Medicare's Role in Determining Prices throughout the Health Care System

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Abstract

Prices set by fee-for-service Medicare have a direct effect on prices paid by private insurers throughout the health care system. While this link is widely recognized, there is disagreement about whether higher Medicare prices lead to lower or higher prices for private health insurance. We review the evidence that informs this debate. Next, we define the "optimal" prices as the prices corresponding to demand in a competitive market with insurance policies that pay lump-sum transfers tied to illness. Real-world Medicare prices do not correspond to these optimal prices. We identify a number of problems with the approach that the Centers for Medicare and Medicaid Services use to set Medicare prices. But even if these problems could be solved, a pricing system based on administrative data that attempts to create the semblance of market prices will always be problematic. The paper closes with suggestions that might move real-world Medicare prices closer to the optimal prices.

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Fee-for-service (FFS) Medicare is the nation's largest health insurance program, enrolling 38.1 million aged and disabled beneficiaries in 2014 (CMS 2014a). Although private health plans have made inroads in Medicare, FFS is likely to retain a large share of all Medicare enrollees. FFS Medicare enrollment may grow—irrespective of its market share—as more baby boomers born between 1945 and 1960 reach age 65.

FFS Medicare pays providers a fee (price)[1] for each service it delivers. And it delivers a lot of services. FFS Medicare processes more than 200 million Part A claims each year, mainly for inpatient hospital and home health care services. The annual volume of Part B claims (mainly for physicians' services) is a little more than 1 billion. On average, that is almost 137,000 claims per hour (CMS 2014a).

These claims represent a staggering variety of services. For example, the Part B fee schedule for physicians recognizes more than 10,000 distinct services.[2] Each of these prices is set by an administrative process that attempts to discern the cost of producing that service in terms of labor time, effort, and practice costs.

Medicare prices substantially influence the prices that private-sector insurers pay for services. To save time and effort in developing their own fee schedules, many private payers

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[1] We use the terms *fees* and *prices* interchangeably. Medicare fees can range from payment for an office visit to payment for a large bundle of inpatient services under the prospective payment system for hospitals.
[2] We refer to *physician payment* throughout the paper, but the Part B fee schedule actually sets payment for many types of health care providers.

have adopted the Medicare prices.[3] Even if they do not use the Medicare fee schedules, private payers are affected when Medicare changes prices. When the elephant in the room sneezes, everyone notices, and many catch cold.

This paper has four purposes. First, we explain the relationship between the prices that Medicare pays and the prices paid by private health plans.[4] That allows us to analyze the effects of the reduction in Medicare prices required by the Patient Protection and Affordable Care Act of 2010 (ACA) on the prices paid by private health plans.[5] Second, we define the optimal prices for Medicare and private insurers and the problems encountered in the pursuit of optimal prices. Third, we explain how Medicare prices are set in the real world and the problems created by that approach. Fourth, we examine different ways that FFS Medicare could set prices that are closer to the optimal prices.

I. What Is the Relationship between Medicare Prices and Private Prices?

The relationship between Medicare prices and prices paid by private health plans is a topic of long-standing disagreement among health economists. This disagreement is important to investigate and resolve because the ACA contains important downward adjustments in the prices that Medicare pays to hospitals, and existing legislation calls for reductions in Medicare physician prices.

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[3] Private payers may use different conversion factors, which turn the relative values of different services into payment amounts, or negotiate fees for individual services. We review the relationship between fees for general practitioners and specialists in private health plans and Medicare in section III.
[4] We focus on FFS Medicare, although the inquiry could be expanded to include Medicaid and other government health care programs.
[5] The ACA payment changes are explained in the appendix.

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Two related but not wholly consistent models exist. We refer to the two models as the *standard economic model* and the *cost-shifting model*. The two models have many common assumptions:

- There are two types of health plans: FFS Medicare and private plans. More than one plan of each type may exist. A provider with market power can "price discriminate" between privately insured patients and Medicare patients because medical care cannot be resold.

- The price elasticity of demand can be different for patients with different plans, resulting in different prices being charged to patients with different plans.[6]

- Medicare patients have private supplementary (Medigap) insurance that pays most of their cost sharing.[7] Thus, the quantity of Medicare services demanded is relatively price-insensitive and ultimately is constrained by the marginal cost curves of providers.

- Medicare is a take-it-or-leave-it price setter, although in the long run, neither model precludes Medicare adjusting its prices on the basis of the consequences of earlier decisions.

In the standard economic model, the private market for health care services could be competitive or the provider could have market power. However, the cost-shifting model requires health care providers to have some market pricing power. Thus, we confine the rest of the discussion to the latter case.

The main difference between the models is in their assumptions about providers' objectives. The standard economic model assumes that providers, whether organized as for-profit

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[6] The concept of patient demand embeds the assumption that patient preferences matter and are not overridden entirely by physicians' adherence to practice norms or their perceptions of ethical duty to provide services to patients.
[7] Of Medicare beneficiaries, 88 percent had some form of supplemental coverage, including Medicaid, in 2010 (Jacobson, Huang, and Neuman 2014).

or nonprofit firms, maximize profits before and after the reduction in Medicare prices, whereas the cost-shifting model assumes that providers have some unexploited ability to increase their profits before the cut in Medicare prices.[8]

A. The Standard Economic Model

Figure 1 diagrams the standard economic model (Dowd et al. 2006–2007; Morrisey 1994). For simplicity, we assume there is one service, used by both Medicare beneficiaries and private-plan enrollees. The vertical axis of figure 1 measures the provider's price for that service, and the horizontal axis measures quantity supplied and demanded. In the simple version of the model, we assume that quality is constant, although we relax that assumption later in the paper.

The provider supplies services to the private market (Q_P) at the intersection of marginal revenue from privately insured consumers (MR) and the Medicare price (P_M). The price of services in the private market will be P_P. The provider supplies services to FFS Medicare patients (Q_M) up to the point that the marginal cost (MC) of services equals the Medicare price.[9]
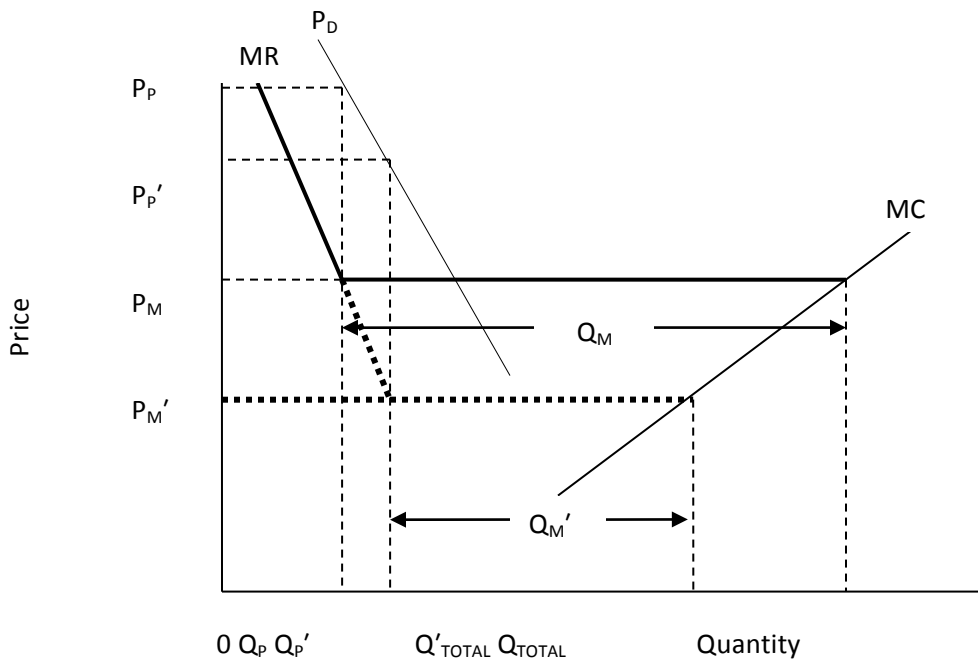
A reduction in the Medicare price from P_M to P_M' makes private patients more attractive relative to FFS Medicare patients. To attract more private patients, the provider *reduces* its price to private patients to P_P'; the quantity of services supplied to privately insured patients increases

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[8] Nonprofit firms maximize profit subject to the utility function of the firm's residual claimants. For example, a nonprofit hospital is expected to generate a positive profit not only to cover its costs but also to advance its other organizational objectives.

[9] The provider's profit is $\pi = R_P(Q_P) + (P_M \times Q_M) - C(Q_P + Q_M)$, where π = profit; R_P = revenue from privately insured patients; Q_P and Q_M are quantities of services supplied to privately insured and Medicare patients, respectively; P_M = Medicare price; and C = cost function. Profit maximization with respect to Q_P and Q_M yields $\partial R_P/\partial Q_P = P_M = \partial C/\partial(Q_P + Q_M)$, which means the marginal revenue from private patients must equal the Medicare price and the marginal cost of services in both markets. Although we use a common cost function for Medicare and private patients, the standard economic model also applies to the case where costs differ by payer. We assume the Medicare price before the ACA is set so the quantity of Medicare services, Q_M, is equal to the quantity that FFS Medicare beneficiaries would demand at a nominal rate of cost sharing corresponding to the current extent and generosity of supplemental insurance coverage among FFS Medicare beneficiaries. In other words, the original situation does not have excess demand or supply of Medicare services. We allow excess demand in our discussion of quality of care later in this paper.

to Q_P'; and the supply of services to FFS Medicare patients shrinks to Q_M'. The total quantity of services falls from Q_{TOTAL} to Q'_{TOTAL}.

Figure 1. The Standard Economic Model

Given the initial assumption of profit maximization, a reduction in the Medicare price must decrease the provider's profit, sometimes referred to as the provider's *margin*. With lower profit, the provider might provide less charity care for uninsured patients (who do not appear in figure 1)[10] or reduce dividends or benefits to its stockholders or stakeholders.

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[10] One of the earliest articles on price discrimination in medical care (Kessel 1958) suggested that might be the case.

