Perspectives:
An Anesthesiologist

by Jess B. Weiss

It has become popular of late to publish articles that at best misunderstand, and often misrepresent, the practice patterns of anesthesiologists, their charges, and incomes. Jerry Cromwell and Margo Rosenbach present here an oversimplified concept for achieving Medicare savings by broad substitution of nonphysician providers for anesthesiologists.

The fundamental thesis of the authors is that anesthesiologists are overpaid for their services to Medicare patients. They reach this conclusion based on the fact that anesthesiologists earn more per hour under the Medicare program than do nurse anesthetists, and upon their belief that nurse anesthetists are capable of providing the same services as anesthesiologists.\(^1\) Medicare, on the average, does pay more for an anesthesiologist’s services than for those of a nurse anesthetist. This does not mean that the amounts paid for anesthesiologists are unreasonable, nor that the differences in compensation levels are unjustified.

Method Of Reimbursement

I focus first on the relative value scale (RVS) method of reimbursement. Anesthesiologists have led in developing this proven reimbursement method. Medicare itself is spending millions of dollars for development of an RVS for all of medicine, the Physician Payment Review Commission has endorsed the RVS concept, and Congress has mandated a uniform RVS for anesthesiologists’ services to Medicare patients.

The principal value of the RVS method—incorporating base (procedural) units, time units, and physical status and risk modifier units—is the fact that it establishes a patient-specific reimbursement system. The authors imply criticism that anesthesiologists do not receive a set payment per operation, but it is the application of base, time, and modifier

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units that constructs a fee that measures the anesthesiologist’s effort and risk on behalf of each patient. There is a marked difference in professional input between the anesthesia care of an eighty-five-year-old patient with pronounced pulmonary disease undergoing a two-hour gall bladder procedure, and that of an otherwise healthy thirty-five-year-old patient undergoing the same procedure for an hour.

A clear advantage of the RVS method is that it permits easy verification of anesthesiologist input by the third-party payer and the patient. Hospital records as to the surgical procedure and patient condition are easily verifiable, and the high correlation between anesthesia time and operating room time permits ready audit of appropriate time units. (Pre- and postanesthesia time, which the authors say they will “consider later” but never quite do, is accounted for in procedural base units.) Application of a dollar conversion factor to total units permits the ready establishment of a fee or authorized charge.

The authors note that, according to American Medical Association (AMA) survey data, the average anesthesiologist earned $140,200 pretax in 1985 and performed or medically directed between 1,000 and 1,300 procedures per year. Assuming an average of 1,150 procedures, this works out to net before-tax earnings of $121.91 per procedure. If we gross up the anesthesiologist’s income by adding malpractice insurance (probably an average of $25,000 per year) and billing and administrative costs of $10,000, the gross receipts per procedure would equal $152.35. Such an average charge is neither shocking nor even remarkable, particularly when one considers that the responsibility of the anesthesiologist is to suspend the patient safely between life and death during surgery.

The authors ignore the fact that anesthesiologists normally treat many indigent patients who pay either nothing or, under most Medicaid programs, very little. Also, virtually all anesthesiologists devote 10 percent or more of their time to continuing medical education and a variety of tasks—necessary for the proper functioning of any hospital but for which they receive no compensation—including administration of the anesthesia department, operating room coordination, and medical staff committee functions.

Does this mean that Medicare and other third-party payers are subsidizing the cost of indigent care and medical staff administration? I think we can all agree that they are. Is this wrong? Reasonable minds can differ whether the costs of indigent care should be borne by the physicians, paying patients, or taxpayers, but as long as taxpayer representatives are unwilling or unable to authorize adequate compensation for such care, we can be sure that the burden will fall on the other two groups.
Are Nurse Anesthetists Close Substitutes?

Cromwell and Rosenbach conclude that anesthesiologists are overpaid because nurse anesthetists on the average earn less and are “closely substitutable.” I should first note that the authors apparently base their salary information on survey data supplied by physician-employed nurse anesthetists. More than half the certified registered nurse anesthetists (CRNAs) are hospital-employed or independent contractors who are paid by Medicare on a “reasonable cost” basis under Part A, outside the diagnosis-related group (DRG) system and unrestrained by Part B fee freezes and maximum allowable actual changes (MAACs).

