

Medicare Reimbursement

An Orthopedic Primer

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Abstract: Since 1992, Medicare has paid physicians and other practitioners by using a resource-based relative value scale system (RBRVS). The Center for Medicare Services updates the RBRVS annually and reviews the work portion for each procedure every 5 years. The calculation of the work units is done by using a survey. This survey polls the average amount of time spent in each portion of the case. The survey process is quite complex. Some of the specific biases that can be found include rank lists, multidimensional, hypothetical items, and complexity and memory overload bias. Survey errors are easy to make over and above item bias. With this system, surgeons are encouraged to be slower to increase their compensation. Surveying methodology is not the most appropriate way to tabulate time and work. Unless this methodology changes, orthopedic surgeons will continue to be shortchanged. **Key words:** medicare, reimbursement, economics, total joint arthroplasty, RBRVS.

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Health care spending in the United States continues to rise at an increasingly alarming rate. Total national health expenditures rose by almost 8% in 2003. In 2003, health care spending in the United States reached \$1.7 trillion, which was more than 4 times the amount spent on national defense [1].

The Medicare program in the United States is the second largest social insurance program, with 42 million beneficiaries and total expenditures of \$309 billion in 2004. The financial stability of the Medicare program continues to be a growing concern. The Medicare trust fund is projected to be exhausted by the year 2020 [2].

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Physician fees account for more than \$50 billion per year of these expenditures. Because of a historical lack of participation that orthopedic surgeons have had as a group in the Medicare process, orthopedic surgical fees in the Medicare program have been decreased significantly in the last 10 years. Under the most recent proposed fee schedule released by the Centers for Medicare and Medicaid Services, in November of 2005, physician payments under Medicare in fiscal year 2006 will be unchanged from the 2005 levels [2].

Since January 1, 1992, Medicare has paid for physician services and other practitioners under a physician fee schedule. To construct the fee schedule, Medicare uses a resource-based relative value scale system (RBRVS) [3-6]. With this methodology, medical procedures are ranked according to the relative costs of resources required to perform them. The RBRVS assigns to each service in the fee schedule 3 different types of relative value units (RVUs): physician work, practice expense, and professional liability. The sum of these units is multiplied by a dollar conversion factor with a resultant payment rate for each particular procedure [7]. These dollars are then multiplied by a geographic

practice expense factor to yield the regional payment for a particular procedure (Table 1).

Arthroplasty surgery is one of the most cost-effective surgical interventions in the field of medicine. Yet, reimbursement for this surgical intervention has decreased significantly over the past 10 years. Calculation of the work units with the RBRVS methodology is done by using a standard survey. This survey polls the average amount of time spent in each portion of the case as reported by surgeons. The operative room work is defined as the sum of the time spent in preservice evaluation and positioning; scrubbing, dressing, and waiting time, the “skin to skin” time; and, finally, the immediate postservice time. The post-surgery work is divided into hospital visits, the discharge summary, and the office visits for the first 90 days. These data are used to develop the total “work RVU,” which is used as part of the calculation in developing total reimbursement [8-10].

The Medicare program has 4 components. Hospital Insurance (HI) or part A pays for hospital, home health, and skilled nursing facility; the Supplementary Medical Insurance or Medicare part B (pays for physician and outpatient hospital charges). Two new parts were added during the past 24 months: part C is a \$10 billion subsidy to the managed care industry and part D (new prescription benefits) will provide subsidized access to drug insurance coverage starting in 2006. Based on the 2005 Annual Report of the Board of Trustees, the financial outlook for the Medicare program continues to raise serious concerns. Total Medicare expenditures are expected to increase in future years at a faster pace than either worker’s earnings or the economy overall. This would place a substantially greater strain on the nation’s workers, Medicare beneficiaries, and the federal budget. The Supplementary Medical Insurance trust fund is adequately financed for the next 10 years because of multiple years of physician fee reductions that would occur under current law [2].