B. The Cost-Shifting Model

Figure 2 provides a diagrammatic exposition of the cost-shifting model. The provider initially does not exploit its market power for private patients, charging private price P_P^* lower than P_P. The resulting increase in demand by private patients would force the provider to ration services to Medicare patients. However, according to the cost-shifting story, when Medicare reduces its price to P_M', the provider decides to pursue profit-maximizing pricing and raises its price to P_P', reducing the supply of services to private patients to Q_P'. Thus, in the cost-shifting model, Medicare price reductions prompt providers to exploit existing market power more systematically.[11]

Figure 2. The Cost-Shifting Model

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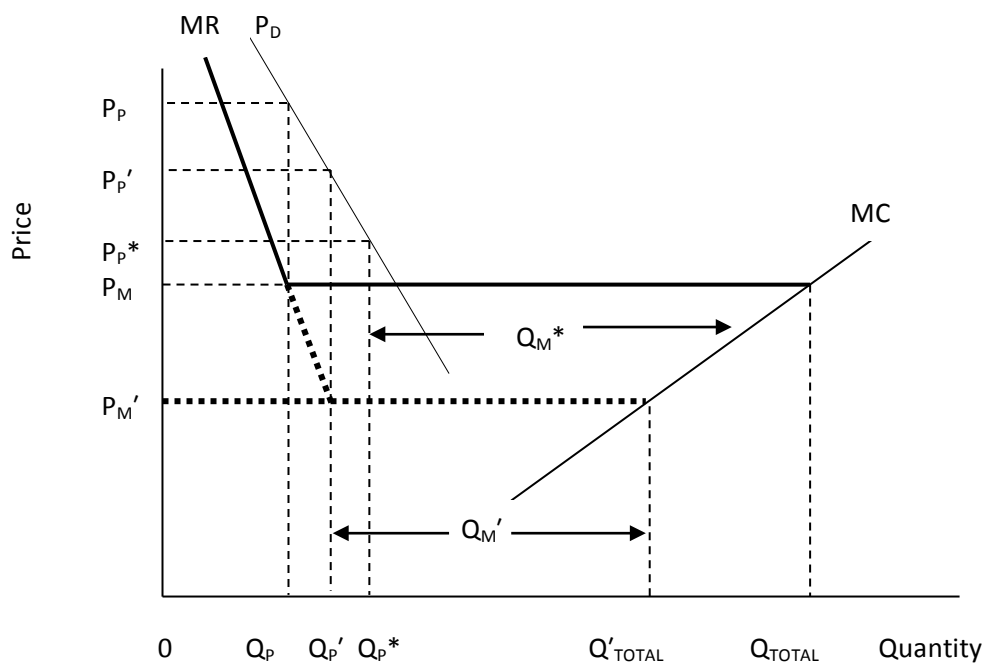
[11] Hospital administrators may think of themselves as shifting costs when they are actually more fully maximizing profits. See Berman and Weeks (1982) for an example of a health care administrator–oriented perspective.

Once the provider has fully exploited its market power to maximize profits, opportunities for cost-shifting are exhausted, and the predicted consequences of further Medicare payment cuts are the same as in the standard economic model.

The cost-shifting model has some intuitive appeal. It is based on the commonsense belief that when Medicare reduces its fees, health care providers must "make up the difference" by charging higher fees to private health plans. But a moment's thought reveals the flaws in the theory. When Medicare reduces its fees relative to those paid by private health plans, the provider maximizes profits by seeing fewer Medicare patients, and it "makes up the difference" by seeing more patients in private health plans. It attracts more private patients by *decreasing* fees to the private health plan. That is what the standard economic model predicts. It constitutes the key difference in the predictions of the two models.

C. Empirical Evidence for the Models: Hospitals

This section reviews the evidence on the relationship between Medicare prices and private prices for hospital services. Section E reviews the evidence for physicians' services.

Frakt (2011, 2014) reviews the literature on hospital cost shifting. At first glance, evidence from descriptive time-series studies appears to offer some support for the cost-shifting model. Figure 3, reproduced from figure 1 in Frakt (2011), shows hospital margins for Medicare, Medicaid, and private patients from 1980 to 2008. Even though hospital margins for private and public patients converge and diverge in ways that might suggest cost shifting, Frakt concludes that the trends could be explained just as easily by other factors, such as the implementation of

the Medicare prospective payment system and the spread of managed care.[12] Hospital margins

uncontrolled for factors that may affect them are at best ambiguous evidence of cost shifting.

After examining both the theoretical and empirical literature on cost shifting, Frakt (2011, 122)

concludes, "In fact, as a whole, the evidence does not support the notion that cost shifting is both

large and pervasive."

Figure 3. Evidence of Cost-Shifting? Aggregate Hospital Payment-to-Cost Ratios for Private Payers, Medicare, and Medicaid, 1980–2008
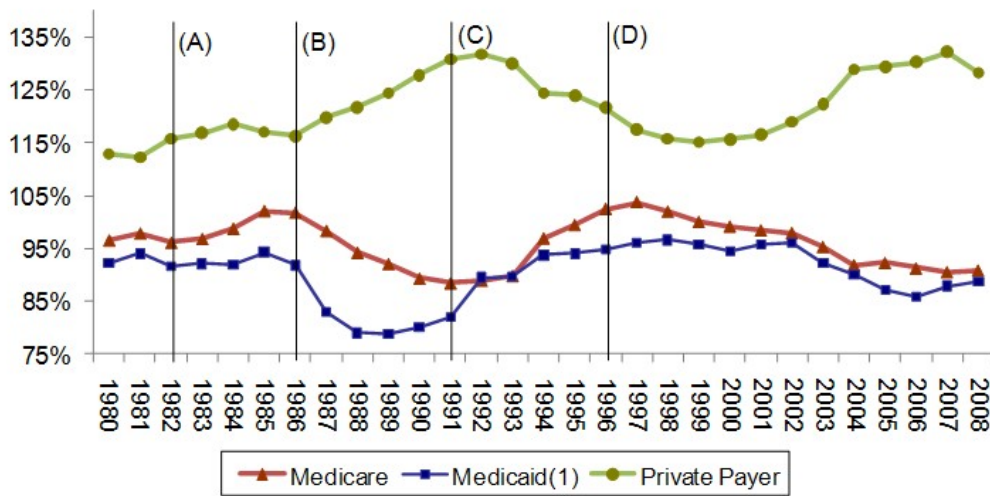
Source: Figure 1 in A. B. Frakt, 2011, "How Much Do Hospitals Cost Shift? A Review of the Evidence," *Milbank Quarterly* 89 (1): 95. © 2011 Milbank Memorial Fund. Data are from American Hospital Association, *Trendwatch Chartbook 2003: Trends Affecting Hospitals and Health System*; and American Hospital Association, *Trendwatch Chartbook 2010: Trends Affecting Hospitals and Health Systems*.

(1) Includes Medicaid Disproportionate Share payments.
(A) = Beginning of Medicare Hospital Prospective Payment System (PPS) phase-in, (B) = PPS fully phased in, (C) = era of commercial market managed care ascendency, (D) = Balanced Budget Act (BBA) passage and managed care backlash.

Two empirical studies used careful methods to study the cost-shifting theory. Wu (2010)

examines the effect of the Balanced Budget Amendment (BBA) payment cuts on private hospital

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[12] Cutler (1998) found dollar-for-dollar cost shifting between public and private patients from 1985 to 1990, but that result may be confounded by the implementation of the hospital prospective payment system, which is based on diagnosis-related groups. Cutler found that payment reductions from 1990 to 1995 resulted in lower hospital profits.

prices from 1996 to 2000. She estimates that hospitals with the average mix of Medicare and private patients shifted $0.21 of every $1.00 loss of Medicare revenue to private payers, with the remaining $0.79 loss borne by the hospital. These results indicate that the upper bound on cost shifting averages roughly 20 percent. In another study, Wu and Shen (2014) find that the ratio of private patients to Medicare patients rose by 23 percent in hospitals subject to the largest BBA payment cuts, whereas it fell by 9 percent in hospitals with the smallest BBA payment cuts. These changes suggest that cuts in FFS Medicare payments to hospitals will lead to displacement of Medicare patients by private patients, just as the standard economic model predicts.

Studies of the cost-shifting theory continue to appear in the literature. White (2013) tested the cost-shifting theory using MarketScan private claims data and Medicare hospital cost reports from 1995 to 2009. He finds that a 10 percent reduction in Medicare hospital payment rates was associated with a 3 to 8 percent cut in private payment rates. White also found that the gap between Medicare and private payment rates of hospitals has widened over time, possibly because of increased hospital consolidation, leading to increased market pricing power.

White (2014) used market-level data from 1995 through 2009 to estimate the effect of Medicare price reductions on inpatient hospital use among the nonelderly. His principal finding is that Medicare price reductions are strongly associated with reductions in nonelderly discharges and hospital capacity. A 10 percent reduction in Medicare price is estimated to reduce nonelderly discharges by about 5 percent. However, changes in the Medicare price are not associated with changes in the shares of Medicare and nonelderly inpatient hospital shares. A market-level analysis is somewhat unusual because the responses to the Medicare price cuts occur at the individual hospital level. However, White believes that market-level analysis captures the effects of hospital openings and closures and nets out the effects of any shifts

among facilities. These results are consistent with cost shifting, but they also could be explained by other factors such as a spillover in practice styles from Medicare to the private sector.

The theory of cost shifting posits that nonprofit hospitals respond to negative financial shocks by raising prices for privately insured patients. Dranove, Garthwaite, and Ody (2013) examine how hospitals responded to the sharp reductions in their endowments caused by the 2008 stock market collapse. They find that the average hospital did not engage in cost shifting, but average hospitals that likely have substantial market power did cost shift.

Wu and White (2014) find that a $1.00 reduction in Medicare inpatient revenue was associated with a reduction of $1.55 in total revenue, and almost all the revenue loss was offset by reductions in operating expenses in not-for-profit hospitals, while for-profit hospitals experienced lower profit. Through simulation modeling, they estimate that the 1.1 percent "productivity adjustment" to hospital prices required by ACA (a fee reduction) would result in 15 percent of hospitals becoming unprofitable over the subsequent 10 years.

Reflecting on the results of these studies, White (2013, 942) writes, "My hope is that the dynamic cost-shifting theory is hereby put to rest." Frakt (2014, 7) concludes that "the era of hospital cost-shifting appears to be over."

D. The Effect of Price Cuts on Hospital Quality

What will happen to quality of hospital care when Medicare cuts its price? *Quality* means both the technical quality of care and the provision of amenities that might have little effect on health outcomes but are valued by consumers. In the standard economic model, quality has two primary characteristics: both private and Medicare patients are able to observe quality, and they both value it. Thus, increases in quality shift the demand curve for private patients to the right and

attract more Medicare patients, even though Medicare payments to providers are relatively insensitive to differences in quality (Glazer and McGuire 2002).

