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Variations in Payments to Anesthesiologists Linked to Anesthesia Time

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The Honorable Lloyd Bentsen
Chairman, Committee on Finance
United States Senate

The Honorable John D. Dingell
Chairman, Committee on Energy and Commerce
House of Representatives

The Honorable Dan Rostenkowski
Chairman, Committee on Ways and Means
House of Representatives

This report responds to a requirement in the Omnibus Budget Reconciliation Act of 1987 (P.L. 100-203) that we review anesthesia times reported to Medicare and verify their accuracy. In the report, we discuss variations in anesthesia times and Medicare payments for eight high-volume surgical procedures. Additionally, we show that Medicare's anesthesia payment system does not allow independent verification of anesthesiologists' reported times. We recommend that the Secretary of Health and Human Services change Medicare's method of reimbursing anesthesiologists.

We are sending copies of this report to the Secretary of Health and Human Services, the Administrator of the Health Care Financing Administration, the Director of the Office of Management and Budget, and other interested parties. The report was prepared under the direction of Janet L. Shikles, Director of Health Financing and Policy Issues, who may be reached at (202) 275-5451. Other major contributors are listed in appendix XVI.

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Executive Summary

Purpose

Medicare costs for physician anesthesia services grew from $757 million in fiscal year 1985 to $1.2 billion in fiscal year 1988. Concerned about these increased costs and the appropriateness of anesthesia times billed, the Congress reduced certain Medicare anesthesia payments and mandated that GAO

- determine the average anesthesia times claimed for payment for these services and compare them to average surgical times,
- verify reported anesthesia times from patient medical records, and
- make recommendations regarding the appropriateness of the anesthesia times Medicare recognizes for payment purposes.

Background

Medicare helps almost all elderly and some disabled persons pay for health care. Among the types of care covered by the program are physician services, including those for anesthesia. Anesthesia is the process of using drugs or gases to render a patient insensitive to pain during surgery.

Normally, Medicare pays physicians a set amount for a procedure regardless of how long it takes in a particular case. Historically, however, payment for anesthesiologists has been based on time. For example, a surgeon who takes 2 hours to perform an operation receives the same payment as a surgeon who takes 1-1/2 hours. But the anesthesiologist in the first case would be paid more.

By January 1, 1992, HHS must implement a resource-based fee schedule for physician services, including anesthesia services. This requirement is contained in the Omnibus Budget Reconciliation Act of 1989 (P.L. 101-239, Dec. 19, 1989). HHS has not decided whether under the fee schedule anesthesiologists will be paid on the basis of time.

GAO reviewed a sample of 1,648 cases for eight high-volume anesthesia procedures performed at 11 hospitals to assess anesthesia time and its relationship to its three components:

- Surgical time (from surgeon's incision to closure),
- Preoperative anesthesia time (before surgery), and
- Postoperative time (from closure of the incision until the anesthesiologist releases the patient to postoperative care personnel).

Using the same sample cases, GAO compared anesthesia times reported on Medicare claims with those in the patients' medical records.

Results in Brief

Among GAO's sample cases, the time used to provide anesthesia services varied widely for the same procedures. As each minute of anesthesia time translates into additional payments, the Medicare payments for anesthesia also varied widely.

Two factors accounted for most of the variation in total anesthesia time and payment—length of surgery and preoperative time. Differences in surgical time, which is not under the anesthesiologist's control, often could be explained by factors such as surgical complications. However, variation in preoperative time, which the anesthesiologist does control, was unexplained.

The accuracy of Medicare payments for anesthesia time cannot be independently validated because the payments are based on anesthesiologists' records of their own time for services. Moreover, for more than 13 percent of the claims GAO sampled, the times on medical records differed from the times on Medicare claims for anesthesia services.

Unexplained variations in anesthesia time, the resulting differences in anesthesia payments, and the inability to validate anesthesia times lead GAO to conclude that HHS should adopt an alternative to basing Medicare payment on an anesthesiologist's reported anesthesia time. GAO also believes that Medicare payment for anesthesia services should be consistent with payment for other physician services.

GAO's Analysis

Payment Differences Due Primarily to Anesthesia Time Variations

Colon surgery provides an example of the dramatically different amounts Medicare pays for identical anesthesia procedures. The average payment to anesthesiologists for services associated with colon surgery at 11 hospitals was $353. The high was $617 and the low $243. Payments for other high-volume procedures also widely varied (see p. 17).

Time was the primary factor that accounted for anesthesia payment differences among the hospitals GAO reviewed (see p. 17). Most of the variation in anesthesia time associated with a procedure is due to differences in surgery and preoperative time. The remaining anesthesia component, postoperative time, comprised only 8 to 12 percent of total anesthesia time (see p. 19). Factors such as a surgeon's speed or complications during an operation explained variations in surgery time. But

GAO could identify no clear rationale for substantial variations in preoperative time. Moreover, the length of surgery did not explain the variations in preoperative time in GAO's sample (see p. 21).

Internal Control Weakness Prevents Validation of Anesthesia Times

Medicare's payment system for physician anesthesia services has a serious internal control weakness. The Federal Managers' Financial Integrity Act of 1982 requires that agencies establish internal controls that assure the proper use of federal funds. Further, key responsibilities for authorizing, processing, and recording transactions should be separated among individuals. Medicare has no such controls for the anesthesia time charges upon which it bases payments. Anesthesiologists enter their times directly onto anesthesia records, entries that no other hospital official is required to corroborate (see p. 26).

Under the time-based payment system, it would be difficult to institute adequate internal controls without substantially increasing administrative complexity for hospitals, Medicare claims-paying agents, or both.

Alternative to Current Payment System Needed

Medicare should eliminate the direct link between anesthesia time and payment. This would eliminate unexplained variations in payments for similar services, the problem GAO observed in validating reported anesthesia times, and the incentive to prolong the time spent providing anesthesia services. It also would be more consistent with how Medicare pays other physicians. One approach GAO discusses—basing fixed fees for services on median anesthesia times related to particular surgical procedures—would have reduced fiscal year 1988 Medicare anesthesia payments by an estimated $51 million (see p. 28).

Recommendations

The Secretary of Health and Human Services should direct the Administrator of the Health Care Financing Administration to establish a fee schedule for reimbursing physician anesthesia services that eliminates the direct link between anesthesia time and payment for anesthesia services.

Agency Comments

HHS agreed that Medicare payments for anesthesia services should not be based on time and stated that it intends to eliminate time units under the physician fee schedule. (See app. XII.) The American Association of Nurse Anesthetists and American Society of Anesthesiologists disagreed, noting that Medicare's definition of anesthesia start time, while

ambiguous, could be improved and time reimbursement retained for anesthesia services (see apps. XIII and XIV). The Anesthesia Care Team Society stated that the problems GAO identified with preoperative anesthesia time warrant changing Medicare's payment policy. The Society suggested paying a standard amount for presurgical services and continuing time-based reimbursements for services during and following surgery (see app. XV).

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Tables

Abbreviations

ASA	American Society of Anesthesiologists
CRNA	certified registered nurse anesthetist
GAO	General Accounting Office
HCFA	Health Care Financing Administration
HHS	Department of Health and Human Services
OBRA	Omnibus Budget Reconciliation Act of 1987

Introduction

The method Medicare uses to determine the amount it will pay for anesthesia services has concerned the Congress for a number of years. To improve the payment system and control anesthesia service costs, several changes have been legislated. The Congress also directed that we and the Department of Health and Human Services (HHS) study the anesthesia payment system. This report addresses the requirements of the Omnibus Budget Reconciliation Act of 1987 (OBRA) (P.L. 100-203, Dec. 22, 1987) that we compare average anesthesia and surgical times, verify billed anesthesia times against patient medical records, make recommendations on the appropriateness of anesthesia times Medicare recognizes for payment, and after discussions with the committee offices, determine the extent of variations in anesthesia time for surgical procedures and the effect of these variations on Medicare payments.

In a separate report,[1] we address another aspect of anesthesiologist reimbursement—additional Medicare payments for such factors as a patient's age or physical status.

The Medicare Program

Medicare is a federal health insurance program covering almost all Americans aged 65 or older as well as some disabled persons under age 65. It consists of two parts:

- Part A, Hospital Insurance, covers inpatient hospital services and care provided in skilled nursing facilities and patients' homes and by hospices. In 1988, part A benefit payments totaled about $51.9 billion.
- Part B, Supplementary Medical Insurance, covers physician services, including anesthesia, and a broad range of other noninstitutional services such as laboratory tests and medical equipment used in the home. In 1988, part B benefit payments amounted to about $33.7 billion.

The Health Care Financing Administration (HCFA), within HHS, administers the Medicare program, establishing regulations and policies under which the program operates. To process and pay claims, HCFA contracts with insurance companies, referred to as intermediaries (part A) and carriers (part B).

In recent years, the cost of Medicare's part B program has increased substantially. During fiscal years 1985-88, part B costs increased from $21.8 billion to $33.7 billion, or 54.6 percent. Medicare payments for

[1] Medicare: Need for Consistent National Payment Policy for Special Anesthesia Services (GAO/HRD-91-23, Mar. 13, 1991).

physician anesthesia services increased similarly during the period, growing from $757 million to $1.2 billion, or about 55 percent.

Anesthesia Claims Paid Differently Than Other Physician Claims

Anesthesiology involves administering drugs or gases to render patients insensitive to pain during surgery. It includes evaluation and care provided during the preoperative and postoperative periods as well as during surgery. Anesthesia services may be administered by a physician, usually an anesthesiologist, or a certified registered nurse anesthetist (CRNA). CRNAs are specially trained and qualified to administer anesthetics under a physician's supervision. Generally, in this report, when we discuss anesthesia claims, anesthesia services provided by nurse anesthetists are included.

Historically, Medicare has paid physicians on the basis of what they and other physicians in the community charge for particular services. Under this "reasonable charge" method, Medicare allows the lowest of the actual (billed) charge, the physician's customary charge, or the prevailing charge, which is set to cover 75 percent of physicians' customary charges within the geographic area. However, a unique feature exists for anesthesia services. While the allowed charge for any other medical procedure is the same regardless of how long the physician spends in furnishing it, Medicare's allowed anesthesia charge is directly dependent on the length of time the anesthesiologist spends with the patient.

The amount Medicare recognizes as the reasonable charge for an anesthesia procedure is the sum of base units assigned to the procedure and the time units (see p. 12) actually used by the anesthesiologist,[2] multiplied by a "dollar conversion factor" per unit.

Medicare figures an anesthesiologist's conversion factor just as it does the allowable charge for other physician services. That is, it takes the lowest of the actual, customary, or prevailing charge conversion factor for the geographic area. The difference between payments to anesthesiologists and those to other physicians comes in the use of base and time units to determine Medicare's allowable charge.

[2]HCFA limited anesthesia units to these two components effective Mar. 1, 1989, disallowing use of so-called "modifier units" (see p. 13).

Base Units Reflect Complexity

Anesthesia base units reflect the relative complexity of an anesthesia procedure. The more base units assigned, the more complex or risky the procedure and the greater Medicare's payment. On March 1, 1989, HCFA made two changes involving base units:

1. In billing for services, anesthesiologists were required to use codes that describe anesthesia procedures instead of surgical codes. This condensed the several thousand surgical codes previously used into about 250 anesthesia codes.

2. HCFA required carriers to use a uniform relative value guide, derived from the American Society of Anesthesiologists (ASA) 1988 Relative Value Guide, for assigning base unit values to anesthesia procedures. Previously each carrier could choose a guide or use charge data from earlier periods to assign base unit values to a particular procedure, causing variation from area to area.

Time Units Represent Payment for Length of Procedure

The Medicare Carriers Manual defines the starting time for anesthesia as when the anesthesiologist or anesthetist begins to prepare the patient for induction (administration) of anesthesia. Anesthesia time ends when the patient is placed under postoperative supervision and the anesthesiologist or anesthetist is no longer in personal attendance. One time unit was allowed for each (1) 15-minute interval during which the anesthesiologist performed the procedure or medically directed a CRNA in his/her employ or (2) 30-minute interval during which the anesthesiologist medically directed a CRNA that he or she did not employ.[3] Generally, actual times were rounded up to the next whole unit.[4]

Anesthesia time consists of three periods:

1. Preoperative time begins when the anesthesiologist starts to prepare the patient for induction of anesthesia and ends when surgery begins. The anesthesiologist may start intravenous fluids, provide preliminary medication, connect the patient to monitoring equipment, and induct the anesthetic.

[3]Effective Jan. 1, 1989, time units for anesthesiologists medically directing CRNAs were defined in 30-minute intervals regardless of who employed the CRNAs. This change was made because, effective the same date, CRNAs could directly bill Medicare using a CRNA fee schedule.

[4]The Omnibus Budget Reconciliation Act of 1989 (OBRA-89) (P.L. 101-239, Dec. 19, 1989) required that, effective Apr. 1, 1990, time units be based on actual time devoted to patient care, rather than rounding up to the next whole unit.

