CHEST Commentary

The Undervaluation of Evaluation and Management Professional Services

The Lasting Impact of Current Procedural Terminology Code Deficiencies on Physician Payment

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The Resource-Based Relative Value Scale (RBRVS) is fundamentally undermined by the following foundational errors: (1) The full range of office-based evaluation and management (E/M) activities are not captured by the Current Procedural Terminology (CPT) code choices, (2) it places relatively high values on procedural services, (3) there is no measure of intensity for complex outpatient E/M care, and (4) its maintenance and update have been delegated to select professional societies. Limitations imposed on the development of the RBRVS dating back to the early 1980s have not been corrected. The repertoire of codes for physician office-based E/M work must be expanded to create a new topology of choices with new outpatient code families with discrete service code levels, such as comprehensive outpatient consultation care, comprehensive outpatient primary care, and limited outpatient consultation care. Service code relative values must be based on representative samples and reliable survey data, draw from the broader literature on work intensity, and be developed with accountable and representative professional engagement.

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Abbreviations: AMA = American Medical Association; CMS = Centers for Medicare & Medicaid Services; CPT = Current Procedural Terminology; CPT-4 = Current Procedural Terminology, 4th Edition; E/M = evaluation and management; HCFA = Health Care Financing Administration; PFS = physician fee schedule; PPRC = Physician Payment Review Commission; RBRVS = Resource-Based Relative Value Scale; RUC = Relative Value System Update Committee; RVU = relative value unit; TCG = technical consulting group

In 1992, the Health Care Financing Administration (HCFA), now the Centers for Medicare & Medicaid Services (CMS), implemented the Resource-Based Relative Value Scale (RBRVS), a system that consolidated and standardized physician payment by assigning relative value units (RVUs) for all professional services. RBRVS had two main goals: (1) contain the total cost of all physician services and (2) correct the imbalance between payments for purely cognitive clinical encounters (eg, office visits, consultations, preventive medicine visits), collectively known as evaluation and management (E/M) services, and procedural services (eg, surgery, interpretation of diagnostic tests).

Neither of the original goals has been achieved. Cost containment still challenges Medicare and the compensation to physicians who perform procedures has continued to outpace those who perform primarily office-based E/M services. This has led to a continued payment disparity between cognitive- and procedure-centered work. For example, with the primary-care specialties, the total income gap has increased from an average 61% in 1995 to 89% in 2008.[1] To only a slightly lesser degree, similar differences apply to all specialists who depend on E/M services for the bulk of their compensation. Much of this disparity has been attributed to the undue dependency by CMS

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on the American Medical Association (AMA) resource-based Relative Value System Update Committee (RUC).[2] The RUC, which largely comprises representatives from specialty societies, meets privately and proposes valuations for new and existing physician services. CMS does not empower the RUC with authority over service code valuations. In fact, the AMA has repeatedly stated that the RUC's recommendations are consistent with constitutionally protected rights of free speech. However, careful analysis of CMS decisions suggests that the RUC has become the de facto resource in the CMS rule-making process. From 1994 to 2010, the agency accepted 87.4% of the RUC's recommendations without modification.[3] Each new service code becomes a payment opportunity. In the 4-year interval from 1999 to 2003, E/M services for Medicare patients went up 15%, whereas diagnostic testing, inflated by new service codes, rose by 36%; the same expansion of code choices increased imaging services by 45%.[4]

There is more to the story, however. Little attention has been paid to the role of the AMA Current Procedure Terminology (CPT) codes in the failure of the RBRVS to rebalance payments among physicians. There were foundational flaws in this system stemming from the original reliance on the limited CPT codes in designing the Medicare physician fee schedule (PFS) for outpatient E/M services. CMS, CPT, and RUC must correct these important deficiencies.

