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Resource-based Relative Value Scale and Reimbursement for Anesthesiology Services: Time Is of the Essence

THE EXISTING American Society of Anesthesiologist's Relative Value Guide (RVG), which incorporates base and time units, provides a rational and acceptable basis for anesthesia charges. However, many of those responsible for paying physicians believe and are prepared to act upon the belief that physician charges, in general, have been based on distorted procedure-oriented values that evolved through the third party and insurance payment system. Many primary care physicians believe these pricing mechanisms are distorted against their interests, whereas others—particularly surgeons, anesthesiologists, and radiologists—have benefited greatly by procedure-driven pricing systems.¹ Furthermore, the existing payment system tries to achieve the contradictory goals of limiting doctor's fees within the fiscal capacity of an organized and tax-supported insurance scheme, while at the same time allowing doctors to continue their unique fee patterns without standardizing a fee schedule. The government has tried to limit costs by using economic indices and by protecting the patient from excessive balance billing through a bewildering mixture of inducements and price ceilings, all of which have led to an incomprehensible system. A successful payment system must be stable, simple, widely understood, and accepted as legitimate by all. The current system meets none of these criteria, and most agree that a change is necessary.²

The fee system is currently being revised to reflect the Resource-based Relative Value Scale (RBRVS),³ which is based on resource cost rather than historic charges. This

will reduce the spread between procedure-driven and evaluation/management services. A conversion formula, including a geographic adjustment, will be set for the first year by the Department of Health and Human Services and thereafter by Congress for converting the scale to dollars. Other elements include volume performance standards, balance billing limits, and expanded effectiveness research.¹ The conversion formula will give Medicare a means to control the flow of dollars into the system. Of great importance to anesthesiologists is the nationwide impact of the RBRVS on anesthesiologists' reimbursement compared to that of the current system, usual, customary, and reasonable charges (UCR).

The current UCR charge system has been criticized as inflationary, complex, irrational, inequitable, and distorted.⁴ The RBRVS establishes what each service or procedure will be paid relative to other services, based on resource costs. Most locations use the same scale, but payments vary from one geographic region to another, based on a geographic index of practice cost and cost of living. The RBRVS is intended to revise the pattern of relative payments to reduce distortions and to improve equity among physicians. It may also affect specialty choice and practice location. A new system should simplify the administrative costs of determining payment rates, although various modifications are already being proposed to the RBRVS. However, since anesthesiologists do not control patient or procedure volume, their fee schedules should not include expenditure targets to control the volume of procedures performed.

To compare the current CPR system with recently proposed payment schemes, Revicki *et al.*, in an article that appears elsewhere in this issue, have examined two types of physician payment reforms—physician-based diagnosis-related groups (MDDRGs) and the RBRVS.⁵ At the time of their study, there was still interest in an MDDRG, which would provide a single, identical payment

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for all patients in a particular DRG for all physician services during a particular hospitalization. Although the MDDRG approach is currently moot, the RBRVS has been accepted into law and will be implemented in January 1992 and gradually phased in over a period of 5 yr. As a result, redistribution of payments across procedures, services, and specialties will occur.

Resource-Based Relative Value Scale

The objective of the RBRVS is to compensate specialists on the basis of their work, the costs of their practices, and the duration of their training. Current physician payment has been distorted by many factors, including health insurance, which has provided economic incentives for physicians to perform certain procedures. One hypothesis is that insurance has distorted upward the price of surgical services that usually are reimbursed, whereas the price of office visits, often not reimbursed, have been distorted downward. Because many both inside and outside the medical community have perceived that the current fee structure is irrational, Congress ordered the Health Care Finance Administration (HCFA) to study resource use in delivering medical services. Dr. William Hsiao, Dr. Peter Braun, and colleagues from the Harvard School of Public Health were awarded the contract to study the problem and develop a solution to control costs of Medicare payments to physicians, costs which have been increasing by 15% per year.

The RBRVS is an index of the *relative* levels of resource inputs expended when physicians produce services or procedures. To establish a fee, the RBRVS would have to be multiplied by a monetary conversion factor (dollars per unit). The Harvard model measured three resource inputs: 1) the work expended on a particular service, encompassing the time spent before, during, and after a service, and the intensity with which that time has been spent; 2) practice costs; 3) the opportunity costs of specialty training. Work is service-specific, whereas practice costs and opportunity costs are specialty-specific. The RBRVS takes into account the mental effort and judgment, physical effort, and technical skill necessary for a service; the stress felt by the physician; the income lost while training for a specialty (eliminated in the 1989 Omnibus Budget Reconciliation Act [OBRA] legislation) and variations among specialties for overhead costs.

To determine the work required for each service, about 100 physicians from each of 18 specialties rated approximately two dozen services within their own specialty. A common procedure, such as repair of an inguinal hernia for a general surgeon, served as a standard reference point in each specialty. The resource cost for the work of physicians for each of 400 commonly performed services was rated quantitatively.³ Since many invasive procedures were found to be overvalued and many evaluation/management services were perceived as undervalued, one effect of the new scale is to more equitably pay physicians

for evaluation/management services as compared to invasive procedures. The fees based on the RBRVS provide a more level economic playing field for all physicians, one based on the resources they expend when performing services. Important to anesthesiologists is that the RBRVS may change physician incentives to enter the specialty of anesthesiology, since economic incentives to enter the primary care specialties will improve. It also may change the geographic distribution of physicians, again through economic incentives. Because the Congressional mandate also requires that total expenditures remain fairly constant, whereas some specialties will receive higher payments for services rendered, others will receive less. Methods to prevent increases in the volume of procedures performed (by which physicians might compensate for the reduced payments) will be incorporated by the HCFA as well.

