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Report to Congressional Committees

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MEDICARE

Payments for Medically Directed Anesthesia Services Should Be Reduced

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The Honorable Lloyd Bentsen, Chairman
The Honorable Bob Packwood, Ranking Minority Member
Committee on Finance
United States Senate

The Honorable John D. Dingell, Chairman
The Honorable Norman F. Lent, Ranking Minority Member
Committee on Energy and Commerce
House of Representatives

The Honorable Dan Rostenkowski, Chairman
The Honorable Bill Archer, Ranking Minority Member
Committee on Ways and Means
House of Representatives

The Omnibus Budget Reconciliation Act of 1987 (OBRA-87) (P.L. 100-203) reduced Medicare payments to anesthesiologists when they concurrently direct certified registered nurse anesthetists (CRNA).[1] Concurrently directed cases are those when one anesthesiologist is involved in two or more overlapping surgeries. For each surgery the anesthesiologist must meet several conditions, including being present when the patient enters and leaves anesthesia and providing directions to CRNAs who actually deliver most of the services. The act required us to assess whether (1) payments to anesthesiologists are excessive for services provided when they concurrently direct CRNAs and (2) the reduced payments resulting from the act have affected the use and employment of CRNAs.[2]

Although OBRA-87 reduced payment when anesthesia procedures involve concurrent direction (see p. 3), Medicare still pays substantially more for directed cases than for services provided personally by an anesthesiologist. Because physicians' hourly revenue for concurrently directed services is much higher than for personally provided services, Medicare payments for directed anesthesia services provide an economic incentive for this mode of delivering anesthesia. We conclude that Medicare should set a fair price for an anesthesia service and pay that amount regardless of how the service is delivered.

[1]In this report we use CRNA to include all nurse anesthetists paid using the OBRA method.

[2]We previously reported on OBRA-87 mandates involving special anesthesia payments and variations in anesthesia time. See Medicare: Need for Consistent National Payment Policy for Special Anesthesia Services (GAO/HRD-91-23, Mar. 13, 1991), and Medicare: Variation in Payments to Anesthesiologists Linked to Anesthesia Time (GAO/HRD-91-43, Apr. 30, 1991).

When OBRA-87 was passed, there was concern that the reductions might adversely affect the use or employment of CRNAs, but we found no discernable effects. We believe the payment reduction was not large enough to cause anesthesiologists to alter their relationships with CRNAs. Other factors that may contribute to maintaining the anesthesiologist-CRNA status quo are (1) the shortage of CRNAs and (2) the ratio of anesthesiologists to CRNAs in an area.

Background

Authorized by title XVIII of the Social Security Act, Medicare is a health insurance program that covers most people 65 years of age or older and some disabled people. The program pays for health services ranging from inpatient hospital care to medical equipment used in the home. Medicare also pays for physician services, which include anesthesia services (the use of drugs and gases given to patients to block pain during surgery). The Health Care Financing Administration (HCFA) of the Department of Health and Human Services (HHS) administers Medicare. To process and pay claims for physician services, HCFA contracts with insurance companies, referred to as carriers. In fiscal year 1989, Medicare paid about $1.3 billion for anesthesia services.

The amount Medicare pays for anesthesia services is based on three factors: the complexity of the procedure, the time involved performing the procedure, and the personnel delivering the services. Complexity is measured by "base units"; the more complex or risky a procedure is, the more units assigned to it. The number of base units assigned to a procedure is uniform nationwide. One time unit is assigned for every 15-minute interval, except a time unit is for every 30-minute interval for anesthesiologists who are concurrently directing CRNAs.

The types and mix of professionals delivering anesthesia services significantly affect the amount Medicare pays. One of three delivery methods is usually used:[3] (1) an anesthesiologist working alone, (2) a CRNA working under the supervision of a surgeon without an anesthesiologist, and (3) an anesthesiologist medically directing one or more CRNAs or anesthesiology

[3]A HCFA-funded study found that the selection of a delivery method depends primarily on the availability of CRNAs and anesthesiologists rather than the difficulty of the procedure. Center for Health Economics Research, Payment Options for Nonphysician Anesthetists Under Medicare's Prospective Payment System, January 1988.

residents.[4] Medicare determines the amount it will pay differently in each of these cases.[5]

When an anesthesiologist performs a procedure alone, Medicare assigns one time unit for each 15-minute interval[6] and adds the number of base units. The sum of these units is multiplied by a dollar-conversion factor, which varies by geographic area. This amount is the maximum allowed by Medicare.[7]

When a CRNA performs a procedure without an anesthesiologist, Medicare recognizes the same number of base units and computes time units the same way as when an anesthesiologist personally performs the procedure. However, for 1991 through 1996, a uniform national dollar-conversion factor[8]—$15.75 in 1992—is used to compute the maximum allowable amount for CRNA.