I would argue that services provided by anesthesiologists and nurse anesthetists are not interchangeable, based on the differences in their respective education, training, and experience. Anesthesiologists complete four years of college, four years of medical school, and four years of residency training before becoming professionally qualified; nurse anesthetists can achieve certification after an average of six years of nursing education after high school. The anesthesiologist’s twelve-year investment includes one year of graduate medical education in clinical medicine (usually internal medicine or surgery) and three in clinical anesthesiology with rotation into all subspecialty areas. In contrast, nurse anesthetist training is technique oriented, and academic requirements are limited and elementary. As Admiral Rickover noted some years ago:

The role of the professional man differs from that of the technician. Both have in common an expertise not possessed by the layman, but the professional man has undergone a much longer period of preparation and knows much more than the technician. Moreover, he is able to apply this knowledge to a great variety of unforeseen problems, while the technician, though he may do difficult work, does it in a routine manner and follows the instructions of his professional superiors.... Creatively endowed professionals enlarge their branch of knowledge and devise new ways to put it to practical use... Fundamental advances in technology are almost without exception the work of professional people.

The claim that nurse anesthetists are “close substitutes” is based on two limited and inadequate studies to the effect that there are no definable differences in mortality and morbidity outcomes in cases whether the provider is an anesthesiologist or a nurse anesthetist. In addition, the authors offer their survey to show that nurse anesthetists participate under anesthesiologists’ supervision in various anesthesia-related tasks or, in hospitals where no anesthesiologist is present, regularly perform those tasks supervised by the operating surgeon or obstetrician.

No one knows whether morbidity and mortality rates differ by anesthesia provider. We do know that, in the main, anesthesiologists...
perform their services in the teaching centers and larger hospitals, where
they deal with more complex anesthesia care involving sicker patients,
and that nurse anesthetists working without anesthesiologists’ supervi-
sion are found in small or rural hospitals in which less than 8 percent of all
surgical procedures are performed. A recent American Hospital Associa-
tion survey disclosed that 26 percent and 17 percent of hospitals with 50-
100 beds and 100-200 beds, respectively, had no anesthesiologists on
staff, whereas 100 percent of hospitals with 201 beds or more had
anesthesiologists on staff. Given this, the limited morbidity/mortality
information is not particularly surprising and can hardly be cited for the
conclusion that nurse anesthetists are “closely” substitutable.

Nor should we consider that, because some nurse anesthetists perform
more anesthesia-related functions in smaller hospitals without anesthesi-
ologists, they are by definition qualified to perform those tasks, unsup-
ervised, with sicker patients in tertiary care centers. Some probably are,
but sound care in this high-risk specialty dictates that an anesthesiologist
provide medical direction.

Throughout the article, the medical specialty of anesthesiology is deni-
grated to “routine monitoring.” Performing intraoperative anesthesia
demands more than “monitoring,” and if any procedure is “routine,” it
results from a well-conducted anesthetic. A patient suspended between
life and death by potentially lethal drugs, unable to breathe spontane-
ously, requires continual assessment, and preventing the nonroutine is
complex medical practice. The authors’ misunderstanding of the spe-
cialty is further highlighted by references to “minor anesthetics” and
“simple procedures.” The anesthetic procedure and attendant risks are
usually unrelated to those of the surgical procedure.

