

Unintended Consequences of Eliminating Medicare Payments for Consultations

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Background: Prior to 2010, Medicare payments for consultations (commonly billed by specialists) were substantially higher than for office visits of similar complexity (commonly billed by primary care physicians). In January 2010, Medicare eliminated consultation payments from the Part B Physician Fee Schedule and increased fees for office visits. This change was intended to be budget neutral and to decrease payments to specialists while increasing payments to primary care physicians. We assessed the impact of this policy on spending, volume, and complexity for outpatient office encounters in 2010.

Methods: We examined outpatient claims from 2007 through 2010 for 2 247 810 Medicare beneficiaries with Medicare Supplemental (Medigap) coverage through large employers in the Thomson Reuters MarketScan Database. We used segmented regression analysis to study changes in spending, volume, and complexity of office encounters adjusted for age, sex, health status, secular trends, seasonality, and hospital referral region.

Results: “New” office visits largely replaced consultations in 2010. An average of \$10.20 more was spent per beneficiary per quarter on physician encounters after the policy (6.5% increase). The total volume of physician encounters did not change significantly. The increase in spending was largely explained by higher office-visit fees from the policy and a shift toward higher-complexity visits to both specialists and primary care physicians.

Conclusions: The elimination of consultations led to a net increase in spending on visits to both primary care physicians and specialists. Higher prices, partially owing to the subjectivity of codes in the physician fee schedule, explained the spending increase, rather than higher volumes.

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IN AN ERA OF COST CONTROL, PHYSICIAN fees are under heavy scrutiny.¹⁻⁵ The Medicare Physician Fee Schedule,⁶ which lists the fees that Medicare pays for each physician service under Part B of the program, contains large payment differences between primary care and specialty services. Stemming from the resource-based relative value system, these fee differences have been linked to a substantial income gap between primary care physicians (PCPs) and specialists and to the shortage of medical students entering primary care.⁶⁻¹² This has motivated efforts to reform physician payment toward increasing fees for primary care.

On January 1, 2010, the Centers for Medicare & Medicaid Services (CMS) instituted a targeted policy to redistribute Medicare payments from specialists to PCPs in a budget-neutral manner. Specifically, CMS eliminated payments for consultations from the Medicare Physician Fee

Schedule, which were billed more frequently by specialists, and raised fees for office visits, which were billed more frequently by PCPs.¹³

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Similar to billing for consultations, physicians bill for office visits (“evaluation and management”) using a set of codes that contains 5 levels of clinical complexity. This is true for both “new” patient office visits and “established” patient office visits. Consultations had long commanded higher payments than office visits at each level of clinical complexity. In 2009, for example, Medicare paid \$124.79 on average for a consultation of medium complexity, compared with \$91.97 for a new patient office visit and \$61.31 for an established patient office visit of similar complexity.

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In place of consultations, the 2010 policy required physicians to bill all encounters as office visits. While fees for office visits were simultaneously increased, they remained well below prior consultation fees, with new office visits 16% to 26% lower and established office visits 42% to 61% lower than their consultation counterparts from 2009 (eTable 1; <http://www.jamainternalmed.com>). The increase in office visit fees averaged approximately 5% to 6% (eTable 2).

The CMS designed the policy to be budget neutral, implying a transfer of Medicare dollars from specialists to PCPs.¹³ Budget neutrality was based on an assumption that physicians would bill for office visits of equal complexity as they had done for prior consultations.¹⁴ We evaluated the effects of this policy on spending, volume, and intensity of coding for office encounters in the first year of implementation. We hypothesized that cutting physician fees may have had unintended consequences for spending on physician encounters through either increased volume or intensity of coding.