In cases involving concurrent medical direction of CRNAs by an anesthesiologist, the CRNA is paid as if performing the procedure alone except that the CRNA 1992 conversion factor is reduced by about 30 percent to $10.75. For the anesthesiologist, allowed time units are cut in half because a time unit in this case is defined as 30 minutes rather than 15 minutes. OBRA-87 reduced the number of base units allowed by 10 percent for concurrent direction of two CRNAs, by 25 percent for three CRNAs, and by 40 percent for four CRNAs.[9] Thus, Medicare pays both the anesthesiologist and the CRNA less than if either one alone had provided the service. However, Medicare's total payment is higher than it would be for an anesthesiologist or a CRNA working alone. Moreover, the anesthesiologist receives more per

[4]Appendix I describes the education and training requirements for anesthesiologists, CRNAs, and residents.

[5]An anesthesiologist who medically directs anesthesia services must meet several conditions to qualify for payment from Medicare. These include performing a preanesthesia examination and evaluation, prescribing the anesthesia plan, and personally participating during the patient's induction and emergence.

[6]Each minute in excess of a multiple of 15 is assigned one-fifteenth of a time unit.

[7]If an anesthesiologist medically directs only one CRNA, Medicare pays as if the anesthesiologist personally performs the procedure.

[8]This factor was divided into work, practice, and overhead expense components. These components are adjusted by their respective geographic practice cost index for the area. This factor does not apply to certain services furnished in certain rural hospitals.

[9]Base units for two types of eye surgeries (cataract and iridectomy) are reduced by 10 percent regardless of the number of concurrent cases.

hour than when personally providing a service because he or she is paid for two, three, or four cases at the same time.

An anesthesiologist can also bill Medicare when medically directing one or two anesthesiology residents. In this case, the anesthesiologist is paid for each service as if it was personally provided; that is, two full payments for medically directing two residents. This delivery method gives anesthesiologists a higher revenue per hour than when they medically direct two CRNAs. In addition, Medicare reimburses hospitals for costs related to the anesthesiology residents, such as salary and fringe benefits, on a cost basis.

The Omnibus Budget Reconciliation Act of 1990 included a provision that is increasing the CRNA dollar-conversion factor so that in 1996 it will equal the factor for anesthesiologists. Thus, CRNAs and anesthesiologists will be paid the same rate when they work alone.

Medicare is also in the process of phasing in a resource-based relative value scale (RBRVS) for paying for physician services. Under this method, each service is assigned a value relative to other services. The relative value of each service represents physician work, physician practice costs, and the cost of malpractice insurance. This value is adjusted to reflect geographic differences in the costs of these three items and multiplied by a national dollar-conversion factor to arrive at the amount Medicare will pay. As part of its final regulations implementing the RBRVS, HCFA adjusted anesthesia conversion factors to ensure that anesthesia payments are consistent with services considered to be of comparable value. However, this did not change anesthesia payment methods for personally provided and medically directed services. Therefore, while the RBRVS payment for most physician services would be based on the value of services rendered, payment for anesthesia services would also be affected by how the service is delivered.

Objectives, Scope, and Methodology

OBRA-87 required that we assess whether (1) payments to anesthesiologists for medical direction are excessive and (2) payment reductions resulting from the act affected the use and employment of CRNAs. The conference report on the act stated that we should assess whether payments to anesthesiologists for medical direction were excessive by comparing the amount received in such cases with the amount received when they personally provide services. We also reviewed those cases where anesthesiologists directed residents.

HCFA's centralized records do not identify medically directed cases. Therefore, we obtained detailed Medicare anesthesia claims payment information for three states with different CRNA-anesthesiologist ratios in 1989: North Carolina had 67 percent of its anesthesia payments for cases involving medical direction; Maine, 41 percent; and Oregon, 9 percent. We used these data to calculate 1989 Medicare payments per case for five high-dollar anesthesia procedures. We determined the average payment per case for services provided by anesthesiologists, CRNAs under medical direction, CRNAs working independently, and residents under medical direction. We also computed anesthesiologists' hourly revenue for personally provided and medically directed services.