The “close substitution” argument also ignores a very important prac-
tice distinction—one that is not altered by the CRNA Part B reim-
bursement effective January 1, 1989—that nurse anesthetists are re-
quired, in every jurisdiction, to be supervised by a physician. Further,
both American Society of Anesthesiologists (ASA) ethical standards and
the Department of Health and Human Services (HHS) Tax Equity and
Fiscal Responsibility Act (TEFRA) rules for anesthesiologist Part B
reimbursement provide that the medically directing anesthesiologist
cannot delegate significant functions. He or she must prescribe the
anesthesia plan, personally participate in the most demanding aspects of
the anesthesia procedure (including induction and emergence), remain
physically available throughout the procedure, follow the course of
anesthesia at frequent intervals, provide indicated postanesthesia care,
and not simultaneously be personally performing another anesthesia
procedure. If these requirements are not met, the anesthesiologist is not
entitled to Part B reimbursement. I suggest that these requirements add up to intense involvement by the anesthesiologist before, throughout, and after each medically directed procedure and not, as the authors imply, mere time-limited attention to each patient.

The authors state anesthesiologists receive reimbursement without providing an anesthetic. This is simply not so; the authors confuse the current concept of monitored anesthesia care with the older idea of “standby” anesthesia. In 1986, the ASA defined monitored anesthesia care as involving continuous presence and availability, personal participation, and prescription of the anesthesia care plan after performance of a preanesthetic exam and evaluation. All of this is directed at providing necessary monitoring, airway protection, oxygen, and necessary drug administration, including anesthetic agents as needed. The Health Care Financing Administration has adopted ASA’s terminology and definitions for reimbursement purposes, agreeing that monitored anesthesia care is in no way a reduced service and is to be fully reimbursed.

Levels Of Payment

The authors compare Medicare reimbursement levels of anesthesiologists working alone versus those who medically direct nurse anesthetists. There are sound medical arguments in favor of both methods. My belief is that sound, safe anesthesia care is best delivered by the solo anesthesiologist, or by one who simultaneously directs no more than two nurse anesthetists. Not all anesthesiologists agree with me (many respected anesthesiologists vigorously disagree), but a recent ASA survey discloses that more than 80 percent of ASA members practice one of these two modes. This figure is confirmed by data collected by the American Association of Nurse Anesthetists (AANA).

If one accepts the fact that anesthesiologist direction of nurse anesthetists is appropriate, then economists should find the care team approach more “efficient” than solo anesthesiologist practice, providing care for more patients. The services of the more completely trained, higher-cost provider are simultaneously applied to two (or more) patients, each of whom is also receiving the medically directed technical services of the lower-cost provider. The efficiency of the anesthesia care team mode should still allow the anesthesiologist to receive greater compensation per hour for simultaneous medical direction of nurse anesthetists than the anesthesiologist working alone receives. New Medicare law imposes a declining scale of per procedure reimbursement levels, depending upon whether two, three, or four nurse anesthetists are simultaneously directed. This appears to be a reasonable way to temper this compensation.
In judging how severe the decrease should be, we should bear in mind that in accepting responsibility for more than a single procedure, the anesthesiologist increases the liability risk and the effort input required. We should also not forget that Medicare regulations mandate that the medically directing anesthesiologist discharge certain critical duties to each patient, as a condition of reimbursement under Part B.

Finally, there certainly are—contrary to the authors’ assumption—market forces that have a restraining influence on anesthesiologist fees. If there is one clear trend in the delivery of anesthesia care, it is the increasing tendency of hospital administrators to insist on a written contract with anesthesiologists. These contracts always contain two provisions: the first tying hospital privileges to the term of the contract; the second specifying or limiting the fees to be charged by the physician.

These contracts are demanded because the hospitals are in a highly competitive environment, and administrators are doing everything possible to increase their institutions’ attractiveness to patients, third-party payers, health maintenance organizations (HMOs), and preferred provider organizations (PPOs). It is the rapidly increasing supply of highly qualified anesthesiologists, cited by the authors, that provides hospitals with the leverage to make their demands stick.

It may frustrate the authors’ economic modeling that these same administrators do not replace anesthesiologists wholesale with nurse anesthetists or at least insist upon medical direction ratios higher than 1:2, but then again, perhaps the administrators know something about the risks, responsibility, and inherent liability involved in anesthesia care that economists do not.