METHODS

STUDY POPULATION

Our population consisted of Medicare beneficiaries drawn from the Thomson Reuters MarketScan Medicare Supplemental and Coordination of Benefits claims Database, 2007 through 2010. This database consists of a large convenience sample of US Medicare beneficiaries with Medicare Supplemental (Medigap) coverage through large employers. For these beneficiaries, Medicare is the primary payer, and all of their Medicare claims are reported in the data.¹⁵

We used a database containing 2.9 million beneficiaries with any diagnosis related to diabetes or cardiovascular conditions or prescriptions for any cardiovascular or cholesterol-reducing drugs (eMethods). From this population, we excluded 326 491 beneficiaries who were not enrolled for at least 1 calendar year. In addition, we excluded 311 271 beneficiaries who were enrolled in health maintenance organization or other plans paid through capitation. Physicians for beneficiaries in capitated plans may not be directly affected by the fee schedule changes. Our final analytic sample comprised 2.2 million beneficiaries who were enrolled for at least 1 year. In sensitivity analyses, we further restricted the sample to 798 262 beneficiaries who were continuously enrolled for all 4 years in the data. We compared characteristics of the population before and after the intervention using *t* tests for continuous variables and the Pearson χ^2 test for categorical variables.

STUDY DESIGN

We used an interrupted time series (segmented regression) design to estimate changes in spending, volume, and intensity of coding associated with the Medicare policy for all 3 types of outpatient encounters (consultations, new patient office visits, and established patient office visits). The preintervention period was from 2007 through 2009. The postintervention period was through 2010.

In the Medicare Physician Fee Schedule, determination of the clinical complexity of a patient-physician encounter is somewhat subjective. For example, a level 1 new patient office visit is characterized by a “problem-focused” history and physical examination involving “straightforward” medical decision making, typically requiring 10 minutes. In contrast, a level 5 new

patient office visit entails a “comprehensive” history and examination involving decision making of “high complexity,” typically requiring 60 minutes. These rough time guidelines are not binding. Any given level of complexity could be appropriate if certain elements of a visit (eg, comprehensive history) are met (eTable 3). We examined changes in the coding of complexity associated with the policy, adjusting for health status, baseline trends, and other covariates.

We also assessed the policy’s effect by specialty category. Specifically, we assigned claims to the PCP category if the physician’s specialty was internal medicine, family medicine, geriatric medicine, or preventive medicine. These physicians accounted for about half of the claims. The remaining half was assigned to the specialist category, with a small fraction of non-physicians and facility providers excluded. Our analyses used all outpatient claims and included both professional and facility fees for all encounters.

VARIABLES

Spending (in 2010 US dollars) was computed from claims-level total payments, including employer and beneficiary cost-sharing. *Volume* was the number of encounters. Each encounter was a unique instance of a consultation or office code for a unique beneficiary on a unique day. *Complexity* was defined as the encounter’s level of complexity.

Potential confounding variables included age, sex, health risk score, secular trends, indicators for quarter of the year (to account for seasonality), and indicators for the beneficiary’s hospital referral region (HRR). We calculated health risk scores using the CMS hierarchical condition categories (CMS-HCC) model, which is used for formal risk adjustment of payments to Medicare Advantage plans.¹⁶ This model generates a risk score based on contemporaneous age, sex, and clinical diagnoses. Adjusting for risk helps reduce bias in the nonrandomly drawn sample of Medicare beneficiaries. *Hospital referral regions* are hospital markets constructed based on where patients receive care and are commonly used in the study of geographic variations in health care spending and utilization.¹⁷⁻¹⁹ Since cost-sharing also affects utilization of services, we included each beneficiary’s cost-sharing as a percentage of total spending in our model as a sensitivity analysis. Cost-sharing is a variable unique to the MarketScan Medicare claims database and allows us to test for the effect of patient-side financial incentives. This is an advantage over the traditional Medicare Part B claims data.

STATISTICAL ANALYSES

All statistical analyses were conducted at the beneficiary-quarter level. We used a multivariate interrupted time series (segmented regression) model. Independent variables included age categories, interactions between age categories and sex, CMS-HCC risk score, indicators for quarter and HRR, secular trend, indicator for year 2009, and indicator for year 2010. The indicator for year 2010 produced our estimate of the policy effect. We added an indicator for year 2009 because there was a small legislative payment increase in the 2009 Medicare Physician Fee Schedule that affected all encounters. The coefficient on the year 2010 indicator reflects the change in the average level of the outcome after the policy took effect, controlling for preintervention trends. Standard errors (SEs) were clustered at the HRR level, which produces more conservative SEs than models with SEs clustered at the individual level.^{20,21}

We conducted a number of sensitivity analyses, including alterations to the statistical model (such as omitting indicators for HRR or quarter of the year) and restricting the sample to continuous 4-year enrollees (eTable 4). All analyses were con-

ducted using STATA software, version 11 (StataCorp LP). Results are reported with 2-tailed *P* values. The Harvard Medical School office for research subject protection approved the study protocol.

