

Original Investigation | HEALTH CARE REFORM

Medicare Payment for Cognitive vs Procedural Care

Minding the Gap

Christine A. Sinsky, MD; David C. Dugdale, MD

IMPORTANCE Health care costs in the United States are rising rapidly, and consensus exists that we are not achieving sufficient value for this investment. Historically, US physicians have been paid more for performing costly procedures that drive up spending and less for cognitive services that may conserve costs and promote population health.

OBJECTIVE To quantify the Medicare payment gap between representative cognitive and procedural services, each requiring similar amounts of physician time.

DESIGN Observational analytical study comparing the hourly revenue generated by a physician performing cognitive services (*Current Procedural Terminology* [CPT] code 99214) and billing by time with that generated by physicians performing screening colonoscopy (Healthcare Common Procedure Coding System code G0121) or cataract extraction (CPT code 66984) for Medicare beneficiaries.

SETTING Outpatient medical practice.

PARTICIPANTS Medical care providers of outpatient services.

EXPOSURE Work relative-value unit assigned to physician services.

MAIN OUTCOME AND MEASURES Payment for physician services.

RESULTS The revenue for physician time spent on 2 common procedures (colonoscopy and cataract extraction) was 368% and 486%, respectively, of the revenue for a similar amount of physician time spent on cognitive care.

CONCLUSIONS AND RELEVANCE Our analysis indicates that Medicare reimburses physicians 3 to 5 times more for common procedural care than for cognitive care and illustrates the financial pressures that may contribute to the US health care system's emphasis on procedural care. We demonstrate that 2 common specialty procedures can generate more revenue in 1 to 2 hours of total time than a primary care physician receives for an entire day's work.

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The medical literature has highlighted the decline in the number of physicians entering cognitive specialties, with accompanying warnings about the impending collapse of primary care.¹ The number of physicians in training who choose the primary care field of internal medicine dropped by 50% from 1998 to 2003,² and primary care physicians (PCPs) in practice are leaving at a faster rate than other specialties.³ Increased workloads, administrative hassles, demanding time commitments, and low compensation relative to other specialties⁴ are major contributing factors.

Fewer physicians are choosing primary care fields while the needs of an aging population with multiple chronic diseases are projected to require an increase in the supply of primary care by at least one-third.⁵ This mismatch between supply and demand for PCPs has serious implications for the future of US health care. Health care costs in the United States are among the highest in the world and continue to rise. The quality of health care that Americans receive has been questioned.^{6,7} Worldwide and within the United States, health care costs are lower and quality is higher in regions with more PCPs. In addition, the quality of care is higher and costs are lower for patients whose first contact with the medical system is with a PCP.⁸

The US health care reimbursement system rewards procedural services while providing financial disincentives for physicians to spend time on cognitive care, the main professional activity of PCPs and other nonprocedural specialists. In a comparison of international health payment systems, Wilson^{9(p475)} concluded that “the current system in the United States offers little incentive for PCPs to provide the kind of care coordination that is known to improve health quality.”

Several proposed or implemented changes, including an increase in the relative value of evaluation and management (E&M) codes,¹⁰ pay-for-performance programs,¹¹ and primary care adjustment,^{12,13} may modestly address this issue, but each of these policy changes is projected to increase PCP compensation by only 1% to 10%.^{11,13,14} Herein we identify the magnitude of the payment gap for physician time spent on common procedures vs cognitive tasks.

Methods

We compared the hourly revenue generated by a physician performing exclusively cognitive services for established patients and billing by time using code 99214 from the *Current Procedural Terminology (CPT)* (a code commensurate with typical chronic illness care) with that generated by physicians performing screening colonoscopy (code G0121 of the Healthcare Common Procedure Coding System) or cataract extraction (CPT code 66984). These codes are among the top 40 services ranked by charges submitted to Medicare: the E&M CPT code 99214 is 2nd, cataract extraction is 4th, and screening colonoscopy is 36th.¹⁵

The payment for a physician service is determined by the total number of relative-value units (RVU) it is assigned. The work RVU (wRVU) for a service is intended to reflect the value of the physician-specific work. In this report we have limited our analysis to differences in payment for the physician work

reflected in wRVU; we have not addressed differences in the other components of total RVU.