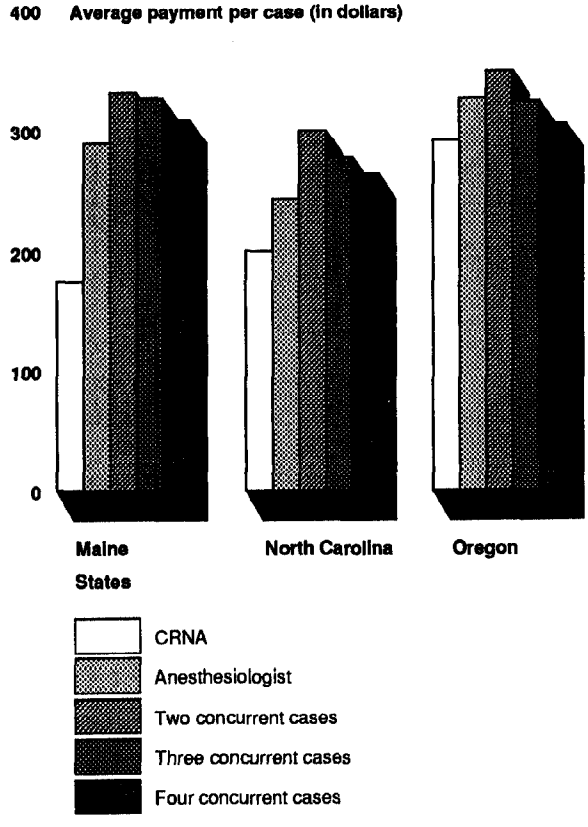
To assess the effect of base-unit reductions on the use of CRNAs, we compared the percentage of surgeries done under medical direction in 1988 and 1989. We also interviewed selected CRNAs and anesthesiologists, HCFA officials, and representatives of the American Association of Nurse Anesthetists, the American Society of Anesthesiologists (ASA), and the Anesthesia Care Team Society. Anesthesia payment data for the three states we reviewed are detailed in appendix II. Details about our methodology are in appendix III.

Medicare Payments to Anesthesiologists for Medically Directing Cases Are High

Medicare pays substantially more for a case that involves medical direction of CRNAs and residents than for services provided personally by an anesthesiologist. In terms of an anesthesiologist's hourly revenue, Medicare reimbursement for concurrent directions can result in more than a 100-percent increase.

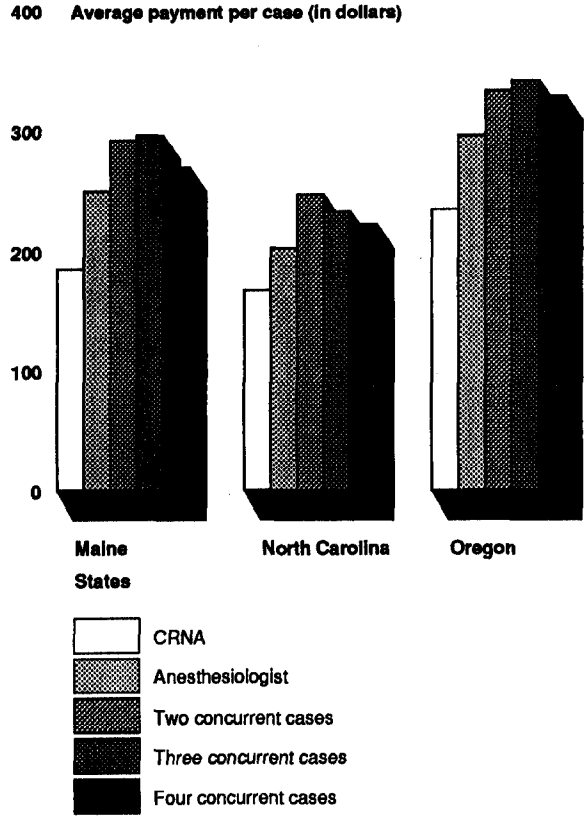
In each of the three states we reviewed, Medicare per-case payments for selected anesthesia procedures were almost always higher when an anesthesiologist concurrently directed CRNAs than when the anesthesiologist or CRNA personally provided the service. For example, in Maine the average anesthesia payment for knee replacement surgery was $290 when services were personally provided by an anesthesiologist and $175 when they were provided by a CRNA. When an anesthesiologist medically directed CRNAs in two, three, and four concurrent cases, per-case payments averaged $332, $327, and $309, respectively (see fig. 1).

Figure 1: Medicare Payment Comparison For Total Knee Replacement (1989)