RESULTS

STUDY POPULATION

There were 2 247 810 unique Medicare beneficiaries who were continuously enrolled for at least 1 year during the study period. **Table 1** lists the age distribution, sex, CMS-HCC risk scores, and region of residence for the beneficiaries before and after implementation of the 2010 policy.

SPENDING

In the first year, the policy eliminated an average of \$18.52 per beneficiary per quarter (95% CI, -\$19.48 to -\$17.55) ($P < .001$) in consultation spending. At the same time, spending increased by \$13.64 (95% CI, \$12.89 to \$14.40) ($P < .001$) on new patient office visits and \$15.08 (95% CI, \$13.56 to \$16.60) ($P < .001$) on established patient office visits per quarter for each beneficiary, an increase of 131% and 12%, respectively. Established visits comprised the majority of physician encounters. On net, spending on all physician encounters was higher by \$10.20 per beneficiary per quarter after the policy (6.5% increase) controlling for preexisting trends (95% CI, \$8.58 to \$11.82) ($P < .001$) (**Table 2**).

Figure 1 shows unadjusted spending by specialty. Prior to the elimination of consultations, average spending on specialist consultations was 3-fold higher than on PCP consultations. As consultations were converted to new office visits, spending on new office visits to specialists saw a larger increase than that for PCPs in 2010 (Figure 1A). Spending on established office visits increased for both PCPs and specialists after the policy was implemented (Figure 1B), driving an increase in overall spending for both groups. Our statistical model showed that 58% of the increase in spending was attributable to PCP encounters, and 42% to specialist encounters ($P < .001$).

VOLUME

After Medicare's policy took effect, the volume of consultations decreased by 11.4 per 100 beneficiaries per quarter ($P < .001$) (essentially 100%). At the same time, the volume of new office visits rose by 8.7 per 100 beneficiaries per quarter ($P < .001$) (a 92% increase), substituting for the majority of consultations that were eliminated (Table 2). This was consistent with unadjusted trends (**Figure 2**). The volume of established office visits increased by a statistically insignificant 1.3 per 100 beneficiaries per quarter ($P = .19$) (1%). On net, there was no significant change in the total volume of encounters (-1.4 per 100 beneficiaries per quarter; $P = .18$) (Table 2). Subgroup findings for PCPs and specialists were consistent with overall results.

Table 1. Characteristics of the Study Population^a

Characteristic	Medicare Beneficiaries (n = 2 247 810)	
	Before Elimination of Consultations (2007-2009)	After Elimination of Consultations (2010)
Age, mean (SD), y	75.0 (7.4)	75.5 (7.4)
Age distribution, y		
65-69	29.9	26.8
70-74	22.2	22.8
75-79	20.4	20.4
80-84	15.7	16.5
≥85	11.7	13.4
Male sex	45.1	45.5
CMS-HCC risk score, ^b mean (SD)	0.56 (0.20)	0.52 (0.21)
Region of residence ^c		
Northeast	14.6	14.5
North central	38.9	44.2
South	34.3	32.3
West	12.1	8.9

Abbreviation: CMS-HCC, Centers for Medicare & Medicaid Services Hierarchical Condition Category.

^aUnless otherwise indicated, data are reported as percentages of Medicare beneficiaries; we compared variables before and after the intervention using *t* tests for continuous variables and the Pearson χ^2 test for categorical variables.

^bThe CMS-HCC risk score is the concurrent risk score calculated from claims-level age, sex, and diagnoses using the CMS-HCC system. The typical average risk score in a claims database is around 1.0. On office-based encounter claims, however, the average risk score will tend to be lower because the diagnoses recorded on these claims are typically less severe than those on claims for procedures or other services.