The 2013 Physician Fee Schedule wRVU for CPT code 99214 is 1.50; for screening colonoscopy, 3.69; and for cataract extraction, 8.52.¹⁶ The total wRVU for cataract extraction is a bundled payment and includes 2 CPT code 99212 visits (combined, 0.96 wRVU), 2 CPT code 99213 visits (total, 1.94 wRVU), and one-half of a CPT code 99238 discharge service (0.64 wRVU). Thus, the wRVU for the cataract extraction itself is 4.98. Codes 99212 and 99213 are E&M codes used for less complicated or shorter care than code 99214. Code 99238 is used to report 30 minutes or less of hospital discharge management.

We determined the physician time associated with each service using definitions from the Centers for Medicare & Medicaid Services (CMS)¹⁷ or literature estimates.^{18–21} Careful history taking, clinical assessment, care coordination, and the management of multiple chronic conditions, commonly termed *cognitive care*, are core activities of primary care. When the billing of CPT code 99214 service is based on time, the CMS requires that 25 minutes be spent face-to-face with the patient, with more than half of that time spent counseling or coordinating care for the patient's conditions.

Literature estimates are 13.5 minutes for colonoscopy procedural time¹⁸ and 14 minutes for cataract extraction.²¹ In our calculations, we estimated an additional 10 minutes per patient for each service, including same-day non-face-to-face activities considered by CMS to be integral to providing the service. These bundled activities include reviewing the patient's medical record, documenting the visit, speaking with family members, and coordination of care with other health care providers. We calculated physicians' hourly revenue for each of these services by multiplying the number of services performed per hour by the wRVU assigned to that service and then by the 2013 CMS conversion factor (CF) of \$34.02 per RVU.²²

Results

Using the 2013 RVU schedule¹⁶ and the CMS CF,²² cognitive care (CPT code 99214) generates an hourly revenue of \$87, whereas procedural care generates an hourly revenue of \$320 (screening colonoscopy) or \$423 (cataract extraction) (Table 1). We evaluated the effect of differing the duration of cognitive services by analyzing E&M visits of varying length. Each visit length is associated with a different level of service and wRVU per visit. At each visit length, the hourly revenue for cognitive care is markedly lower than the revenue for procedural services (Table 2).

We also evaluated the effect of varying lengths of procedural care times using literature-reported times. If even the longest published times for performing these procedures are used, procedural care generates more than 200% of the revenue that cognitive care generates per unit of physician time (Table 3).

Last, we compared data from our model with data from the Relative Value Scale Update Committee (RUC) (Table 4).²³ Analysis of the revenue using RUC data yields a smaller difference between the revenue for cognitive and procedural services owing to substantially longer times assigned by the RUC to the procedural services.

Table 1. Comparison of Hourly Medicare Physician Revenue for 3 Services

Service to Medicare Patients	Total Same-Day Time, min ^a	wRVU per Service	wRVU per Hour	Hourly Revenue, \$	% of Cognitive Service
Cognitive service	35	1.50	2.57	87	
Screening colonoscopy	23.5	3.69	9.42	320	368
Cataract extraction	24	4.98	12.45	423	486

Abbreviation: wRVU, work relative-value unit.

^a Determined using the Centers for Medicare & Medicaid Services definitions¹⁷ or literature estimates.^{18,21}

Table 2. Sensitivity Analysis of Physician Revenue for E&M Services

Service to Medicare Patients, CPT Code	Total Time for Service, min ^a	wRVU per Service	wRVU per Hour	Hourly Revenue, \$
99212	15	0.48	1.92	65
99213	20	0.97	2.91	99
99214	35	1.50	2.57	87
99215	50	2.11	2.53	86

Abbreviations: CPT, Current Procedural Terminology; E&M, evaluation and management; wRVU, work relative-value unit.

^a Time for service was the Centers for Medicare & Medicaid Services

face-to-face time for billing by time plus an estimated 5 minutes of same-day preservice and postservice times for codes 99212 and 99213 and 10 minutes of same-day preservice and postservice times for codes 99214 and 99215.