RBRVS and the Fateful Decision to Use the AMA CPT Codes

The concept of the relative-value scale, a schedule establishing the relative value assigned to individual physician services, evolved to standardize professional service payments.[5] Before the relative-value scale conventions, physicians charged Medicare, insurance companies, and individuals according to their usual, customary, and reasonable rates. As a result, Medicare faced a wide range of costs for the same services and the resulting budgetary crisis.[6] In 1984, with Medicare spending pressures, Congress passed the Deficit Reduction Act, a bipartisan bill imposing a 15-month freeze on physician payments. The Deficit Reduction Act directed the Office of Technology Assessment to address "any inequities between cognitive services and medical procedures" and to take into account the "relative time, complexity, and investment in professional training" necessary for the development of a national PFS.[7]

But there was a prior decision that distorted the Office of Technology Assessment process. In 1983, HCFA elected to make the AMA CPT manual the exclusive source for service codes used in the official Medicare Part B Healthcare Common Procedure Coding System, the federally sanctioned directory of physician services.[8] The goal was to standardize Medicare and Medicaid claims by using one set of descriptors of the then 120 identified procedure coding systems.[9] Developed and maintained since 1966 by the AMA, CPT codes are assigned to all physician services to ensure uniformity in billing and clinical communication. HCFA could have developed its own directory of physician services, but this would have required an enormous commitment of resources, and there was growing pressure to consolidate the language of billing as a prerequisite to tackling the larger challenge of cost control. In 2000, CPT was designated as the national coding standard for all health-care procedures and services.[10] The AMA CPT Editorial Panel, comprising physicians nominated by national medical specialty societies, continues to update and modify the CPT code set and is responsible for accepting and developing descriptive language for proposed new service codes.

In 1985, HCFA commissioned the three-part National Resource-Based Relative Value Scale Study led by William Hsiao and Peter Braun (commonly known as the Harvard Study). HCFA adoption of CPT codes constrained the Harvard Study to a service directory of just over 7,000 Current Procedural Terminology, 4th Edition (CPT-4), code descriptors. Of these 7,000 codes, about 6,900 were for procedures and interpretation of specific diagnostic tests, allowing relatively narrow and precise service definitions for each code. Purely cognitive physician services (those services other than procedures and interpretation of test results) provided during a new or established patient office visit were represented at the time by only six levels of service (minimal, brief, limited, intermediate, extended, and comprehensive), varying by the complexity of patient encounter.[11]

The Harvard Study

The Harvard Study was intended to build a knowledge base for public policy. The investigators calculated relative values from three resources for each service: total work (eg, the overall effort in delivering a service), practice costs (eg, expense of doing business), and the opportunity costs for specialty training (eg, lost wages in residency). Relative work values in the Harvard Study were developed in the following three steps.

Defining and Measuring Work

Hsiao et al[12] defined total work for each CPT code as the time and intensity (technical skill, mental/physical effort, and psychosocial stress) necessary to complete that service. Work was calculated over three time periods (preservice, intraservice, and postservice)

and then summed to form the total for a given CPT code. The most critical element for each service was the contribution provided in the face-to-face (or skin-to-skin) encounter: the intraservice work. Hsiao's team developed typical patient vignettes for about 400 commonly performed services with the help of 100 physicians organized into 14 technical consulting groups (TCGs).[12] The physicians were nominated by >30 specialty societies in a process coordinated by the AMA. Importantly, procedural and specialty physicians made up about 85% of the TCG membership. In retrospect, the specialty supermajority in the TCGs was a logical expedient that ensured the participation of as many specialties as possible because determining the relative valuations for procedures was the unwritten, but foremost agenda. It was only later that the diversity of cognitive work became apparent to the Harvard investigators. Hsiao and Braun used these vignettes in a national survey administered to a random sample of 3,200 physicians. Participants were asked to separately compare the magnitudes of intraservice work (based on the amount of technical skill, mental/physical effort, and psychosocial stress) of a standardized vignette to a list of 20 to 30 other service vignettes selected in their specialty. Hsiao and Braun used the survey responses to established interspecialty relativity.