To visualize how a rightward shift in the private demand caused by improvements in quality would be likely to interact with Medicare payment cuts, suppose that the initial FFS Medicare price (before quality improvement) is sufficient to satisfy patients' demand at the initial level of quality and the initial extent and generosity of supplemental insurance (Medigap) coverage among FFS Medicare beneficiaries.[13] Under such market conditions, if the private demand curve shifts to the right or Medicare cuts the FFS price, hospitals would want to admit more private patients and fewer Medicare patients. They could achieve that goal either by cutting the private price or by increasing the quality of care provided to private patients.

However, once providers have selected a given level of quality, we assume it is difficult to provide different levels of quality to patients covered by different insurance plans. This assumption could be justified by the difficulty of identifying each patient's insurance plan or provider resistance to treating patients differently, possibly because of legal barriers to unequal treatment. If providers do increase quality to both private and Medicare patients, the new equilibrium would have higher quality and "excess demand" by FFS Medicare patients—more demand from FFS Medicare patients than the hospital is willing to supply.

Thus, if quality discrimination among patients by payer type is *not* possible, a cut in the FFS Medicare price could lead to an *increase* in overall quality to attract more private patients. In fact, Nyman (1985, 1988) finds this occurred in his study of nursing homes, where Medicaid is the largest fixed-price purchaser of care. When Medicaid cut its price, the quality of nursing home care actually improved, but Medicaid patients created excess demand.

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[13] We made a similar assumption in the standard economic model, which assumes no variation in quality.

If service quality *can* vary for public versus private patients, the direction of quantity effects becomes theoretically ambiguous. If providers respond with quality improvements that private patients are willing to pay for, the quantity effect for Medicare patients under Medicare payment reductions would be negative, as under the standard economic model. In contrast, if the profit-maximizing strategy of hospitals involves reductions in quality, the quantity of care supplied to Medicare patients could increase, decrease, or stay the same, depending on the magnitude of the quality reductions.

Several important studies have investigated the effects of changes in FFS Medicare prices on the quality of hospital services. Dafny (2005) exploited a policy change that occurred in 1988, when the Health Care Financing Administration revised 40 percent of the diagnosis-related group (DRG) codes. Before the policy change, patients who were older than 69 or who had complications were automatically placed in DRGs with higher payment rates; after 1988, the age restriction was eliminated so that only complications were used in the classification. Using a large nationwide data set, Dafny finds that hospitals did not increase the volume of Medicare admissions for diagnoses subject to the largest price increases.[14] However, they spread the additional payments across all Medicare admissions, with increases in admissions, cost per admission, length of stay, and intensive care unit days. The elasticity of admissions with respect to the price change was 1.728; the elasticity of cost per admission was almost 1.00. Taken together, these measures indicate that price changes are likely to affect not only the quantity of patients treated but also the intensity of each patient's care, with a composite price elasticity of supply encompassing intensity and admissions that exceeds 2.0.

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[14] Dafny (2005) suggests several possible explanations for the lack of diagnosis-level responses: hospitals may be unable to select different intensity levels for each diagnosis, patients may respond to the hospital's overall choice of intensity, and the initial choice may not have been equilibrium.

Seshamani, Zhu, and Volpp (2006) find that 30-day mortality rates for surgical patients who developed complications increased more rapidly at hospitals under greater financial pressure from the BBA compared with hospitals under less BBA pressure. Wu and Shen (2014) find complementary evidence that mortality for patients with acute myocardial infarction increased in hospitals most severely affected by the BBA cuts. The effect became measurable in 2001–05, after controlling for pre-BBA trends. Part of the worsening acute myocardial infarction outcomes in hospitals with large payment cuts was caused by reductions in staffing levels and operating costs. Wu and Shen (2014) and Lindrooth et al. (2013) also find a positive association between the size of Medicare fee cuts and mortality for hospitalized patients.

Thus, the evidence indicates that unlike the nursing homes studied by Nyman (1985, 1988), hospitals are likely to respond to Medicare payment cuts by reducing quality to all patients and the quantity of services supplied to Medicare patients. At best, cost shifting can mitigate but not reverse entirely the effects predicted by the standard economic model.

E. Empirical Evidence for the Models: Physicians' Services

The ACA does not subject physicians to the same annual price adjustments as hospitals, but physicians were threatened by substantial price cuts for more than a decade under the Sustainable Growth Rate (SGR) established by the Balanced Budget Act of 1997. Thus, the same questions regarding providers' supply decisions that apply to hospitals under the ACA applied to physicians under the SGR.

The theoretical results of the standard economic model apply in roughly the same way to all health care providers who have market pricing power for private patients and fixed payments from public payers. Physician markets are generally seen as imperfectly competitive with market

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power (Frech 1996), so the standard economic model ought to apply to physician services supplied to Medicare.

Until recently, empirical studies were limited to the effect of Medicare fees on the volume of Medicare services: Are higher fees associated with more services? In one of the earliest studies of this question, Paringer (1980) finds that a 1 percent increase in Medicare prices results in a 5 percent increase in the assignment rate. This is the percentage of Medicare claims for which the physician accepts Medicare's allowed prices as payment in full for services. Mitchell and Cromwell (1982) also find that assignment rates are sensitive to Medicare prices, with a 10 percent increase in the allowed price raising assignment rates by 14.7 percent.

In 1984, the participating physician and supplier program was introduced, whereby a physician who agrees to accept assignment on all Medicare patients is given certain rewards compared to nonparticipating physicians, who can decide to accept assignment on a case-by-case basis. Currently, Medicare prices for services from nonparticipating physicians are set at 95 percent of the prices for participating providers. Nonparticipating physicians can charge up to 15 percent more than the discounted price (9.25 percent more than the price for participating providers), but they must bill patients directly rather than being reimbursed by Medicare. Mitchell, Rosenbach, and Cromwell (1988) find that the decision to become a participating provider was sensitive to reimbursement levels, with a 10 percent increase in the Medicare price increasing participation rates by 9.5 percent.

Hadley and Reschovsky (2006) report that the number of Medicare beneficiaries treated by physicians is positively related to Medicare physician fees, although the results indicate a wide range of elasticities, from zero to 0.61. Service intensity, measured by relative value units

(RVUs) per beneficiary, also responds to fees with an elasticity of 1.04 to 1.71.[15] Hadley et al. (2009/2010) extended this study by examining the relationship between FFS Medicare prices and quantities of eight services representing office and hospital visits, consultations, and cardiac tests. Simulating the response to a 10 percent fee cut, the authors find that predicted volume decreased for all services and decreased by more than 10 percent for five services.[16]

The US Government Accountability Office examined the effect of a reduction in Medicare payments for imaging services that took place in 2007 (GAO 2008). From 2000 to 2006, use of and expenditures on imaging services had been increasing at a rapid rate. Following the payment cuts, the volume of services continued to increase, but expenditures fell, particularly in 2007, the first year following the payment cuts.

Clemens and Gottlieb (2014b) examined physicians' responses to changes in the areas that Medicare uses to adjust its fees for geographic differences in practice costs. The changes were exogenous, with arbitrary increases for physicians in some areas and arbitrary decreases in other areas. For example, the number of areas in Wisconsin was reduced from eight to one while neighboring Minnesota was unaffected. Using an extensive nationwide data set, Clemens and Gottlieb find that these changes caused a large change in the supply of physicians' services to Medicare beneficiaries, with elasticities of 2.0 to 3.0. These findings are consistent with the standard economic view that the supply of services will rise when they are better reimbursed. Furthermore, the elasticities reported by Clemens and Gottlieb overlap

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[15] The most flexible specification of their model allowed a backward-bending supply curve and used an instrumental variables estimation method. This produced the low estimate (statistically not different from zero) for the elasticity of beneficiaries treated and the high estimate (1.71) of the elasticity of services per beneficiary.

[16] This finding does not support the hypothesis that the supply of physicians' services is "backward bending" (i.e., a cut in fees will lead to an increase in supply). Although some range of prices may exist in which price cuts could result in increases in quantity supplied, the scope for such behavioral offsets would diminish to zero in the long run under sustained payment cuts. Studies that have looked at short-run behavioral offsets include CMS/OACT (1998) and CBO (2007).

with those found by Hadley and Reschovsky (2006), although Clemens and Gottlieb's elasticities tend to be larger.[17]

Recently, Clemens and Gottlieb (2014a) found evidence of a strong relationship between Medicare physician fees and private fees. A $1.00 cut in Medicare's relative payments was associated with a $1.30 cut in private payments. This evidence is opposite of the prediction from the cost-shifting model. The relationship between Medicare prices and private prices was weaker in highly concentrated provider markets. Using these new results, Clemens, Gottlieb, and Shapiro (2014) estimate the effect of a 2 percent cut in Medicare physician payments legislated in the Budget Control Act of 2011 on private-sector physician prices. They find that private prices will fall by 0.7 percent, with about half the adjustment occurring in two years after the Medicare payment cuts and the remainder occurring after three or more years.

These studies support the predictions of the standard economic model. Cuts in Medicare prices are likely to result in access issues for beneficiaries in Medicare and Medicaid. The reduction in supply could take the form of physicians refusing to participate in those programs, accepting fewer patients, or supplying fewer services per patient. Cuts in Medicare prices are transmitted to lower price-sector prices, although this relationship is attenuated in highly concentrated provider markets.

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[17] Sloan, Mitchell, and Cromwell (1978) and Decker (2007, 2009) find similar results for the elasticity of physician services in the Medicaid market. Higher Medicaid fees increased the number of private physicians who accept Medicaid patients and led to visit times that are more comparable with those of private patients. Cuts in Medicaid fees led to reductions in the number of visits for Medicaid patients compared with private patients. Brunt and Jensen (2014) find that physicians' willingness to accept new patients under Medicare and Medicaid is strongly related to the generosity of fees under both programs.

F. Summary and Qualifications

To summarize, reductions in Medicare hospital fees are unlikely to result in increases in the prices that private health plans pay for hospital services. The empirical evidence indicates that lower Medicare fees will result in reduced supply of hospital services to Medicare beneficiaries and are likely to result in lower hospital quality. Lower Medicare physician fees also are likely to be associated with lower fees paid by private health plans and an increase in demand by private patients.

