Adding Value to Relative-Value Units

Eric C. Stecker, M.D., M.P.H., and Steven A. Schroeder, M.D.

Relative-value units (RVUs) were developed in 1988 as a method of accounting for physicians' work effort and hospital or clinic expenses. Because RVUs provided a uniform, formulaic metric for myriad clinical services, they quickly became the prevailing method for setting fee-for-service payments for Medicare and private insurance. However, the dominance of the fee-for-service model has created strong structural impediments to physicians' participation in value-focused health care.[1] The success of new models of care will require not only changes in the way that health systems are organized and paid but also vigorous engagement by generalists and specialists, yet RVU formulas for clinician compensation have not evolved to meet these needs. Many important physician activities — including managing systems of care, managing the health of populations, delivering individual patient care in new ways, and considering behavioral influences on health — are not measurable in the current RVU system. This limitation has led policymakers and researchers to experiment with alternative payment and incentive systems for physicians. Nonetheless, a reconfigured RVU system has many advantages and could evolve into the method best suited to accounting for physicians' services in a variety of delivery and payment contexts.

Physician-reimbursement methods can be broadly categorized as fee for service, capitation, salary, pay for performance (using measures of quality or outcomes), or some combination of these.[2] Fee for service has been dominant since the advent of the medical profession. Capitation, previously a feature of large, closed-panel, prepaid group practices such as Kaiser Permanente, gained prominence in the 1990s as part of attempts to move financial risk sharing to the provider level. But when applied in the small-group context, capitation proved unpopular for a variety of reasons, including inadequate risk adjustment and public perception of potential conflicts of interest. Salaried-physician models have been proposed as a potential solution, including during the 2012 presidential campaign. However, both salary and pay-for-performance systems often incorporate fee-for-service metrics such as work RVUs to account for physicians' productivity.[3]

The resilience of RVUs in such alternative payment systems sends an important signal. We believe that policymakers should interpret the continued widespread use of RVUs as a sign of their usefulness and consider improvements that would both emphasize value in the current fee-for-service environment[4] and account for physicians' work in future payment systems.

Ideally, physicians' work would be reimbursed on the basis of metrics that signal whether their clinical services efficiently improve patient outcomes and that use effective clinical risk adjustment. In reality, using patient outcomes as a basis for payment can work well at the health-system level, but small samples and inadequate risk adjustment limit their use for individual physicians and many group practices. A common alternative is to identify clinical processes of care that are associated with improved outcomes and tie physicians' salaries or bonuses to the attainment of process benchmarks. Although such methods have enjoyed great support, results have not shown that pay for performance is a viable system,[2] and any success will probably depend on savvy orchestration of complex program designs.

Creating a new RVU-based system that incorporates value considerations has important advantages over pay-for-performance programs, salaries that are not tied to incentives, and physician-level capitation. All other systems for tracking and offering incentives for physicians' work must contend with substantial challenges that RVU-based systems have already overcome: incorporation into physicians' clinical decision-making calculus, adoption by health systems' financial managers, integration into software used by health systems, and creation of processes for reassessing and modifying metrics.[1]

Thanks to long experience with RVU-based payments, physicians and health-system administrators have become skilled at modifying systems of care to respond to imbalances in RVU weighting. For

Sample Modifications to Improve the Value Basis for Relative-Value Units (RVUs) in Cardiology.*