NOTES

Nurse anesthesia became a formal specialty in the United States in the latter part of the nineteenth century as a result of the dismal morbidity and mortality results of the “occasional” anesthetist. Surgeons turned to the Catholic Sisters and then to the professional nurse to provide a stable, qualified, and experienced anesthesia provider. There are now approximately 20,000 active, practicing certified registered nurse anesthetists (CRNAs) in the United States who administer more than 60 percent of the twenty-four million anesthetics administered annually. This commentary responds to the preceding article by Jerry Cromwell and Margo Rosenbach, from the perspective of the CRNA.

The Cost Of Anesthesia

The Cromwell and Rosenbach article is important and timely. Even though the costs of health care are a subject of considerable interest in an era of budget constraints and limited resources, surprisingly little study has been devoted to the multibillion-dollar market for anesthesia services. With the growing costs of Medicare and Medicaid, more and more questions likely will arise about the cost of health care. And well they should: Cromwell and Rosenbach demonstrate convincingly that patients are charged at least $850 million too much for anesthesia services each year. According to their article, many anesthesiologists who bill for the services of CRNAs have incomes of $750,000 to $2 million. This startling amount should, at minimum, bring the $140,000 reported taxable income under close scrutiny. It also should raise questions as to the degree of income sheltering that occurs within professional corporations. The following facts are presented to further illuminate the points Cromwell and Rosenbach have made.

The authors astutely note that physician anesthesiologists have
achieved artificially high prices in the form of both high average incomes and artificially high numbers of anesthesiologists. These two economic factors have resulted in a total cost increase of 270 percent in just ten years. Even though CRNAs are a lower-cost provider of quality anesthesia services and there is no close substitute for surgeons’ services, increases in anesthesiologists’ charges have far outstripped those of the surgeon. Therefore, relative to surgeons’ fees, anesthesiologists’ fees are excessive.

The existence of a lower-cost substitute for physician anesthesiologists’ services in the form of CRNAs makes the rise in anesthesiologists’ fees even more difficult to understand. Had there not been a lower-cost alternative, the anesthesiology costs may have increased even more dramatically.

Cromwell and Rosenbach draw their conclusions from Medicare data. According to Medicare, approximately 50 percent of all anesthesiologists do not accept assignment, and, therefore, they balance bill for an even greater amount than the $20 Medicare conversion factor cited. CRNAs, on the other hand, must accept assignment when direct Medicare reimbursement for CRNA services goes into effect January 1, 1989. Medicare charges represent about 37 percent of the total surgical cases performed annually. Concerning the remaining surgical cases, anesthesiologists charge patients up to a $60 conversion factor with $30 to $40 being a common range. Thus, the authors may underestimate the true cost to the health care system by as much as 200 percent. The potential savings to the health care system could be as much as 60 percent greater than the $850 million they originally projected.

The authors placed the average taxable income for anesthesiologists at $140,000 in 1985. Many anesthesiologists earn incomes in excess of $750,000. Many others who work fewer hours still generate incomes that exceed those of full-time surgeons. The American Medical Association (AMA) projects that the number of anesthesiologists will increase by 41.7 percent by the year 2000. Based on this projected growth rate and a historical income growth rate of 145 percent for the past ten years, the total cost for anesthesiologist services by the year 2000 will be 340 percent of what it is currently, or a 22 percent increase per year. If this unwarranted growth is allowed to continue and if the current "regulated payment inequities" are not corrected, then the costs for anesthesia services will exceed the nation’s ability to pay.

Anesthesiologists also are attempting to increase their market share by creating “supervisory” positions in facilities where anesthesia care was previously provided by “independent” CRNAs. This is similar to railroad firemen’s insisting that their services were as essential for safety on an internal combustion diesel train as they had been to the operation of a
coal-fired steam engine. These firemen successfully maintained their jobs and spent most of their time in a featherbed in the caboose. This "featherbedding" preserved the income of a specific class of railroad worker, but it had a disastrous effect on the railroad industry. Similarly, this new form of professional featherbedding in the name of quality threatens to increase costs needlessly in an industry already under attack for skyrocketing inflation. If society and health payers do not resolve the featherbedding problem in much of health care, including anesthesiology, the nation’s goal of accessible health care at affordable costs for all citizens will continue to be thwarted.