The TCGs matched each surveyed vignette to its corresponding CPT-4 code. Because of the limited number of CPT-4 E/M codes, multiple vignettes were assigned to each outpatient E/M service code, ranging from one to 27 in part 1 of the Harvard Study (Table 1). Even within a specialty, multiple vignettes matched to the same E/M code. For example, CPT code 90020 (office visit, new, comprehensive) matched to four distinct vignettes for family practice, two for general surgery, and five for rheumatology (Table 2). Physicians rated the cognitive work within their specialty with a general degree of agreement.[12] However, there was considerable disagreement among specialties about work and face-to-face encounter time. Braun et al[13] reported up to a threefold variation in the time and work associated with each office-based E/M code across specialties; this was an early indication that the process of collapsing a wide range of cognitive services into a small number of CPT codes was too constrained.

Linking Services Across Specialties

Next, vignettes were linked among specialties to align all physician services on a common relative-value scale. Hsiao selected a subset of 24 physicians from TCG panels, including at least one physician from each specialty. Of this group of 24, 19 were from procedure- or specialty-oriented disciplines. The final outcome of the linkage process in phase 1 was the identification of 82 cross-links in which 40 vignettes were considered the same and 42 equivalent. Hsiao reported an average difference of 13% in intraservice work values, with more than one-half of the services differing by <10%, demonstrating that a cross-linking between specialties was feasible.[14] What these numbers did not illustrate was how one specialist rated a particular code relative to other codes in his or her specialty. For example, the surgical work value for a short procedure, such as a hernia repair, was nearly six times greater than similar time spent in outpatient E/M work.[12]

Extrapolating

Hsiao et al[12] extrapolated relative values from the nearly 400 surveyed vignettes to the remaining 6,000-plus nonsurveyed CPT-4 codes. The TCGs identified families of codes that were closely related to one another, each comprising homogenous codes of which only one had been directly measured in the national survey.[15] The Harvard team relied on 1985 Medicare Part B charge data to determine the relative values assigned to service codes within these new service code families.[14] Significantly, Hsiao et al[12] noted "considerable ambiguity in the CPT-4 codes for evaluation and management services…this shortcoming is so severe that we have not been able to extrapolate the RBRVs for surveyed office and hospital visits to non-surveyed visits." Because office visits accounted for one-quarter of all physician expenditures, this was a huge shortcoming. The Harvard team concluded that a valid and

Table 1—*Total Number of Unique Vignettes Within Each E/M CPT-4 Code*

E/M Code (Pre-1992)	E/M Code (Post-1992)	Total No. Surveyed Vignettes, RBRVS Phase 1	Description
90015	99203	2	Office visit, new, intermediate
90017	99204	13	Office visit, new extended
90020	99205	27	Office visit, new, comprehensive
90040	99211	1	Office visit, established, brief
90050	99212	17	Office visit, established, limited
90060	99213	10	Office visit, established, intermediate
90070	99214	11	Office visit, established, extended
90080	99215	1	Office visit, established, comprehensive

CPT-4 = Current Procedural Terminology, 4th Edition; E/M = evaluation and management; RBRVS = Resource-Based Relative Value Scale.

Table 2—*Vignettes Assigned to CPT Code 90020 (Office Visit, New, Comprehensive)*

Specialty	Vignette
Allergy and immunology	Direct hospital admission of 62-y-old smoker, established patient, pharynx for nasal polyps
Cardiothoracic surgery	Evaluation of 50-y-old man with aortic aneurysm, surgery recommendation
Dermatology	Initial office visit, 16-y-old man with severe cystic acne, new patient
Family practice	Initial visit pregnancy 25-y-old, primigravida, history and examination
General surgery	Initial evaluation 48-y-old man, recurrent lower back pain to leg
Orthopedic surgery	Evaluation of progressive scoliosis in 13-y-old woman
OBGYN	Office visit and counseling of 34-y-old patient with primary infertility
Pediatrics	Possible sexual abuse of 5-y-old new patient
Rheumatology	Follow-up visit of 45-y-old, rheumatoid arthritis on gold
Urology	Initial evaluation and management of unexplained renal failure in 40-y-old woman