Activity	Current Medicare Work RVUs	Proposed Value-Based Modification	Change
Office visit			
Smoking-cessation counseling with documentation of target quit date	1.0–3.2	4.0–6.4	+100–300%
Positive reinforcement of tobacco-free status and relapse-prevention counseling within 30 days after smoking cessation	1.0–3.2	4.0–6.4	+100–300%
Initiation of a new medication supported by class I guideline recommendations for a diagnosis of heart failure, coronary artery disease, or atrial fibrillation	1.0–3.2	2.0–6.4	+100%
Population management			
Supervision of a telephone-based care-management program for patients with high-risk heart failure or coronary artery disease (credited quarterly, per 50 patients enrolled)	0	20.0	—
Supervision of a quality-improvement program to reduce stroke risk and manage bleeding risk among patients with atrial fibrillation, using evidence-based care (credited quarterly, per 50 patients enrolled)	0	20.0	—
Procedures			
Stenting			
ST-segment elevation myocardial infarction			
Not otherwise specified	12.6	12.6	None
Door-to-balloon time <60 min	12.6	25.2	+100%
Chronic stable angina			
AUC score of 7, 8, or 9 and conducted in catheterization laboratories with an approved AUC auditing process	11.2	14.0	+25%
AUC score of 4, 5, or 6 and conducted in catheterization laboratories with an approved AUC auditing process	11.2	5.6	–50%
AUC score of 1, 2, or 3; no AUC score documented; or conducted in catheterization laboratories without an approved AUC auditing process	11.2	2.8	–75%
Implantation of cardioverter–defibrillator			
AUC score of 7, 8, or 9 and conducted in electrophysiology laboratories with an approved AUC auditing process	15.2	19.0	+25%
AUC score of 4, 5, or 6 and conducted in electrophysiology laboratories with an approved AUC auditing process	15.2	7.6	–50%
AUC score of 1, 2, or 3; no AUC score documented; or conducted in electrophysiology laboratories without an approved AUC auditing process	15.2	3.8	–75%

* Guideline and appropriate-use criteria (AUC) recommendations are developed by the American Heart Association and American College of Cardiology in association with other professional societies (www.cardiosource.org/science-and-quality/practice-guidelines-and-quality-standards.aspx). Class I guidelines are supported by the highest level of clinical evidence (or expert consensus in lieu of evidence). The AUC method was developed by RAND and the University of California, Los Angeles, to foster a hierarchical approach for rating the appropriateness of care for commonly encountered clinical scenarios. AUC scores range from 1 to 9, with higher scores indicating greater levels of appropriateness. Work RVUs are major determinants of physician remuneration in many payment systems. Note that the RVU values and proposed modifications are for illustrative purposes only. Additional RVU adjustment factors are applied to fee-for-service payments, and any value-based modifications would ideally be determined in a methodologically rigorous fashion.

example, RVU distortions drove the development of physician-owned, specialty-specific procedural centers and the movement of cardiac imaging from physicians' offices to hospital outpatient units. The first shift was dramatic enough to prompt regulations to freeze the trend, and the second was associated with a tripling of the proportion of cardiologists employed by hospitals. Manipulations in health care delivery that may be lamentable when triggered by value-blind RVU distortions would be laudable if they occurred in response to value-centered metrics.

An improved RVU formulation for physicians' work could be developed that reflects clinical value by weighting activities according to whether they demonstrably improve patient outcomes. Although incorporating comparative-effectiveness data would be challenging, it has been done successfully in contexts such as value-based insurance design. Physician work RVUs are currently based on the relative levels of perceived time, skill, and intensity associated with clinical activities, but value-based elements could be emphasized to align physicians' work efforts with high-value clinical services.

Such an approach could lead to a comprehensive, methodologically rigorous reformulation of RVUs for many clinical activities, but it could start quite simply. Across the board, RVU levels for cognitive clinical work could be increased and those for procedural work could be decreased to create incentives for primary care services.[1] RVU levels could also be increased substantially for high-value clinical activities undertaken by either specialists or generalists (see table for examples from cardiology). Although RVUs are traditionally used for episodes of care provided by individual clinicians for individual patients, activities linked to RVUs could be more broadly defined to include team-based and supervisory clinical activities as well.

After a more comprehensive set of comparative-effectiveness data is developed, RVUs could be assigned to clinical activities in an evidence-based manner, proportionately to their influence on patient outcomes and clinical efficiency. Activities for which comparative-effectiveness data are lacking (e.g., clinic counseling for low-risk patients with headaches, fatigue, or palpitations; workup of nonspecific symptoms such as dyspnea; or multistage workup and treatment of complex disorders) could have RVU values assigned by expert consensus in a prescribed and transparent process. Pilot projects testing new value-based RVU systems could be undertaken in progressive health care systems and state Medicaid programs.