The Center for Medicare Services (CMS) updates the RBRVS annually, and is required by statute to review the work portion of the RBRVS for each procedure at least every 5 years. The RBRVS

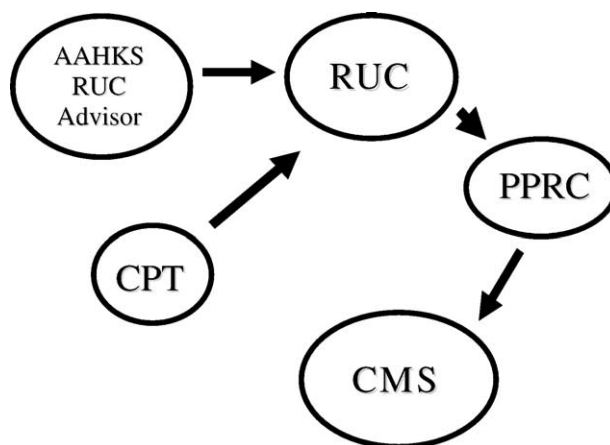


Fig. 1. Process to price a procedure. PPRC indicates Payment Review Commission.

process uses the procedure codes and definitions contained in the Physicians’ Current Procedural Terminology (CPT). The CPT is updated annually to reflect current medical practice, and changes in the CPT necessitate annual updates to the RBRVS for the affected codes. In addition, CMS may change the relative value of a procedure to reflect changes in the resources needed to perform the procedure, or if it concludes that a change otherwise is warranted. Units for each CPT code are then assigned by the American Medical Association (AMA)–created AMA/Specialty Society RVS Update Committee (RUC). The RUC makes recommendations to CMS with respect to the physician work component of the RVUs contained in the RBRVS. The RUC has 26 physician members, of whom 22 represent medical specialty societies. The AMA and the American Osteopathic Association each appoint 1 voting member. The process is outlined in Fig. 1. The CPT code is created, assigned work and practice expense values, and then submitted for final approval to CMS. Arthroplasty surgeons now have a representative or RUC advisor that attends every RUC meeting (Fig. 1).

The RUC annual update process involves 3 steps: surveys of practicing physicians by the nonhospital specialty board on the RUC Advisory Committee [11,12]. These surveys of practicing physicians are then reviewed by the proper subspecialty groups, and these results are then presented to the full RUC for evaluation.

The survey process is quite complex. The American Academy of Orthopaedic Surgeons (AAOS) sends more than 1000 surveys for each code that is evaluated. A minimum of 30 physician answers is required to comply with the RUC regulations. A

Table 1. Payment Calculation for a CPT Code (2005)

$$\text{Work} + \text{Practice Expense (PE)} + \text{Malpractice (PLI)} = \text{Total RVU}$$

$$\text{Total RVU} \times \$37.8975 \times \text{GPIC} = \text{Payment}$$

The conversion factor is multiplied by the sum of the RVUs for physician work, practice costs, and malpractice insurance. This is then multiplied by a geographic practice index (GPIC) to calculate the total dollar amount.

case vignette is sent for each typical patient and each typical service with the survey. The survey normally takes approximately 25 to 30 minutes to complete. Once the surveys are completed, the data are analyzed by the health policy group of the subspecialty and then is provided to the AAOS for a final recommendation to the RUC.

The survey is a 12-page questionnaire that is long and difficult to answer. A number of problems are inherent to any survey methodology. Some of the specific biases that can be found in all surveys include problems such as rank lists bias. Many survey researchers recommend that respondents not be asked to rank more than 4 or 5 items. On the AAOS RUC survey, we find that critical questions about physician work complexity and intensity have more than 8 items to be ranked, which allows respondents to start giving arbitrary rankings just to get past the item.