Neither the cost-shifting theory nor the standard economic theory can accommodate disruptive innovations in health care. That is not a criticism of the theories, because innovation often is disruptive precisely because it is unforeseen and catches consumers and producers by surprise. A number of changes that plausibly could occur in the production of health and health care services would have important effects on the relationship between public and private fees.

The first is significant changes in licensure and reimbursement rules for nonphysician clinicians. Health care professionals are licensed by states, many of which restrict the activities of nonphysician clinicians that can occur without direct supervision by a physician. As a result, nonphysician clinicians often are not able to practice at the "top of their license." Allowing more unsupervised care to be delivered by nurse anesthetists, physician assistants, and nurse practitioners, for example, could have an important effect on both the supply of services and the unit prices paid by both public and private insurers. Any discrepancy in the reaction of public and private insurers to such opportunities, or the way in which the insurers adjust their payment policies to nonphysician clinicians, could affect the gap between public and private fees.

Second, the *unit of service* could be redefined so that it no longer is an office visit, an inpatient stay, or a surgical procedure, for example. The unit of payment could become a bundle

of services, just as DRGs became the unit of payment for bundles of inpatient hospital services in 1983. Medicare usually has taken the lead in redefining the units of service, with private health plans following suit, but there is no reason that should be the case.

Third, disruptive innovations in the technology of producing health could arise. A cure for cancer, a vaccine for HIV/AIDS, or successful treatment of Alzheimer's disease would represent a disruptive change in many health care systems. Some technologies aim to eliminate the need for health care professionals entirely (Shaywitz 2013, 2014).

II. What Are the Optimal Prices for Public and Private Health Plans?

Determining the optimal fees for public and private health plans raises issues of both fairness and efficiency. Economists think of fairness of processes and outcomes (Weimer and Vining 2011). Unfair processes, such as lack of equal opportunity, often are addressed through legislation. Economists tend to be skeptical of post hoc adjustments to the distribution of resources to address unfair outcomes, because such adjustments can produce perverse behavioral incentives. They prefer adjustments to initial endowments of resources, followed by a competitive market. In this analysis, we assume that Medicare fees are fair (to society's satisfaction) so that we can focus on efficiency of the fees.[18]

If health care were like breakfast cereal, or—better yet—*perfectly competitive*, then the *efficient* price for a unit of health care (e.g., a strep test or a hernia repair) would be the price that equated market supply and demand. Competitive markets require perfect information, unrestricted entry and exit, and no distortions in the prices faced by consumers and producers. For producers of breakfast cereals, that price would be equal to their marginal cost.

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[18] Requiring all consumers to pay the optimal fees could create fairness problems, which would need to be addressed through redistribution of resources.

Health care is different from breakfast cereal in many ways, however. Health care is expensive, and the onset of an illness that triggers the need for health care is uncertain. Those features of health care give rise to a market for health insurance. But by reducing the consumer's out-of-pocket price for health care, insurance increases health care use beyond the point at which the marginal cost and marginal benefits of the next unit of service are equal. Insurance also weakens consumers' incentives to protect their health and may encourage them to engage in risky behavior.

If health insurance were not subsidized, then the level of coverage demanded by consumers would reflect the optimal, second-best balance of demand for an inefficiently high level of care and protection against risk. Consumers would demand more generous coverage until the marginal cost of moral hazard (too much use) were just equal to the marginal benefit of risk reduction. However, the market for health insurance is subsidized in two important ways. First, the tax deductibility of health insurance for employed workers and their families under section 125 of the Internal Revenue Code encourages individuals to purchase more generous health insurance policies, which leads to demand for inefficiently high levels of care. Second, in Medicare, Medigap coverage reduces the consumer's point-of-purchase price for health care, which leads to increased use, but Medigap premiums reflect only a portion (about 20 percent) of the increased use caused by Medigap coverage. In addition, Medicare beneficiaries lobby the political process for better coverage, the cost of which is largely paid by current and future taxpayers. Those subsidies result in consumers purchasing health insurance beyond the point where the marginal benefits and cost of insurance are equal. Inefficiently high levels of insurance lead, in turn, to inefficiently high levels of demand for health care.

Nyman (2003) notes that moral hazard could be eliminated by giving consumers a lump sum transfer tied to their illness. Under that type of "contingent-claim" insurance, each dollar the

consumer spent on medical care would reduce his or her net income by one dollar, so consumers would use the efficient level of services. Nyman's observation leads to our first criterion for optimal fees: *Optimal fees would produce the level of demand for health care that corresponds to the demand under contingent-claim insurance.*

Unfortunately, health care markets are not perfectly competitive. For example, consolidation of providers has resulted in increased market power that enables providers to raise prices above their marginal cost (Town and Vogt 2006). In fact, both the standard economic theory and the cost-shifting theory assume a degree of market failure that allows providers to accept or charge different prices to public and private insurers for the same product. Thus, our criteria for optimal fees can be expanded as follows: *Optimal prices would produce the level of demand for health care corresponding to demand under a contingent-claim insurance contract in a competitive market.*

We return to the question of how Medicare can set the optimal prices after explaining how it sets prices in the real world.

III. How Are Medicare Prices Set in the Real World?

The previous section noted that Medicare prices for physicians' services diverge from the optimal prices in a number of ways. In this section, we elaborate on the ways Medicare has set physician prices. We outline how Medicare physician prices have been set since 1992, summarize the results in terms of physician compensation and incentives, and describe how the price-setting method has failed to achieve important objectives (among them, failure to approach the optimal price criteria described earlier). We also briefly summarize important changes in physician reimbursement enacted in 2015, as this paper was being written.

Newhouse (2007, p. 1883) provides a succinct summary of the problems that gave rise to the current FFS Medicare payment method:

Medicare's initial method for setting fees mimicked the typical system used by the Blue Shield plans of the 1960s: payment for the lowest of usual, customary, or reasonable fees. Twenty-five years later, the resulting fee schedule made little sense; individual physicians were paid grossly different amounts for providing identical medical services, with large variations across different geographic areas.

The usual, customary, and reasonable payment system also was widely thought to underprice evaluation and management (E&M) services and to overprice procedures, leading to an increased emphasis on procedure-oriented medical care[19] (Ginsburg and Berenson 2007).

Medicare scrapped the old system in 1992 and adopted the Resource-Based Relative Value Scale (RBRVS) in an attempt to ground prices in something closer to the costs of delivering specific services, as measured by the amount of work and practice expense involved in delivering each service. Nothing in the method addressed concerns such as the value or cost-effectiveness of services, even when priced closer to unit costs.

A. The RBRVS Physician Payment Methodology

More than 10,000 different services are reimbursable under Medicare (according to Current Procedures and Terminology [CPT] procedure codes), each reimbursed at a value calculated by the RBRVS and expressed in RVUs. The RBRVS methodology bases payments for services on these estimates of the relative costs of inputs. The methodology is best understood by explaining the basic steps in the computation of the relative costs and the process that provides key data for

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[19] E&M and procedural services are often, although too simply, described as services delivered by primary care physicians and specialists. However, Sigsbee (2011) notes that many specialist visits are nonprocedural, and family physicians claim that their E&M visits typically deal with patients with multiple comorbidities (Heim 2011).

the computations.[20] First, we review the formal computations, then the process by which the

computations are made.

1. The computations. The RVUs comprise three components:

- physician work, which is based on three contributing factors: the time a procedure takes;

  the technical skill, mental judgment, and physical effort it requires; and the stress the

  physician experiences because of the patient's risk from the procedure;

- practice expenses that reflect the cost of such items as ancillary personnel, equipment,

  supplies, and office overhead;

- professional liability (malpractice) insurance.

The shares of these components vary by physician service. Overall, work represents slightly

more than half the total RVUs (MedPAC 2006b).

The RVUs thus calculated are adjusted for a Geographical Practice Cost Index (GPCI) to

account for differing practice costs in different parts of the country.[21] The locality-adjusted RVU

total is then multiplied by a "conversion factor," the congressionally determined value of a unit

on this scale (more on this later). The result is the fee for that CPT code.

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[20] Many summaries are available, e.g., Laugesen (2014); Maxwell, Zuckerman, and Berenson (2007); and MedPAC (2014).

[21] As summarized in MaCurdy et al. (2012, i): "GPCIs measure geographic differences in input prices. Paralleling the RVU structure, GPCIs are split into three parts: [physician work (PW), practice expense (PE), and malpractice insurance (MP)]. Each of these three GPCIs adjusts its corresponding RVU component. GPCIs do not affect aggregate payment levels; instead, they reallocate payment rates to reflect regional variation in relative input prices. For example, a PE GPCI of 1.2 indicates that practice expenses in that area are 20 percent above the national average, whereas a PE GPCI of 0.8 indicates that practice expenses in that area are 20 percent below the national average. CMS calculates the three GPCIs for payment areas known as Medicare localities. Each physician payment locality is assigned an index value, which equals the area's estimated input cost divided by the average input cost nationally. Localities are defined alternatively by state boundaries (e.g., Wisconsin), metropolitan statistical areas (MSAs) (e.g., Metropolitan St. Louis, MO), portions of an MSA (e.g., Manhattan), or rest-of-state areas that exclude metropolitan areas (e.g., Rest of Missouri). As a result, some localities are large metropolitan areas, such as San Francisco and Boston, whereas many localities are statewide payment areas that include both metropolitan and nonmetropolitan areas, such as Minnesota, Ohio, and Virginia."

For example, consider one procedure code: CPT 27603, drainage of a leg lesion in the

United States and the state of Montana (updated from an example developed in Xerox 2012).

Table 1. Sample 2014 Fee Schedule Payment Calculation for CPT 27603: Drain Lower Leg Lesion

Area:	United States	Montana		
Type of Provider:	physician	physician	physician assistant	physician
Place of service:	office	office	office	hospital
Work RVU	5.23	5.23	5.23	5.23
GPCI work		1.00	1.00	1.00
Practice expense RVU	8.77	8.77	8.77	4.89
GPCI practice expense		1.00	1.00	1.00
Malpractice RVU	0.97	0.97	0.97	0.97
GPCI malpractice		1.165	1.165	1.165
Total RVUs	14.97	15.13	15.13	11.25
Professional difference			0.850	
Conversion factor	$35.82	$35.82	$35.82	$35.82
Fee	$536.27	$542.00	$460.70	$403.01

Source: Centers for Medicare and Medicaid Services, 2014, "Physicians Fee Schedule Search," CMS, http://www.cms.gov/apps/physician-fee-schedule/search/search-criteria.aspx (requires accepting the terms and conditions of the Current Procedural Terminology, 4th edition, in order to use the fee schedule search).