2. Surgery time begins at the surgeon's incision and ends when the surgical incision is closed. During this time, the anesthesiologist typically monitors and maintains the patient's vital life functions, such as breathing and blood pressure.

3. Postoperative time extends from closure of the incision until the anesthesiologist releases the patient to postoperative care personnel. Typically, during this period, the anesthesiologist observes the patient emerge from the influence of the anesthetic and informs personnel responsible for postanesthetic care of any specific problems.

Anesthesiologists also conduct preanesthetic evaluations and postanesthetic follow-up, but Medicare considers these activities part of the normal anesthesia process and does not permit them to be paid separately.

Payment Procedures for Modifier Factors and Monitoring

Before 1989, carriers could make additional payments for modifier units, which were supposed to take into account special factors, such as the patient's age or physical condition, and special monitoring procedures, such as placing catheters within a patient's body for the purposes of monitoring cardiac pressure. Because individual carriers decided whether to include modifier units and/or monitoring procedures in payment calculations, practices among carriers varied.

Effective March 1, 1989, HCFA prohibited direct payments for modifier units. It required carriers that had previously allowed them to increase their dollar conversion factors to reflect the extent to which modifier units had affected payments. At the same time, HCFA advised carriers that they should continue their existing policies for paying special monitoring procedures. A separate report (see p. 10) discusses our review of modifier units and special monitoring procedures.

Anesthesia Claims Under the Fee Schedule

HHS will replace the current reasonable charge payment mechanism with a resource-based, relative value scale fee schedule for all physician services including anesthesiology, beginning January 1, 1992. This change is required by OBRA-89, section 6102. HHS, which is considering eliminating payments for anesthesia time as part of the anesthesiology services fee schedule, expects to publish a Notice of Proposed Rulemaking for the fee schedule by April 30, 1991.

Objectives, Scope, and Methodology

Section 4048(d) of OBRA required that we review Medicare payments to anesthesiologists. Our objectives, as stated in that section, were to review anesthesia time billed to Medicare to (1) determine the average anesthesia times reported for Medicare reimbursement purposes and compare these times to average surgical times, (2) verify reported anesthesia times from patient medical records, and (3) make recommendations regarding the appropriateness of anesthesia times recognized by Medicare for reimbursement purposes. In addition, we examined variations in anesthesia time for the same surgical procedures and how these variations influenced Medicare payments.

To determine average anesthesia times reported for Medicare reimbursement purposes and compare average anesthesia time to average surgical times, we reviewed 1,648 cases involving anesthesia services. These services were provided to Medicare beneficiaries between July and December 1987 at 11 hospitals in nine states. The cases cover eight types of anesthesia services billed for ten surgical procedure codes. We selected these procedure codes (see p. 32) because of high dollar payments for them by Medicare in 1985. Hospitals were judgmentally selected to provide a teaching/nonteaching, rural/urban mix.

Using a GAO-developed computer software program, we recorded and edited anesthesia and surgery times and other information extracted from hospital records for each case and analyzed the data in various ways. In addition to comparing average anesthesia time to average surgery time, we computed median and quartile times for the eight anesthesia services and examined components of total anesthesia time. We examined the effect on anesthesia time of beginning anesthesia prior to entering the operating room and in the operating room and whether anesthesiology residents participated in the procedure. Using this data, we assessed how anesthesia time variations influenced Medicare payments.

To verify reported anesthesia times, we obtained from the nine carriers who processed the applicable claims, hard copies of the claims for 1,534 of the 1,648 cases. Carriers could not locate hard copies for the other 114 cases. We used these claims to compare anesthesia time billed to Medicare with the time data extracted from medical records.

Our audit work was done at HCFA headquarters and HCFA regional offices in Atlanta, Boston, Kansas City, Philadelphia, and San Francisco. With HCFA headquarters officials, we discussed program policies relating to Medicare payments for anesthesia services and obtained from them

national data on payment policies for anesthesiologists. With HCFA regional office staff, we discussed regional modifications of HCFA policies.

We also discussed Medicare's reimbursement policies for anesthesia services with representatives of the American Association of Nurse Anesthetists, ASA, and the Anesthesia Care Team Society. Moreover, we discussed our review methodology with ASA representatives. HHS and these three organizations provided written comments on a draft of this report. Their comments and our evaluation of these comments appear in chapter 4 and appendixes XII-XV.

Our work was conducted between February 1988 and June 1990 in accordance with generally accepted government auditing standards. Appendix I presents a more detailed discussion of the methodologies used in our various analyses.

Variations in Anesthesia Time Affect Medicare Payments

Medicare pays dramatically different amounts for the same anesthesia procedures, largely as a result of differences in time billed by anesthesiologists. For example, Medicare's average allowed charge[1] for anesthesia at prostate surgeries was $130 at one hospital and $270 at another, a variation of over 200 percent. This occurred principally because average anesthesia time was 64 minutes at the first hospital and 132 minutes at the second.

Surgery time for the same procedures varied significantly. Total anesthesia time is positively correlated with the length of surgery, a factor outside the anesthesiologist's control. Thus, differences in surgery time explain, in part, the variation in Medicare payments for anesthesia services. The other major factor influencing anesthesia payment variations is the length of preoperative anesthesia time. Preoperative time, which is largely under the anesthesiologist's control, varied significantly and its length was not strongly related to the length of the surgery.

Payments Differ for the Same Anesthesia Services

Medicare payments for identically coded anesthesia procedures differed substantially from one hospital to another. For example, anesthesiologists at one hospital were paid an average of $130 for services associated with prostate surgery (see table 2.1). This was 43 percent below the average Medicare payment of $229 for all 11 hospitals we surveyed. At the other extreme, for services associated with colon surgery, anesthesiologists at one hospital were paid an average of $617—75 percent higher than the average of $353 for the 11 hospitals. For the average Medicare payments at individual hospitals, see appendix II.

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

Table 2.1: Medicare Payments for Anesthesia Services at 11 Hospitals (1987)

Surgical procedure	Average payment			Variation from 11-hospital average (percent)
	11-hospital weighted	Lowest	Highest	
Cataract	$200	$155	$244	−23 to +22
Colon	353	243	617	−31 to +75
Femur fracture	301	188	416	−38 to +38
Gallbladder	303	224	412	−26 to +36
Heart bypass	864	687	1,007	−20 to +17
Hernia repair	212	134	267	−37 to +26
Hip replacement	422	279	505	−34 to +20
Prostate	229	130	272	−43 to +19

Note: Our sample includes 130 cases in which payment for time was based on 30- minute intervals because the anesthesiologist supervised nurse anesthetists employed by the hospital. For comparison purposes, the payment in these cases is adjusted to reflect 15-minute time intervals, which is the payment interval for all other cases.

Payment Differences a Result of Anesthesia Time Variations

Medicare payment for the same anesthesia procedure differs primarily because the time anesthesiologists spend performing identically coded anesthesia services varies. To isolate the influence of time on payment differences, we removed differences due to the other anesthesia payment factors by using the same number of base units and dollar conversion factors, and by eliminating modifier units. We recalculated payments using the base units for each procedure in the 1988 ASA Relative Value Guide. To eliminate the influence of geographic differences in conversion factors, we used a fixed $18 conversion factor.[2]

After making these adjustments, the recomputed average payments (shown in table. 2.2) were somewhat lower than the actual payments for seven of the eight procedures—primarily because we excluded modifier units. Payment differences among the hospitals remained substantially the same. Standardizing all payment components except time reduced the payment variation by less than 25 percent for seven of the eight procedures. Payment variation for hip replacements was reduced by 41 percent. (For the standardized average payment at individual hospitals, see app. III). Because significant differences still existed after standardizing all payment components except time, actual payment differences for the same procedure result directly from variations in anesthesia time.

[2]This figure is approximately equal to the average conversion factor for the nine carriers included in our review.

Table 2.2: Standardized Average Medicare Payments at 11 Hospitals (1987)

Surgical procedure	Recomputed[a] average payment			Variation from 11-hospital average (percent)
	Weighted 11-hospital	Lowest	Highest	
Cataract	$180	$159	$233	−12 to +29
Colon	340	261	566	−23 to +66
Femur fracture	291	231	422	−21 to +45
Gallbladder	298	244	418	−18 to +40
Heart bypass	742	619	858	−17 to +16
Hernia repair	202	172	271	−15 to +34
Hip replacement	426	377	512	−12 to +20
Prostate	211	170	270	−19 to +28

[a] All payment factors standardized except time.

Anesthesiologist, Surgeon Responsible for Anesthesia Time Variations

Anesthesia service time associated with the same procedure varied dramatically from one case to another, as well as among and within hospitals. Two factors contributed to most of the variation—the length of surgery (which the anesthesiologist does not control) and how long before surgery anesthesia services started (which the anesthesiologist usually controls). Also, anesthesia time was consistently longer when an anesthesiology resident was involved.

Anesthesia Time Varies Considerably by Procedures

We looked at variation across all our sample cases for each procedure by arraying anesthesia times and determining the 25th, 50th (median), and 75th percentiles of times. As illustrated in table 2.3, differences in anesthesia times for the same procedures were dramatic. For example, for 257 prostate surgery cases, the anesthesia times for 25 percent were less than 65 minutes; for another 25 percent, over 120 minutes. The median time for these cases was 90 minutes.

Table 2.3: Anesthesia Time Variations for 1,648 Cases (1987)

Procedure	Anesthesia time (minutes)		
	25th percentile	Median	75th percentile
Cataract	65	80	100
Colon	130	170	240
Femur fracture	105	135	179
Gallbladder	88	120	170
Heart bypass	230	305	379
Hernia	75	90	125
Hip replacement	150	180	240
Prostate	65	90	120

Variation among and within hospitals also was considerable. For example, one hospital had an average of 66 anesthesia minutes for cataract surgery while a second had a 131-minute average. Individual cases at this first hospital varied from 45 to 95 minutes, and at the second, from 90 to 210 minutes. Average times at individual hospitals can be found in appendix IV.

Anesthesia services during surgery accounted for more than half (52-72 percent) of total anesthesia time for each of the eight procedures we reviewed. Preoperative anesthesia service times were also substantial (19-38 percent). The remaining component, postoperative time, comprised 8-12 percent of total anesthesia time. The 11-hospital weighted average of these components (as a percentage of average anesthesia time) appears in appendix V, individual hospital data in appendix VI.

Surgery times for the eight procedures reviewed varied widely among the cases we reviewed as well as among and within hospitals. There was a strong positive correlation between surgery and total anesthesia times.[3]

Additionally, a strong correlation between length of surgery and total anesthesia time was found in a study of anesthesia procedures at six hospitals[4] by Battelle Human Affairs Research Center. Battelle concluded that "this strong relationship suggests that most of the variation in anesthesia time depends on the length of surgery."[5]

But variations in surgery times are not the only reason for anesthesia time differences. Preoperative times and, to a lesser extent, postoperative times for each procedure also varied among the cases we reviewed and contributed to variations in total anesthesia time and payments.

To illustrate variation within the three components of anesthesia time, we determined the 25th and 75th percentile for each component for

[3]Correlation coefficients were calculated for each provider for each procedure at each hospital. The correlation was statistically significant at the 95-percent confidence level for 104 of the 154 samples. The correlation coefficients exceeded .85 for 85 of these samples.

[4]Although Battelle's study involved 16 hospitals, only 6 provided data on both anesthesia and surgical time.

[5]Battelle Human Affairs Research Center, Examination of Variations in Hospital Anesthesiology Services and Charges: An Exploration of Possible Effects of a DRG Payment System For Anesthesiologists, June 23, 1988.

each procedure. As can be seen in table 2.4, substantial variation existed in each component. We checked to see if there was a relationship between the length of surgery and the length of preoperative time. Correlation analysis showed that the relationship between these two times was negligible. Therefore, differences in surgery time do not explain differences in preoperative anesthesia time.

Table 2.4: 25th and 75th Percentiles of Anesthesia Component Times for 1,648 Cases (1987)

	25th and 75th percentile of components of anesthesia time (minutes)		
Surgical procedure	**Preoperative**	**Surgery**	**Postoperative**
Cataract	24–40	27–58	3–10
Colon	22–45	90–170	10–20
Femur fracture	40–65	50–99	10–20
Gallbladder	20–41	52–115	5–22
Heart bypass	40–80	165–265	15–30
Hernia	18–30	45–81	5–15
Hip replacement	40–65	98–157	7–19
Prostate	20–40	31–65	5–15

Average time data by anesthesia component for individual hospitals appear in appendixes VII, VIII, and IX. A comparison of the average preoperative anesthesia times (app. VII) with average surgical times (app. VIII) demonstrates the importance of this component in explaining anesthesia time variations. Generally, average surgical times were substantially greater than preoperative anesthesia times. But for seven of the eight procedures, average preoperative anesthesia time in at least one hospital exceeded the average surgical time in at least one other hospital. Also, hospitals with high total anesthesia times (app. IV) appeared to have high preoperative anesthesia times (app. VII).