Outcomes: Anesthesiologists Versus CRNAs

According to American Association of Nurse Anesthetists (AANA) data, 25 percent of all CRNAs provide anesthesia services in urban and teaching hospitals with over 500 beds. Interestingly, CRNAs also provide 65 percent of all anesthesia in rural America. According to the same data source, 20 percent of all CRNA-administered anesthetics are provided without the collaboration of an anesthesiologist. According to the study performed by Cromwell and Rosenbach, CRNAs and anesthesiologists working separately and collectively perform the same tasks and participate in the same procedures regardless of complexity. Moreover, recent data collected and analyzed by an independent firm for the AANA demonstrate that when CRNAs and anesthesiologists work in joint practice arrangements, the cases assigned to CRNAs are, as a general rule, longer and more complex. Further, in the same settings, CRNAs provided anesthesia for 87 percent of all Medicare cases, which tend to be of greater length, of higher complexity, and reimbursed at a lower payment level than non-Medicare cases.

A congressionally mandated study by the National Research Council of the National Academy of Sciences confirmed that there is no significant difference in outcomes of care between anesthesia providers. This report stated: “There was no association of complications of anesthesia with the qualifications of the anesthetist or with the type of anesthesia.” Studies show that most poor anesthesia outcomes have nothing to do with the level of education of the provider, that is, anesthesiologist or CRNA, but stem from lack of attention, organization, and the ability to function as a part of the surgical team—factors not unique to any health profession. From these studies, it is obvious that CRNAs and anesthesiologists possess the necessary education and clinical experience to administer anesthesia with similar results.

Cromwell and Rosenbach’s statement that “a surprising percentage of
CRNAs work directly with the surgeon” is itself surprising. CRNAs are licensed to practice—and do practice—individually in anesthesiologists. Medical direction, when required, may be provided as well by a surgeon or an obstetrician rather than an anesthesiologist.

Saklad, a prominent anesthesiologist, wrote in 1968: “The number of medical judgements made by the anesthesiologist in any single administration are few indeed.” Certainly, the sicker the patient, and the more complex the case, the greater the potential for requiring medical decisions. If specific medical decisions are needed during an anesthetic, the attending surgeon or obstetrician can, and often does, provide that input, regardless of the anesthesia provider. When other appropriate consultation is required, neither the CRNA nor the anesthesiologist will hesitate to request other physician consultants. Failure to consider this option led to some gaps in the article.

Sydney Wolfe, cofounder of the seventeen-year-old Public Citizen Health Research Group, stated: “Arguments that anesthesiologists are automatically better than CRNAs make no sense at all.” Careful, outcome-based quality assurance research is critical, regardless of provider, to assist in maintaining and improving the overall quality of care in this important specialty area. The AANA and the American Society of Anesthesiologists (ASA) support the development of quality assurance information.

**Market Incentives For Anesthesiology**

Cromwell and Rosenbach are correct when they conclude that patients would benefit from lower prices for anesthesia services and that the way to achieve lower prices is to build market-like incentives into the existing third-party payment system. An example of how a market system might work is plastic surgery. Here, the patient usually pays the entire bill, and third-party reimbursement is virtually nonexistent. The results are striking: in the plastic surgery submarket, nurse anesthetists working directly with surgeons provide the vast majority of the anesthesia services, with savings being passed on to the patient.

I concur with Cromwell and Rosenbach’s general conclusion that artificial barriers have distorted free-market forces. Barriers include those imposed by (1) both state and federal statutes and regulations; (2) private third-party payer policies; (3) voluntary accreditation standards; (4) physician dominance and control over hospital and ambulatory surgery-center policies, including access to clinical privileges, patients, and clinical teaching resources; and (5) restrictions of physician-owned insurance companies. Many of these barriers have more to do with protecting...
particular professions than protecting the public safety and welfare, as the Cromwell-Rosenbach article clearly demonstrates. Unless decisive action is taken, increasing economic pressure will lead to further market aberrations, which threaten to destroy any reasonable possibility of creating a truly competitive market in the foreseeable future. When barriers to the independent practice of appropriately qualified professionals are removed, much of the tortured logic underlying reimbursement for anesthesia care can be avoided, since competitive pressures will be able to determine reasonable prices for anesthesia services.