^cStates represented by region of residence: Northeast includes CT, MA, ME, NH, NJ, NY, PA, RI, and VT; North Central includes IA, IL, IN, KS, MI, MN, MO, NE, ND, OH, SD, and WI; South includes AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, and WV; West includes AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, and WY.

COMPLEXITY

Figure 3 displays the discrete jump in coded complexity of encounters before and after January 2010. Because consultations were largely replaced by new patient office visits (Figure 2), these 2 types of encounters were combined, as shown in Figure 3. In adjusted analyses, our statistical estimates show a discontinuous rise of 0.03 (scale, 1.00 to 5.00) in the average level of complexity for consultations and new office visits in 2010 ($P < .001$). We also found an increase of 0.01 in the average complexity of established office visits ($P < .001$). On net, the magnitude of this coding effect for all encounters was 0.01 ($P < .001$), driven by the larger volume of established visits. These estimates control for the underlying rise in the secular trend of complexity over this 4-year period (Figure 3). Similar results were found among the continuously enrolled subsample.

Converting this coding effect to dollars, our model suggests that coding accounted for about one-third of the overall increase in spending. Given no significant changes in volume, our results suggest that the other two-thirds of the overall spending effect was attributable to the fee increase for each of the office visit codes embedded in the 2010 policy.

Table 2. Average Spending, Volume, and Coded Complexity of Outpatient Physician Encounters Before and After 2010^a

Characteristic	2007-2009	2010	Difference		
			Unadjusted	Adjusted ^b	P Value
Spending per beneficiary per quarter, \$US					
All encounters	157.04	166.74	9.7	10.20	<.001
Consultations ^c	19.67	0.30	-19.37	-18.52	<.001
Office visits, new patient	10.39	23.67	13.28	13.64	<.001
Office visits, established patient	126.98	142.77	15.79	15.08	<.001
Volume, per 100 beneficiaries per quarter					
All encounters	192.4	195.3	2.9	-1.4	.18
Consultations ^c	11.7	0.2	-11.5	-11.4	<.001
Office visits, new patient	9.5	18.2	8.7	8.7	<.001
Office visits, established patient	171.2	176.9	5.7	1.3	.19
Complexity level, 1-5					
All encounters	3.29	3.34	0.05	0.01	<.001
Consultations and office visits, new patient	3.34	3.40	0.06	0.03	<.001
Office visits, established patient	3.29	3.34	0.05	0.01	<.001

Abbreviations: CMS-HCC, Centers for Medicare & Medicaid Services Hierarchical Condition Category; HRR, hospital referral region.

^aAll patients were Medicare beneficiaries with Medicare Supplemental coverage. The centers for Medicare & Medicaid Services eliminated payment for consultation codes on January 1, 2010.

^bSpending adjusted to 2010 dollars. Adjusted differences are from a model controlling for age, sex, CMS-HCC risk score, preexisting trends, seasonality, and HRR fixed effects. Standard errors are clustered by HRR.

^cThe number of consultations in 2010 was not exactly 0 because of the claims run-out period.