In addition to finding variations in pre- and postoperative times for the same procedure among the cases we reviewed and among hospitals, we found significant variations for all eight procedures within hospitals. For example, preoperative times for prostate surgery ranged from 13 to 25 minutes at one hospital, while at another hospital the range was from 15-100 minutes. Postoperative time for prostate surgery was 10-15 minutes at one hospital and 0-35 minutes at another hospital (see apps. X and XI).

No Clear Justification for Preoperative Time Variations

The surgical component of total anesthesia time is a function of a surgeon's speed and/or case-by-case differences in the operation's complexity. Surgeons explained the extreme variation in the surgical time component on individual cases by such operative circumstances as surgical complications or performance of a second procedure. As discussed earlier, our analysis showed that the length of the surgery did not explain preoperative time variations.

We did not identify a clear rationale for preoperative time variations, nor could HCFA representatives explain the variations we observed in preoperative time. In commenting on a draft of this report, anesthesia organizations identified several activities that they believe contribute to time variations before surgery. (See apps. XIII-XV.) For example, two organizations cited patient positioning for hip surgery. Although these activities could help explain variation in preoperative anesthesia time among different procedures, they did not explain the substantial variation we found within surgical procedures. Also, these organizations criticized Medicare's "loose" or "ambiguous" definition of anesthesia start, suggesting that it can easily result in disagreement as to when services begin for Medicare billing purposes. Medicare defines anesthesia start time as when the anesthesiologist begins to prepare the patient for anesthesia induction. This definition does not prescribe specific criteria or guidance for how soon before induction it is reasonable to begin preparation. Thus, it essentially allows the anesthesiologist to select the time to start anesthesia services.

The anesthesiology organizations also stated that discretion over start time is minimized by the hospitals' desire to maximize operating room usage. We agree that this would temper discretion once the patient enters the operating room but note that anesthesia start time does not necessarily begin after a patient enters the operating room. In over a third of our sample cases, anesthesia service started before entering the operating room (see p. 22).

Preoperative Time Increases Related to Where Services Begin

HCFA and anesthesiology officials agree that a procedure's preoperative anesthesia services generally should be similar, regardless of whether anesthesia services begin before entering or in the operating room. But some preoperative time variation appears related to where anesthesiology services begin.

In 40 percent of the cases[6] we reviewed, anesthesia services began before the patient entered the operating room. In these cases, average total anesthesia time for each procedure was one to five payment units (one unit = 15 minutes) longer than for cases in which anesthesia services started in the operating room. As shown in table 2.5, preoperative time increased for all eight procedures, resulting in an increase of two payment units for each procedure.

Table 2.5: Average Time Increase When Anesthesia Services Start Before Patient Enters Operating Room (1987)

	Cases		Average increase (decrease) in anesthesia time			
				By component (minutes)		
Surgical procedure	All	Anesthesia starts before operating room	Total minutes	Preoperative	Surgical	Postoperative
Cataract	391	163	6	16	(10)	0
Colon	167	47	52	20	27	5
Femur fracture	128	30	63	27	25	10
Gallbladder	95	32	53	20	23	8
Heart bypass	260	71	46	24	15	7
Hernia	182	59	34	17	15	4
Hip replacement	168	65	50	28	19	4
Prostate	257	91	28	20	4	4

Note: Totals may not add due to rounding.

Use of Anesthesia Residents Related to Anesthesia Time Increases

For the procedures we reviewed, the average anesthesia time was longer for every time component whenever an anesthesiology resident was involved (see table 2.6). Because residents are being trained, some additional time for instruction would be expected. About 18 percent of our sampled cases (293 of 1,648) involved an anesthesiology resident.

[6]Not included are 239 cases at three hospitals that did not record operating room times.

Table 2.6: Average Anesthesia Time Increase When Anesthesia Residents Were Used at 11 Hospitals (1987)

Surgical procedure	Cases		Average anesthesia time (minutes)		
	All	With residents	With residents	Without residents	Increase
Cataract	391	31	126	81	45
Colon	167	29	261	173	88
Femur fracture	128	22	256	129	127
Gallbladder	95	18	231	117	114
Heart bypass	260	64	378	294	84
Hernia	182	33	151	93	58
Hip replacement	168	51	238	182	56
Prostate	257	45	140	86	54

Summary

Medicare payments for the same anesthesia procedures differ considerably from one hospital to another, primarily because billed anesthesia times vary. Surgery time, generally the largest single component of anesthesia time, had a positive correlation with total anesthesia time for the eight procedures we reviewed and was a major reason why payments differed.

Although preoperative anesthesia services for a particular surgery should be similar, preoperative time varied considerably. This anesthesia time component is largely controlled by the anesthesiologist. For seven of eight procedures, average preoperative anesthesia time in one hospital exceeded the average surgery time at another hospital. Variations such as these made a significant contribution to anesthesia payment differences.

Anesthesia Payment Accuracy and Internal Controls Should Be Improved

Anesthesia time recorded on patient medical records differed from the time indicated on the Medicare claim forms for over 13 percent of the claims we sampled. As a result, one of every eight Medicare payments for anesthesia services was inaccurate. Moreover, a serious internal control deficiency exists involving all anesthesia claims because Medicare contractors cannot independently verify the accuracy of times recorded by anesthesiologists on claims.

Inaccuracies Found in Anesthesia Billings

Our review of 1,534 randomly selected claims[1] for physician anesthesia services at 11 hospitals showed that for over 13 percent of the claims sampled, anesthesia time billed to Medicare differed by at least one payment unit from time recorded in patient records (see table 3.1).

Table 3.1: Claimed Versus Recorded Anesthesia Times for 1,534 Cases at 11 Hospitals (1987)

Hospital	Total cases	Cases with errors	Over-payment	Under-payment	Error rate (percent)
A	34	10	9	1	19.4
B	186	32	22	10	117.2
C	194	12	1	11	6.2
D	94	23	9	14	24.5
E	144	10	6	4	6.9
F	191	37	8	29	19.4
G	269	38	28	10	14.1
H	33	1	0	1	3.0
I	187	33	20	13	17.6
J	110	2	1	1	1.8
K	92	6	6	0	6.5
Total	**1,534**	**204**	**110**	**94**	
Average error rate					**13.3**

For these claims, the errors resulted in average over- or underpayments of about $37. The frequency of error was high, but the ratio of over- to underpayments varied considerably from one hospital to another and their net effect on Medicare payments for the sample claims was small.

Anesthesia billing department officials attributed the disparities in claimed versus recorded anesthesia times to errors in transferring anesthesia time from medical records to claim forms, computing anesthesia

[1] An additional 40 claims were excluded from our sample analysis because of obvious inconsistencies on the claim form (see app. I).

payment units, and estimating anesthesia time when the anesthesiologist neglected to record anesthesia start and stop times. During our review, we observed examples of each type of error. For the most part, errors appeared to be caused by carelessness or errors in estimates.

In addition, errors occurred when anesthesia payment units on claims submitted by electronic media, such as magnetic tape or disk, were computed. As we pointed out in a 1989 report[2] to the HCFA Administrator, many electronic claim errors could be detected through the use of required internal controls.

Internal Control Weakness Prevents Validation of Anesthesia Times

Our analyses of anesthesia billing errors were based on the assumption that anesthesia times recorded on medical records are accurate. However, there could be additional errors on the medical records that are not possible to detect because of a serious internal control weakness in Medicare's anesthesia payment system.

The Federal Managers' Financial Integrity Act of 1982 (31 U.S.C., S. 3512(b)) calls for renewed focus on the need to strengthen internal controls. It requires executive agencies to establish internal control systems that reasonably ensure that agency expenditures are consistent with laws, regulations, and policies. When an agency's major function involves monitoring the activities of private organizations, the agency should establish policies and procedures to assure that they adopt adequate internal control systems. The Comptroller General has specified internal control standards for agency use in implementing the Financial Integrity Act. For example, to reduce the risk of error, waste, or wrongful acts or to reduce the risk of their going undetected, no one individual should control all key aspects of a transaction or event. However, this is not the case for anesthesia claims.

Anesthesia start times recorded on medical records are based on the anesthesiologist's oral or written certification. Although Medicare payment for anesthesia time units begins at this point, start time usually

[2]Internal Controls Over Electronic Claims for Anesthesia Services Are Inadequate (GAO/HRD-90-49, Dec. 18, 1989). Of the 1,534 claims we reviewed, 231 (15 percent) were in electronic form. Of eight carriers we queried, documentation controls for seven did not ensure the accurate payment of anesthesia claims submitted electronically. These seven did not meet Medicare Carriers Manual requirements that all claims for anesthesia services show anesthesia times, electronic media claims receive the same prepayment review as paper claims, or both. Our sampling of electronic claims at three carriers disclosed high error rates at two (24.7 and 30.7 percent). In March 1990, the HCFA Administrator advised us that action had been taken or was planned to remedy the internal control problems involving electronic claims.

cannot be corroborated with independent records or individuals. Consequently, the accuracy of Medicare payments for anesthesia time depends upon the veracity of the anesthesiologists who bill Medicare, rather than a system of internal controls.

At 6 of 11 hospitals we reviewed, anesthesia time was recorded only on the patient's anesthesia medical record. At the other five hospitals, anesthesia time also was documented in operating room records by operating room personnel. However, even in these cases operating room records did not permit independent verification because (1) the anesthesia start time for Medicare billing purposes does not always begin in the operating room, (2) operating room personnel sometimes obtain anesthesia time from either the anesthesia record or the anesthesiologist, and (3) operating room personnel sometimes use different criteria in recording the anesthesia start and end times. For example, at one hospital the circulating nurse used induction as the anesthesia start time on the operating room record. Medicare guidelines, however, identify anesthesia start as when an anesthesiologist begins preparing a patient for induction.

Summary

Medicare payments for anesthesia services time cannot be validated. The amount of payment depends largely on the time recorded by the anesthesiologist, which cannot be independently validated by other records. Absent internal controls over reported times, the payment system must rely on anesthesiologists to report accurately the time for which they are paid.

Correcting this internal control weakness under the current, time-based payment system would require substantial changes in the record-keeping systems at hospitals and additional work for the carriers. At present, only a partial validation is possible by comparing time or time units on medical records to times or units on claims. Our check of anesthesia times revealed that over 13 percent of the Medicare claims in our sample were inaccurate.

Conclusions and Recommendations

Anesthesia time is the principal component in the anesthesia reimbursement system, accounting for about 58 percent of Medicare anesthesia payments. We found large, unexplained variations in anesthesia payments and time, a serious internal control weakness inherent in the time-based system of payment for anesthesia services, and discrepancies between times reported on Medicare claims and those in medical records. An alternative payment methodology could correct these problems.

Because of variations in anesthesia time charges, average Medicare payments for physician anesthesia services for identical surgical procedures differ by over 200 percent among hospitals. Surgery time is generally the largest single component of anesthesia time, and anesthesia time variations within procedures and from one hospital to another are often associated with variations in surgery times. For each of the eight procedures we reviewed, there was a strong positive correlation between surgery time and total anesthesia time.

Although preoperative anesthesia services should be similar for the same procedure, an anesthesiologist has considerable discretion in deciding when to begin these services. This results in wide variations in preoperative times, which, in turn, have a significant effect on anesthesia time and Medicare payment. For example, for 25 percent of the prostate surgery cases we examined, preoperative time was under 20 minutes, while 25 percent exceeded 40 minutes. For seven of eight procedures reviewed, the average preoperative anesthesia time at some hospitals exceeded the average surgical time at one or more other hospitals.

One possible explanation for the wide variations we observed is that there are widely varying interpretations of HCFA criteria for when anesthesia starts. Another possibility is that Medicare's anesthesia reimbursement system tends to reward inefficiencies. That is, it generally results in greater Medicare compensation for longer, less efficiently provided preoperative anesthesia services than for shorter, more efficiently provided services. The present system does, in fact, provide an incentive for an anesthesiologist to spend more time providing services. This incentive would be particularly strong if the anesthesiologist had time available between surgeries. If so, under the current payment system the anesthesiologist could start the next procedure earlier than necessary, thereby increasing Medicare's payment for anesthesia services.

Further, Medicare's time-based anesthesia payment system has a serious internal control weakness. Hospital records used as the basis for anesthesia time charges to Medicare are controlled by the anesthesiologist and cannot be independently verified. Consequently, the accuracy of payments for anesthesia time depends solely on the accuracy of the payee's documentation. This payment system weakness is unique to anesthesiologists. Surgeons, for example, are paid for the specific procedure performed irrespective of surgery time.