CPT = Current Procedural Terminology; OBGYN = obstetrics and gynecology.

equitable PFS would require more E/M service code choices than were available in CPT-4.[12]

The Political Origins of Physician Payment Policy

In 1986, Congress created the Physician Payment Review Commission (PPRC) (now the Medicare Payment Advisory Commission), a 13-member advisory board made up of physicians, economists, academics, and administrators to transform the Harvard Study into a viable fee schedule. The PPRC accepted the general paradigm proposed in the Harvard Study, namely that payment could be based on a relative-value scale built from component elements.[14] Malpractice insurance costs were substituted for opportunity costs, and the original model was simplified to one that added the RVUs for work, practice expense, and liability. This allowed for adjustment of each regional expense variations and was considerably more straightforward than the original Harvard model (which was multiplicative). With these modifications, RBRVS became the monetary system for physician payment, and RVUs became the coin of the realm.

The PPRC noted the outpatient E/M service code problem and proposed enhanced content descriptions,[14] but the limited number of CPT-4 E/M code choices remained. Time was added to the code descriptions to expand documentation options for each service code. For example, CPT-4 code 90020 was redefined in 1992 as CPT-4 code 99205 (office/outpatient visit, new, comprehensive, 60-min physician time)[16]; time was intended to be a proxy for intraservice work effort. However, the impact of time had a differential impact on E/M and procedural services. Over the past 20 years, there have been dramatic reductions of intraservice time for many procedures and an expansion of intraservice time for E/M services.[17]

Since 1992, new procedure service codes added to RBRVS have provided the largest source of growth.[18] This, coupled with the cap imposed on total Medicare physician payments, effectively shifted compensation away from E/M services, further compounding the payment inequities that have developed between providers who depend largely on office-based E/M service codes and all others. The trend for physicians to choose higher code levels within the existing E/M service code families reflects efforts by physicians to capture some of the increased intensity of E/M work in the face of declining E/M service code relative values.[19] With the elimination of the consultation E/M codes in 2010, CMS only confounded the issue by further restricting service code choices.[20]

Conclusions and Policy Implications

RBRVS fundamentally assumes that professional compensation is built on payment units derived from the work completed for each patient, the practice expenses, and the liability insurance costs. Relative valuation was conceptually sound and addressed the most pressing need, namely to develop an acceptable and manageable single system for physician payment. But critical foundational decisions continue to undermine its utility. First, the broad ranges of outpatient E/M activities are not captured by the current CPT code choices. There are office-based E/M services that are overpaid and underpaid. No one knows how many or by how much, but the cognitively based consultants in all specialties are the most vulnerable to the undervaluation of work intensity. Second, from the very beginning, RBRVS placed relatively high values on procedural services. Hsiao's work depended heavily on specialists who more highly rated their procedural activities with respect to their own cognitive work. Third, no effort has been made to reintroduce measures of intensity for complex outpatient E/M care.[21,22] RBRVS acknowledged this for procedure work, allowing variations in valuation to reflect higher levels of intensity for the same intraservice time. Time itself cannot be a surrogate for intensity in cognitive work. There are patients for whom the complexities of data analysis, diagnosis, and treatment are extreme and the time for reaching resolution is limited. A growing number of Medicare beneficiaries have one or more chronic illnesses with $>20\%$ having five or more chronic

conditions.[23] Fourth, CMS is responsible for ensuring that new service codes are appropriately valued and that existing codes are increased or decreased in value on the basis of valid and representative survey tools. Unfortunately, since the inception of RBRVS, the CMS has consistently accepted the RUC's recommendations without modification.[4] The RUC deliberations are not publically released for peer review and its reference data are not updated consistently to reflect improved efficiencies.[24] The RUC deliberations are not accountable to anyone other than the RUC participants. Only professional societies that are members of the AMA House of Delegates can participate in the formal RUC activities, and House of Delegates membership requires that a professional society's members also join the AMA. The composition of the RUC remains as it was originally conceived and reflects the original membership distribution of the TCGs assembled by the Harvard investigators, although these investigators concluded that the process they created did not accurately value E/M services.[25]