Table 3. Sensitivity Analysis of Physician Revenue Using Literature Estimates for Time for Colonoscopy and Cataract Extraction

Service to Medicare Patients, Source	Time for Service, min ^a	wRVU per Service	wRVU per Hour	Hourly Revenue, \$	% of Cognitive Care
Screening colonoscopy					
Wexner et al, ¹⁹ 2001	32.7	3.69	6.77	230	264
Nelson et al, ²⁰ 2002	40.6	3.69	5.45	185	212
Cataract extraction					
Gogate et al, ²¹ 2003 (lowest time)	21	4.98	14.23	484	556
Gogate et al, ²¹ 2003 (highest time)	27	4.98	11.06	376	432

Abbreviation: wRVU, work relative-value unit.

^a Indicates published times plus 10 minutes for same-day preservice and postservice times.

Table 4. Comparison of Hourly Physician Revenue Using RUC Estimates for Time for Cognitive Service and Procedures

Service to Medicare Patients	Time, min	wRVU per Service	wRVU per Hour	Hourly Revenue, \$	% of Cognitive Service
Cognitive service ^a	40	1.50	2.25	77	
Screening colonoscopy	75	3.69	2.95	100	130
Cataract extraction	84	4.98	3.56	121	157

Abbreviations: RUC, Relative Value Scale Update Committee; wRVU, work relative-value unit.

^a Indicates Current Procedural Terminology code 99214.

Discussion

The times used by the RUC (Table 4) show a cognitive-procedural differential that is considerably less than our calculations using published data. The RUC has 31 members, 22 of whom are appointed by national medical specialty societies, 5 of whom are appointed by the American Medical Association or its representative bodies, and 4 of whom are 2-year rotating members, with one of these positions reserved for a primary care representative. Thus, although PCPs constitute nearly half the physician population, they represent only 16% of the voting members of the RUC.^{4,24} A detailed review of the RUC process is beyond the scope of this report, but that process has significant methodological limitations.^{4,25,26} The RUC method uses self-reported times for services in which the purpose of the survey (to establish payment rates) is known to the respondents^{4,25} who stand to benefit by inflated estimates.

McCall et al²⁷ found that RUC survey data overestimated the procedural time by an average of 31 minutes across 60 procedures when compared with objective data from operative logs.

We analyzed complex chronic care based on CPT code 99214 as billed by time. The E&M services may also be billed on the basis of content (“intensity”), that is, the complexity of the history, examination, and decision making. A significant difference in same-day time between these 2 methods for the level of service determination would affect our analysis. Available data for office visits in primary care demonstrate concordance between observed intraservice time and the Medicare requirement when billing by time.^{27,28}

Our analysis identifies the difference in hourly revenue for procedural vs cognitive services. The absolute difference in annual compensation for PCPs, gastroenterologists, and ophthalmologists will vary based on the blends of cognitive and procedural services within each specialty. Our analysis may underestimate the differential in revenue available to physi-

cians for cognitive care vs procedural or surgical care in several important respects.

First, to the degree that same-day previsit and postvisit work (eg, reviewing hospital records and other physicians' notes, responding to postappointment laboratory findings) is greater for cognitive care for complex chronic illness than for screening colonoscopy or uncomplicated cataract extraction, our findings underestimate the payment gap between these cognitive and procedural services. Limited data about physician work intensity support this possibility.^{29,30}

Second, considerable interappointment work without additional revenue occurs during cognitive care. For example, a patient with diabetes and atrial fibrillation who is receiving anticoagulation and insulin therapy typically requires significant between-visit care, which CMS considers a bundled service and thus not a separately reimbursed service. To the extent that interappointment physician work for cognitive care exceeds that for procedural care, our findings underestimate the payment gap. Limited data suggest that surgeons spend less time on work without the patient present than do cognitive fields such as family medicine and internal medicine.²⁹

Third, our model assumes a constant CF for physician services, which is true for Medicare. However, some commercial insurers use a higher CF for procedural services than for cognitive services.²⁵ For example, in 2009, Wellmark of Iowa used a CF of \$47.75/RVU for E&M services and \$65/RVU for screening colonoscopy (Colleen Olson-Davis, FAHM, e-mail communication, May 12, 2009). We are not aware of any insurance plan that applies a larger CF to E&M services.