An alternative payment methodology could increase the likelihood that Medicare would pay similar amounts for similar services and that physician payment systems are uniform. At least two approaches are possible:

1. Base payment on a fixed fee for anesthesia services related to specific surgical procedures without special consideration for time differences within each procedure. For instance, fixed fees could be based on median anesthesia time; that is, the value at which 50 percent of the sample cases had longer anesthesia times and 50 percent had shorter times. For the eight procedures we reviewed, payments based on median times would have reduced total payments to anesthesiologists by 7.3 percent (see table 4.1). About 58 percent of anesthesia payments in our sample cases was for the time anesthesiologists claimed. Projected to the universe of anesthesia payments, the 7.3 percent reduction could have reduced Medicare payments by about $51 million in fiscal year 1988.[1]

Table 4.1: Savings to Medicare If Anesthesia Payments Were Based on Median Time

Surgical procedure	Anesthesia time (minutes)		Savings based on percent differences
	Average	Median	
Cataract	85	80	5.9
Colon	189	170	10.1
Femur fracture	150	135	10.0
Gallbladder	139	120	13.7
Heart bypass	315	305	3.2
Hernia	104	90	13.5
Hip replacement	199	180	9.6
Prostate	96	90	6.3
Average percentage of time by which median is lower (weighted by number of cases)			7.3

[1]Anesthesia payments totaled $1.2 billion in FY 1988, about $692 million (58 percent) of it for anesthesia time. Reducing this by 7.3 percent yields projected savings of about $51 million.

2. Use the current anesthesia payment methodology, but base time on an independent, verifiable variable, such as surgery time.[2] Anesthesia time could be established as either a percentage of actual surgery time (such as 140 percent) or actual surgery time plus a fixed amount of time for preoperative and postoperative services. For example, if Medicare payments were based on anesthesia time computed at 152 percent of surgery time for the 1,648 cases we reviewed, there would be no change from the amount Medicare currently pays.

Either approach would eliminate payment differences related to the unexplained variations that we observed with preoperative and postoperative times and also would remove the internal control problems inherent to the current anesthesia payment system. The second approach would be administratively more difficult to implement because of the need to develop data on the relationships between pre- and postoperative anesthesia times and surgery times. Such relationships may be needed for each anesthesia procedure because preoperative anesthesia services can differ significantly from one procedure to another. It also would continue providing higher per case reimbursement for similar anesthesia services at teaching hospitals—because surgical times at these hospitals are generally longer. The first approach would make the payment method for anesthesia services consistent with that for other physicians; that is, the same payment for the same service regardless of the time involved.

Recommendations to the Secretary of HHS

We recommend that the Secretary of Health and Human Services direct the Administrator of HCFA to establish a fee schedule for reimbursing physician anesthesia services that eliminates the direct link between anesthesia time and payment for anesthesia services.

Comments and Our Evaluation

In commenting on a draft of this report, HHS said it agreed with our recommendation to sever the direct link between anesthesia time and payment for anesthesia services. HHS pointed out that it announced, in the Federal Register of September 4, 1990, its intention to eliminate time units under the physician fee schedule. (See app. XII.)

[2]Surgery time generally is recorded by an operating room nurse in a hospital record that is not controlled by the anesthesiologist.

The American Association of Nurse Anesthetists and ASA disagreed with our recommendation and advocated maintaining the status quo by continuing payment for actual anesthesia time. (See apps. XIII and XIV.) Both stated that variations in preoperative anesthesia time are explained by such factors as differences in the time required to position and prepare patients before surgical incision. These factors could help explain some of the variation across surgical procedures, but we do not believe they explain the substantial preoperative time variations we found within individual procedures.

The Anesthesia Care Team Society stated that the problems we identified with reimbursement for preoperative time warrant a change in Medicare payment policy. (See app. XV.) The Society believes Medicare should standardize preoperative anesthesia time at one time unit but continue to reimburse for actual anesthesia time spent during and after surgery. This suggestion would eliminate payment variation associated with preoperative time but not address the differing relationships between preoperative time and surgical time from one procedure to another. Nor would this approach be consistent with Medicare payments to other physicians.

The comments of the three anesthesiology organizations are discussed further in appendixes XIII through XV. Our evaluation of the comments focused on those considered most relevant to the report's central issues. Where appropriate, we made changes to the report.

Scope and Methodology

Scope

We conducted case studies of anesthesia services provided at 11 hospitals in nine states:

- Walter Boswell Memorial Hospital, Sun City, Arizona
- Sequoia Hospital, Redwood City, California
- Haywood County Hospital, Clyde, North Carolina
- Greenwich Hospital Association, Greenwich, Connecticut
- St. Vincent's Medical Center, Jacksonville, Florida
- Iowa Methodist Medical Center, Des Moines, Iowa
- Brigham and Women's Hospital, Boston, Massachusetts
- Jewish Hospital of St. Louis, St. Louis, Missouri
- Ashland State General Hospital, Ashland, Pennsylvania
- Geisinger Medical Center, Danville, Pennsylvania
- Milton Hershey Medical Center, Hershey, Pennsylvania

The hospitals were judgmentally selected from a HCFA listing of Medicare-eligible hospitals to include teaching, nonteaching, urban, and rural hospitals, as well as to provide geographic dispersion.

Methodology

Claim Sample

We reviewed anesthesia services billed for 10 Medicare surgical procedure codes. The selection of these procedures generally was based on carrier-allowed dollar amounts for Medicare part B anesthesia services, as recorded in the 1985 part B Medicare Annual Data file. The 10 procedures ranked 1-7, 10, 11, and 20 on this listing of anesthesia services. For our analysis, we combined two heart bypass procedures (codes 33510 and 33512) and two cataract procedures (codes 66984 and 66983). The 10 codes, in descending order of allowed Medicare dollar amounts, are:

- 66984 (cataract [extracapsular])
- 66983 (cataract [intracapsular])
- 52601 (prostate)
- 33512 (heart bypass [three grafts])
- 27130 (total hip replacement)
- 27236 (femoral fracture)
- 44140 (colectomy [colon and/or large intestine])
- 49505 (inguinal hernia)
- 47600 (cholecystectomy [gallbladder])

- 33510 (heart bypass [one graft])

Nine carriers processed claims for anesthesia services provided at the 11 selected hospitals:

- Blue Shield of Massachusetts (Brigham and Women's Hospital)
- Travelers Insurance Company (Greenwich Hospital)
- Pennsylvania Blue Shield (Ashland State General Hospital, Geisinger Medical Center, and Milton Hershey Medical Center)
- Prudential Insurance Corporation of America (Haywood County Hospital)[1]
- Florida Blue Shield (St. Vincent's Medical Center)
- Blue Shield of Iowa (Iowa Methodist Medical Center)
- General American Life Insurance Company (Jewish Hospital of St. Louis)
- Aetna Life and Casualty Company (Walter Boswell Memorial Hospital)
- Blue Shield of Northern California (Sequoia Hospital)

From each carrier, we obtained a list for each selected hospital of all Medicare billings for the 10 procedure codes with dates of service between July 1 and December 31, 1987. This period was chosen to allow sufficient time for physician billing and carrier processing of claims. From these lists, we selected a random sample of Medicare claims for each identified anesthesiologist or group of anesthesiologists at the 11 hospitals. We selected a maximum of 25 beneficiary claims for a procedure code for each anesthesiologist's (or group's) billing number. For procedure codes with fewer than 25 claims, we selected all claims. The total sample was 1,688 claims. Because our primary objective was to compare anesthesia and surgical time, we excluded 40 claims for which anesthesia or surgery times were obviously incorrect (for example, the claim showed that surgery began before general anesthesia). Thus, we sampled 1,648 cases of anesthesia services at the 11 hospitals. Table I.1 summarizes these cases by hospital and anesthesia service.

[1]When our review began, Prudential was the Medicare carrier for North Carolina. Effective Jan. 1, 1989, EQUICOR, of Nashville, Tennessee, became HCFA's contractor for this state.

Table I.1: Anesthesia Cases Sampled, by Hospital and Surgical Procedure

Surgical procedure	Number of cases, by hospital											Total cases
	A	B	C	D	E	F	G	H	I	J	K	
Cataract[a]	[b]	71	33	22	25	25	112	[b]	27	27	49	391
Colon	15	16	25	11	25	21	18	2	25	7	2	167
Femur fracture	10	26	5	2	25	19	6	7	25	3	[b]	128
Gallbladder	10	2	25	1	3	14	14	3	6	6	11	95
Heart bypass[a]	30	44	31	28	[b]	40	30	[b]	32	25	[b]	260
Hernia	11	13	25	9	23	22	30	7	25	10	7	182
Hip replacement	22	[b]	25	8	18	25	17	3	25	25	[b]	168
Prostate	14	24	25	13	25	25	42	11	25	18	35	257
Total	**112**	**196**	**194**	**94**	**144**	**191**	**269**	**33**	**90**	**121**	**104**	**1,648**

[a]The two cataract and two heart bypass codes are combined.

[b]No anesthesia claims for this procedure at this hospital.

The sample of cases was designed to assess variability in the anesthesia charges and anesthesia times billed to Medicare. Our data are not projectable to all procedures billed to Medicare nationwide. For each of the eight procedures, we computed average payments and mean, median, and quartile times. The median is the value at which half of the times are greater and half are less. The first quartile is the value at which 25 percent of the times are less. The third quartile is the value at which 25 percent of the times are greater.

Data Obtained

At each hospital, we used a GAO-developed computer software program to record and edit the following information from hospital records (though not all questions were applicable at all hospitals):

- Patient name
- Patient age
- Patient physical status
- Patient Medicare number
- Surgical procedure code
- Date of service
- Anesthesia times from anesthesia records (start time for Medicare billing purposes, induction, emergence, and end time for Medicare billing purposes)
- Times from operating room records (operating room entrance, anesthesia start, incision, surgery end [closure], anesthesia end, and operating room exit)

- Patient hospital status (inpatient/outpatient)
- Number of anesthesiologists involved in procedure
- Names of anesthesiologists (up to three)
- Number of CRNAs involved in procedure
- Names of CRNAs (up to three)
- Number of residents involved in procedure
- Type of anesthesia

A second GAO staff member independently verified all data entered. Using a statistical software program, we determined overall, and by hospital, average anesthesia and surgery times and average Medicare payments for the eight services. We examined the various components of anesthesia time, and the effect on anesthesia time of anesthesia services (1) beginning prior to the patient entering the operating room and (2) involving anesthesiology residents. In 558 of the 1,409 cases for which we obtained operating room entrance time (about 40 percent), anesthesia start time was prior to operating room entrance time. Anesthesia residents were involved in 293 cases, approximately 8 percent of the 1,648 cases.

Carrier Policies

In addition to obtaining claims from carriers, we determined their payment policies regarding base, time, and modifier units. From eight of the carriers, we obtained electronic anesthesia claim processing requirements and compared them with requirements for processing paper claims. We did not obtain requirements from the Prudential Insurance Corporation of America because, when we sought this information, the company was no longer the North Carolina Medicare carrier.

Average Allowed Anesthesia Charge, by Procedure and Hospital

Surgical procedure	Average allowed charge, by hospital										
	A	B	C	D	E	F	G	H	I	J	K
Cataract	[a]	$217	$155	$204	$178	$223	$202	[a]	$210	$244	$172
Colon	$353	366	311	324	243	396	381	$323	388	617	298
Femur fracture	247	297	265	263	268	416	292	188	302	413	[a]
Gallbladder	282	268	255	304	258	412	304	224	298	366	296
Heart bypass	789	947	687	865	[a]	863	875	[a]	873	1,007	[a]
Hernia	176	190	180	225	161	267	245	134	234	241	210
Hip replacement	406	[a]	394	403	470	505	398	279	384	426	[a]
Prostate	199	231	204	245	185	266	272	130	225	270	217

[a]No anesthesia claims for this procedure at this hospital.

Standardized Average Allowed Anesthesia Charge, by Procedure and Hospital

Surgical procedure	Standardized average allowed charge, by hospital										
	A	B	C	D	E	F	G	H	I	J	K
Cataract	[a]	$182	$164	$202	$191	$226	$159	[a]	$201	$233	$159
Colon	$347	332	293	331	261	401	303	432	377	566	297
Femur fracture	261	251	245	261	287	422	231	247	284	330	[a]
Gallbladder	295	279	252	342	294	418	244	324	291	369	277
Heart bypass	633	756	638	829	[a]	785	619	[a]	825	858	[a]
Hernia	173	181	172	236	172	271	178	190	226	238	198
Hip replacement	395	[a]	381	479	504	512	377	402	380	424	[a]
Prostate	192	197	188	242	199	270	195	170	220	253	208

[a]No anesthesia claims for this procedure at this hospital.

Note: The standardized allowed charge was calculated by excluding modifier units, using a single relative value guide for base units, a fixed $18 conversion factor, and 15-minute time intervals.

