

Medicare Funding of Nurse Education

The Case for Policy Change

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Objectives.—To determine the magnitude and distribution of US Medicare funding for nursing education and to assess the extent to which Medicare funding contributes to meeting national health care workforce priorities.

Data Sources.—Medicare Hospital Cost Report Information System, American Hospital Association Annual Survey of Hospitals, and National League for Nursing national surveys of schools of nursing.

Data Analysis.—Using hospital identifiers, data from three data sets were merged and analyzed to estimate percentage distributions of Medicare funding according to types of educational programs, hospital characteristics, and student enrollment.

Results.—Fifteen percent of direct Medicare graduate medical education funding goes to hospitals for the training of nurses and paramedical personnel. Totalling approximately \$174 million in 1991, 71% of these funds went to hospitals for nursing education costs. Most of the nation's teaching hospitals (289 of 381 Council of Teaching Hospitals member hospitals) and nurse education programs (1112 of 1484) do not qualify under existing policies for Medicare nursing education reimbursement. Sixty-six percent of Medicare nurse training funds, totaling \$114 million in 1991, went to 145 hospitals operating diploma nursing programs; these programs produce less than 10% of nurse graduates. Three states (Pennsylvania, New Jersey, and Ohio) received nearly one half (48%) of the \$114 million for diploma nursing education.

Conclusions.—Medicare is the largest single source of federal support for nursing education. Yet, the majority of Medicare nursing education funding goes to hospitals affiliated with an increasingly smaller, idiosyncratic subset of nurse training programs. Unlike graduate medical education, Medicare supports primarily preprofessional education in nursing. Graduate education, including the preparation of nurse practitioners, does not generally qualify for reimbursement. Medicare reimbursement for nursing education must be retargeted.

(JAMA. 1995;273:1528-1532)

CYCLICAL shortages of hospital nurses in the United States have long motivated public policies to maintain a large supply of registered nurses (RNs) for inpatient employment.¹ Indeed, the supply of nurses has grown steadily, far outstripping popu-

lation growth. Nurse-to-population ratios increased from 246 nurses per 100 000 people in 1950 to 726 per 100 000 people in 1992.^{2,3} An average of 50 000 nurses have been added to the workforce every year for the past decade.⁴ Most of this increased supply has been absorbed by hospitals, where two thirds of nurses are employed. But the restructuring of the hospital industry raises important concerns regarding the likelihood that hospitals will continue to absorb new nurses at current rates of production.

In recent years, the rate of growth of employment in outpatient settings has outpaced growth of inpatient employment. Between 1988 and 1992, the employment of nurses in hospital outpatient settings and public health or community settings increased by 68% and 62%, respectively. During the same period, nurse employment in hospital inpatient settings grew less than 6%.^{3,5} Anecdotal reports of hospital inpatient workforce restructuring, including reductions in RN positions, are numerous but comprehensive research is still lacking. Authors of a recent study that evaluated employment across eight occupations in hospitals, nursing homes, and other health care settings in New York City predicted that 7% to 15% of current acute care capacity could be eliminated by the year 2000, resulting in a significant decline in demand for nurses and other inpatient personnel.⁶ Another recent study analyzed survey responses of chief nursing executives in 76 hospitals that had recently completed restructuring projects (executives from 68% of eligible hospitals responded). Ninety percent of responding chief nursing executives reported reductions in jobs resulting from restructuring and 87% of these hospitals had eliminated RN positions.⁷

In 1990, even before recent escalations in hospital restructuring, *The Seventh Report to the President and Congress on the Status of Health Personnel in the United States* concluded that the mix of nurses by educational level was out of balance with national needs.⁸ According to this report, the nation will face a substantial shortage of nurses educated at the baccalaureate and graduate levels by the year 2000, while having an excess supply of nurses with less than a baccalaureate education. The need to

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increase production of advanced practice nurses to meet the demands created by the growth in managed care has received attention from several recent workforce policy reports.⁹⁻¹¹

From its inception, Medicare has reimbursed eligible hospitals for a portion of the costs associated with the training of nurses and paramedical personnel, in addition to physicians. Yet, little is known about the magnitude and nature of Medicare expenditures for nursing education, or the effect of these expenditures on the composition of the health care workforce. Attention to Medicare policies and expenditures for nursing education has been notably absent from assessments of the adequacy of the health care workforce and from recent legislative proposals to modify Medicare graduate medical education (GME) policies. In an era of increasingly constrained resources, and in view of the need to restructure the health care workforce for the future, an appraisal of Medicare nursing education expenditures is overdue.