Problems with the RBRVS include the following: 1) within each Current Procedural Terminology-4 (CPT-4) classification, severity may vary systematically, but is unaccounted for by the system⁴; and 2) as with other payment systems, the *quality* of services provided is not evaluated either by measuring the quality of work actually performed or the outcome or benefits resulting from the procedure. All things considered, the establishment of a fair and equitable payment system that does not rely only on charges may ameliorate one important policy problem, the shortcomings of the existing UCR system.

Although much attention has been devoted to the differences among specialties before and after these new payment systems are implemented, Revicki *et al.*⁵ have studied the potential effects of the MDDRG and RBRVS payment schemes on physicians within one specialty, anesthesiology. Since anesthesiologists have used their own RVG for many years, the authors compared UCR charges (based on the ASA RVG) with a simulated RBRVS payment system. Anesthesiologists charge on the basis of the number of units of anesthesiology service performed during a surgical procedure, multiplied by the dollar conversion factor. The three components of anesthesia units of service include: 1) the base relative value units reflecting or weighting the average complexity or risk of the specific anesthetic procedure; 2) time units, usually 1 unit per 10 or 15 min; and 3) in some geographic areas, modifier units reflecting the severity of the patient's physical condition and complexity of the anesthesia procedure.

Time usually contributes most of the units, reflecting both the presence and the activity of the anesthesiologist during the surgical procedure. *However, it cannot be emphasized strongly enough that time is controlled not by the anesthesiologist but by the surgeon.* The surgeon not only makes the initial decision to submit the patient to operation but also determines, in detail, the specifics of the procedure, and thus determines the amount of time required to perform the procedure once the patient is anesthetized. Certainly the anesthesiologist should not influence the amount of time the surgeon consumes to perform the surgical

procedure. It is, therefore, extremely important to pay the anesthesiologist for the time spent caring for the patient independently of the surgeon's own estimated timetable for performing the operation.

Revicki *et al.*⁵ assumed properly that under either simulated analysis (MDDRG or RBRVS), budget neutrality would reign, although the distribution of payments across anesthesiologists' practices might change. They adjusted for regional differences across the United States, although they sampled only 60% of the cases. Considering MDDRGs, the authors found that surgical time varied considerably within a DRG category, and so stratified their analysis accordingly. The authors used average time to simulate the RBRVS payment because actual time was not incorporated in the original RBRVS methodology. Fortunately, actual time is now supported by Hsiao *et al.* for use in anesthesiology payments, although actual time is not yet incorporated into the law.

Revicki *et al.* then compared the estimated RBRVS charges to the existing UCR anesthesiology charges (based on the RVG) to identify in what respects anesthesiologists would gain or lose under an RBRVS payment system. As expected, anesthesia time correlated highly with surgical time ($r = 0.94$). Thus, the authors found a two- to seven-fold variation in charges, a three- to ten-fold variation in anesthesia time, and a three- to 10-fold variation in surgical time. By contrast, UCR anesthesiology charges and times varied only two- to four-fold. Of great importance was the effect of the payment system on reimbursement to anesthesiologists in teaching and urban hospitals. The authors found that under a DRG-based system, anesthesiologists in teaching and nonrural hospitals would lose income, as would those involved in longer operations. Similarly, the RBRVS simulation also suggested that teaching hospitals would lose reimbursement, and that rural practitioners might gain relative to their urban counterparts. No estimate, however, was offered with regard to rural teaching hospitals (if any were so categorized) as compared to urban teaching hospitals.

When compared to other specialties, and assuming budget neutrality, anesthesiology is likely to lose some reimbursement (estimated at 10%) when the RBRVS is implemented. However, the study by Revicki *et al.* demonstrates that even within this specialty, some gains and some significant losses attributable to the two payment options also occur. In their study, most of the charge variation in surgical procedures within DRGs was based on anesthesia time, which correlated extremely well with surgical time, a factor beyond the anesthesiologist's control. Thus, anesthesiologists must continue to emphasize the importance of actual anesthesia time in any payment system, since their presence and professional care are required. Anesthesiologists do not control operating room efficiency (once surgery begins), surgical competence, or the practice setting. Just as hospitals lose income within a DRG for patients whose length of stay exceeds an arbitrary norm, anesthesiologists would lose income when

caring for patients whose surgical procedures likewise exceeded an arbitrary norm. Unlike hospitals and primary care physicians, who can exert some control over the patient's length of stay and hospital efficiency, anesthesiologists can exert little or no control over the surgeon's duration of operation.

Anesthesiologists in teaching hospitals are doubly affected since longer surgical times are more common in teaching as compared to nonteaching hospitals. Not only is the case mix in teaching hospitals likely to include patients requiring a higher intensity of care, but also surgical teaching, an important component in the operating room, prolongs the time taken to perform the operative procedure. If pressure to conform to average times is placed on both anesthesia and surgical services, operating room teaching will suffer, and so create one more obstacle in the education of medical students, young physicians, and surgeons in real patient-care settings. Another major loser would be the urban hospital, which is in far worse economic condition than the teaching hospitals. Their patients are often more ill and require more resources,⁶ and yet these anesthesiologists would suffer reduced payments under the simulation provided by Revicki *et al.* If true, urban hospitals' ability to recruit staff would be even further limited than it is currently.

As a result of efforts by the leadership of the ASA, the importance of actual time, as shown in the work by Revicki *et al.*,⁵ has been accepted and is planned for incorporation in the RBRVS. It will be important to monitor implementation of the RBRVS to insure that this system's initial goals—the reduction of perceived inequities—are met.

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