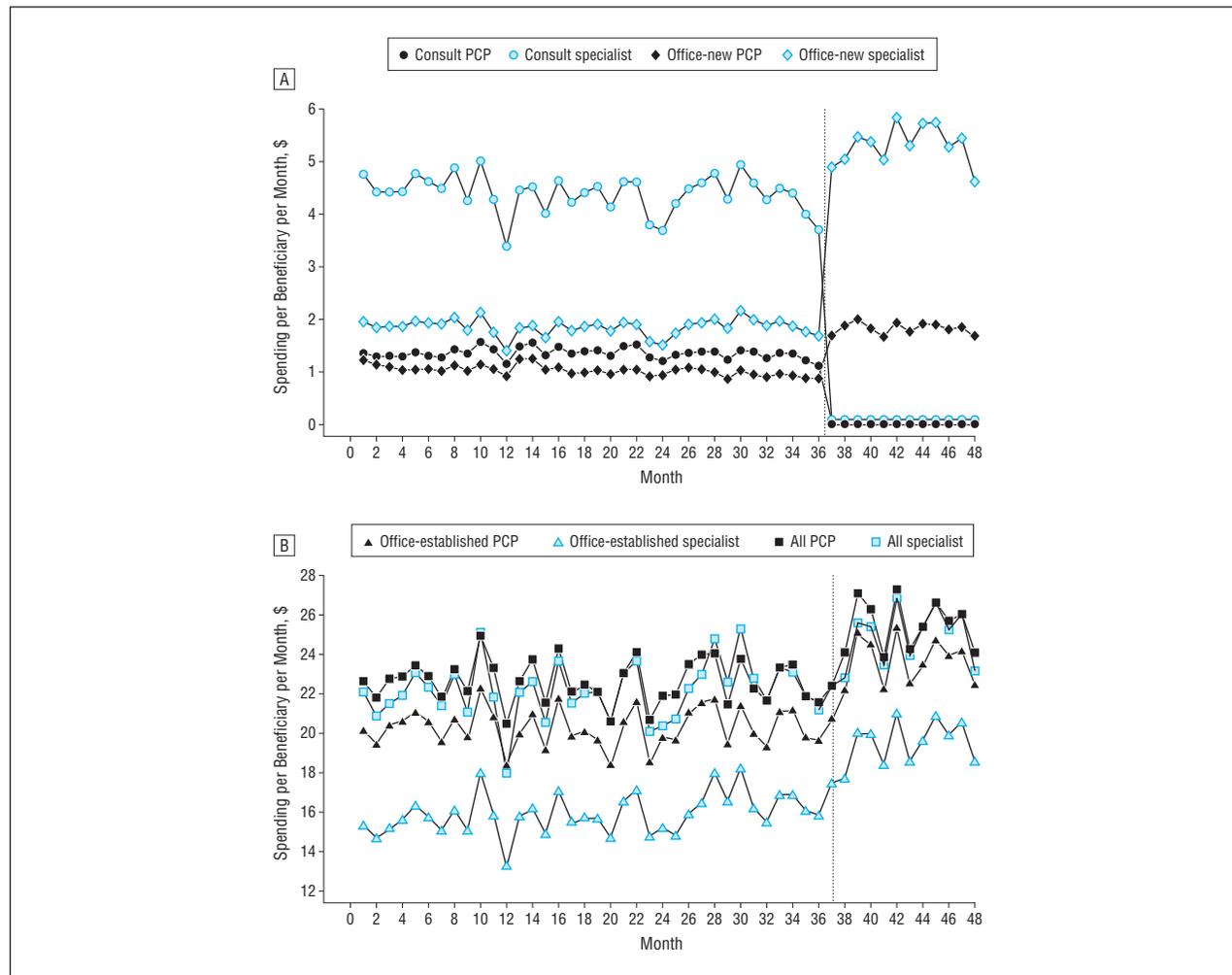


Figure 1. Unadjusted spending per beneficiary per month (2010 dollars) on outpatient physician encounters from January 2007 through December 2010. Encounters are categorized into primary care physician (PCP) and specialist encounters. A, "New" patient office visits. B, "Established" patient office visits and total spending on all encounters. The horizontal line represents the implementation date of the new Medicare physician fee schedule.

