed during our survey felt that the staff on-call hours were improved by the presence of residents. Interestingly, only one administrator (who happened also to be a physician) stated that at his hospital the residents were there to be trained and did not provide services on their own; as such, they were a drain on his staff physicians' time and he felt them to have a negative effect on the facility's staff on-call hours.

Physician Recruitment and Retention

Questions dealing with GME programs' impact upon the ability of rural hospitals to recruit physicians drew the most positive response. While seventy-two percent of the respondents believed that the residency programs had a positive effect upon their hospital's physician recruitment efforts, twenty-nine (88%) reported that residents had remained at the hospital as staff physicians upon completion of their training. In fifteen hospitals, at least one resident on average stays after completion of training to become a staff physician every year. A common sentiment among the administrators was that many physicians who decided to settle and work in their communities were attracted by the opportunity to share their experience and knowledge with the physicians-in-training participating in the rural GME programs.

Table 5
Financial Arrangements for Payment of Residents' Stipend and Benefits

Number of Hospitals	Residents on Payroll	Paid through contract with another hospital, or other financial arrangement	Surveyed hospital makes no financial contribution
12	•		
2	•	•	
2	•		•
3	•	•	•
11		•	
3		•	•

Table 6
Perceived Benefit of Medical Residents to Rural Hospitals

	Much better	Better	No Impact	Worse	Much worse
Quality of patient care	8 (25%)	13 (41%)	11 (34%)	0	0
Patients' perception of quality of care	6 (19%)	13 (41%)	13 (41%)	0	0
Hospital's ability to recruit staff physicians	11 (34%)	12 (38%)	9 (28%)	0	0
Staff on-call hours for services that have a resident(s)	9 (28%)	10 (31%)	12 (38%)	0	1 (3%)
Hospitals ability to retain staff physicians	9 (28%)	9 (28%)	14 (44%)	0	0

Fourteen administrators said that the presence of a residency program had resulted in the recruitment of staff physicians who did not serve as residents. One administrator called the residency program "a big selling point" for recruiting staff physicians. A majority of respondents also stated that the residency programs improved their facility's ability to retain staff physicians.

We asked respondents what they thought they would do if Medicare Direct Medical Education payments were discontinued. While 24% were unsure and 21% felt that their program would remain the same, 27% of the administrators we interviewed thought that they would decrease the size of their residency program and 27% thought they would eliminate the program altogether if direct payments were discontinued. When we asked about the possibility of elimination of indirect payments, the response was similar—27% would decrease the size of the program and 24% felt that loss of Medicare indirect funds would result in elimination of the program at their hospital. Twenty-seven percent state that their program would stay the same in the face of IME payment cuts. There was no significant difference in response to these two questions when we stratified on program size or by whether the respondent thought the program helped recruit and retain staff physicians.

Eight respondents told us that if they were forced to decrease the number of residents in their hospital, additional paid staff would need to be hired. Although one would expect these administrators to be less likely to make program changes in the face of GME payment cuts there was no significant difference in this response as compared to the response of administrators who felt that any lost residents would not need to be replaced by paid personnel.

Respondents from 17 of the participating hospitals chose to comment further on the impact of their residency program on their hospital's ability to recruit and retain staff physicians and the impact that changes in Medicare GME payment levels would have on their programs. All respondents but one wanted to reiterate the positive impact that they felt the residency program had on both the hospital and the surrounding community. Perceived benefits included high percentages of graduates choosing to remain either at the hospital or to locate in the surrounding areas; an enhanced ability to recruit staff physicians due to the teaching mission of the institution; and a positive impact on the hospital environment and improvement in the quality of care provided as a result of the presence of medical residents.

A number of respondents voiced concern about the possibility that Medicare GME funds will be reduced or eliminated in the future. While some individuals simply reiterated what had been said in the survey—that reduced or eliminated funds could result in eliminating the residency program, others took a more global view. One respondent noted that if resident funding was withdrawn, "it would seriously hamper our efforts to recruit physicians to .rural area(s)." Another voiced concern that care for local indigents would be less available in their community if the residency program were not there. Several respondents mentioned that they were uncertain about how the new provisions in the Balanced Budget Act of 1997, which contain incentives for larger programs to reduce their trainee sponsorship, will affect their programs and their facilities. They felt that these incentives, and the likely resulting reduction in the availability of medical personnel, would probably have an adverse impact on rural areas.

SUMMARY

In order to assess the impact that Medicare GME payments have on rural hospitals, this document uses two data sources to explore the following: the level of Medicare GME funding received by rural hospitals; the trends in payment levels in recent years; the effect of Graduate Medical Education programs on rural hospitals' ability to hire and retain staff physicians; and the potential effect of elimination of Medicare GME payments on the size and viability of existing GME programs in rural hospitals.