Table 1 shows that the national fee in 2014 for drainage of a leg lesion (CPT 27603) is

14.970 RVUs multiplied by a $35.823 conversion factor, or $536.27. But adjustments must be

made to the price for that service in a given locality performed by a given professional:

- The national fee is adjusted for geographic variation in local practice costs. Montana's

  GPCI is 1.000 for work, 1.000 for practice expense, and 1.165 for malpractice insurance.

  The fee for CPT 27603 performed by a physician in Montana is thus $542.00.

- Though the RBRVS generally is termed a "physician" fee schedule, Medicare uses it to

  pay for services performed by other providers. Physician assistants and nurse

  practitioners working incidental to physicians are usually paid at 85 percent of the

  physician rate, or $460.70 in Montana. Note that RVUs for services of audiologists,

chiropractors, physical therapists, and others for services they uniquely provide are

separate from the physician RVUs.

- Place of service matters as well. The physician is assumed to pay all costs of office

    staff, supplies, and equipment. But the service may be provided in a setting where the

    physician does not pay all practice expenses (e.g., in a hospital, ambulatory surgical

    center, skilled nursing facility, or community mental health center). In these settings,

    Medicare pays a separate facility fee. To prevent Medicare from paying twice for these

    expenses, it reduces the practice expense RVUs when the service is provided in one of

    these locations. Here, the place of service adjustment is reflected in the lower practice

    cost RVU for hospital-based care (4.890 for the hospital versus 8.770 for the

    physician's office).

Other technical issues and modifiers exist, but this is the essence of the calculation of the

RVUs. Recently, numerous legislative changes have replaced the routine application of the

standard method for specific services. For example, the ACA authorized fee increases of 10

percent over five years (2011–2016) for primary care providers. The American Taxpayer Relief

Act of 2012 increased the use assumption for diagnostic imaging equipment as a way to reduce

the practice expense RVUs for imaging services.

2. The administrative process for RBRVS. The discussion to this point ignores the critical

difficulty in any administrative pricing system: even assuming the input cost factors in the

algorithm are right, and assuming they are placed in the right relationship to each other, where do

we get the data to compute the actual prices (e.g., the values shown for each factor in table 1)?

The task is formidable.

The CMS makes annual updates to the RBRVS to introduce new service codes and revises codes for which definitions have been modified. In addition, until recently the law required a comprehensive review of the fee schedule values every five years. Statutory changes now require more frequent periodic review and identification of potentially misvalued codes. The ACA requires the CMS to increase its data collection and analytical activities and periodically review and adjust relative values for misvalued codes. In 2012, the CMS replaced the five-year review with a more continuous examination of codes required in the statute. The Protecting Access to Medicare Act of 2014 (the so-called SGR Patch, P.L. 113-93, sec. 220) provides additional authority and funds to the CMS to more aggressively identify misvalued codes. It also specifies a target correction of misvalued codes equal to 0.5 percent of the estimated amount of expenditures for the year and specifically directs the CMS to examine codes that have experienced the fastest growth or that account for the majority of spending under the physician fee schedule.

In principle, the CMS could collect fine-grained data on practice costs—e.g., cost-accounting data for a representative set of practices, as Ginsburg (2012) has suggested—or fund multiple sources of information from private contractors or other sources. That is indeed beginning to happen, under new authority and funding from Congress and new activities in the CMS. But the CMS historically relied on the Relative Value Scale Update Committee (RUC) of the American Medical Association (AMA), a private body representing physicians and others, to propose the data on which the RVUs are based. The RUC's membership is drawn from the major specialty societies, primary care physicians, the AMA, and the osteopathic and allied health care professions. It meets three times a year to develop updated recommendations for the CMS.

The AMA has claimed that it sponsors the RUC both as an exercise of "'its First Amendment rights to petition the Federal Government' and for 'monitoring economic trends . . . related to the CPT [Current Procedures and Terminology] development process'" (quoted in Goodson 2007, 2309). Much has been said about the obvious conflict of interest here; in response, specialty societies and the RUC emphasize the unique expertise of the committee (Laugesen 2014).

We say more about this issue later, but for now, understanding the process itself is important. The RUC has 31 members. Of these, 21 seats are reserved for representatives of major specialty societies; 4 seats rotate every two years, with 2 of those seats reserved for internal medicine subspecialties, 1 for primary care, and 1 for other subspecialties; 5 seats are occupied by representatives of committees or organizations associated with the update process, such as the AMA and the CPT Editorial Panel;[22] and the committee chairperson holds 1 seat.

In these simple numerical terms, specialty societies hold a numerical edge in the process. But it is important not to focus on that fact alone. The data collection process has more weaknesses than simple overrepresentation of specialty societies.

Laugesen, Wada, and Chen (2012, 966–67) describes the broad outlines of the RUC process:

> Any of the specialty societies has the option of making recommendations on any service's work value. However, the members from societies representing more frequent providers of a given service typically lead this effort, sometimes in combination with members from other societies. Societies send a survey to practicing physicians that asks respondents to estimate the time and complexity involved in providing a service, based on a typical patient scenario. After they gather this information, the societies then propose a work value to the update committee. In its deliberations, the committee considers survey data and a report written by a small review committee prior to the meeting of the full committee. Committee members then vote on the proposed work

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[22] The CPT Editorial Panel of the AMA is a 17-member panel that develops five-digit codes for medical services and procedures.

value. The update committee gives CMS a list of recommended work values for the new and updated services. CMS decides whether to accept or modify the recommendations, typically making only minor changes. It publishes a list of new work values, which are open to public comment, in the Federal Register each year, usually in the fall. The new values are reflected in the Medicare fee schedule issued the following January. A separate comprehensive review is conducted every five years to assess potentially over- or undervalued codes.

In broadest outlines, this is how the RUC develops and proposes RVUs to the CMS and what the CMS does with them. But one more part of the calculation that has an important effect on the results deserves discussion: the budget neutrality and SGR requirements that could affect the unit prices set by RBRVS each year.[23]

B. Cost Control

The RBRVS is not itself a form of cost control but rather a set of relative resource values grounded in a process of cost estimation. Through a conversion factor, the RVUs translate into actual unit prices. Volumes of each service, in turn, translate the prices into spending.

Two requirements in the RBRVS framework were intended to contain spending within automatic limits. One—the budget neutrality requirement—affects unit prices directly. The other—the SGR formula—until recently linked the level of prices to a target rate of spending growth. We explain these requirements in turn.

1. Budget neutrality. Spending under the RBRVS is not budget neutral. "What is 'budget neutral' in a sense is the pool of RVUs. With some explicit exceptions that increase the pool, any new

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[23] For the moment, we focus on the SGR regime that governed the RBRVS until 2015. We ignore recent legislation repealing the SGR. We address the new statute later in the paper.

covered service or increase in RVUs for an established service must be offset by a pro rata

decrease in the RVUs of all other services to preserve the same pool of RVUs."[24]

Specifically, in the five-year reviews of the RVUs, the CMS is required to make annual

adjustments to physician payments to maintain budget neutrality if the changes to the work

RVUs[25] result in an increase or decrease in overall fee schedule outlays of more than $20

million. The CMS must use a budget neutrality factor to bring its total payments back into line.

The CMS first used budget neutrality in 2007 by applying it solely to the physician work RVUs,

because a revaluation of physician work RVUs for E&M codes led to the expected overage. The

CMS also later used adjustments to the conversion factor. Maxwell, Zuckerman, and Berenson

(2007, p. 1859) describe one example:

> Although the CMS recently announced that the RVUs for physicians' work associated
> with certain higher-level evaluation and management codes increased by 29 to 37% (as a
> result of the third 5-year review [in 2006]), the overall effect of these changes on
> evaluation and management services was significantly smaller for two reasons. [citation
> omitted] First, many other values for evaluation and management services were not
> increased under the third 5-year review, and second, the CMS reduced all RVUs for
> physicians' work by 10% as a budget-neutrality adjustment.

Thus, unlike the SGR requirement discussed below, budget neutrality has directly

redistributed physician payments through the RVUs for different services.

2. Sustainable growth rate. In theory, the SGR formula would automatically adjust the

conversion factor for updating the Part B physician fee schedule by comparing actual spending

and a target spending growth rate. The target was based on changes in the number of FFS

Medicare beneficiaries, the 10-year average annual change in real gross domestic product per

capita, and the estimated annual change in expenditures caused by changes in law or regulations,

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[24] Anonymous reviewer's comment on an earlier draft of this paper.
[25] Note that RVUs for practice expense and malpractice are not part of this adjustment.

all of which normally increased the target over the prior year's spending. If total expenditures

exceeded the SGR-defined target, the conversion factor was supposed to be reduced in the

subsequent year, thereby cutting fees equally for all physicians. Moreover, the adjustment was

cumulative: failure to make the adjustment in one year increased the adjustment in later years.

In practice, the annual update of the conversion factor became a political decision, with

the AMA and specialty societies lobbying Congress every year to delay the SGR payment cuts

(Laugesen 2009). Guterman (2014, 2261) notes the following:

> In its first few years, with the rapid economic growth of the late 1990s, the SGR
> produced relatively large increases in Medicare's physician fees. [citation omitted] As the
> economy slowed in the early 2000s, however, while physician spending continued to
> increase, the formula began to dictate reductions in those fees. Those cuts would have
> applied to every service, regardless of its potential benefit (or lack thereof), and to every
> physician (or other health care professional paid under Medicare's physician fee
> schedule), regardless of his or her own contribution to spending growth.

As a result, under the SGR formula, the CMS produced updates that purported to bind

Medicare fees to the SGR. But starting in 2002, Congress repeatedly cut those ties. As noted by

the Congressional Budget Office (2015, 3),

> Application of the SGR formula produced annual increases in payment rates for
> physicians' services through 2001, but resulted in a 4.8 percent reduction in 2002. When
> the SGR formula would have reduced payment rates again in 2003, that reduction was
> overridden by changes enacted in the Consolidated Appropriations Act (P.L. 108-7),
> which resulted in a 1.6 percent increase in payment rates. That was the first of 17 acts
> that have since overridden the SGR formula.