Anesthesia charges then will fall, since the price insensitivity and artificial barriers that have protected them from competition will no longer exist. Smaller fees will make this specialty less attractive to current and potential future practitioners, reducing the “oversupply” of anesthesiologists and limiting their work to areas where they are most effective and efficient. Concomitantly, professional and economic premiums will attract increased numbers of professional nurses to this nursing specialty. Society will save scarce resources that can be put to other, more productive, use.

Conclusion

Anesthesia is a demanding and highly respected profession. Over the past decades, many CRNAs and anesthesiologists have contributed selflessly to the care of patients, the provision of anesthesia services, and the expansion of the art and science of the profession. CRNAs and anesthesiologists who have worked to foster cost-effective services and savings to the system should be protected from any revisions in payment methodologies. This protection could be achieved through reimbursement revisions that weight payments for individual anesthesia services and that pay for them regardless of qualified provider or the practice arrangement.

Cromwell and Rosenbach have provided data and economic evidence to support their contention that reimbursement policy and other artificial barriers to professional practice by selected qualified providers are distorting the market for anesthesia care and threatening the professional role of nurse anesthetists. While their recommendations for change are well considered, perhaps the best solution to this problem is to work toward the elimination of the unwarranted barriers to competition in this specialized field, permitting more free-market principles to act to control cost, quality, and provider mix. Or, perhaps Congress should consider amending Medicare legislation to permit the Health Care Financing Administration, through its intermediaries, to contain future health care
costs by acting as a prudent buyer of services contracting with those providers who are willing to pass cost savings on to the government, beneficiaries, and ultimately the public. Anesthesia Medicare reimbursement, comprising 35 to 40 percent of the required anesthesia market, may be a good place to start such an experimental program. Introducing the “prudent buyer” concept into this health care market will have positive effects on reducing anesthesia costs without sacrificing quality and may lead the way to containing other health care costs.

NOTES

1. Assume that an anesthesiologist employs four CRNAs and that each CRNA administers an average of 650 anesthetics per year. The average anesthetic procedure has a total relative value of thirteen units (time, plus base units, plus modifiers). Assume that the average conversion factor is $25 (the national range is from $12.50 to $60). The product of these numbers equals $845,000 (four CRNAs times 650 cases per year times thirteen relative value units per case times $25 conversion factor equals $845,000). Even after considering the costs for CRNAs in 1986 dollars (four CRNAs times $75,000 in wages, benefits, malpractice insurance, and overhead equals $300,000), the net income for this practice will exceed $500,000. When a $60 conversion factor is used, the gross income would approach $2 million, and the expenses would remain unchanged. Anesthesiologists who “supervise” hospital-employed CRNAs enjoy the benefits of a slightly reduced income without the additional expense of employing CRNAs. According to Center for Health Economics Research (CHER) data, approximately 75 percent of all anesthesiologists supervise and bill for the services provided by CRNAs.

On a case-by-case basis, anesthesiologists working without CRNAs charge on average 30 percent more per Medicare case than do CRNAs working without anesthesiologists. According to unpublished AANA survey data, the average conversion factor charged by solo CRNAs is $18.50. According to Medicare data, the average national conversion factor paid by Medicare for anesthesiologists (without modifiers) is $24. Assuming a total average relative value of 11.3 for Medicare cases (base, plus time units) the CRNA fee would be $209 (11.3 times $18.50), and the anesthesiologist fee for the same procedure would be $271, a difference of $62. The CRNA in this situation will have to accept assignment, or what Medicare allows. The anesthesiologist, in contrast, can balance bill the patient for that amount of the fee that exceeds what Medicare allows. This results in increased out-of-pocket costs for the Medicare recipient and a higher fee differential between CRNAs and anesthesiologists.

2. Data from the National Center for Health Statistics, personal communication, May 1987.