We created a model to examine how Medicare values cognitive vs procedural physician work. Depending on the comparison, Medicare values physician time performing procedures 3- to 5-fold more than physician time performing cognitive services. Our model demonstrates that an ophthalmologist will receive more revenue from Medicare for 4 cataract extractions, typically requiring 1 to 2 hours of time, than a PCP will receive for an entire day of delivering complex care for chronic illness to Medicare patients.

Medicare payment policy creates incentives for physicians who perform procedures to avoid providing cognitive care in favor of performing procedures. According to our model, a gastroenterologist is compensated almost 4 times more for time spent performing a procedure than for time spent evaluating the need for the procedure itself or for time spent managing complex illnesses within gastroenterology that do not require a procedure.

Public payers, including Medicare, directly determine approximately one-third of all physician income³¹ and are thus major contributors to the cognitive-procedural payment gap. Because most commercial payers use the same payment method as Medicare, payment disparities that originate with Medicare policy are extended to most physician payment policies.

The Medicare Payment Advisory Commission (MedPAC)^{32(p113)} has stated that "beneficiary access to undervalued services may be threatened if providers are confronted with incentives to avoid furnishing them relative to more profitable services." We believe that the overvaluing of procedural care relative to cognitive care may have contributed to an increase in consumption of procedural services and is worthy of further evaluation. Others, including the National Commission on Physician Payment Reform, have come to a similar conclusion.³³

Conclusions

Medicare reimburses physicians for procedural care at 368% (screening colonoscopy) and 486% (cataract extraction) of the rate of cognitive care. This relative overvaluing of physician time spent on procedures has multiple effects on the health care system. This value discrepancy is a major contributor to the decline in the number of physicians choosing primary care careers. Such a discrepancy may also contribute to an excess of expensive procedural care. We believe the strong financial incentives described compromise access to primary care and ultimately contribute to the lower quality and higher costs experienced in the United States compared with other developed countries.^{1,8}

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Invited Commentary

Using Science to Shape Medicare Physician Payment

Paul B. Ginsburg, PhD

In the 1980s, Congress decided that the long-standing method of setting payments for physician services, which was in use in Medicare, many Medicaid programs, and much of commercial insurance, was systematically undervaluing cognitive services in favor of procedures. Concerns were expressed about disincentives to enter or remain in primary care, especially at a time

when the role of primary care should have been increasing. These concerns are eerily similar to those expressed today. The previous payment method was a passive one of screening billed charges to make sure that they were in line with other charges for the

same service in the community. The method accepted the community norms. Congress called for studies of approaches to reform payment and created the Physician Payment Review Commission, which later became the Medicare Payment Advisory Commission (MedPAC), charging it with developing a proposal to reform Medicare physician payment.

Responding to Congress, the Health Care Financing Administration supported a study by Hsiao and colleagues¹ at Harvard University. The study created relative work values for physician services on the basis of surveys of physicians in different specialties by asking respondents to rate the time and intensity of effort involved in 20 to 25 vignettes that described patients and what the physician did. Results for specialties were linked through overlapping services.¹ The Physician Payment Review Commission endorsed the study and created the rest of the fee schedule, consisting of relative values for practice expense and geographic adjusters and policies on balance billing. Congress enacted the Medicare physician fee schedule in 1989, which was implemented beginning in 1992. In a concession to the American Medical Association, which supported the reform, the organization was given a role as a convener of specialty societies to refine and update relative work values.

Analyses showed that the reform led to large shifts in payment away from procedures and toward primary care. From 1991 to 2002, Medicare payment rates for primary care services increased in excess of 40% in relation to rates for physician services overall.² Over time, Medicaid programs and most commercial insurers adopted the relative value scale used by Medicare, so the influence of this reform has been very broad. Along with the rapid growth in managed care, which at the time used gatekeeper models ex-



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