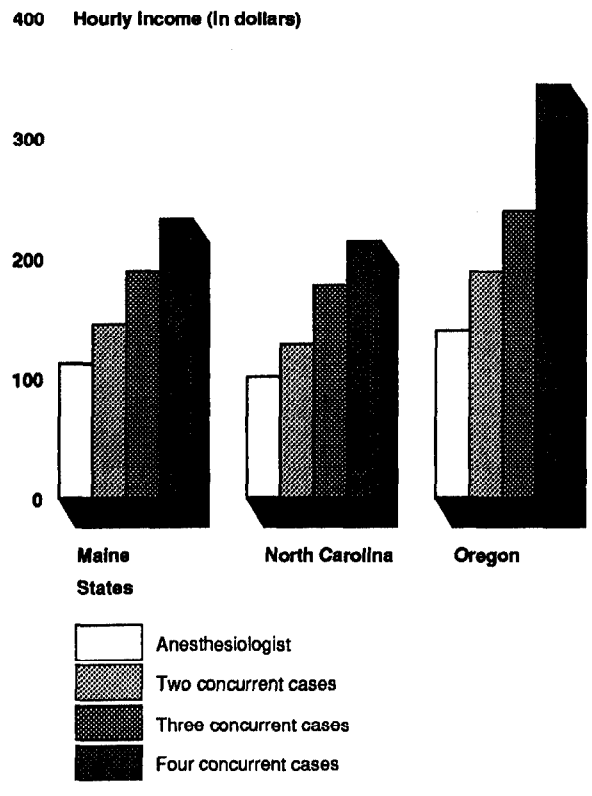
In North Carolina, where the incidence of medical direction of CRNAs was high, Medicare's payment for anesthesia services at upper abdominal surgery averaged $203 when provided by an anesthesiologist and $167 when provided by a CRNA. When an anesthesiologist medically directed CRNAs on two, three, and four concurrent cases, per-case payment averaged $247, $233, and $222, respectively (see fig. 2). Average Medicare per-case payments in Maine, North Carolina, and Oregon for the five procedures we reviewed are detailed in appendixes IV, V, and VI.

Figure 2: Medicare Payment Comparison For Upper Abdominal Surgery (1989)



Medicare payments for cases involving concurrent direction of CRNAs also greatly increased anesthesiologists' hourly revenues—in some situations these increases can exceed 100 percent. For example, during 1989, anesthesiologists working alone in North Carolina averaged $101 an hour for prostate surgery. Their average hourly revenue would increase to $128, $177, and $214 when they direct CRNAs at two, three, and four concurrent prostate surgeries, respectively (see fig. 3). Appendix VII shows Medicare 1989 average hourly payments to anesthesiologists for personally providing services versus medically directing services for five high-volume procedures in the three states.

Figure 3: Hourly Medicare Income of Anesthesiologists for Prostate Surgery (1989)



Payments Higher for Medically Directing Residents

Anesthesiologists who medically direct residents also receive higher Medicare payments than when they personally provide anesthesia services or direct CRNAs. This occurs primarily because most Medicare carriers (the North Carolina carrier is an exception) use 15-minute service intervals for time units when residents are medically directed but 30-minute intervals when CRNAs are directed. OBRA-87 increased this disparity by applying the base-unit reduction for medical direction on concurrent cases to CRNAs and not to residents. For example, on average, an anesthesiologist in Maine received $178 per case for concurrently directing CRNAs in two upper abdominal surgeries compared with $271 per case for concurrently directing two residents for the same procedure (see table 1). Medicare's payment to an anesthesiologist for directing CRNAs in two upper abdominal surgeries in North Carolina was $146 per case; for directing two residents, Medicare paid $155 per case.

Table 1: Adjusted Average Payment to Anesthesiologists Higher for Medically Directing Residents Than CRNAs in Maine and North Carolina (1989)[a]

Procedure	State	Payment per case for concurrent direction of: Two CRNAs	Two residents	Difference
Lens surgery	ME	$9	[b]	[b]
	NC	84	$89	$5
Lower abdominal surgery	ME	170	268	98
	NC	144	152	8
Prostate surgery	ME	116	172	56
	NC	105	112	7
Total knee replacement	ME	198	312	114
	NC	177	186	9
Upper abdominal surgery	ME	178	271	93
	NC	146	155	9

Note: To eliminate payment differences due to anesthesia time variation, we used CRNA average times in computing each procedure's average payment.

[a]North Carolina's payments for direction of residents differs because it bases time units on 30-minute intervals. Maine, and most other Medicare carriers, base time units on 15-minute intervals.

[b]Service not provided by residents under medical direction.