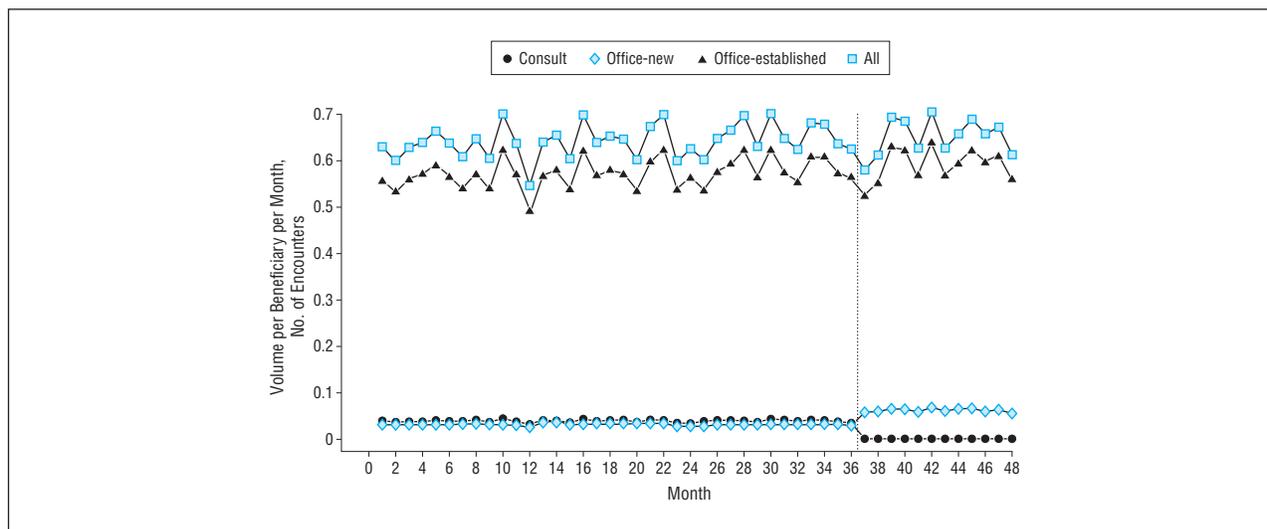


Figure 2. Unadjusted encounter volume per beneficiary per month from January 2007 through December 2010. All primary care physician (PCP) and specialist encounters are included. The horizontal line represents the implementation date of the new Medicare physician fee schedule.

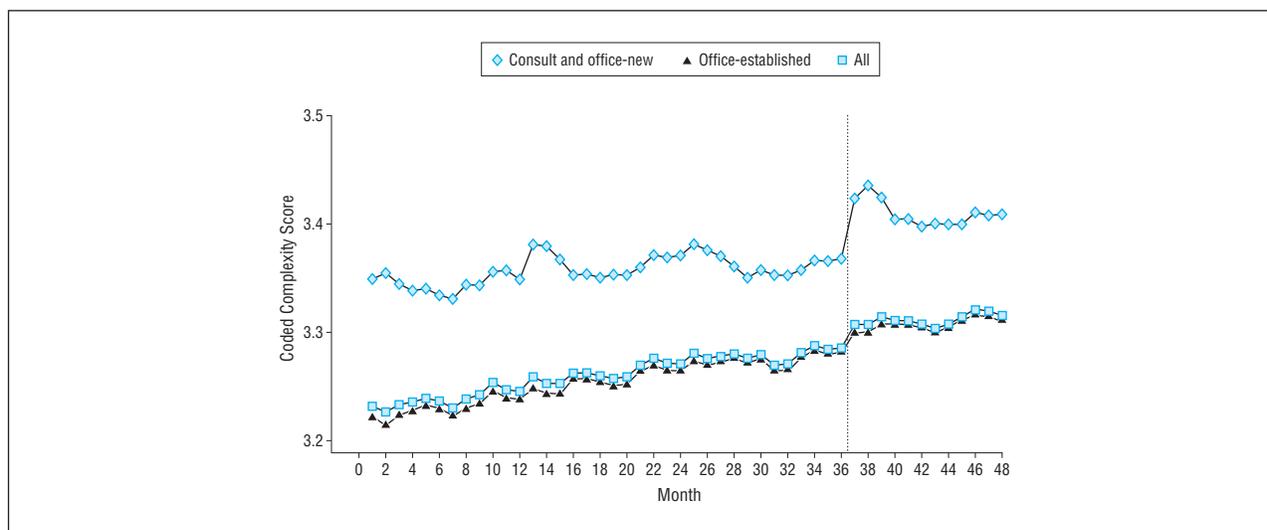


Figure 3. Average unadjusted complexity score of encounters from January 2007 through December 2010. Complexity scores ranged from 1.0 to 5.0. All primary care physician (PCP) and specialist encounters are included. Consultations and new office visits are averaged together because new office visits largely substituted for consultations after the new fee schedule took effect. The horizontal line represents the implementation date of the new Medicare physician fee schedule.