Average Anesthesia Time, by Procedure and Hospital

Surgical procedure	Average anesthesia time, by hospital (minutes)											Range of time (minutes)
	A	B	C	D	E	F	G	H	I	J	K	
Cataract	[a]	85	72	105	92	122	67	[a]	104	131	66	66–131
Colon	194	182	151	180	122	249	153	270	217	377	148	122–377
Femur fracture	122	115	109	125	145	267	99	112	145	183	[a]	99–267
Gallbladder	137	123	102	180	125	243	95	163	129	199	114	95–243
Heart bypass	216	324	228	388	[a]	361	207	[a]	382	410	[a]	207–410
Hernia	79	86	79	132	82	163	81	105	123	134	95	79–163
Hip replacement	174	[a]	163	248	267	272	135	183	164	200	[a]	135–272
Prostate	80	83	79	124	78	150	79	64	105	132	91	64–150

[a]No anesthesia claims for this procedure at this hospital.

Anesthesia Time Components—11 Hospitals' Average, by Procedure

Surgical procedure	Anesthesia time components (percent)		
	Preoperative	Surgery	Postoperative
Cataract	38	54	8
Colon	19	72	9
Femur fracture	38	52	10
Gallbladder	23	65	12
Heart bypass	20	72	8
Hernia	26	63	11
Hip replacement	28	65	8
Prostate	34	55	12

Note: Totals may not add to 100 percent due to rounding.

Percentage of Average Anesthesia Time, by Component and Hospital

Surgical procedure	Anesthesia time component	Percentage, by hospital										
		A	B	C	D	E	F	G	H	I	J	K
Cataract	Preoperative	[a]	28	28	39	32	46	54	[a]	31	29	42
	Surgical	[a]	67	68	50	59	46	39	[a]	61	66	42
	Postoperative	[a]	5	4	11	10	8	7	[a]	8	5	15
Colon	Preoperative	18	21	16	24	18	24	13	13	17	24	18
	Surgical	77	73	76	68	68	65	80	81	73	70	64
	Postoperative	5	6	8	8	14	11	7	6	10	6	18
Femur fracture	Preoperative	34	37	28	36	36	40	44	38	38	46	[a]
	Surgical	56	57	64	44	53	49	46	45	53	54	[a]
	Postoperative	10	7	7	20	11	11	10	17	9	0	[a]
Gallbladder	Preoperative	23	24	22	17	19	26	16	18	24	20	29
	Surgical	66	69	70	75	61	62	76	59	65	66	52
	Postoperative	12	7	8	8	20	12	8	23	11	14	19
Heart bypass	Preoperative	14	21	20	16	[a]	28	15	[a]	21	19	[a]
	Surgical	75	74	73	78	[a]	62	76	[a]	70	74	[a]
	Postoperative	10	5	7	5	[a]	11	9	[a]	10	6	[a]
Hernia	Preoperative	31	28	28	22	22	33	20	25	24	27	32
	Surgical	59	64	66	67	60	56	69	62	65	71	51
	Postoperative	10	8	6	11	18	10	11	13	11	2	18
Hip replacement	Preoperative	27	[a]	32	28	21	35	21	29	29	25	[a]
	Surgical	66	[a]	64	66	72	57	69	63	63	68	[a]
	Postoperative	7	[a]	4	7	7	8	10	8	8	8	[a]
Prostate	Preoperative	25	35	28	32	34	41	29	35	22	37	43
	Surgical	64	58	65	58	49	45	63	43	65	54	44
	Postoperative	11	7	6	10	16	13	8	22	13	9	13

[a]No anesthesia claims for this procedure at this hospital.

Note: Totals for each procedure by hospital may not add to 100 percent due to rounding.

Average Preoperative Anesthesia Time, by Procedure and Hospital

Surgical procedure	Average preoperative time, by hospital (minutes)											Range of time (minutes)
	A	B	C	D	E	F	G	H	I	J	K	
Cataract	[a]	24	20	4	29	56	36	[a]	32	38	28	20–56
Colon	34	38	24	44	22	59	20	35	37	92	26	20–92
Femur fracture	42	42	31	45	52	06	44	43	55	90	[a]	31–106
Gallbladder	3	30	23	30	24	64	5	29	3	4	33	15–64
Heart bypass	3	68	45	64	[a]	100	32	[a]	79	79	[a]	31–100
Hernia	25	24	22	29	8	54	6	26	29	37	30	16–54
Hip replacement	47	[a]	52	68	56	95	29	53	47	49	[a]	29–95
Prostate	20	29	22	40	27	62	23	23	23	48	39	20–62

[a]No anesthesia claims for this procedure at this hospital.

Average Surgical Time, by Procedure and Hospital

Surgical procedure	Average surgical time, by hospital (minutes)											Range of time (minutes)
	A	B	C	D	E	F	G	H	I	J	K	
Cataract	[a]	57	49	52	54	56	26	[a]	63	86	28	26–86
Colon	150	133	114	122	83	162	123	220	159	263	95	83–263
Femur fracture	68	65	70	55	77	131	46	50	76	107	[a]	46–131
Gallbladder	90	85	72	135	76	150	72	96	84	133	59	59–150
Heart bypass	163	242	167	303	[a]	223	157	[a]	266	304	[a]	157–304
Hernia	47	55	52	88	49	92	56	65	80	98	48	47–98
Hip replacement	116	[a]	104	162	192	155	94	116	104	136	[a]	94–192
Prostate	51	48	51	72	39	68	49	28	68	71	40	28–72

[a]No anesthesia claims for this procedure at this hospital.

Average Postoperative Time, by Procedure and Hospital

Surgical procedure	Average postoperative time, by hospital (minutes)											Range of time (minutes)
	A	B	C	D	E	F	G	H	I	J	K	
Cataract	[a]	4	3	12	9	10	5	[a]	8	7	10	3–12
Colon	10	11	12	14	17	28	10	15	21	23	27	10–28
Femur fracture	12	8	8	25	16	30	10	19	13	0	[a]	0–30
Gallbladder	16	8	8	15	25	29	8	38	14	28	21	8–38
Heart bypass	22	15	16	21	[a]	38	18	[a]	37	26	[a]	15–38
Hernia	8	7	5	15	15	17	9	14	14	3	17	3–17
Hip replacement	12	[a]	7	17	20	22	13	15	13	15	[a]	7–22
Prostate	9	6	5	12	13	20	6	14	14	12	12	5–20

[a]No anesthesia claims for this procedure at this hospital.

Range of Preoperative Anesthesia Times, by Procedure and Hospital

Surgical procedure	Range of preoperative anesthesia times, by hospital (minutes)										
	A	B	C	D	E	F	G	H	I	J	K
Cataract	[a]	5–65	5–30	15–60	8–55	30–105	5–82	[a]	20–60	15–55	10–59
Colon	25–50	19–58	0–40	18–75	10–45	27–115	10–45	25–45	20–65	25–175	25–27
Femur fracture	35–55	20–85	5–55	35–55	29–90	60–240	30–65	33–53	30–100	60–135	[a]
Gallbladder	14–73	30–30	10–50	30–30	15–30	47–105	7–23	18–37	20–145	15–80	17–45
Heart bypass	10–70	45–95	15–80	40–80	[a]	48–187	17–75	[a]	35–120	55–112	[a]
Hernia	15–36	18–30	10–32	15–50	5–30	23–95	10–40	18–44	10–55	15–75	22–45
Hip replacement	30–124	[a]	35–70	40–93	40–79	55–160	0–45	50–58	30–70	20–80	[a]
Prostate	13–25	15–42	13–40	20–60	15–55	30–100	15–60	15–30	10–55	15–100	20–75

[a]No anesthesia claims for this procedure at this hospital.

Range of Postoperative Anesthesia Times, by Procedure and Hospital

Surgical procedure	Range of postoperative anesthesia times, by hospital (minutes)										
	A	B	C	D	E	F	G	H	I	J	K
Cataract	[a]	0–10	0–15	0–30	5–15	5–25	0–35	[a]	0–25	0–15	1–22
Colon	0–20	5–24	0–65	5–30	10–30	0–82	5–35	15–15	5–55	10–30	25–29
Femur fracture	5–25	0–20	0–13	15–35	5–25	10–60	5–15	12–25	10–30	0–0	[a]
Gallbladder	3–70	5–10	0–35	15–15	20–30	10–65	0–20	35–43	5–25	0–105	12–37
Heart bypass	0–60	0–30	3–30	5–150	[a]	0–100	5–30	[a]	10–85	0–145	[a]
Hernia	0–14	4–10	0–10	10–28	5–74	7–35	0–40	10–22	5–45	0–10	8–25
Hip replacement	0–43	[a]	0–15	5–25	5–60	0–99	5–70	15–15	5–25	0–108	[a]
Prostate	5–16	0–25	0–18	0–25	5–27	13–35	0–20	10–15	0–25	0–35	5–22

[a]No anesthesia claims for this procedure at this hospital.

Comments From the Department of Health and Human Services

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

DEPARTMENT OF HEALTH & HUMAN SERVICES Office of Inspector General

Washington, D.C. 20201

JAN 15 1991

Mr. Lawrence H. Thompson
Assistant Comptroller General
United States General
Accounting Office
Washington, D.C. 20548

Dear Mr. Thompson:

Enclosed are the Department's comments on your draft report, "Medicare: Variation In Payments To Anesthesiologists Linked To Anesthesia Time." The comments represent the tentative position of the Department and are subject to reevaluation when the final version of this report is received.

The Department appreciates the opportunity to comment on this draft report before its publication.

Sincerely yours,

Richard P. Kusserow
Inspector General

Enclosure

Comments of the Department of Health and Human Services on the General Accounting Office Draft Report, "Medicare: Variation In Payments To Anesthesiologists Linked to Anesthesia Time"

Overview

This GAO draft report responds to the Congressional mandate to study several aspects of Medicare payment for anesthesia services, including:

(1) average anesthesia times reported for Medicare reimbursement purposes;

(2) verification of those times from patient medical records; and

(3) comparison of anesthesia and surgical times.

The present report documents the wide variations in the use of anesthesia time for the same procedure among different hospitals and even within the same hospital. The study provides a useful breakdown of anesthesia time into three categories: surgical time; pre-operative time; and post-operative time.

GAO Recommendation

We recommend that the Secretary of HHS, direct the Administrator of HCFA to establish a fee schedule for reimbursing physician anesthesia services that eliminates the direct link between anesthesia time and payment for anesthesia services.

Department Comment

This recommendation was supported by data GAO captured on 10 anesthesia services from 11 hospitals in 9 States. In all, data was obtained on approximately 1,700 claims involving anesthesia services. While the claims were randomly selected within hospitals, the hospitals were selected "judgmentally" with the intention of covering hospitals in urban/rural areas and teaching/nonteaching characteristics.

We agree with the recommendation that a Medicare payment system for anesthesia services should be established that severs the direct link between anesthesia time and payment for anesthesia services. Indeed, in the Model Fee

Page 2

Schedule, published in the September 4, 1990 Federal Register, HHS announced an "intention to propose the elimination of time units as part of the April 1991 NPRM" on the fee schedule. GAO is able to demonstrate that there are problems with the current time unit policy such as unjustified variations in preoperative anesthesia time. However, GAO should caution and amplify that its results are not statistically significant because of the size of the sample and the way the sample was drawn, i.e., judgmentally.

We encourage GAO to finalize this report as soon as possible to ensure its relevance to an on-going policy debate. This report will be of significant assistance to the policy issues surrounding the use of time for anesthesia services.

See comment 1.

The following is GAO's comment on the HHS letter of January 15, 1991.

GAO Comment

1. HHS offered several technical comments. These were considered and revisions made where appropriate.

Comments From the American Association of Nurse Anesthetists

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

January 10, 1991

Lawrence H. Thompson
Assistant Comptroller General
United States
General Accounting Office
Washington, D.C. 20548

RE: GAO Draft Report "Medicare: Variation in Payments to Anesthesiologists Linked to Anesthesia Time"

Dear Mr. Thompson:

On behalf of the American Association of Nurse Anesthetists (AANA), I appreciate the opportunity to comment on the United States General Accounting Office (GAO) draft report "Medicare: Variation in Payments to Anesthesiologists Linked to Anesthesia Time". As the professional society that represents over 24,000 certified registered nurse anesthetists (CRNAs), AANA was pleased to provide input to GAO on Medicare's reimbursement policies for anesthesia services. We commend GAO for the preliminary work that has been done on this report, but urge that serious consideration be given to our recommendation about the need for clearer definitions of preoperative time and surgery time.

One general comment that we would like to make about the draft is that the AANA has consistently opposed the outright elimination of the use of time units in the calculation of anesthesia payments. AANA believes that clear congressional intent to continue the use of time units was indicated in the Omnibus Budget Reconciliation Act of 1989 (OBRA 1989), which revised the method under which time units are determined, but did not eliminate time units themselves. In addition, the Physician Payment Review Commission supports the use of the uniform relative value guide for anesthesia services, which includes actual time units. AANA's endorsement of the use of actual time units was most recently included in our comments on the proposed Medicare model fee schedule contained in the September 4, 1990 Federal Register notice by the Health Care Financing Administration.

See comment 1.

Our specific comments will reference pages as they appear in the GAO draft report.