BACKGROUND

The organization and financing of nursing education differs in important ways from that of medical education. Three different kinds of education programs (3-year hospital diploma, 2-year associate degree, and 4-year baccalaureate degree programs) prepare RNs. These program types vary in length, content, and financing. The last comprehensive study of sources of revenue for nursing programs was conducted in 1974; thus, there is no detailed information available to compare nursing and medical school financing.^{12,13} There are, however, several obvious differences. First, all three types of nursing schools depend more on tuition than do medical schools. Data in the Table from institutions of higher education where about 90% of nursing programs now reside suggest that tuition constitutes between 17% and 40% of revenues,¹⁴ compared with about 4% for the revenues of medical schools.¹² Service revenues from practice plans and hospitals, including Medicare payments for GME, are the most important source of financing for medical schools, accounting for 48% of total revenues. In contrast, patient care funds are an important source of nursing education funding primarily in hospital-based diploma nursing programs.¹³

Since established by the Social Security Amendments of 1965 (Public Law 89-97), the Medicare program has reimbursed hospitals for a portion of the educational costs of training physicians, nurses, and certain paramedical personnel. The original aim of this funding was the promotion of high-quality inpatient

Distribution (%) of Total Revenues of Institutions of Higher Education* Compared With Medical Schools

	Tuition	State/Local Government	Federal Research	Services		Other
				Hospital†	Other‡	
Medical schools§	4	12	19	12	36	17
Institutions of higher education						
Public universities	17	37	12	13	14	8
Public 2-year colleges	20	64	5	0	7	4
Private universities	40	3	16	11	13	18

*Not specific to nursing schools.

†Medicare educational revenues are included under the hospital category.

‡Other services for medical schools are primarily practice plan revenues; for institutions of higher education, other services include educational activities and auxiliary enterprises.

§Data from Ganem et al.¹²

||Data from National Center for Education Statistics, US Department of Education.¹⁴ Totals may exceed 100% because of rounding.

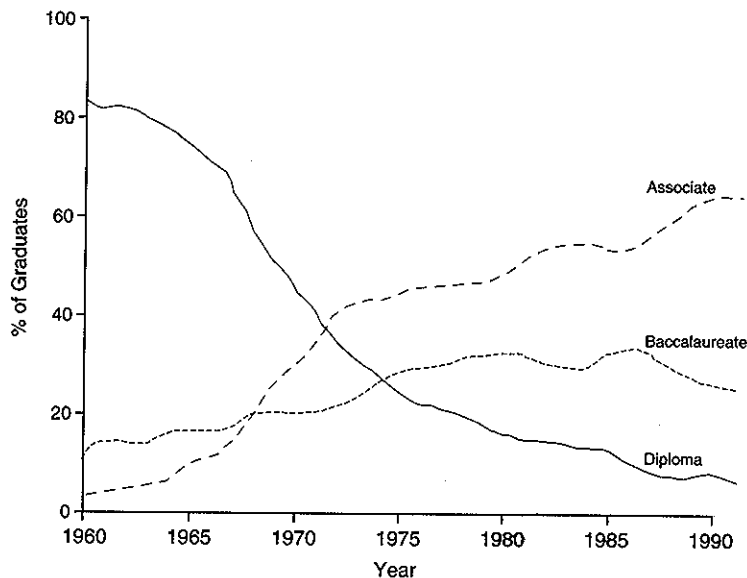


Figure 1.—Nurse graduates by type of education program, 1960 through 1991. Data from National League for Nursing, Division of Research.^{16,17}

care for Medicare beneficiaries, as put forth in the following legislation:

Many hospitals engage in substantial educational activities, including . . . the training of nurses and the training of various paramedical personnel. Educational activities enhance the quality of care in an institution, and it is intended, until the community undertakes to bear such education costs in some other way, that a part of the net cost of such activities . . . should be considered as an element in the cost of patient care, to be borne to an appropriate extent by the Hospital Insurance program (S. Rep. No. 404, 89th Congress, 1st Sess. 36 (1965); H.R. Rep. No. 213, 89th Congress, 1st Sess. 32 (1965)).¹⁵

Providers are defined in the legislation to include hospitals, skilled nursing facilities, home health agencies, and other health care facilities; however, hospitals are the institutions receiving payment.