National reform of RVU-based systems is limited by the secretive, proprietary, and specialty-focused nature of the American Medical Association's Relative Value Update Committee, which functionally sets RVU levels. However, fidelity to the committee's recommendations by Medicare and private insurers is subject to modification at any time. Other challenges to the adoption of value-based RVUs include the limitations inherent in all individual-level quality-incentive programs: a focus on processes of care may lead to inadequate correlation with clinical outcomes, and outcomes often cannot be measured directly because of small-sample random variation. Overall, distortions and inadequate incentives would undoubtedly remain, despite value-based modifications to RVU formulas and their linked clinical activities. But any shortcomings could be addressed over time with iterative fixes and the addition of simple, focused, pay-for-performance systems where appropriate.

RVU-based physician-productivity measures have survived for good reason: they are proven, potent, and efficient motivators of physician behavior. Simple fixes to promote value could rapidly align physicians' practice patterns with other elements of a value-focused health care system. Value-based RVUs could thereby serve as a bridge for physicians in the transition away from fee-for-service payments, promote important primary care services, and improve the integration of specialty care into new delivery models. A reformed RVU system could remain central beyond fee for service, since methods such as global and bundled payments do not account for or direct the distribution of physicians' work efforts within health systems.[5] Ultimately, refining this durable, well-entrenched system may be preferable to replacing it with unproven alternatives.

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From the Knight Cardiovascular Institute, Oregon Health and Science University, Portland (E.C.S.); and the Department of Medicine, University of California, San Francisco, San Francisco (S.A.S.).

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Assessing Participant-Centered Outcomes to Improve Clinical Research

Rhonda G. Kost, M.D., Laura M. Lee, M.S., R.N., Jennifer Yessis, Ph.D., Robert A. Wesley, Ph.D., David K. Henderson, M.D., and Barry S. Coller, M.D.

The value of patient-centered outcome measures for improving the care and satisfaction of patients is now well established, and the U.S. health care system has incorporated patient feedback into quality-improvement efforts.[1] Moreover, thanks in part to prodding from the newly established Patient-Centered Outcomes Research Institute, patient-centered outcomes are increasingly being incorporated into clinical research. In contrast, although intense interest has been expressed in the ethical conduct of clinical studies, research participants' perspectives on their research experiences — such as whether the informed-consent process properly and completely prepared them for research participation — are virtually never systematically examined. Indeed, one might imagine that such research could be accomplished as an extension of the requisite data gathering for clinical trials, but we are unaware of any validated surveys that obtain empirical data on research participants' experiences and perspectives in order to evaluate the effectiveness of current practices and improve processes. For example, participant-perception information may be especially important in the expanding areas of genetic research, in which there are strong disagreements among investigators, bioethicists, and other research professionals about the best processes and guidelines for reporting incidental findings identified by next-generation DNA sequencing.

To begin to address this deficiency in the research-improvement process, we developed and validated a standardized Research Participant Perception Survey that was based on themes derived from focus-group discussions involving research participants and research professionals.[2] We deployed the survey to 18,890 research participants at 15 U.S.-based clinical research centers supported by the National Institutes of Health (NIH) — 13 Clinical and Translational Science Award (CTSA) sites, 1 General Clinical Research Center site, and the NIH Clinical Center (for a list of the participating sites, see the Supplementary Appendix, available with the full text of this article at NEJM.org).[2,3]

A total of 4961 surveys (29% of the 17,030 delivered surveys) were returned from participants of diverse ethnic (5% Hispanic) and racial (85% white, 12% black, 3% Asian, 2% Native American or Alaskan Native, and 1% Native Hawaiian or Pacific Islander) backgrounds. Of all participants, 37% were healthy volunteers; in the centers that provided data on sex, 61% of participants were female. The demographic distribution of responders approximated that of the sample population of the participating centers.[2] Response rates varied among sites, from 18% to 74%, depending largely on the methods chosen for recruitment (e.g., whether a reminder was sent after the initial survey mailing). Responses to questions about participants' overall experience were similar at sites with high and low response rates.

The table summarizes the responses to selected questions. In aggregate, 73% of participants rated their overall research experience very highly (at 9 or 10 on a 10-point scale). Similarly, 66% said they would "definitely" recommend research participation to friends or family members, and 31% said they would "probably" do so. Participants were more likely to rate their overall experiences very highly when they trusted the investigators and nurses; felt that investigators and nurses treated them with respect, listened to them, and gave them understandable answers to their questions; and could meet with the