Now on p. 11.

Page 17: CRNA Administration of Anesthetics

The statement that "CRNAs are specially trained and qualified to administer anesthetics under a physician's medical direction" is inaccurate. It is true that, in most states, CRNAs must practice

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under either the "supervision" or "direction" of a physician. The phrase "medical direction" in the context it is used is inappropriate, however, because medical direction is not a legal requirement for CRNA practice. HCFA defines medical direction as the situation where an anesthesiologist provides medical direction to qualified anesthetists who actually administer anesthesia; the phrase is only relevant for purposes of Medicare payment. Of the 16 million anesthetics provided annually by CRNAs, approximately 25% are administered by CRNAs who are working with a surgeon or obstetrician, but are not under the medical direction of an anesthesiologist.

See comment 2.

Now on p. 12.

Page 18: Base Units Reflect Complexity

We realize that the GAO review of cases was limited to services provided to Medicare beneficiaries between July and December 1987. This was prior to the April 1, 1988 onset of the 10%, 25% and 40% reduction in base units for the concurrent medical direction of two, three and four CRNAs respectively. However, because OBRA 1990 extended this provision until December 31, 1995, we believe that it must be included in all future standardization of payment factors because it will have an impact on future Medicare payments for anesthesia.

See comment 3.

Now on p. 12.

Page 20: Definitions of Preoperative Time and Surgery Time

AANA believes that the current definitions of preoperative time and surgical time are ambiguous and should be changed. A clarification of the circumstances that must be present for purposes of billing for preoperative time for anesthesia appears to be warranted by the study findings. We also believe that the definition for surgical time should be modified. We suggest the following definition: "surgery time begins when the surgeon or other procedural physician starts the preparation of the patient for surgery (by positioning, prepping, or performing an examination or treatment under anesthesia) and ends when the treatment (including surgical dressing, cast, or examination) by the surgeon or procedural physician that necessitated anesthesia is completed". We believe that clearer definitions of preoperative time and surgery time would result in greater standardization of anesthesia billings. Two examples may help to illustrate the difficulties with the current definitions. First, when a dilatation and curettage (D&C) is done in a teaching hospital, the staff physician and a resident may perform pelvic examinations and discuss them prior to the placement of instruments to begin the D&C. When should the surgery time begin in such a case - with the beginning of the examinations under anesthesia, or with the actual starting of the procedure? Second, when using a fracture table for hip cases, should the surgery time begin with the placement of the patient on the

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fracture table, or with the incision? Positioning for many cases may take 45 minutes to one hour; positioning in neurosurgery cases may take more than one hour. The determination of when surgery time begins significantly impacts preoperative anesthesia time.

See comment 4.

Now on p. 14.

Page 22: Objectives, Scope, and Methodology

AANA shares the GAO's concern about the variation in the mean preoperative anesthesia time billed for by anesthesiologists in the hospitals studied. However, we do not believe that the limited sample size and variables studied provided reliable and valid data to support the inference that the variation in preoperative anesthesia time is based primarily on inefficiency or financial incentives to perform work slower.

See comment 5.

Now on p. 17.

Page 25: Factors Relevant to Anesthesia Time

AANA agrees with the GAO conclusion that differences in surgery time and length of preoperative anesthesia time are two major factors influencing anesthesia payment variations. Surgical procedures performed by some surgeons are so short that it takes as much or more time to prepare for and induce anesthesia in the patient than it takes to perform the surgery. A cataract procedure is a good example, and represented approximately 24% of the sample used in the GAO study. Note that in three hospitals, the percentage of average anesthesia time in preoperative time and surgery time is either equal to, or in one instance greater than, surgery time. It would have been of interest to note to what extent each of these hospitals utilized local, regional, or general anesthesia for cataract procedures.

While the length of preoperative anesthesia time also affects anesthesia payment variations, we must never lose sight of the fact that the provision of quality preanesthesia preparation and induction takes time. This process at a minimum includes 1) identification and verification of patient and procedure to be performed, 2) starting intravenous fluids, 3) application of monitors and recording baseline data, 4) assessing laboratory or radiologic data, 5) inducing anesthesia, and 6) positioning the patient for surgery.

In addition, we believe that the study would have had more reliability and validity if it had included factors that contribute to the length of anesthesia time that are outside the control of the anesthesia provider, such as:

- Based on patient acuity, there may be a need for invasive monitoring. The insertion of invasive monitoring devices adds to preoperative time. (It is noteworthy to recall

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that when modifier units were eliminated, time units were then to reflect these concerns).

- Hospital case-mixes related to patient physical status, e.g. rural hospitals that have a greater percentage of Medicare patients who have higher rates of chronic diseases. As a result, they may be in a higher risk group overall for anesthesia, and thus cause an increase in preoperative anesthesia time.

- Hospital resources available to assist the anesthesia provider with the preoperative anesthesia preparation. Institutional policy favoring the presence or absence of a preoperative holding area for some work prior to moving to the operating room may have a difference.

- The surgical preparation of the patient depends on the surgical equipment. The intraoperative preparation time, for example, in putting a hip fracture patient on the fracture table, may take longer than the actual surgical procedure itself.

- Delays when the surgeon or procedural physician must leave to deliver a baby, is called to provide emergency room care, or chooses to consult with another physician.

- Patient complications during induction.

- The type of anesthesia is sometimes chosen by the surgeon or procedural physician and one type of anesthesia may take longer to implement than another, i.e. regional versus general. Also, when epidural or spinal anesthesia is given, additional time may be required for preloading the patient with fluid, a variation which may have accounted for some of the differences in the group of patients having prostrate surgery. In some cases, both regional and general anesthesia is provided for patient safety, pain management, or other reasons.

- Assistance available during induction (if other health care providers start the IV or insert a Swan Ganz, arterial line, or a central venous catheter).

- Teaching hospitals may have longer preoperative time related to the training of anesthesia providers and surgical residents. The level of students and the instructor to student ratio would also be a factor in the length of preoperative time.

- In some surgical procedures, anesthesia may represent the greatest risk to the patient and thus warrant a greater

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amount of time than the surgery.

Now on p. 18.

Page 28: Table 2.2: Standardized Average Medicare Payments

Future payment factors must also be standardized for the following components:

1. The 10%, 25%, and 40% reduction in base units for the concurrent medical direction of two, three, and four CRNAs respectively.

2. The use of anesthesiology residents, nurse anesthesia students, and surgical residents.

See comment 6.

3. Patient acuity and/or procedural complexity.

Now on p. 22.

Page 35: Use of Anesthesiology Residents

Medicare carriers currently allow full base units and 15-minute time units for physician concurrent medical direction of up to two anesthesia physician residents. However, the lack of an official HCFA policy on payment for CRNA direction of nurse anesthesia students has led carriers to uniformly deny payment for the concurrent direction by a CRNA of up to two nurse anesthesia students (residents). We are concerned that anesthesiology residents and nurse anesthesia students are being treated differently. One option to assure parity would be to allow full base units and 15-minute time units for up to two procedures when either CRNAs or anesthesiologists are working with nurse anesthesia students or anesthesiology residents. A second option would be to utilize a 10% reduction in base units and one time unit for every 30 minutes for up to two procedures when either CRNAs or anesthesiologists are working with nurse anesthetist students or anesthesiology residents. We recommend a major review and restructuring of the differences between the direction of anesthesiology residents, nurse anesthesia students, and CRNAs because the current system disproportionately favors anesthesiology residents.

See comment 7.

Now on p. 27.

Page 45: Incentive to Spend More Time Providing Anesthesia

There is discussion that the present system creates an incentive for an anesthesia provider to spend more time providing services. In fact, most institutions have full surgical schedules and as a result there is no incentive to start providing the anesthesia services for a procedure earlier than necessary because that would decrease the number of cases that could be done in a day. In addition, because surgeons are paid by the case and not by the

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length of time necessary to perform the surgery, most surgeons want to get their cases done in a timely manner so they can move on to the next case or get to their offices to see patients.

See comment 8.

Now on p. 28.

Page 46: Alternative Payment Methodology

There is discussion of several alternative payment methodologies for anesthesia time. AANA does not at this time support any of the following options:

Payment based on a fixed fee for anesthesia services related to specific surgical procedures without special consideration for time differences within each procedure.

AANA does not support this option for the following reasons:

- It would create administrative problems in institutions where the speed of the surgeon varies from practitioner to practitioner. Anesthesia providers would have a financial incentive to opt to work with the faster surgeons.
- We have delineated numerous factors that have an impact on preoperative anesthesia time that were not included in the study. Consequently, sufficient data is not available to determine a fee structure related to specific surgical procedures.
- At minimum, such an approach would need to include some type of outliers to accommodate the factors that are outside the anesthesia provider's control.

Use of the current anesthesia payment methodology but base time on an independent, verifiable variable, such as surgery time. Anesthesia time could be established as a percentage of actual surgery time (such as 140%).

AANA does not support this option for the following reasons:

- Payment for surgery time or a percentage of surgery time does not reflect true anesthesia time. Preoperative time and postoperative time have little correlation to surgery time.
- Due to the fact that AANA believes that the definition of surgery time itself needs to be reconsidered, we do not at this time advocate basing payment for anesthesia time on a percentage of existing surgery time.

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- The study dealt with a limited number of cases. The use of such an approach over a broader array of surgical cases may result in unforeseen inequities in payment.

Use of the current anesthesia payment methodology but base time on an independent, verifiable variable, such as surgery time. Anesthesia time could be established as actual surgery time plus a fixed amount for preoperative and postoperative time.

AANA does not support this option for the following reasons:

- While we believe that it is the best of the three alternative payment options, it suffers from the fact that the definitions of surgery time and preoperative time still need to be clarified.

- At minimum, such an approach would need to include some type of outliers to accommodate the factors that are outside the anesthesia provider's control.

Conclusion

The AANA continues to strongly endorse the use of actual time units in the calculation of anesthesia payments, but we believe that clearer definitions of preoperative time and surgery time need to be developed. We believe that a clarification of these definitions will obviate the need to develop an alternative payment methodology for anesthesia time.

The AANA appreciates the opportunity to have our comments on the GAO draft report considered. We would be willing to meet with GAO staff and other interested parties to discuss our concerns and recommendations. Please contact Kathy Michels in the AANA Washington, D.C. Office, (202) 682-1267, if you have any questions.

Sincerely,

David R. Fletcher

David R. Fletcher, CRNA, MA
President
American Association of Nurse Anesthetists

DRF:KAM:aal

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The following are GAO's comments on the American Association of Nurse Anesthetists' letter dated January 10, 1991.

GAO Comments

1. OBRA-89 required that, effective April 1, 1990, time units be based on actual time rather than rounding up to the next whole unit (see footnote 4, p. 12). This action was not a clear indication of congressional intent to continue the use of time units. Rather, this change responded to the HHS Office of the Inspector General's finding that rounding up to whole time units reimbursed anesthesiologists for effort never expended and cost Medicare about $69.5 million annually. While the Physician Payment Review Commission has endorsed the use of relative values for anesthesia services, as of March 1991 it had not endorsed a specific payment basis.

2. We made the suggested change.

3. The background section to which the Association's comments refer addresses the definition of base units, not the amount of payment for them. Moreover, whether the reduction in anesthesiologist base units when they medically direct nurse anesthetists will affect future payment amounts depends on the method selected for payment under the physician fee schedule.

4. As discussed in chapter 2, the current Medicare definition of preoperative time (i.e., anesthesia start time for Medicare billing purposes) is a probable cause of some preoperative anesthesia time variation. The Association did not suggest a less ambiguous definition. We do not believe that a less ambiguous one would significantly reduce preoperative anesthesia variation because considerable variation was apparent even within hospitals where the anesthesiologist(s) presumably used a consistent definition of start time. We believe that, to reduce unexplained variation, it is more important to eliminate either the anesthesiologist's start time discretion or the financial incentive to start services as soon as possible.

5. As pointed out in app. I, our data is statistically valid among the hospitals and procedures we reviewed but is not projectable nationwide.

6. The table to which this comment refers isolates the effect of anesthesia time on 1987 Medicare payments for anesthesia services by eliminating all payment variables except time.

7. The Association's comment is not relevant to the subject of this report. It refers to differences in Medicare payment policy when anesthesia services involve physicians directing physician residents versus when they involve nurse anesthetists directing nurse anesthesia students.

8. We disagree that full surgical schedules eliminate the incentive to start providing anesthesia services earlier than necessary. Surgical delays occur without regard to institutional operating room use levels and can result in the anesthesiologist having down time while awaiting the availability of a surgeon or an operating room. In such circumstances, the anesthesiologist is reimbursed if anesthesia services begin, but is not reimbursed for delaying anesthesia start. Even absent surgical delay, there is still discretion as to when the anesthesiologist should prepare the patient for the administration of anesthesia. The Association, along with ASA and the Anesthesia Care Team Society recognized this when they cited the "loose" and "ambiguous" nature of Medicare's definition of anesthesia start for billing purposes.