We have found that the number of rural hospitals receiving any Medicare GME funding is small and remained relatively constant during the five-year time period studied, with three large facilities accounting for over half of the payments received. The total amount of dollars paid out by Medicare as either IME or DME payments to rural hospitals with medical resident training programs increased steadily over the five years studied, with the IME payments experiencing the greatest rate of increase and representing the largest share of the total payments made. The increase in total payments is due to both an increase in the number of rural hospitals receiving Medicare GME and a large average yearly payment per hospital.

Results from our survey suggest that both staff physician recruitment and retention in the surveyed facilities were better as a result of the presence of medical residents. In addition, it appears that the programs may have also led to greater numbers of physicians settling in the communities surrounding the facilities or in rural areas similar to those in which they trained. Though the percentages differed slightly between responses regarding discontinuation of DME and IME funding, the majority of those surveyed felt that elimination of GME funds would lead to either decreases in the size or outright elimination of the medical resident training programs operating at their facilities.

DISCUSSION—LOOKING TO THE FUTURE

In recent years, much attention has been given to calls for reductions in the number of residents in training as a way of reining in a teaching system that is perceived to be

over-producing physicians. While there may well be a glut of physicians in the metropolitan areas of the country, few would allege that rural areas are experiencing this same problem. Because resident training programs receive significant amounts of funding from Medicare based on the number of FTE residents involved in their programs, current legislative efforts to address the national oversupply of physicians focus on restricting the amount of Medicare payments to graduate medical education programs.

Although the number of hospitals located in nonmetropolitan counties that receive Medicare GME payments is small, our study results support the contention that rural-based training programs are feasible in a wide range of hospital and community sizes. Further, the results support the findings of previous research that suggest that rural residency training programs are very important to the hospitals and surrounding community in terms of improvement in recruitment and retention of physicians, and that these programs provide an essential component of the physician supply pipeline to rural areas. For some hospitals with residency programs, the dollars received from Medicare for GME are an important source of support, and many administrators feel that without these payments their program might be in jeopardy. Therefore, it is quite possible that reductions in Medicare GME payments to rural hospitals will have a negative impact on these hospitals and the surrounding community.

The recently passed Balanced Budget Act of 1997 contains several provisions concerning Medicare GME payments that may effect rural hospitals in the near future.[6] Of likely benefit to rural hospitals are provisions that expand the range of providers who are eligible to be included for GME payments. For example, Medicare can now make DME payments to rural health clinics and federally qualified health centers, which should encourage the placement of medical residents and interns in rural settings. When counting the number of full-time-equivalent (FTE) residents for IME payments, GME programs will now be able to include time spent training in ambulatory settings. Given that a large proportion of rural programs already incorporate ambulatory settings into their programs, the provision should increase IME payments and increase the financial attractiveness of placing residents in ambulatory settings. As skills developed in non-hospital based settings may often be more valuable to physicians practicing in rural settings than those skills commonly acquired in the larger teaching hospitals, a shift in training site away from the hospital will be beneficial.

On the negative side, other sections of the Balanced Budget Act call for the gradual reduction of IME payments to be provided to facilities training residents and for a ceiling to be placed on the number of residents for which a GME program will receive Medicare funding. For the purpose of determining both IME and DME payments, existing teaching hospitals may not exceed a number of resident FTEs equal to a rolling three-year average of the number of residents reported in their cost reports, ending on or before December 31, 1996. This limitation on FTEs could be detrimental to the health care needs of rural areas served by existing GME programs because any limitations on the number of residents training in an area in turn limits the pool of physicians most likely to settle and practice in that area.

Although the cap on the number of residents will restrict new expansion of residency programs in general, there has been recognition of the importance of resident training programs to rural areas. This recognition is reflected in provisions in the Balanced Budget Act that specifically instruct the Secretary of Health and Human Services to "give special consideration to facilities that meet the needs of underserved rural areas." (P.L. 105-33,§4623, 111 stat. 251, 478 (to be codified at 42 U.S.C. §1395 ww (H)(4)) Discretion is also given to the Secretary to modify this ceiling for new GME programs (those established on or after January 1, 1995).

These provisions are critical, as they theoretically allow for expansion of rural training programs at a time when the over-all number of training slots is contracting. To insure the growth of physician supply in rural areas, it is important that the protections in the Act are equally beneficial for rural hospitals that receive residents as part of an arrangement with larger metropolitan hospitals. Residency positions at these rural hospitals are often funded by and identified as metropolitan-based programs, so it is not clear whether rural facilities relying on residents funded by metropolitan-based programs will fall within the discretionary power of the Secretary.

Finally, the complex financial relationships between urban and rural hospitals regarding residents raises other issues. Although the survey reported here only sampled rural hospitals, the actions of larger metropolitan training hospitals in response to changes in Medicare GME payments could also have a significant impact on rural hospitals. An important question for further research is whether those urban hospitals that send residents out to rural hospitals for some part of their training, often at no cost to the rural hospital, will continue to do so if their GME payments for that resident are cut or eliminated.

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[6] For more information on the specific provisions of the Balanced Budget Act of 1997, please see RUPRI (1997a).