In contrast to Medicare's policy of supporting postgraduate clinical training of physicians, Medicare's support of

nursing education goes to hospitals for preprofessional programs preparing RNs. Medicare reimbursement regulations pertaining to nursing education have been revised repeatedly, creating confusion among fiscal intermediaries, hospital officials, and training programs, as well as inconsistencies in reimbursement. According to current regulations, Medicare reimburses hospitals that legally operate approved nurse education programs for a share of their classroom and clinical costs, based on the proportion of the hospital's patients who are Medicare beneficiaries. Hospitals may receive reimbursement for clinical costs incurred in association with nonprovider-operated nursing education programs only if (1) the provider was reimbursed for clinical training costs during the latest cost-reporting period ending on or before October 1, 1989; (2) the provider's portion of allowable clinical costs does not exceed the previous period's portion; (3) the provider shows benefits

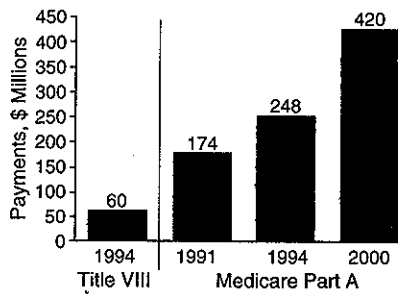


Figure 2.—Actual and projected Medicare payments to hospitals for nursing education, 1991 through 2000, compared with present Title VIII funding. (Data sources: Medicare 1994 and 2000 estimates from the Office of the Actuary, Health Care Financing Administration, unpublished data; 1991 Medicare data from Medicare Hospital Cost Report Information System files; and Title VIII funding information from Division of Nursing, Bureau of Health Professions.)

from the support it furnishes through the provision of clinical services by students; and (4) the associated costs to the provider do not exceed those that would accrue if the provider legally operated the program.¹⁵

The net result of the "provider-operated" provisions is the exclusion of most nursing education programs conducted under the aegis of institutions of higher education—2- and 4-year colleges and universities where approximately 90% of nurses currently receive their education (Figure 1).^{16,17} In 1960, more than 900 hospital-based diploma programs produced 83% of the nation's nurses; by 1991, only 145 diploma programs remained in operation, producing less than 10% of nurse graduates.

The original legislation's focus on the quality of care for Medicare beneficiaries continues to provide the rationale for Medicare's support of health professions training. Yet, in the case of nursing, changes in hospital staffing and education since the passage of Medicare substantially altered the role of students in patient care. In the pre-Medicare hospital, fewer graduate nurses were employed than is the case today, and students were an important source of supplemental labor. Medicare, with its cost-based reimbursement scheme, facilitated the creation of new positions for graduate nurses.^{1,18} Between 1972 and 1993, the ratio of graduate nurses to patients in community hospitals increased from an average of 50 to 106 nurses per 100 patients in keeping with an increase in the average acuity levels of patients.^{19,20} With a larger cadre of fully trained nurses, hospitals became less reliant on students to provide patient services. Additionally, current hospital accredita-

tion guidelines do not permit student nurses to be counted in the computation of nurse staffing, and the accrediting body for nursing education programs limits the amount of time students can be required to provide patient care. These changes, in addition to accreditation requirements for increased classroom preparation, significantly increased the costs to hospitals to operate nursing schools. Moreover, the rapid growth of community college programs in the 1970s and 1980s provided an adequate supply of nurses in most communities, giving hospitals less of an incentive to operate their own programs.

DATA SOURCES AND ANALYSIS

Three data sources were used in conducting our analyses: the Health Care Financing Administration (HCFA) Hospital Cost Report Information System (HCRIS), which provides Medicare cost and reimbursement information by hospital; the American Hospital Association Annual Survey, which provides details on the characteristics of hospitals; and the National League for Nursing nursing school enrollment statistics. The HCRIS contained data from the eighth year of the prospective payment system, a period beginning and ending anywhere from September 1990 to October 1992 depending on a hospital's fiscal year. For the sake of simplicity, hereafter we refer to prospective payment system year 8 as 1991.

Using individual hospital identifiers, we merged the HCRIS dataset with the American Hospital Association 1991 survey data to inform our analyses with further details on the characteristics of hospitals receiving Medicare reimbursement for nursing education programs. For hospitals with programs approved by the National League for Nursing, we added nursing school enrollment data for 1991 to the merged data files. Our analysis is descriptive and reports percentage distributions of Medicare funding by program type, hospital type, and estimates of per student Medicare funding for diploma nursing programs.

RESULTS

Types of Programs Funded

In 1991, 750 hospitals received an estimated \$245 million for educational programs for nurses and paramedical personnel, accounting for about 15% of Medicare direct GME payments. Comparing our estimates of 1991 expenditures with those from an earlier study,²¹ Medicare payments to hospitals for nurse and paramedical personnel education has increased while the number of hospitals receiving Medicare funding has de-

creased. Between 1985 and 1991, the number of hospitals receiving Medicare reimbursement declined by 10%, from 835 to 750, while the average payment per hospital rose by 17%.