COMMENT

Medicare's elimination of consultations was associated with a 6.5% increase in overall spending for outpatient encounters in 2010. This increased spending was explained by higher fees paid for office visits and by increased intensity of coding. Our results suggest that the policy did not achieve its goal of budget neutrality in the first year. However, it did appear to narrow the gap in Medicare payments for office encounters between PCPs and specialists. Of the overall increase in spending, PCPs accounted for a greater proportion than specialists (58% vs 42%). Thus, since specialists received more income from consultations than PCPs did before 2010, the relative income gap was effectively narrowed. This gap applies only to income from office encounters. Whether the gap in total Medicare reimbursements between PCPs and

specialists changed depends on all other physician services. The overall discrepancy in Medicare payments derives largely from procedural services, which this policy does not address.

In contrast to previous studies of Medicare fee cuts,²²⁻²⁶ we did not observe a volume increase by specialists in response to the fee cut. There are several potential explanations for this finding. First, relative to their fees for procedures and other services, office visit fees for specialists may be low enough that extra volume is not profitable. This explanation may be more likely for procedural specialists as opposed to cognitive specialists whose portfolios are dominated by office-based care. Any pressure to increase volume may have been directed to other, perhaps more profitable, services. We were unable to systematically test for such potential "spillover" effects owing to other policies that were simultaneously in place

in 2010, such as Medicare fee cuts in certain radiology and cardiology imaging services, which were directly impacting utilization in those service areas.

Second, volume may have remained unchanged because coding for higher-complexity visits allowed physician specialists to make up for about one-third of the fee cut through changes in coding. Importantly, this change in coding complexity need not reflect coding at a higher-than-appropriate level. Given the variety of definitions governing the complexity of encounters (eTable 3), a physician who codes based on time may justifiably determine that in place of a level 3 consultation (40 minutes), an appropriate substitute is a level 4 new patient office visit (45 minutes) rather than a similar level 3 new patient office visit (30 minutes).

Third, volume may not have responded because most physicians are already at capacity with office visits. Thus, it would be difficult to increase the number of visits without working longer hours or shortening the length of visits, and shorter visits would earn a lower fee.

These explanations highlight the importance of the interpretation of coding definitions in the Medicare Physician Fee Schedule, which are also widely used by commercial insurers. A policy that aims to achieve savings by targeting only the price (fees) component of health care spending may be susceptible to coding changes that (at least partially) offset its intended effects. Increased coding intensity can be difficult to separate from inappropriate “upcoding,” even after adjusting for health risk scores, owing to the flexibility in code definitions.

Our study has several potential limitations. First, the population contains only Medicare beneficiaries who have employer-sponsored supplemental (Medigap) coverage. Thus, results may not generalize to Medicare beneficiaries without such coverage. Second, the MarketScan Medicare Supplemental population is derived mostly from large employers. Former employees of small firms and formerly self-employed beneficiaries are not represented. However, our comparisons with the Medicare Expenditure Panel Survey Medicare Supplemental population yielded similar age, sex, geography, and utilization distributions. In addition, our sample was not randomly selected from the MarketScan database; inclusion criteria captured about half of available beneficiaries (eMethods). However, all analyses were adjusted for risk using the nationally representative CMS-HCC risk score system. Our results were also robust to sensitivity analyses within each age subcategory (not shown).

The policy’s effects in the first year may not generalize to the long term. For example, the increase in office visit fees might have encouraged PCPs to see more complex patients and refer them less often to specialists. In addition, the relatively high volume of new office visits to specialists may decrease as patients make repeat visits and become established.

Our evaluation of Medicare’s elimination of consultations offers potential lessons for policymakers. Primarily, the volume effects associated with fee cuts will depend on the nature of the service. Office visits may be less subject to volume changes owing to capacity issues. In contrast, the recent 10-year proposal of the Medicare Payment Advisory Commission to cut specialist fees while

freezing PCP fees, which would affect all physician services, would more likely be associated with volume changes.²⁷ Finally, the inherent flexibility and subjectivity of code definitions could lead to potentially undesirable coding behavior in response to fee-based policies, as numerous areas in the physician fee schedule feature a gradient of service intensities captured by a set of closely related codes.

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