Comments From the American Society of Anesthesiologists

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS

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January 15, 1991

Lawrence H. Thompson
Assistant Comptroller General
Human Resources Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Thompson:

On behalf of the American Society of Anesthesiologists (ASA), representing more than 25,000 physicians nationwide, I am pleased to submit comments on the GAO Report, Medicare: Variation in Payments to Anesthesiologists Linked to Anesthesia Time. The ASA has appreciated the candor and availability of the GAO staff throughout the preparation of this report.

Sincerely,

Betty P. Stephenson, M.D.

Betty P. Stephenson, M.D.
President

BPS:kc

Enclosure

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I. Purpose of the Study

This GAO study was mandated by the Omnibus Budget Reconciliation Act of 1987 (OBRA '87). It should be noted at the outset, however, that Congress subsequently discussed and acted on anesthesia time, pursuant to an Inspector General Report. OBRA '89 required that anesthesia time be reported and reimbursed in terms of actual time; previously, Medicare required actual time to be rounded up to 15- or 30-minute units.

GAO also refers to the Resource Based Relative Value Scale Medicare Fee Schedule (MFS) and HCFA's stated intention to eliminate anesthesia time under the MFS. ASA further notes that OBRA '89 directed the Secretary to retain, to the extent practicable, the Uniform Relative Value Guide -- base units plus actual time -- under the MFS. These two congressional actions, reforming anesthesia time and supporting its inclusion under the MFS, supercede the 1987 request for the GAO study on time.

See comment 1.

II. Definitions

An anesthetic service comprises the totality of three phases: pre-anesthetic evaluation, peri-anesthetic care, and post-anesthesia care. Care rendered in these three phases is measured by calculating both the Basic Value of the procedure and the anesthesia time devoted to the patient. As defined in the ASA RVG:

> A Basic Value...includes the value of all usual anesthesia services except the time actually spent in anesthesia care....[It] includes usual pre-operative and post-operative visits, the administration of fluids and/or blood incident to the anesthesia care and interpretation of non-invasive monitoring.

The other element of the anesthetic service -- anesthesia time -- is time spent providing direct care to the patient, i.e., hands on to hands off:

> Anesthesia time begins when the anesthesiologist begins to prepare the patient for anesthesia care in the operating room or in an equivalent area, and ends when the anesthesiologist is no longer in personal attendance, that is, when the patient may be safely placed under post-operative supervision.

ASA disagrees with the definitions or divisions of time which are the basis of the GAO report, and we believe the inappropriate definitions explain most of the reported variations in anesthesia time. Specifically, we disagree with GAO's use of surgery time, which GAO defines as incision to closure. It is ASA's strong contention that this definition, which may have been used because the hospitals all recorded incision time, undermines the entire study.

See comment 2.

2

The inference throughout the report is that all time except incision to closure is discretionary to the anesthesiologist. This is not accurate. There is often considerable time and activity spent after the administration of the anesthetic but before the surgical incision. Patient positioning, preparation, and draping may, depending on the procedure and patient, take from 5 minutes to an hour.

ASA also disagrees with GAO that the anesthesiologist controls "how long before surgery anesthesia starts." A more accurate statement would be that the anesthesiologist largely controls how soon after the anesthesia starts the patient can be prepared for surgery (see discussion on page 3). This segment of time is controlled in the sense that the anesthesiologist is working with the patient, preparing the patient for the anesthetic procedure, and inducing or administering the anesthetic agents. This difference is critical and belies GAO's underlying suppositions as to gaming.

Scheduling, surgeon availability and institutional practices generally determine the start of anesthesia time. Patients are not brought to the operating suite until shortly (usually 20 to 30 minutes) before the scheduled time of the surgery and the anesthetic procedure generally begins after the surgeon arrives in the operating suite. Hospitals, particularly under DRGs, are interested in efficient utilization of extremely expensive operating suite time, including the operating room and the nursing staff which must attend patients within the suite and holding areas.

III. Time Variations

The findings of the study as to variations in time are neither surprising nor dissimilar to the results of other studies. As indicated in the Battelle study commissioned by ASA and by the Inspector General Study, the major determinant of anesthesia time is surgical time -- a correlation which is strengthened by properly defining surgical time to begin with the anesthetized patient's preparation for surgery, not incision. There is no question, moreover, that the presence of anesthesia and/or surgical residents significantly increases total time.

GAO states that a "surgeon's speed and/or case by case differences in an operation's complexity" account for surgical time. Case complexity, surgical procedure (i.e., there are different approaches to hip repair, or the difference between an initial or a re-do coronary artery bypass graft), and selection of the anesthetic technique all influence the anesthesia time prior to incision. For example, after induction of anesthesia, the following decisions or activities may occur:

- Are x-rays or other imaging equipment (C-arm) required?

3

- Does the patient need to be placed on a positioning frame?

- Does the procedure require the patient to be in a sitting, lateral, or prone position? (When the anesthetized patient is moved and positioned, extreme care must be taken to avoid nerve damage.)

- Protection of the eyes and padding for nerve damage, i.e., the anesthesiologist must substitute for the patient's natural reflexes which anesthesia has removed.

- Has the anesthetic block taken effect?

- Does the surgeon use a special room with specialized equipment and protocols, such as a laminar flow room for total joint procedures.

The use of incision time inappropriately attributes to pre-operative anesthesia time the time spent in such patient preparation. We assert that beginning surgical time when the patient is anesthetized and ready for preparation for surgery would virtually eliminate variations in pre-operative time. We agree with GAO that the length of time from incision to closure has no relationship with pre-anesthesia and post-anesthesia time requirements.

IV. Site of Service

GAO found instances of increased anesthesia time when the service began outside the operating room. There should not be extensive variation by site, but two factors contribute to longer total times when anesthesia care begins in holding areas.

If the mode of anesthetic best for the patient is a block or regional anesthesia, then a holding area might well be the site for performing the block. In this way the block can become effective without interrupting operating room efficiency.

One could conjecture that the use of holding areas could mean slightly longer total times, which the hospital exchanges for its goal of quicker operating room turn-around. This is not under the anesthesiologists' control.

V. Claims vs. Records

Since GAO assumes that the times recorded in medical records are unimpeachable, it is not surprising that they found error rates of 13 percent. However, most of these errors appear to be unintentional and primarily due to inaccurate transcriptions of reported times. The analysis of errors in time recording from two hospitals was based on fewer than 35 cases; often it appears

that the errors detected occurred without the knowledge of the anesthesiologist. Overpayments and underpayments cancelled each other out and there is no evidence of systematic abuse. GAO states that there is no independent verification of the start and stop times recorded by the anesthesiologist. ASA objects to the underlying inference that a "second opinion" on the start of anesthesia time is necessary for veracity. It should also be kept in mind that many physician services (regardless of specialty) are paid based only on the physician's report that he or she did in fact perform the service.

In any event, there are internal controls which can be implemented quite expeditiously. Circulating nurses in holding areas and operating rooms keep independent records, and many already record anesthesia times. Such independent verification can be instituted at all facilities. Also, when the anesthesiologist delivers the patient to the PACU or ICU and vital signs are recorded, the time is noted in the chart.

See comment 3.

VI. Methodology

The GAO looked at 1,648 cases within 10 procedure codes from 11 hospitals. The estimates from individual hospitals are based on very small sample sizes, making them very unstable and likely to shift dramatically with one or two outlier values. GAO combines single and three graft CABG procedures, which may introduce additional variation in anesthesia time and charges: in the Battelle study anesthesia time was 309 and 335 minutes for one and three graft CABG, respectively.

The findings of the GAO report in general support those summarized in the Battelle study on variations in anesthesia charges, anesthesia time, and surgical time. The Battelle study found far higher estimates of the percentage of anesthesia time attributable to surgical time for the procedures the studies had in common:

femur fracture: GAO = 52%; Battelle = 79%
gallbladder: GAO = 65%; Battelle = 87%
CABG: GAO = 72%; Battelle = 78%
hernia: GAO = 63%; Battelle = 66%
hip replacement: GAO = 65%; Battelle = 74%
turp: GAO = 55%; Battelle = 65%

The Battelle study shows that more of anesthesia time can be attributed directly to surgical time; this is likely due to the problematic definition GAO used for surgical time.

See comment 4.

5

See comment 5.

VII. Conclusions and Recommendations

The anesthesiologist does not have "considerable discretion in deciding when to begin" his or her service. The system does not provide an incentive for the anesthesiologist to spend more time on a given case. Just the opposite, the institutional incentive is to proceed with the next case in order to complete scheduled cases, and the anesthesiologist's financial incentive is to maximize the number of cases (base plus time units) performed. Further, anesthesiologists medically directing CRNAs have an incentive to avoid multiple concurrency and would not want to start a case early, thereby reducing each case's reimbursement by becoming a third or fourth concurrent case. The goal of the team of the operating room is to complete the schedule; slowdowns by anesthesia personnel are intolerable in most surgical suites.

The GAO report offers two recommendations: to use average or median times for each service, thereby eliminating time as a separate component, or to use actual surgical time plus some allowance for pre- and post-surgical time. ASA is opposed to both of these proposals.

Median Time:

- The use of averaging is fraught with difficulties and inequities. It is acknowledged by the GAO that surgeons, not anesthesiologists, control the time of the service. This is evident in the GAO report even with the faulty definition used for surgical time.

- HCFA recently (1989) adopted the 250 anesthesia CPT-4 codes, which describe the anesthesia service for the nearly 5,000 surgical codes. The ASA RVG is able to use these more efficient codes because the anesthesia time accounts for the vast difference in surgical procedures collapsed within the anesthesia codes. Average time would necessitate a return to the use of surgical codes, clearly a step backward in coding reform.

- Average times would result in systematic over- and underpayments. Teaching hospitals would suffer severe losses and dislocation of anesthesia personnel. The incentive for anesthesiologists would be to work only with fast surgeons and healthy patients, such as in ambulatory facilities.

Surgical Time Plus X:

- A percentage of surgical time does not make sense. Just because a procedure lasts longer does not mean the pre-operative anesthesia time is commensurately longer.

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See comment 6.

•There is no data to determine surgical time. For reasons we have presented, the definition used by GAO covers only skin to skin time and is not appropriate for measuring anesthesia time. Also, there would still need to be differentiation by code to determine pre-surgical allowances; as discussed, the procedure, the patient's physical status, and the selected anesthetic technique could all influence this time.

•This approach would still disadvantage teaching facilities and those using more efficient holding areas.

ASA Position

ASA strongly recommends continuation of the congressionally-mandated reform requiring use of the Uniform RVG plus actual time. The use of actual time is fair to patient, physician, and Medicare, as payment is made for the exact service provided. The use of actual time has built in savings: as surgeons become more proficient with procedures, the time -- and charge -- automatically decreases. The first laparoscopic gallbladder surgeries took up to four hours, but a year later we see times of two hours. Averaging would lock in times.

Circulating nurses and holding area nurses can certainly note the start of anesthesia time, as PACU nurses can verify stop time. Absent evidence of systematic abuse, there is no reason to abandon a system that has worked for three decades. The Uniform RVG is consistent with the MFS and implementation (that is, continuing the current system) requires only an adjustment to the conversion factor to reflect the goals of RBRVS and the elimination of geographic variations.

ASA is more than willing to work with the GAO on a better definition of anesthesia start and stop time and on aggressive physician education on this issue. The definition could be changed by addition of the underlined words, to read:

> Anesthesia time <u>involves the continuous actual presence of the anesthesiologist (or of the medically-directed CRNA or resident) and</u> starts when he or she begins to prepare the patient for anesthesia care in the operating room or an equivalent area and ends when the anesthesiologist is no longer in personal attendance, that is, when the patient may be safely placed under post-operative supervision.

The clarification of what has always been intended, that is continuous presence, should address those instances of interrupted pre-operative time. We believe this to be the best approach.

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The following are GAO's comments on the American Society of Anesthesiologists' letter dated January 15, 1991.

GAO Comments

1. Section 6106 of OBRA-89 required payment based on the actual number of minutes of anesthesia time rather than rounding up to 15- or 30-minute time units. This section was intended to reduce Medicare payments in response to an Inspector General's report pointing out that $69.5 million could be saved by this action. Section 6102 of OBRA-89 directed HHS to ensure that fee schedule amounts for anesthesia be consistent with those for other physician services of comparable value when anesthesia services are brought under the resource-based relative value system from the uniform guide established for them in March 1989. Neither of these sections requires the use of time in anesthesia payments under the physician fee schedule.

2. We are surprised that ASA believes our definitions of anesthesia surgery time undermine this study, for several reasons: (1) at the start of our work ASA officials agreed with the proposed study methodology—including definitions of anesthesia time components; (2) the Battelle Human Affairs Research Center, in a study supported by ASA, used the same definition of surgical time as ours; and (3) the Anesthesia Care Team Society commended the "sound method" used in our study to break down anesthesia times. (See p. 69.)