Thirteen types of nonphysician training programs are approved for Medicare funding: professional nursing, practical nursing, nurse anesthesia, medical technology, medical records, x-ray technology, physical therapy, occupational therapy, pharmacy residencies, inhalation therapy, hospital administration, dietetic internships, and cytotechnology. Other types of programs may be considered for funding on a case-by-case basis.

Our analysis of HCRIS data from 1991 shows that hospitals received a total of \$174 million, or 70% of nonphysician GME expenditures, as reimbursement for the costs of nursing education (professional and practical). The remaining funds, totaling \$71 million in 1991, reimbursed hospitals for costs associated with paramedical training (including nurse anesthesia). The HCRIS dataset does not include information on the type of paramedical programs for which hospitals receive Medicare reimbursement, and a special study is required to compute this information directly from Medicare hospital cost reports. The last such study, reported in 1988, found that radiography and medical technology programs accounted for the largest Medicare expenditures for paramedical personnel.²¹

According to recent unpublished projections from HCFA, hospitals will receive approximately \$248 million in Medicare support for nursing education in 1994, rising to some \$420 million by the year 2000 (oral communication with John Wandishin, HCFA Office of the Actuary, March 1995). By comparison, as illustrated in Figure 2, Title VIII Public Health Service monies, which constitute most of the other federal support for nursing education, now total roughly \$60 million a year. Medicare is thus the single largest federal source of support for nursing schools. In addition, an important distinction between these two sources of funding is that Medicare funding for nursing education has been a stable and reliable resource, increasing from year to year because it is an entitlement, and thus not subjected to the congressional appropriations process as is Title VIII. However, Title VIII monies go directly to educational programs, whereas Medicare funds accrue to hospitals' general revenues and are not specifically earmarked for education.

Of the 1484 nursing education programs, 372 programs received Medicare support indirectly through their affili-

ated hospitals. The majority of programs received no such support. Hospitals with diploma nursing programs received 66% of the total Medicare nursing education funds. Some 145 hospitals associated with 144 diploma programs received an estimated \$114 million in Medicare funding, more than twice the amount for all nursing programs supported by Title VIII funds. This finding is particularly noteworthy in light of the steady decline in diploma schools over the past decade, from 303 in 1981 to 145 in 1991, despite these programs' favorable reimbursement status.

Nurse anesthesia is the only type of graduate nurse training receiving Medicare reimbursement under current policy (and is categorized by Medicare as paramedical training rather than nursing). In a survey of the 92 operational nurse anesthesia programs, the American Association of Nurse Anesthetists documented that 31 hospitals associated with nurse anesthesia programs received an estimated \$2.2 million in Medicare reimbursement in 1992. Reimbursement amounts per program were modest, varying from a low of \$15 390 to a high of \$126 000.²²

Characteristics of Hospitals Funded

More than 90% of Medicare funding for nursing education went to private, nonprofit hospitals. Most of the public hospitals receiving funding were state-owned teaching hospitals; these institutions received less than 4% of the funds. City and county public hospitals received approximately 3% of funding. Hospitals with more than 300 beds garnered 70% of nursing education reimbursement. Among the 145 hospitals supporting diploma programs funded by Medicare, only 13 were located in rural areas.

Only 24% of Council of Teaching Hospitals (COTH) member institutions received any Medicare reimbursement for nursing education in 1991; funds to these hospitals accounted for only 28% of all Medicare nursing education funding. Hospitals that belong to COTH received significantly lower average reimbursement amounts for their nursing programs than non-COTH hospitals, explained by the fact that the largest payments were directed to hospitals with diploma nursing schools. Most COTH hospitals are affiliated with university-based nursing schools, and are therefore generally ineligible for substantial Medicare funding.

Geographic Distribution of Medicare Reimbursement

Medicare reimbursement of nursing education is clustered geographically.

Three states—Pennsylvania, New Jersey, and Ohio—account for one half of the total Medicare payments for diploma nursing education. Pennsylvania gets \$1 of every \$5 Medicare spends on nursing education. The clustering is explained by the location of the few remaining hospital diploma nursing programs. Sixty-six of the 144 funded diploma programs are located in these three states.

Hospital Variations in Medicare Reimbursement

Medicare reimbursement for nursing education also varies across hospitals. On the one hand, one third of hospitals receiving any reimbursement for nursing education averaged only \$32 400, amounts quite small relative to the size of their operating budgets. On the other hand, 54 hospitals, accounting for 15% of all hospitals receiving Medicare funding, each received in excess of \$1 million in 1991. Forty of these 54 hospitals had diploma nursing programs. Thus, the fact that 372 hospitals and their affiliated nursing programs received some Medicare payment for nursing education overstates the number of hospitals and programs substantially benefiting from current policy, since a large share received relatively small amounts.