The unfinished agenda of RBRVS, namely a more accurate valuation of the outpatient E/M service codes, was identified by the PPRC in 1991 but then forgotten.[26] The failure to return to and redefine the diversity of cognitive services to capture the intensity of complex patient care and to establish a comprehensive set of office-based E/M families, each with separate service levels, remains the fundamental flaw of RBRVS. Importantly, roughly 150 E/M services are listed in the 2013 CPT manual, but nearly all of these are specific to the location of care (ICU, ED, etc) or are time based.[10] For outpatient care, there are five office-based service codes for new patients, five for consultations, and five for established patients. CPT continues to offer a narrow range of office-based E/M service code choices, which is in dramatic and sharp contrast to the broad range of procedure service code choices.

The Affordable Care Act of 2010 established a national objective of expanding health-care access to achieve 95% coverage by 2019. This expansion will require a robust workforce with physicians who understand fully the appropriate application of procedures and interventions and physicians with the expertise and skill to perform procedures and interventions. This will not be possible unless physician payment rates are corrected to ensure that outpatient E/M compensation is competitive with the procedural compensation. The service codes available must be redefined and accurately valued within the RBRVS paradigm. The creation of a valid national PFS is all the more important as new payment schemes evolve. All cognitively dependent specialties, such as pulmonary care, primary care, infectious diseases, rheumatology, endocrinology, neurology, and others, will continue to face compensation discrimination unless the current system is fundamentally reformed. If an Accountable Care Organization recapitulates the current PFS on a smaller scale, E/M activities will still be undervalued and undersupported.

CMS is responsible for ensuring the validity and accuracy of RBRVS and is ultimately accountable for the impact of its payment policies on Medicare beneficiaries. If the cognitively based specialties are to meet the nation's future workforce needs, it is incumbent on the agency to address deficiencies in the current PFS. At the least, the repertoire of codes for physician E/M work should be expanded to create new office-based service code families, such as (1) comprehensive primary care with service levels that reflect increasing levels of multiple-issue management and include payment for the follow-up responsibility that high levels of face-to-face care entail, (2) comprehensive consultation care that assigns value to different levels of comanagement and subsequent access for non-face-to-face consultative support, and (3) limited consultation care with a narrow scope and less ongoing care responsibility. These codes should be developed in the context of existing service codes, such as the transitional care management codes, to ensure that the boundaries of each service are well defined. CMS payment policies should be grounded in a sound and continually updated knowledge base. Service code relative values should be based on reliable survey data, drawn from the broader literature on work intensity, and developed with accountable and representative professional engagement.

Opportunities are available within existing organizations, such as the AMA CPT and RUC, to effectively address the outpatient E/M code deficiencies. For example, any professional society could propose new office-based service code families to CPT. The RUC could then provide valuations, or CMS could undertake the valuation process independently. Alternatively, CMS could propose new service codes with valuations, soliciting input from the professional community through the annual rule-making process. In the case of the CPT/RUC-centered process, it will be up to the professional organizations to become more inclusive of their nonprocedurally compensated colleagues and more willing to accept the parity of purely cognitive and predominantly technical professional services. In the case of the CMS-centered process, there is risk that the professional voice could become less valued and possibly marginalized. The ideal solution is most likely to emerge from a hybrid approach wherein CMS is explicit with its expectations for representative data collection and peer review and professional organizations strengthen the RUC with participants drawn from all of medicine to best represent Medicare beneficiaries, not just those whose organizations are

members of the AMA House of Delegates, and an understanding of the complexities of modern medical decision-making.

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