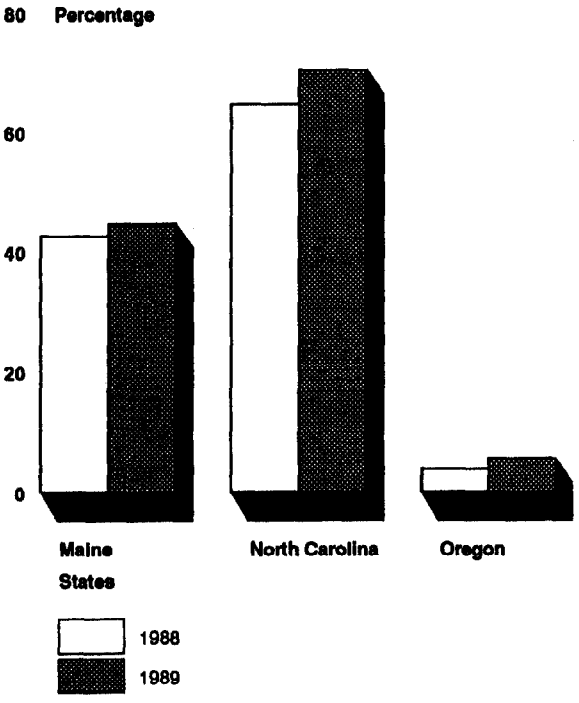
In final rules describing the fee schedule for physician services, published on November 25, 1991, in the Federal Register, HCFA decided to eliminate payments for concurrently directing anesthesia residents. Effective in 1994, Medicare will pay teaching anesthesiologists only when they are involved with a single procedure involving a resident. HCFA believes this change will remove the financial incentive to choose direction of residents over CRNAs.

OBRA-87 Reductions Did Not Affect Use and Employment of CRNAs

Our analysis of medical direction case data in three states and discussions with members and representatives of the anesthesia community indicate that the OBRA-87 payment reductions had no discernible effect on CRNA use or employment. The percentage of Medicare cases in which CRNAs were medically directed increased in Maine, North Carolina, and Oregon from 1988 to 1989. (See fig. 4.) These increases could have been caused an by increased number of CRNA practitioners relative to the number of anesthesiologists. In addition, anesthesiologists could have maintained their incomes when payments were reduced by increasing the amount of medical direction.

Anesthesia providers generally agreed that the reductions had not resulted in use or employment changes. ASA membership surveys indicated that the percentage of surgeries performed under medical direction increased from 1987 to 1989. Anesthesiologists responded that they directed CRNAs more frequently in 1989 on two concurrent cases and less frequently on three and four concurrent cases.

Figure 4: Percentage of Cases Performed Under Medical Direction



We interviewed 16 anesthesiologists and 30 CRNAs.[10] Of these, 13 and 23, respectively, believed that medical direction ratios within their practices had remained stable since 1987. The others generally believed the incidence of 2:1 and 3:1 ratios had increased and 4:1 ratios declined.
The American Association of Nurse Anesthetists reported that average CRNA incomes rose from about $46,000 to $61,000 from 1986 to 1988. However, association representatives cautioned that a national shortage of CRNAs could mask possible adverse effects related to the OBRA-87 payment reductions. The representatives cited a February 1990 study of the CRNA work force by the National Center for Nursing Research, National Institutes

[10]Includes three CRNAs from states other than Maine, North Carolina, and Oregon.

of Health, which estimated a national shortage of 5,300 CRNAs. The center projected that this shortage would increase to 6,600 by 1992, and 12,000 by 2010. In addition, an American Hospital Association's 1988 survey identified a shortage of about 500 CRNAs in hospitals—a position-vacancy rate of about 10 percent. The center's estimate was higher because it considered CRNA needs in settings other than hospitals, such as ambulatory surgery centers.

Finally, we believe it unlikely that the OBRA-87 reductions caused significant changes in the use or employment of CRNAs. The effect of the OBRA-87 base-unit reductions of 10, 25, and 40 percent for two, three, or four concurrent cases, respectively, on Medicare's total anesthesia payments was much lower than these numbers suggest. We estimate that OBRA-87 reduced Medicare payments for 1989 to anesthesiologists by an average 4 percent in Maine, 8 percent in North Carolina, and less than 1 percent in Oregon. An analysis done by a large anesthesiology group in North Carolina that had a high volume of medically directed cases, estimated that the group's Medicare-payment reduction was less than 6 percent during April 1989 through March 1990. In the three states, the small reduction in payments to anesthesiologists, combined with the slight increase in the amount of medically directed anesthesia, is consistent with maintaining or slightly increasing the use of CRNAs.

Conclusions

Medicare pays more for anesthesia services performed by CRNAs or residents under concurrent medical direction by an anesthesiologist than for identical services personally provided by an anesthesiologist. Although OBRA-87 reduced Medicare payments to anesthesiologists when they concurrently direct CRNAs, this method of service delivery still increases their hourly revenue. The reductions did not affect the use or employment of CRNAs—possibly because (1) there is a nationwide shortage of these specialists and (2) decisions to use an anesthesiologist, a CRNA, or both are often dictated by the availability of these professionals in an area.

In either medically directed anesthesia cases or those where the anesthesiologist or CRNA personally provides the service, the patient receives the same service. Because anesthesiologists earn more revenue by directing CRNAs or residents on concurrent cases, Medicare is providing an economic incentive for medically directed anesthesia.