3. Our analyses of billing errors were based on the assumption that medical records are correct, although we pointed out that there could be additional errors on the records that are not possible to detect. (See p. 25.) Also, we do not imply that independent verification is necessary for veracity. Rather, we state that the ability of Medicare payers to corroborate anesthesia claims with independent records or individuals is a desired, but missing, internal control.

As ASA points out, payment of most physician services is based only on the physician's report that he or she performed the service. However, there is a difference between paying a fee for the provision of a service and paying for the time spent providing a service. In the first instance, it is possible to verify that a service was provided by checking with the beneficiary of such services. Similarly, it is possible to verify that an anesthesiologist provided a claimed service, but it is not possible to verify the accuracy of the physician's recording of his/her own start time—which is the basis Medicare uses in paying the claim.

4. As pointed out in comment 2, the Battelle study used the same definition of surgical time as ours. It is possible this difference may be related to 73 percent of Battelle's study cases coming from one teaching hospital. A second teaching hospital accounted for an additional 16 percent of Battelle's cases.

5. We agree that anesthesiologists who are medically directing nurse anesthetists have an incentive in certain situations to avoid starting a case early because this can result in payment reductions (for concurrent medical directions). We also believe that, just as a financial incentive can influence the anesthesiologist's decision to postpone anesthesia start, it is equally likely, when a financial incentive is present, that the anesthesiologist may start a case sooner than necessary because this results in additional payment.

6. We did not recommend using either average or median times as the basis for implementing our recommendation to sever the direct link between anesthesia time and payment. Rather, we pointed out that using average time would result in the same total amount of Medicare payments whereas using median time would reduce payments by $51 million. Under the resource-based relative value system, Medicare is supposed to set a price for a service based on its value relative to other services. Thus, Medicare is to determine what a service is worth and pay all physicians the same amount for it (except for adjustments for geographic difference in practice costs). The relative value of a service does not vary based on the items cited by ASA.

Comments From the Anesthesia Care Team Society

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

Anesthesia Care Team Society

9 January 1991

Lawrence M. Thompson
Assistant Comptroller General
U.S. General Accounting Office
Mailroom 4th Fl/ Room 4427
441 G St. NW
Washington, DC 20548

Re: GAO Report, "Medicare: Variation in Payments to Anesthesiologists Linked to Anesthesia Time."

Dear Mr. Thompson:

Thank you very much for giving the Anesthesia Care Team Society an opportunity to review and comment on the General Accounting Office's draft report on variation in anesthesia time and reimbursement.

SUMMARY

After reviewing your paper carefully, ACTS believes that the General Accounting Office has identified a problem with reimbursement for preoperative anesthesia time which is large enough and likely enough to be true so that the GAO is justified in recommending that Congress take steps to address the situation. We notice that the GAO does not suggest its study is statistically reliable. In fact, a much larger study recently published in Anesthesiology showed smaller differences in anesthesia and surgery times than were found in the GAO study. Even so, ACTS accepts that the study is suggestive of problems with time based reimbursement for preoperative anesthesia procedures, suggestive enough to warrant making reasonable changes.

However, ACTS does not believe that the study would warrant changing the method of time based reimbursement for anesthesia during surgery and following surgery. In fact, ACTS believes that the GAO study very clearly and candidly shows that reimbursement must continue to be based in part on actual surgical times. And ACTS believes that the study has not proven any need to abandon time based reimbursement for post-operative anesthesia procedures. Accordingly, ACTS strongly urges the GAO to recommend to Congress that it modify its reimbursement for preoperative anesthesia procedures, but that it also recommend to Congress that it would be better to continue to reimburse anesthesiologists and anesthetists for the actual time they spend during the surgery and following it.

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ANALYSIS

In making its study, the General Accounting Office looked specifically at time based reimbursement for anesthesia during each of three periods, prior to surgery, the surgery itself, and the period following surgery. ACTS believes that this is a sound method of breaking down anesthesia times, and will address its comments to the GAO analysis of each these three phases.

As to the preoperative phase of anesthesia, ACTS agrees that the variations which the GAO has discovered are hard to explain. (ACTS notes that there are also significant variations in surgical time, which suggests that a fairly wide range of actual time is unavoidable. Variations in preoperative anesthesia time are, we think, only worrisome insofar as they are greater than variations is surgery times.) ACTS believes, however, the GAO study does not account for the effect surgeons and others (eg. radiologists) have on preoperative time. Not only is preoperative time used to review the anesthesia plan, to start lines and catheters, to attach monitors, and to intubate patients, it also accounts for things the surgeon does. Lengthy preoperative periods may sometimes be attributable entirely to the surgeon.

Looking at the reasons for variations in preoperative anesthesia time which are attributable to the anesthesia team, a likely reason for some of the variation is the want of a clear definition of the beginning point for anesthesia time. The Medicare Carriers Manual says that preoperative anesthesia time begins when the anesthesiologist or anesthetist begins to prepare the patient for induction of anesthesia. The definition is loose and people could reasonably and easily disagree about when one begins to prepare. Additionally, the definition makes no provision for time lost because of delay arising after the anesthesiologist or anesthetist has begun to prepare the patient. ACTS believes it would be possible to write a definition of preoperative anesthesia time which picked a better marker for the beginning of the preoperative anesthesia time. ACTS also believes that it would be possible to instruct anesthesiologists and anesthetists not to bill for preoperative "down-time".

See comment 1.

ACTS supposes, however, that the GAO would point out that there is still no good way to verify preoperative anesthesia time even if the criteria for defining it were improved. Given that fact, ACTS accepts that it makes administrative sense for the GAO to recommend that preoperative anesthesia time be paid for on the basis of estimated average times. **ACTS suggests a standard of one unit.** If Medicare were to pay anesthesiologists and anesthetists on such a basis, it would be administratively simple and it would continue to affirm the fact that anesthesiologists, to a very great extent, are performing a professional service the value of which is related to the time it takes to do it.

Turning to surgical time, ACTS believes that the GAO draft report very clearly and candidly demonstrates the reasons why time has to continue to be part of the formula for anesthesia reimbursement. **The GAO has found that surgery time is the major time factor in reimbursement, that surgery time is verifiable from existing hospital records, that surgical time varies considerably, and that it is outside the anesthesiologist's or anesthetist's control.** Because the time of the operation is the most important time factor in reimbursement, and because it is acceptably accurate given the procedures and record keeping that hospitals now employ, it really ought to be retained unless the reasons to abandon it completely outweigh the reasons for keeping it. As we read the report, the GAO suggests two reasons for abandoning time altogether. The first is that time based reimbursement is unusual in medicine. While it is unusual, it is certainly not unique to anesthesia. There is different reimbursement for brief, intermediate and lengthy consultations and examinations. The second is administrative convenience, but given that a time based system is in place already, we see no administrative reason to abandon it. It certainly would not add to the administrative efficiency of medicine if Medicare were to use a fundamentally different reimbursement system for anesthesia than is used by all the rest of the insurance industry. And it would take a lot of effort to create a new system.

See comment 2.

As to the question of post-operative time, the GAO has found that this accounts for only about 8 to 12% of total anesthesia time. It also appears that the end points are clear enough, viz., that anesthesia time ends when the patient is turned over to post-operative supervision and the anesthesiologist or anesthetist is no longer attending the patient. ACTS understands that it would be possible to use estimated average post-operative times just as ACTS understands that it probably would be better to use estimated average preoperative times. However, given that there does not seem to be a problem with post-operative times, ACTS suggests that it is better to be accurate and use actual time rather than estimates. This is particularly true because patients who emerge from anesthesia without problems do so in a predictable amount of time, but the few patients who have problems are going to stay under the care of the anesthesiologist or anesthetist for various and unknowable lengths of time. That being so, estimating the amount of time which ought to apply to post-operative anesthesia would be difficult, and there is little in the GAO's report which would help it make such estimates.

Turning to its conclusions, the GAO suggests two approaches, one to pay a fixed fee for anesthesia services related to specific surgical procedures and the other to use current methodology but recalculate time on an independent verifiable basis such as surgery time. The GAO prefers the first because of what it sees as administrative problems associated with the second. Specifically, the GAO believes that to adopt the second approach would require it to develop data on the relationships between pre- and post-

operative anesthesia time and surgery time, which relationships might differ from one procedure to another. ACTS suggests that this administrative problem is not unique to the second option. If one were to adopt a fixed fee schedule for anesthesia services associated with specific surgical procedures, that would require exactly the same sort of analysis of the relationship between anesthesia time and surgical time as would the second option, and it would require an analysis of the relationship between anesthesia procedures, such as the Swan Ganz catheter, and surgical procedures. Developing the fee schedule would be as hard and probably harder than reworking time units. It would also be inconsistent with the recent decision to accept the ASA uniform relative value scale and to move from the use of surgery codes to the use of far the fewer and simpler anesthesia codes.

Underlying the GAO conclusion is an implicit opinion about the size of the problem shown in its study. GAO argues the problem requires a complete change. Thus, there must be a big problem. However, as noted above, the GAO has found that surgery times also vary greatly. Furthermore, Revicki, et al., have done a study which finds that anesthesia times correlate more closely to surgery times than the GAO study would indicate. That study examined 10,431 cases, six times more than the GAO study. The conclusion is stated in the abstract as follows:

> Anesthesiology time was highly correlated with surgical time ($r = 0.86 - 0.96$)... After adjusting for complexity of procedure, the distribution of payment gains and losses was a function of duration of surgery, which is not influenced by the anesthesiologist.

Revicki, et al., "Physician Payment Reform: Anesthesiology as a Case Study," Anesthesiology, Vol. 73, p. 760 (1990) (emphasis added). We have enclosed a copy of this study for your review.

Finally, ACTS suggests that the GAO is overlooking the natural consequences of the economic pressures built into its proposed change. We know that the GAO understands there are consequences to economic changes in the reimbursement system. (For example, the GAO suggests itself that paying for preoperative anesthesia time rewards inefficiency at that stage. There are, of course, other things which reward efficiency at that stage, things such as professional respect, concern for patients, and the need to attend to other medical matters in the operating suite. Even so, freshman economics teaches you that paying for time would tend to increase the amount of time taken on a project.) However, if Medicare were to cease paying for time spent by an anesthesiologist or an anesthetist during surgery, when that time is completely outside the anesthesiologist's or anesthetist's control, similar economic pressures would encourage anesthesiologists and anesthetists to avoid working with slower surgeons, who are also sometimes less skilled surgeons. It is impossible to quantify the effect of this pressure, but it very clearly tends to push anesthesiologists and

anesthetists with the power to choose toward a choice of working for faster surgeons. It is also reasonable and probably correct to infer that better anesthesiologists and anesthetists would have more ability to choose, so the whole system would tend toward combining better anesthesiologists and anesthetists with better surgeons, and worse with worse. As ACTS has said, it is not possible to quantify this. But, it certainly ought also to be avoided so long as there is no compelling reason to do away with reimbursement for surgical time, which there is not, as the information collected in the GAO's study demonstrates.

CONCLUSION

Thank you again for the opportunity to comment on this study. We know from earlier conversations with Messrs. Sayers and Roffo how much work you and your staff have put into this, and we believe that the work shows. We think that within the limits of the study, the data and evidence collected and presented show a correctable weakness in the present reimbursement system regarding payment for preoperative time. We think that there is also always something to be said for uniformity, and we understand that tendency to look for a way to bring anesthesia reimbursement into line with most other medical specialties. Nevertheless, the GAO's own factual conclusions that surgical time is (1) verifiable, (2) various, (3) beyond the anesthesiologists' and anesthetists' control, and (4) the principal part of the reimbursement for time, taken together, show conclusively that Medicare, like all private insurers, ought to continue to reimburse anesthesiologists and anesthetists for the actual time that they spend in surgery and after. The single likely problem identified, viz., unexplained variations in preoperative time, can be fixed simply by using estimated average times for presurgical procedures. ACTS suggests one time unit.

Thank you for your attention to our comments and for the opportunity to review your study. We would be very pleased to speak with you in Washington or elsewhere if you have any questions about our position or if you would like further information.

With best wishes, we are

Very truly yours,

Gerald A. Maccioli, M.D.
President

Steven Mansfield Shaber, Esq.
Executive Director

GAM\SMS: sc A:Report.GAO

The following are GAO's comments on the Anesthesia Care Team Society letter dated January 9, 1991.

GAO Comments

1. Problems with the definition of anesthesia start time are addressed in chapter 2.

2. We disagree that adopting a fixed fee schedule for anesthesia services and recalculating time based upon a percent of surgery time would require the same analyses of the relationships between surgical and anesthesia times. A fee schedule can be developed using payment data from anesthesia claims or, if anesthesia time is desired, by obtaining total anesthesia times recorded on Medicare claims. On the other hand, surgical time is not recorded on Medicare claims for anesthesia services. Computing the relationships between surgical and preoperative and postoperative times could require analysis of medical records.

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