A form of ambiguity arises with several items due to the multidimensionality (multidimensional bias) such as on the preservice and postservice period. That also can overtax the respondent by requiring an excessive memory burden. The more complex the item, the easier it is to overload memory (complexity and memory overload bias). The survey is based on hypothetical cases (hypothetical items bias). Hypothetical cases create a difficult challenge for respondents. Considering such cases require time for imagination and consideration, surgeons tend to base responses on their most related actual experiences that can differ from one surgeon to another. Survey errors are easy to make over and above item bias. Survey errors include such factors as faults in sampling (AAOS survey is based on 30 responders), coding, tabulating, data processing, interviewer bias, researcher bias, and data misinterpretation. One of the essential steps in survey research is pretesting; no matter how experienced the survey researcher is, pretests almost invariably bring to light item ambiguities and other sources of bias and error. In fact, Converse and Presser [13] argue cogently that a minimum of 2 pretests are necessary, with pretest sizes of 25 to 75 administered to respondents similar to those who will be in the final sample; the AAOS did not pretest these surveys.

We feel that the current system in which compensation is linked to RVUs is inefficient. With this system, surgeons are encouraged to be slower to increase their compensation. This is contrary to the basic principles of efficiency in which any process that is done faster and better is compensated for at a higher rate. It is imperative that our societies spend time and effort in developing a

system that compensates surgeons for working more efficiently and having better outcomes.

Surveying methodology is not the most appropriate way to tabulate time and work. Lavernia et al [14] have presented data that clearly show that surgeons underestimate the amount of time that they spend in the operating room as well as the amount of time they spend operating. Unless this methodology changes, orthopedic surgeons will continue to be shortchanged.

It is critical for each American Academy of Hip and Knee Surgeons (AAHKS) member to stay informed on all regulatory and political issues regarding Medicare policy. A very large percentage of our daily bread comes from this payer, and most other payers follow CMS policies very closely.

Stay involved in the political/regulatory process by supporting the AAHKS board and the Orthopedic Political Action Committee. More than 85% of the trial lawyers give hard money to their political action committee. Less than 20% of our members give money for our cause.

References

1. Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, at <http://www.cms.gov/statistics/nhe/default.asp> (2003 National Health Care Expenditures Data Files for Downloading, file nhegdp03.zip).
2. Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds. 2005 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds. Washington, DC, March 23, 2005.
3. Glass KP, Anderson JR. Relative value units: from A to Z, part 1 of 4. *J Med Pract Manage* 2002;17:225.
4. Glass KP, Anderson JR. Relative value units and productivity, part 2 of 4. *J Med Pract Manage* 2002; 17:285.
5. Glass KP, Anderson JR. Relative value units and cost analysis, part 3 of 4. *J Med Pract Manage* 2002; 18:66.
6. Glass KP, Piland NF. Relative value units: from A to Z, part 4 of 4. *J Med Pract Manage* 2002;18:120.
7. Hsiao WC, Becker ER. Paying physicians according to their resource-costs: the development of a resource-based relative value scale. *Health Policy* 1989;12:257.
8. Hsiao WC, Braun P, Dunn D, et al. Results and policy implications of the resource-based relative-value study. *N Engl J Med* 1988;319:881.
9. Hsiao WC, Braun P, Kelly NL, et al. Results, potential effects, and implementation issues of the Resource-Based Relative Value Scale. *JAMA* 1988; 260:2429.

10. Hsiao WC, Dunn DL, Verrilli DK. Assessing the implementation of physician-payment reform. *N Engl J Med* 1993;328:928.
11. Hsiao WC, Stason WB. Toward developing a relative value scale for medical and surgical services. *Health Care Financ Rev* Fall 1979;1:23.
12. Kelly NL, Hsiao WC, Braun P, et al. Extrapolation of measures of work for surveyed services to other services. *JAMA* 1988;260:2379.
13. Converse JM, Presser S. *Survey questions: handcrafting the standardized questionnaire*. New Delhi (India): Sage Publications; 1986.
14. Lavernia C, Hernández VH, D'Apuzzo M, et al. Medicare reimbursement methodology: the scientific analysis. Presented at the 73rd Annual Meeting of the American Academy of Orthopaedic Surgeons. Podium session. Chicago, IL, March 2006. *Proceedings* 2006.