In 1996, the RBRVS will pay anesthesiologists and CRNAs the same amount when they personally perform the same procedure. However, when an

anesthesiologist and CRNAs work together on concurrent cases, the CRNAs will be paid less and the anesthesiologist will be paid more than when working alone. Moreover, total Medicare payments will be higher when the two work together. Thus, Medicare will continue to provide anesthesiologists with an economic incentive to medically direct two or more CRNAs.

Under RBRVS, Medicare is supposed to set a price for a service based on the resources needed to furnish it, considering such factors as necessary training and experience, practice expense, and work value. Under this concept, any person qualified to provide a service receives the same payment, which represents the value of the service. We see no reason why anesthesia services should be treated differently. Medicare should set a fair price and let the medical community decide which qualified person(s) should furnish the service. To enable this to be done, Medicare law would need to be revised so that the same amount will be paid for an anesthesia service regardless of how it is delivered.

Recommendation to the Congress

We recommend that the Congress amend the Social Security Act to limit Medicare payments for medically directed anesthesia services to the resource-based value that HCFA establishes under the physician fee schedule.

Comments and Our Evaluation

HHS provided technical comments but did not address the report's conclusions or recommendation to the Congress. We considered HHS's comments in finalizing the report.

The American Association of Nurse Anesthetists said that it generally supported our conclusions. The association, however, was concerned about additional changes to Medicare anesthesia payment methods because major changes could occur in finalizing RBRVS, thus affecting the employment of CRNAs. The final RBRVS was promulgated 2 weeks after the association commented and did not make major changes in Medicare's anesthesia payment methods. The association provided some technical comments and we revised the report where appropriate.

The American Society of Anesthesiologists and the Anesthesia Care Team Society opposed our proposal to limit payments for anesthesia services to their relative values under RBRVS. ASA said that anesthesiologists, because they are physicians, can make medical judgments that CRNAs cannot and, in

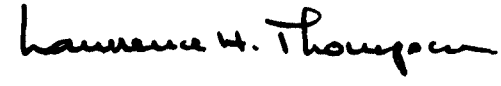
complicated cases, an anesthesiologist's judgment can be essential. Both societies said that the patient does not receive the same service when anesthesia is furnished by an anesthesiologist, or under an anesthesiologist's medical direction, as when furnished by a CRNA because of the medical decision-making difference. The societies also said that anesthesiologists who concurrently direct CRNAs accept more responsibility and risk and should be compensated for this.

CRNAs are trained and licensed to furnish anesthesia services and often do so without an anesthesiologist being involved or, in some cases, even in the geographic area. In those cases where the extra capabilities of an anesthesiologist are needed, the medical profession, as represented by the patient's surgeon and/or attending physician, can ensure that an anesthesiologist is available. However, as discussed in this report, Medicare currently provides anesthesiologists with an economic incentive to medically direct CRNAs regardless of whether an anesthesiologist's presence is medically necessary. The effect of this incentive is apparent from recent research showing that the availability of anesthesiologists and CRNAs in an area is the primary determinant of whether medically directed anesthesia occurs.

ASA also said that the economic incentive for medical direction is the result of congressional decisions about how CRNAs should be paid by Medicare. We understand that Medicare law provides this incentive. This is why we are recommending that the law be amended, neither encouraging nor discouraging who furnishes anesthesia services. We believe Medicare should establish a fair price for anesthesia and let the medical community decide which person(s) should provide the service.

We are sending copies of this report to the Secretary of Health and Human Services; the Director, Office of Management and Budget; and other interested parties. Copies also will be made available to others upon request.

This report was prepared under the direction of Janet L. Shikles, Director, Health Financing and Policy Issues. Should you have any questions, she may be reached on (202) 512-7119. Other major contributors are listed in appendix VIII.



Lawrence H. Thompson
Assistant Comptroller General

Contents

Figures

Abbreviations

ASA	American Society of Anesthesiologists
CRNA	certified registered nurse anesthetist
HCFA	Health Care Financing Administration
HHS	Department of Health and Human Services
OBRA-87	Omnibus Budget Reconciliation Act of 1987
RBRVS	resource-based relative value scale

Education and Training Requirements for Anesthesiologists, CRNAs, and Medical Residents

Anesthesiologists

Anesthesiologists must complete 4 years of undergraduate education, 4 years of medical school, and 4 years of medical residency. The American Society of Anesthesiologists estimates that in 1990 there were 19,000 practicing anesthesiologists in the United States.

Certified Registered Nurse Anesthetists

CRNAs must complete a 4-year undergraduate program in nursing, have 1 or 2 years of clinical experience in acute care, and complete a 24- to 30-month training program in anesthesia. Of the 80 nurse anesthetist programs nationwide, 64 percent are university based and offer a master's degree program. About 20 percent of practicing CRNAs hold master's degrees. Practicing CRNAs must pass a national certification examination administered by the Council on Certification of Nurse Anesthetists and must be recertified every 2 years. As of November 1991, the American Association of Nurse Anesthetists reported that there were more than 24,000 practicing CRNAs in the United States.