And thus, as Bodenheimer, Berenson, and Rudolf (2007, 304) describe the following:

> From 1999 to 2004, total Medicare physician payments increased rapidly because of
> volume growth from imaging, minor procedures, and diagnostic tests—not from
> evaluation and management services [citation omitted]. This volume growth is largely
> responsible for Medicare physician payments that exceed the SGR target, thereby
> triggering a reduction in the Medicare conversion factor. The decrease in the conversion
> factor affects not only those responsible (specialists benefiting from imaging, minor
> procedures, and diagnostic tests) but all physicians. Volume-based income gains of
> procedural and imaging specialists can create fee-based income losses for primary care
> physicians.

Following sustained attention by Congress and the CMS, some of which is noted above, the volume of imaging and some other procedural services declined somewhat after 2009, but it remains much higher than a decade ago (MedPAC 2014). As Guterman (2014, 2261) notes, the SGR cuts applied "to every service, regardless of its potential benefit (or lack thereof), and to every physician (or other health care professional paid under Medicare's physician fee schedule), regardless of his or her own contribution to spending growth." Or as MedPAC (2013, 77) emphasizes, the SGR "neither rewards professionals who restrain volume nor punishes those who prescribe unnecessary services [citation omitted]."

The losses to practices with less procedural volume were not a *direct* result of the mechanistic SGR formula. However, the SGR triggered the critical actions:

- Payments to physicians increased because the volume of procedural services expanded considerably. Given productivity and volume increases, the work and practice expense RVUs for those services should have declined, but they did not do so to a sufficient extent to offset the volume increases.

- In the absence of congressional action, the increase in payments automatically translated into a reduced conversion factor under the SGR formula and thus to substantial reductions in fees for all physicians. The threat of this large reduction led Congress each year to suspend the SGR and substitute flat freezes or small across-the- board increases for virtually all physician services.

- E&M services were not exempted from the small fee adjustments, though they hadn't contributed to the payment increases that triggered the congressional actions. Thus, although the SGR did not directly reduce physician fees, the credible threat of large payment cuts forced Congress to act, and those actions affected the fees for E&M services.

C. Effects of the RBRVS on Medicare Physician Prices and Payments

Obviously, the RBRVS is a complex system with complex effects on physician payment. Certain effects are important to note here.

Early policy simulations suggested that the RBRVS would increase payments for E&M services by 25 to 30 percent, decrease payments for procedures by 25 percent, and redistribute overall payments toward E&M services and the physicians' specialties that furnish mainly those services (Maxwell, Zuckerman, and Berenson 2007). It has turned out differently.

After the RBRVS was implemented in 1992, the relative value units for existing E&M codes increased 20 percent by 2002 (Maxwell, Zuckerman, and Berenson 2007). Over that same period, RVUs for tests increased by 36 percent, while RVUs for imaging, major procedures, and other procedures actually decreased by 1 to 15 percent. These changes seemed to be what the new system's proponents sought.

But many new codes were introduced over this period, and substantial changes occurred in the quantity and mix of services. Both of these can contribute to RVU volume, that is, each RVU multiplied by units of service, which approximates Medicare income for each physician and across all physicians is the total cost of Medicare physician services. From 1992 to 2002, the share of RVU volume accounted for by E&M services decreased by 4 percentage points, while the shares for imaging, other procedures, and tests increased—notwithstanding reductions in RVUs—because of large volume increases in these services. E&M services grew 40 percent in volume, but volumes grew much more rapidly for imaging (63 percent), other procedures (68 percent), and tests (185 percent, from a very small value in 1992) (Maxwell, Zuckerman, and Berenson 2007). Through the budget neutrality adjustments discussed previously, these volume increases change the net effect of adjustments in RVUs.

One notable example occurred in the CMS's 2006 five-year update. Overall, work values for E&M services increased by 20 percent, whereas other visit codes did not fare so well, in keeping with the original purposes of the RBRVS. However, as Ginsburg and Berenson (2007, 1202) note, "Because few services received work-value reductions, the required budget-neutrality adjustment reduced the increases in work values for evaluation and management services to 8%. Since such services represent 46% of total spending on physician services, they absorbed much of the reduction for budget neutrality."

The key here is that, in a budget-constrained environment, few reductions occurred in RVUs for procedural services in which physicians' productivity increased, which meant that services less likely to experience increases in physician productivity (such as E&M services) faced erosion in what otherwise would have been a large increase in payments. As Bodenheimer, Berenson, and Rudolf (2007, 303) note, physician payment under SGR is a pie: "If [one] specialty receives a larger slice [due to volume increases], others must accept smaller portions. Evaluation and management services make up more than 50% of total Medicare physician payments. Even small increases in office visit RVUs would create a dramatic increase in total Medicare physician spending, thus triggering a conversion factor reduction." Years later, MedPAC[26] (2014, 112–13) continued to reiterate "its standing recommendation to repeal the SGR formula, rebalance payments between primary and specialty care, have legislated updates. . . . The physician fee schedule must be rebalanced to achieve greater equity of payments between primary care and other specialties."

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[26] The Medicare Payment Advisory Commission (MedPAC) provides the US Congress with analyses and policy advice on the Medicare program. It is a nonpartisan agency, formally part of the legislative branch.

Thus, the way the RBRVS was implemented resulted in some adjustments compared with earlier charge-based payments, but it did not change relative work units enough to reallocate Medicare physician payment to E&M services.

D. Effects of the RBRVS on Private Prices

The failure of the RBRVS to redistribute payments to primary care physicians is magnified by the influence of RVU methods on the fees paid by private insurers. Dyckman and Associates (2003) surveyed private health plans for MedPAC and found that most private health plans used payment methods modeled on the RBRVS, but with specialty-specific conversion factors. (Also see AMA 2014.) MedPAC (2011b, 87) concludes that Medicare fees are consistently lower than private insurer payments:

> In the early to mid-1990s, Medicare payment rates averaged about two-thirds of commercial payment rates for physician and other health professional services, but since 1999 Medicare rates consistently have been near 80 percent of commercial rates. For 2009, we find no change from the results reported for 2008. In each of the two years, Medicare's payments for physician and other health professional services were at 80 percent of commercial rates for preferred provider organizations (PPOs) when averaged across all physician services and geographic areas.

With respect to E&M services, MedPAC (2009) notes that Medicare's payment rates are closer to private payers' rates—about 88 percent on average in 2007. Bodenheimer, Berenson, and Rudolf (2007, 304) provide additional detail on the primary-specialty differential in fees for commercial insurers and Medicare:

> On average, private insurers paid primary care physician office visits at 104% of Medicare's fee, whereas surgical, diagnostic procedure, and imaging codes were paid at 119% to 120% of Medicare fees. Markets with large single-specialty groups were associated with even higher specialty fees. Surgical codes have been paid as high as 330% of Medicare fees while radiology and diagnostic procedures may attain 250% of Medicare fees. The primary care–specialty fee gap is greater for private plans than for Medicare.

These results suggest that "private insurer payment favors specialty care over primary care to a greater degree than does Medicare" (Bodenheimer, Berenson, and Rudolf 2007, 304) and that to some degree, those payments are influenced by the RBRVS methodology, though with conversion factors chosen by the health plans and insurers.

E. Medicare Physician Pricing in the Real World: Problems with the RBRVS

The problems with the RBRVS system go well beyond the issues discussed previously. An outline of those problems helps illustrate the difficulties Medicare faces in using this administrative method to determine physician prices.

1. Flaws in the specialty society surveys. As described earlier, the CMS relies on the AMA's RUC and specialist surveys. The membership of this committee is dominated by specialists, as many have noted. But apart from the obvious conflicts of interest (e.g., physicians estimating work values that affect their own reimbursement), other important issues exist. On the basis of interviews with current and former RUC participants, Laugesen (2014) summarizes some of the problems with the surveys.

- *Use of small and nonrandom samples.* Until 2014, the RUC required societies to survey a minimum of 30 physicians (it is now 50). Apparently, it has accepted even smaller samples and permits use of standing panels of physicians who complete surveys regularly. Laugesen (2014, 1) notes, "Such panels may not be broadly representative of physicians or specialty society members. For example, one society has used a panel drawn from its practice management section, whose members are likely to have a better understanding than most physicians of reimbursement policy and how survey results can

influence payment rates. The problems introduced by small purposive samples are likely compounded by low response rates."

- *Difficulties with new or specialized procedures.* For new procedures that are not widely practiced and for infrequent procedures, an issue clearly exists of whether a particular physician is familiar with the new or infrequent procedure. But the RUC does not appear to require a minimum number on the panel to be familiar with the procedure; possibly "people who have never performed the specific procedure may be providing data. In other cases, societies rely on physician lists provided by device manufacturers to identify providers known to be using the procedure. Manufacturers' interests in obtaining higher work values that could increase the uptake of their product might influence which physicians they nominate for the survey sample" (Laugesen 2014, 1–2).

- *Cherry picking of survey results.* The RUC may use an expert panel to develop alternative estimates if they deem the survey data to be "flawed or incomplete." As one participant told Laugesen (2014, 2), "If survey data suggest work values should be lower, a society can put forth alternative estimates from an expert panel to override the survey data. Specialty societies making their case to the RUC have the discretion to ignore survey findings if they think the survey participants misunderstood the questions or undervalued the work involved. While the RUC may reject specialty recommendations, ultimately these kinds of ad-hoc adjustments can—and do—end up in RUC recommendations according to CMS."

- *Practice expense estimates based on unrealistic assumptions.* Ginsburg and Berenson (2007, 1202) describe the unrealistically low assumptions about rates of use of equipment (20 hours per week) and unrealistically high assumptions about the interest rates for

financing its purchase (11 percent) the CMS has long used. They go on to note:

"Although a suitable all-specialty survey might cost CMS all of $3 million every few years, there is extremely limited funding for the administration of Medicare. On this and other fronts, such underfunding undermined accurate updating of the fee schedule."

- *Unequal resources of various specialties to support RUC work.* Ginsburg and Berenson (2007) note that the political playing field is not level, with some specialties having more resources for studies and lobbying, as well as well-heeled industry allies. This adds up to a relatively serious allegation of deficiencies in the rigor and reliability of the survey process.

2. No incentive for the RUC to identify undervalued E&M procedures. Ginsburg and Berenson (2007, 1201) aptly note that, since the system was implemented, "relative values have defied gravity—going up or staying the same but rarely coming down." One reason for this was noted by MedPAC (2006a, 2), in a letter to the CMS administrator:

> CMS acknowledges that there is little incentive for physician specialty societies to identify codes that may be overvalued for review. Nevertheless, CMS has not yet proposed any alternative method for identifying such services in the next five-year review, and maintains that it is the responsibility of the specialties to present compelling evidence that a code is misvalued [though CMS appeared to have taken a more critical approach to its review of the RUC's recommendations more recently].