Medicare Payment per Student Enrolled

The hospitals that benefit most from existing Medicare policy are those operating diploma nursing schools. Given the substantial resources directed to these few hospitals, we calculated the average Medicare payment per student to assess the relative efficiency of this type of educational investment. We estimated the average per student reimbursement amount for every diploma program by dividing total Medicare payments for nursing education by student enrollment figures (as reported by the National League for Nursing).²³ This is a rough estimate since Medicare funds do not pay nursing student stipends as is the case for Medicare funding of medical residents. The average per student annual Medicare payment to hospitals for diploma schools of nursing was \$5028 in 1991, ranging from a low of \$751 to a high of \$22 876. Medicare reimburses only a portion of the costs of educational programs, generally around 30% depending on what proportion of a hospital's patients are Medicare beneficiaries. Hence, just as Mullan et al²⁴ estimated mean Medicare payments per resident physician at \$18 600 but the mean rate of payment at \$48 900,²⁴ the mean annual payment rate for diploma nursing students could be estimated to average approximately \$15 000.

COMMENT

Our analysis has several limitations. First, it was not possible to conduct meaningful trend analyses of HCRIS data given the numerous changes in Medicare payment policy over time. Second, HCRIS data lack specificity on the types of programs for which hospitals report costs, categorizing these amounts into two broad categories: nursing or paramedical. Third, while hospitals calculate reimbursement for nursing and paramedical education as part of the cost-reporting process, it was difficult to estimate the actual payment amounts received by hospitals using the national HCRIS data elements. Currently, HCFA uses a crude estimation method, whereby a direct medical education payment is calculated that includes the costs of educating interns and residents, nurses, and paramedical personnel. This total is then broken down into nursing, paramedical, and intern/resident reimbursement figures based on the ratio of costs attributable to any one of these three program types over the calculated total direct medical education payment. We used this method in constructing our estimates. Finally, one must hold suspect the exactness of the costs reported, as these data are revised quarterly and are rarely audited for validity.

Even given these limitations in the data, our findings are straightforward enough to raise serious concerns about the appropriateness of current Medicare reimbursement policy for nursing education. First, we have confirmed that Medicare payments to hospitals for nursing education constitute the largest source of federal support for nursing education. Hence, Medicare is an important potential policy vehicle for shaping the nurse workforce to meet the needs of the nation's health care system in the 21st century. Medicare payments for nursing education are too large to be treated with the benign neglect that has characterized policies to date.

Second, our findings suggest that by biasing funding eligibility to hospital-operated programs, Medicare has become a source of unrestricted support for an increasingly smaller subset of hospital-based programs that lie outside the mainstream of health professions education. Only 372 of the 1484 nursing education programs training future RNs received any Medicare support. Hospital diploma programs, which received the majority of these funds, had enrollments of less than 23 000 out of a total enrolled nursing student population of 237 598, and were clustered in two regions of the country.

Third, Medicare's nursing education funding policies are at odds with na-

tional health care workforce priorities. Shortages have been projected for nurses trained at the graduate level in advanced clinical practice^{25,26} and at the baccalaureate level for roles in out-of-hospital settings.¹⁰ Such programs receive little support from Medicare. Indeed, Medicare funds support the education of a type of nurse estimated to be in excess supply.⁸ Moreover, Medicare funds go entirely to hospitals—a questionable setting for educating nurses for ambulatory care. Finally, Medicare's policies are contrary to the recommendations of the Goldmark report²⁷ of 1922—which is to nursing education what the Flexner report²⁸ is to medical

education. The Goldmark report recommended that the education of professional nurses take place in institutions of higher education.

CONCLUSION

At the approach of a new century, 65% of all new nurses in the United States are trained at less than the baccalaureate level despite much evidence that nurses' roles will be ever more complex and demanding. Other countries, including Australia, Spain, Portugal, Denmark, the Philippines, Ecuador, and Chile, have already shifted basic nursing education to the baccalaureate level.^{29,30} If Medicare reimbursement

policy for nursing education is to have an effect on national workforce goals and priorities, it must be retargeted. Graduate level clinical education and baccalaureate education would be targets consistent with the assessed needs of the nurse workforce of the future.

This research was supported by the Office of the US Department of Health and Human Services Assistant Secretary for Health. The views contained herein are those of the authors and do not necessarily reflect the policies of the funding agency. The authors gratefully acknowledge the cooperation of Gerard F. Anderson, PhD, and the National League for Nursing in the provision of data, and to Linzhu Tian, MA, for her assistance in data analysis.

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