Medical Residents

Medical residency in anesthesia consists of 1 year of patient care in internal medicine, surgery, or pediatrics; 2 years of clinical anesthesiology; and 1 year of concentrated clinical study in an anesthesia subspecialty area, such as critical care or obstetrics. ASA estimates that in 1990 there were 5,000 anesthesia residents in the United States.

Medicare Payments for Physician Anesthesia Services in Maine, North Carolina, and Oregon (1989)

Payment category	Maine	North Carolina	Oregon
Allowed for anesthesia services[a]	$4,101,652	$21,889,206	$11,150,761
Allowed for medical direction	$1,665,184	$14,548,417	$1,010,432
Physicians	$1,199,428	$8,778,549	$695,097
CRNAs	$465,756	$5,769,868	$315,335
Medical direction percentage	40.6	66.5	9.1

[a]Medicare pays 80 percent of this amount, and the beneficiary pays the remainder.

Scope and Methodology

We contacted carriers in three states to determine their payment policies covering anesthesiologists and certified registered nurse anesthetists: Blue Shield of Massachusetts (Maine); EQUICOR, Inc. (North Carolina); and Aetna Life and Casualty Co. (Oregon).

We selected these states because of the contrast they provided in their ratio of CRNAs to anesthesiologists and in the frequency with which anesthesiologists medically directed CRNAs. According to data from the Center for Health Economics Research, North Carolina ranked very high in CRNAs and low in anesthesiologists per capita. Maine ranked moderately high in CRNAs and low in anesthesiologists. Oregon was at the other end of the spectrum, with few CRNAs and many anesthesiologists.

For these states, we obtained and summarized information from payment tapes for Medicare physician anesthesia services rendered from 1987 through 1989. The information included

- the amount billed and allowed in total and by procedure code;
- the number of medically directed cases performed during calendar years 1987, 1988, and 1989;
- the amount billed and allowed for medically directed services in total and by procedure code;
- the number of cases performed during calendar year 1989 by an anesthesiologist alone; by an anesthesiologist medically directing two, three, or four CRNAs; by an anesthesiologist medically directing residents; or by an independent CRNA;
- the amount billed and allowed in 1989 for services provided by independent CRNAs in total and by procedure code; and
- the number of cases performed between April 1 and December 31, 1988, by an anesthesiologist alone; by an anesthesiologist medically directing two, three, or four CRNAs; and by anesthesiologist medically directing residents.

To assess whether payments to anesthesiologists for concurrent medical direction were excessive relative to payments when anesthesiologists personally provide such services, we calculated payments for each state for five high-volume procedures performed between March 1 and December 31, 1989.[1] We determined average payments for medically directed and anesthesiologist- or CRNA-provided services. Using the average payment

[1]Services rendered in January and February 1989 were excluded because some cases included additional payments for modifiers. Modifiers were used by some carriers to adjust anesthesia payments for such factors as a patient's age, a patient's physical status, or unusual risk circumstances.

per case information, we calculated the payment per hour for anesthesiologists.[2] Our calculations assumed that the anesthesiologists were being reimbursed on the basis of an average dollar-conversion factor and that they were providing concurrent direction for the same procedures. Anesthesiologists' hourly revenue was computed for personally provided and medically directed services.

We discussed Medicare's reimbursement policies for the medical direction of CRNAs, the philosophy of working with CRNAs, and the effect, if any, of the base-unit reductions on the use and employment of CRNAs with 16 anesthesiologists practicing in Maine, North Carolina, and Oregon, including the president of each state's anesthesiologist association. With 30 CRNAs, we discussed Medicare's reimbursement policies for CRNAs, their views of working with anesthesiologists, and the effect, if any, of base-unit reductions on CRNA use and employment.[3]

We also discussed Medicare's reimbursement policies for anesthesia services and the effect, if any, that base-unit reductions had on the use and employment of CRNAs with representatives of the American Society of Anesthesiologists, the Anesthesia Care Team Society, and the American Association of Nurse Anesthetists. In addition, we discussed with the Physician Payment Review Commission its work related to CRNAs. The Congress mandated that the commission study the effects of the Medicare fee schedule on nonphysician providers, including CRNAs.

We conducted our work from May 1990 to April 1991 in accordance with generally accepted government auditing standards.

[2]We considered all time spent providing anesthesia care except the time expended for preoperative and postoperative visits. These visits are reimbursed as part of the base-unit value.