In the same document, MedPAC (2006a, 1–2) notes that it is

> concerned by the overwhelming number of undervalued codes identified and corrected during the five-year-review process, as compared to the number of overvalued codes. CMS proposes to increase the work RVUs for 225 codes and decrease the RVUs for only 28 codes. This suggests that overvalued services continue to be largely ignored by the current process. Such misvaluation can distort the market for physician services (as well as for other health care services that physicians order, such as hospital services). Services that are overvalued may be overprovided because they are more profitable than other services.

Bodenheimer, Berenson, and Rudolf (2007) note the asymmetry in consequences between an increase in E&M and procedure RVUs: through the budget neutrality requirement, even small increases in office visit RVUs create a dramatic increase in total Medicare physician spending, thus triggering a conversion factor reduction through the budget neutrality requirement. Specialists making little income from E&M services are therefore wary of such RVU increases. "Procedure increases are less contentious because no single procedure has sufficient volume to perceptibly increase total Medicare spending" (Bodenheimer, Berenson, and Rudolf 2007, 303).

3. Many codes are overvalued. The specialty society surveys attempt to obtain data on factors such as technical skill, physical exertion, and mental stress. Estimates of intensity of effort are necessarily subjective and prone to error. Meanwhile, as Laugesen (2014) notes, time should be more easily measured, but research shows that the time values in the RVU are consistently in error. For example, a study of surgeons' time logs (McCall, Cromwell, and Braun 2006) found that median RVU estimates for intraservice time (time in the operating room) were significantly longer than intraservice times from operative logs. The average difference across 60 procedures was 31 minutes, ranging from a few minutes to almost two hours. Cromwell et al. (2010, 676) performed "four studies showing shorter physician times with patients in their offices and in the operating room, increases in surgeons' self-reported total work in spite of declining operating room times, and growing numbers of costly handoffs to nonsurgeons, while surgeons receive full payment for postoperative follow-up with patients."

Laugesen (2014) analyzed the times observed in the McCall and Cromwell studies and concludes that RUC times remained longer than actual times for 20 of the 24 services studied.

Across all 24 services, RUC times overstate real-world times by an average of 33 percent and by as much as 127 percent in one instance, in part because of problems with the methodology of the surveys and the way the data are used.

Part of the problem here is that productivity for such procedures tends to increase over time, so physicians can perform more of them. Newhouse (2007) notes that physicians performing new procedures "tended to become more adept at them over time," and therefore the cost per procedure decreased (alternatively, physicians could perform more such procedures in a day). Meanwhile, substantial improvements in technology have occurred, including automation of the interpretation of results for imaging and other tests, so that the physician's time is reduced, in many cases substantially.[27] Fewer opportunities exist to increase productivity and reduce physician time in E&M services—hence fewer opportunities for physicians to increase their income by increasing volumes in these services.

4. CMS almost always accepts the RUC's recommendations. The CMS review process in principle might correct the overvalued procedure codes. However, in the past, relative fees almost never were reduced in the review process and frequently were increased (Newhouse 2007). Maxwell, Zuckerman, and Berenson (2007, 1858) find the following:

> During the first 5-year review [by CMS], values for physicians' work were increased for only 30.6% of the service codes, but these codes accounted for 82.0% of the RVU volume for physicians' work under review [table omitted]. During the second 5-year review, the values of RVUs increased for a large share of codes (55.7%), but this increase accounted for a smaller share of the RVU volume for physicians' work under review (38.0%). In both 5-year reviews, relatively few codes were reduced in value (10.9% during the first review and 3.6% during the second review).

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[27] This point was emphasized by an anonymous reviewer.

Laugesen, Wada, and Chen (2012) analyzed the CMS's decisions on updating work values between 1994 and 2010. They find that the CMS agreed with 87 percent of the committee's recommendations, although the CMS reduced recommended work values for a limited number of radiology and medical specialty services.

More recently, substantial statutory changes in the review process have given the CMS more authority and funding for more frequent periodic review and identification of potentially misvalued codes. This change appears to have had some effect on the CMS's acceptance of RUC recommendations. In the most recent five-year review, the CMS accepted fewer of the RUC's recommendations: "During previous five-year reviews, CMS agreed with over 90 percent of the RUC's recommendations. For [the 2012 review], the acceptance rate was 51 percent" (MedPAC 2011a, 3).

5. The RBRVS is an average-cost payment method. Even if average costs are estimated correctly, payment of average costs creates an incentive to provide more services whose variable costs are low, such as imaging and tests (Ginsburg and Berenson 2007). Site visits to 12 nationally representative metropolitan areas found providers responding to the incentive (Ginsburg and Berenson 2007, 1202, citations omitted): "we have seen more and more physicians building capacity to compete with hospital outpatient departments by offering these lucrative services; we take this as a sign of distorted payment structures."

F. Repeal of the SGR in 2015

In April 2015, the president signed the Medicare Access and CHIP Reauthorization Act of 2015 (P.L. No. 114-10). The passage of this legislation promises to correct some long-standing

criticisms of the RBRVS process. Although not going as far as the MedPAC report (2014), the legislation does the following:

- It repeals the SGR formula.

- It provides physicians with guaranteed annual 0.5 percent increases in Medicare fees through 2019 and will maintain them at the 2019 level through 2025.

- Though payments will remain at the 2019 level through 2025, the amounts paid to individual providers will be subject to additional incentive mechanisms, depending on whether the physician chooses to participate in the Merit-Based Incentive Payment System (a value-based purchasing model) or an Alternative Payment Model program.[28]

- For 2026 and subsequent years, payment rates to providers in an Alternative Payment Model program will increase each year by 0.75 percent, while other providers' rates will increase by 0.25 percent per year.

The new statute obviously goes well beyond replacing the SGR and the associated regime of "doc fixes"—and well beyond the concerns of this paper. But the key provisions stabilize the annual updates even as they create new value-based purchasing incentives.

Although the SGR wreaked some havoc with the normal congressional process and occasionally made providers nervous, it did not affect physician payment in the end. Since 2002, the SGR in effect has been repealed in one-year increments. Freezes or very small increases in the conversion factor occurred year after year. The new legislation does precisely that, prospectively, for an indefinite period. Its biggest effect is to remove an annual process of

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[28] The Merit-Based Incentive Payment System would consolidate Medicare's Meaningful Use, Physician Quality Reporting System, and Value-Based Modifier programs into one program. Alternative Payment Models are designed to shift physicians and others away from FFS reimbursement to alternative payment models in which they bear some financial risk, meet standards related to the use of electronic medical records, and meet certain quality measures in return for certain incentive payments.

SGR review much disliked in Congress and to remove the intense, distracting lobbying associated with it.

G. Can the RBRVS Be Fixed?

Although the RBRVS is flawed in fundamental ways, most observers believe that it will not be replaced in the near future. Ginsburg and Berenson (2007, p. 1203) conclude the following:

> The agenda for improving Medicare's methods of paying physicians needs to be broader than the development of more accurate relative values. An increasing proportion of these services is devoted to treating chronic disease, and the absence of payment for activities such as coordinating care and educating patients means that these services are likely to be underprovided. The increasing role of major equipment in medical practice argues for payment schedules that vary with service volume, with sharp increases in volume indicating a need for payment based on episodes of care or capitation. However, such ambitious approaches are probably years away. In the meantime, the RBRVS based fee schedule, which has been on automatic pilot, needs much greater attention to ensure that its objectives are again achieved.

Newhouse (2007, p. 1884) agrees:

> Unfortunately, neither the [SGR] spending limits nor the asymmetric review process is likely to disappear. The overall pressure on the federal budget and the large share of it that Medicare represents, 17% in 2007, will probably keep the increases in Medicare spending on physicians' services modest. Many procedures that become less costly over time may well continue to fly under the radar of the review process. With no easy fix in sight, Medicare spending on physicians will probably remain a thorny issue.

Laugesen, Wada, and Chen (2012, 970) pose a somewhat different issue:

> A key question for policy makers and both critics and supporters of the update process is whether changes should be made to it. First, we need to distinguish between features of the update process and the larger payment policy framework. The update committee and CMS both operate within a resource based payment system, in which differences in physical or mental effort or stress to the physician determine work values. Those values, in turn, rely on physicians' estimates of effort and stress. The larger policy framework explains CMS's reliance on the update committee: Unless some of the deeper assumptions of the fee schedule are changed, CMS will probably continue to need the committee's recommendations.
>
> If policymakers or physicians want to improve the update process in roughly its current

form, there is a fairly settled set of recommendations. MedPAC (2006b) and others have

suggested that RUC membership include more primary care physicians. Ginsburg (2012) has

suggested the CMS should audit group practices to obtain more reliable cost accounting data

than the current surveys. In a similar vein, many (e.g., Ginsburg and Berenson 2007; Laugesen

2014;Laugesen, Wada, and Chen 2012; MedPAC 2014) urge the CMS to acquire independent

sources of expert analysis to reduce the heavy reliance on the RUC. The ACA addresses some of

these concerns by providing some funding to reevaluate the data underlying work RVUs and

reviewing misvalued codes. The SGR patch went further in providing additional authority and

funding and required targets for correcting misvalued codes. MedPAC (2014) proposed replacing

the SGR with a 10-year path of legislated updates with higher updates for primary care services

than for other services, thereby severing the link between growing specialist/procedural volume

and reductions in proposed increases in primary care reimbursement. The Medicare Access and

CHIP Reauthorization Act of 2015 does not go that far but does stabilize the annual update of the

conversion factor.

Each of these suggestions or initiatives is in its own way a reasonable response to the

problems of the current system, unless, as Laugesen (2012) suggests, some of the deeper

assumptions of the fee schedule are changed. Most important is the premise that the pricing

system for physician services should be based on administrative data (however perfect or

imperfect) that attempt to create the semblance of market prices for physicians. As we noted

previously in section II, the amount of information required for the government to replicate the

result of millions of consumers and producers operating atomistically and independently is

formidable. An alternative approach would be to reduce the government's administrative price-

setting role.