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APPENDIX

GME PAYMENTS TO RURAL HOSPITALS BY STATE

Medicare Indirect Medical Education Payments to Rural Hospitals, by State

State	PPS Year 7	PPS Year 8	PPS Year 9	PPS Year 10	PPS Year 11	PPS Year 12
Alabama	408,420	248,499	99,787	241,857	29,159	421,255.00
Arkansas	482,773	719,611	937,225	1,059,781	803,981	731,323.00
Colorado	770,702				89,899	1,615,543.00
Georgia	878,892	1,063,012	1,044,936	1,105,253	884,013	981,514.00
Idaho				97,466	230,699	236,309.00
Illinois	590,560	657,410	485,151	427,937	812,985	735,578.00
Iowa	974,596	1,031,310	1,188,378	1,374,016	1,561,357	1,577,591.00
Kansas	279,440	359,371	541,298	776,328	793,986	654,808.00
Kentucky	325,519	541,546	359,864	1,026,618	396,329	479,108.00
Louisiana	551,042	1,440,262				129,534.00
Maine	767,914	841,485	851,715	1,048,719	1,140,732	1,224,095.00
Michigan	979,877	1,216,973	893,109	1,372,740	1,567,447	1,455,967.00
Missouri	1,394,605	1,192,492	1,082,328	991,653	417,096	947,028.00
Montana		2,460				
Nebraska			63,055	205,728	145,946	206,105.00
New Hampshire	7,103,605	8,956,531	8,855,318	11,850,512	15,205,912	3,792,721
New York	1,158,110	3,065,903	3,073,585	3,361,668	3,305,751	3,798,266.00
North Carolina					223,079	
North Dakota	277,577	230,634	348,950	411,085	175,863	416,523.00
Ohio	353,094	467,344	436,547	608,329	794,614	910,285.00
Oklahoma	257,205	176,891	116,861	34,141	1,881	23,044.00
Oregon					155,737	667,764.00
Pennsylvania	11,833,012	13,581,837	12,622,114	13,553,043	15,389,243	
South Carolina	467,239	632,680	593,924	692,023	792,682	935,403.00
Tennessee	1,838					1,831,458.00
Virginia	64,777	82,124	40,876	277,870	22,314	332,000.00
Washington	35,315	122,726	174,765	119,733	125,341	182,326.00
West Virginia	8,054,100	9,200,133	10,363,601	11,753,048	11,632,855	
Wisconsin	475,574	1,347,063	2,093,559	2,398,198	1,897,233	2,334,298.00

Receive no rural IME dollars: Alaska, Arizona, California, Delaware, Florida, Hawaii, Indiana, Maryland, Massachusetts, Minnesota, Mississippi, Nevada, New Jersey, New Mexico, South Dakota, Texas, Utah, Vermont, Wyoming

Medicare Direct Medical Education Payments to Rural Hospitals, by State

State	PPS Year 7	PPS Year 8	PPS Year 9	PPS Year 10	PPS Year 11	PPS Year 12
Alabama		43,103		2,976	46,841	77,500.00
Arkansas	202,609	283,974	262,035	304,315	295,231	282,815.00
Colorado	394,478				10,807	721,048.00
Georgia	478,688	541,395	800,555	795,493	899,954	969,616.00
Idaho				42,399	185,410	111,455.00
Illinois	191,752	203,887	288,951	264,058	270,512	289,822.00
Iowa	314,370	306,832	531,456	553,776	466,204	591,073.00
Kansas	32,823	50,845	53,486	122,490	102,956	124,666.00
Kentucky	111,429	185,848	348,412	307,814	364,524	334,424.00
Louisiana		1,325,920				48,350.00
Maine	689,203	794,508	891,772	1,073,328	1,096,790	1,207,198.00
Michigan	382,677	575,436	487,736	634,869	916,333	
Missouri	693,718	652,238	614,279	747,126	343,031	
Nebraska			32,079	139,783	125,218	
New Hampshire	2,646,434	3,149,472	3,246,275	3,325,870	3,579,492	
New York	357,265	1,626,638	1,795,819	1,895,206	2,062,700	
North Carolina	44,100	48,598	32,952	68,989	34,818	
North Dakota	45,056	149,050	174,311	248,431	59,027	
Ohio	209,154	96,907	268,925	364,687	400,441	
Oklahoma		2,888	2,414	2,490		
Pennsylvania	5,192,186	5,666,373	5,309,825	5,287,335	5,949,409	
South Carolina	442,644	476,393	561,766	612,459	681,503	
Tennessee	4,090					
Virginia	93,139	138,096	157,110	128,899	19,832	
Washington	3,565	9,689	27,417	18,219	24,543	
West Virginia	2,363,005	2,467,538	2,703,271	2,888,694	2,833,694	
Wisconsin	424,837	414,654	640,578	694,569	653,282	

Receive no rural DME dollars: Alaska, Arizona, California, Delaware, Florida, Hawaii, Indiana, Maryland, Massachusetts, Minnesota, Mississippi, Montana, Nevada, New Jersey, New Mexico, Oregon, South Dakota, Texas, Utah, Vermont, Wyoming