[3]Of the 30 CRNAs interviewed, 27 practiced in the states we reviewed, and the other 3 were interviewed at the suggestion of American Association of Nurse Anesthetist officials.

Average Medicare Payment Per Case for Anesthesia Services for Five Procedures in Maine (1989)

Procedure/provider	Personally provided		Concurrently directed		
			Two	Three	Four
Lens surgery					
Anesthesiologist	$140	$ •	$99	$92	$86
CRNA	•	125	68	68	68
Total	**$140**	**$125**	**$167**	**$160**	**$154**
Lower abdominal surgery					
Anesthesiologist	$249	$ •	$170	$176	$195
CRNA	•	183	110	110	110
Total	**$249**	**$183**	**$280**	**$286**	**$305**
Prostate surgery					
Anesthesiologist	$164	$ •	$116	$109	$94
CRNA	•	144	72	72	72
Total	**$164**	**$144**	**$188**	**$181**	**$166**
Total knee replacement					
Anesthesiologist	$290	$ •	$198	$193	$175
CRNA	•	175	134	134	134
Total	**$290**	**$175**	**$332**	**$327**	**$309**
Upper abdominal surgery					
Anesthesiologist	$250	$ •	$178	$182	$155
CRNA	•	186	114	114	114
Total	**$250**	**$186**	**$292**	**$296**	**$269**

Average Medicare Payment Per Case for Anesthesia Services for Five Procedures in North Carolina (1989)

Procedure/provider	Personally provided		Concurrently directed		
			Two	Three	Four
Lens surgery					
Anesthesiologist	$115	$ •	$84	$85	$82
CRNA	•	99	56	56	56
Total	**$115**	**$99**	**$140**	**$141**	**$138**
Lower abdominal surgery					
Anesthesiologist	$204	$ •	$144	$131	$121
CRNA	•	171	102	102	102
Total	**$204**	**$171**	**$246**	**$233**	**$223**
Prostate surgery					
Anesthesiologist	$146	$ •	$105	$94	$82
CRNA	•	141	71	71	71
Total	**$146**	**$141**	**$176**	**$165**	**$153**
Total knee replacement					
Anesthesiologist	$244	$ •	$177	$155	$141
CRNA	•	201	123	123	123
Total	**$244**	**$201**	**$300**	**$278**	**$264**
Upper abdominal surgery					
Anesthesiologist	$203	$ •	$146	$132	$121
CRNA	•	167	101	101	101
Total	**$203**	**$167**	**$247**	**$233**	**$222**

Average Medicare Payment Per Case for Anesthesia Services for Five Procedures in Oregon (1989)

Procedure/provider	Personally provided		Concurrently directed		
			Two	Three	Four
Lens surgery					
Anesthesiologist	$157	$ •	$117	[a]	[a]
CRNA	•	139	76	[a]	[a]
Total	**$157**	**$139**	**$193**	[a]	[a]
Lower abdominal surgery					
Anesthesiologist	$271	$ •	$189	$178	$165
CRNA	•	228	125	125	125
Total	**$271**	**$228**	**$314**	**$303**	**$290**
Prostate surgery					
Anesthesiologist	$187	$ •	$132	$124	$93
CRNA	•	161	82	82	82
Total	**$187**	**$161**	**$214**	**$206**	**$175**
Total knee replacement					
Anesthesiologist	$327	$ •	$210	$185	$166
CRNA	•	292	140	140	140
Total	**$327**	**$292**	**$350**	**$325**	**$306**
Upper abdominal surgery					
Anesthesiologist	$296	$ •	$200	$209	$196
CRNA	•	235	133	133	133
Total	**$296**	**$235**	**$333**	**$342**	**$329**

[a]Service not provided at this concurrent direction ratio.

Estimated Medicare Hourly Payments to Anesthesiologists for Personally Provided and Medically Directed Services for Five Procedures (1989)

		Hourly revenue[a] per case			
			Concurrently directed		
Procedure	State	Personally provided	Two	Three	Four
Lens surgery	ME	$107	$135	$210	$289
	NC	103	130	180	242
	OR	134	162	[b]	[b]
Lower abdominal surgery	ME	95	116	148	167
	NC	90	111	152	181
	OR	120	149	199	239
Prostate surgery	ME	112	145	189	232
	NC	101	128	177	214
	OR	140	189	239	343
Total knee replacement	ME	95	116	154	190
	NC	89	105	150	183
	OR	118	158	222	267
Upper abdominal surgery	ME	105	130	160	204
	NC	102	131	177	205
	OR	126	168	199	236

[a]These estimates are based on actual payments to anesthesiologists but assume the concurrent directions were for the same procedure; actual hourly income would vary depending on the mix of procedures performed.

[b]Services not provided at this concurrent direction ratio.

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