IV. How Can Medicare Find the Optimal Prices?

A. How Can Medicare Find the Efficient Price Level?

Our proposed conditions for efficient consumption and production of health care services mirror the standard assumptions underlying microeconomic equilibrium models. Those conditions would be met in an environment free of market failure. Unfortunately, markets for both health insurance and health care have many types of market failure. The most important are poor information, provider pricing power, and health insurance subsidies for both working people and Medicare beneficiaries.

But even if those market failures were corrected, FFS Medicare's administrative prices, which are insensitive to supply and demand, would not produce a fee schedule that replicated the results achieved by a perfectly competitive market. Because the amount of information required for the government to replicate the actions of millions of consumers and producers is formidable, an alternative approach would be to reduce the government's administrative role in setting prices. Movement away from administered prices could take several forms.[29] We offer these alternatives merely to illustrate the variety of options that are available. None of them would be trivial to implement, and they could be as complex to administer as the current system. Their potential advantage is that they might be closer to the optimal fees.

- FFS providers could bid on the RBRVS or DRG multipliers that determine actual fees.

- Services could be bundled, and providers could bid on the bundle of services.[30] The

  Medicare Acute Care Episode demonstration is a recent attempt to create bundles of

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[29] A reviewer suggested another option—conversion of FFS Medicare to major medical insurance that covers only the cost of expensive procedures.

[30] This proposal and the fourth proposal, concerning bidding for ACOs, would help address problems noted earlier (e.g., by Ginsburg and Berenson 2007) that, in paying for myriad individual services, the RBRVS fails to account for care coordination and other activities central to chronic disease management for which fees have not been established.

services within the traditional FFS Medicare payment system. The Acute Care Episode demonstration did not include bidding but did allow physicians to share in savings that resulted from better coordination of care (IMPAQ 2013).

- Accountable Care Organizations (ACOs) in Medicare could move away from FFS payment with shared risk and toward a blend of FFS payment and capitation, coupled with competitive bidding on the fee schedule multipliers or the capitation component of payment. An important step associated with this alternative would be for beneficiaries to choose a primary care provider that would manage their referrals to specialists. These agreements would be voluntary for FFS beneficiaries who were willing to sign up with an ACO. If costs were lower than budgeted, ACO enrollees could be rewarded with lower Part B premiums.

- Providers could set their fees wherever they liked but then be placed in cost-sharing tiers based on their bids for bundles of services, RBRVS and DRG multipliers, or ACO partial capitation payments. Beneficiaries could see any provider of their choice, but they would pay higher coinsurance, copayments, or balance bills for providers in higher-cost tiers.

- Medicare could allow more flexibility in balance billing. Physicians can choose whether to accept assignment of Medicare patients. If physicians accept assignment, they agree to accept Medicare's approved amount as full payment for the service. Physicians who do not accept assignment on all patients (referred to as nonparticipating physicians) can bill the patient for up to 9.25 percent more than Medicare's allowable charge. Balance billing warrants a more detailed discussion.

If we take for granted that Medicare's prices are administered prices and as such are unresponsive to supply and demand, one suggestion for finding the ideal prices is to let patients

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pay more than the administered prices. If they could add their own money to what Medicare pays, physicians would be more willing to treat them and to offer high-quality services. Paying more than Medicare's prices is known as *balance billing*, so this proposal calls for relaxing the current limit on balance billing.

At first glance, one might think that all physicians would serve more Medicare patients if they could balance bill with fewer restrictions. However, Feldman (2008) shows that the physician's ability to balance bill should make no difference in the quantity of Medicare services supplied if the Medicare price is higher than the physician's marginal revenue from balance billing the last Medicare patient. Balance billing simply lets these physicians collect more revenue from less price-sensitive Medicare patients—for example, those with better supplementary insurance coverage. Furthermore, balance billing has no effect on either the quantity of services for private patients or the private price.

Unlimited balance billing would increase the quantity of Medicare services only if the last Medicare patient taken on assignment were more profitable to balance bill. In that case, balance billing also would decrease the quantity of private services and increase the private price.

McKnight (2007) investigated the effect of restrictions in balance billing that began in the 1980s when states and the federal government began to limit this practice in Medicare.[31] Her findings show that physicians treated the same mix of patients but received less revenue because of the limits on balance billing. This evidence indicates that easing the current restrictions on balance billing would not likely have a significant impact on the quantity of Medicare services.

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[31] A similar theoretical model can be found in Zuckerman and Holahan (1991).

B. Difficulties with Bidding Approaches

None of the bidding approaches will be effective without some incentive for providers to bid low. The greatest incentive to bid low would be expulsion of losing bidders from the Medicare program (winners take all), but that is politically infeasible and may be technically unwise as well. Many providers could not survive without Medicare patents, so the threat of expulsion from Medicare would encourage providers to consolidate further into units that would be too big to exclude.

Another incentive to bid low would be the threat of losing patients to a lower-cost provider, but that requires beneficiaries to care about the prices determined by providers' bids. This has been difficult in the past because FFS Medicare beneficiaries generally buy first-dollar coverage of their health care expenses through Medigap policies, making it difficult to give beneficiaries "skin in the game" when they are so accustomed to insulation from such consequences. Currently, the government subsidizes Medigap premiums by paying approximately 80 percent of the additional use induced by first-dollar coverage. That policy could end by (a) requiring Medigap plans to retain some level of cost sharing for each service up to a reasonable limit on total out-of-pocket spending per year; (b) taxing Medigap premiums; or (c) requiring Medigap insurers to convert to Medicare Advantage plans.

The first Medigap alternative strikes us as the most politically feasible, and it would be practical to implement. To illustrate how it would work, suppose Medicare determines from the bids submitted by cataract surgeons that the benchmark price for cataract surgery will be $10,000. Providers bidding less than $10,000 would be paid $10,000, while those bidding above $10,000 would have to charge beneficiaries for the difference. Medigap plans would not be allowed to cover the balance billing (the difference between the actual charge and the benchmark price).

Medigap plans might not cover the balance bill even if they could. Because Medicare would not subsidize the balance bill, 100 percent of the cost would have to be included in the Medigap premium. Beneficiaries might not be willing to pay for this extra insurance coverage out of their own pockets.[32] To the extent beneficiaries in traditional Medicare face some out-of-pocket cost sharing, providers would have incentives to submit low bids.

C. How Can Medicare Set Efficient Prices for Individual Services?

Thus far, we have discussed Medicare prices as if they were a homogenous single "fee." In fact, FFS Medicare sets thousands of individual fees for particular services, not counting adjustments to prices such as the GPCI, graduate medical education, and extra payments for hospitals that see a disproportionate share of indigent patients. Currently, the prices for individual physician services are governed by the RBRVS weights and hospital services by the DRG weights. Those weights require constant adjustment and, as noted earlier, are subject to political influence and distortions in the update processes.

Some of the steps suggested previously, which would move FFS Medicare prices toward more competitively determined prices, could be applied to individual services or groups of services. In other words, the CMS could carve out hip fractures, ongoing care of beneficiaries with diabetes or hypertension, or other conditions and use bidding to recalibrate its payments for those episodes of care. An analogy would be the Coronary Artery Bypass Graft Demonstration, held by the Health Care Financing Administration from 1991 to 1996. In this demonstration, the Health Care Financing Administration negotiated bundled payment for Part A and Part B

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[32] The most popular Medigap plan, "Type F," currently covers Part B balance billing. However, balance billing is infrequent and physicians can balance bill only 9.25 percent more than the allowed fees. The extent of balance billing in a competitive pricing system could be substantially greater and far more frequent than insurers' current calculations reflect. In addition, the fastest-growing Medigap plan is "Type N," which does not cover balance billing.

services for coronary artery bypass grafts, which allowed participating organizations to create payment approaches that rewarded physicians for reducing the cost of care (Coulam, Feldman, and Dowd 2011).

An important technical problem with bidding for episodes of care is that Medicare beneficiaries often have several comorbid conditions, which makes adequate risk adjustment a challenging task. A substantial question also exists concerning quantities in any bidding process. Medicare would need to estimate the demand for services in each market area in the absence of inefficient moral hazard, and it would ask providers of specific services in each market area to submit bids for both the price of the service (or bundle of services) and the quantity that the provider would be willing to supply at that price. Medicare would rank the bids from lowest to highest and set its price equal to the highest-ranked bid that yields the desired quantity of the service in the market area.[33] All providers would be paid that price, which would exceed the bids submitted by lower-priced providers (who would not be allowed to increase their supply of services).

Although the amount of information and effort needed to set prices using price and quantity bids is formidable, understanding that Medicare currently behaves as if it has made explicit policy decisions regarding moral hazard and local variation in supply and demand is important. Beneficiaries receive very large subsidies for Medigap premiums, and Medicare sets prices that satisfy the demand for services at the inflated levels of coverage. This behavior suggests that inefficient moral hazard currently is not viewed as a serious problem. Medicare does not adjust its fees to reflect local variation in demand for services, and the only supply-related variable in the payment formulae is variation in input prices (Dowd et al. 2006–2007).

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[33] Alternatively, Medicare could set the benchmark price at the lowest excluded bid.

The bidding systems we have described would not work well under some types of provider market structure. Difficulties could arise if one large provider faced competition from a set of smaller providers who, in aggregate, could not possibly meet the government's desired supply of services to beneficiaries in the market area. This problem points to the importance of efforts to monitor—and address—provider concentration in each market area.

D. Summary

Medicare's administrative pricing system and its political manipulation introduce significant price distortions into the markets for hospital and physicians' services. Those distortions result in a set of somewhat counterintuitive results, at least from the point of view of the cost-shifting model.

First, if the ACA legislation is successful at reducing Medicare fees, the likely result will be a reduction in the fees paid by private health plans, up to a point. Medicare's total expenditures will be reduced for two reasons—lower fees (unit prices) and reduced supply of services to Medicare beneficiaries.

Second, a well-designed bidding system can find the efficient cost of production, but for the bids to represent the providers' true cost, providers must have an incentive to bid low. The greatest incentive is the threat of losing patients to a lower-cost provider, but as long as FFS Medicare beneficiaries face near-zero cost sharing, it is difficult to design a system that exposes beneficiaries to the marginal cost of higher-cost providers. If beneficiaries face some cost sharing, then the threat of beneficiaries having to pay an additional out-of-pocket price to remain with a higher-cost provider could be a powerful incentive to submit low bids. Losing bidders could remain in the Medicare program, but would face reduced patient demand for their services. This would move Medicare prices in the real world closer to the ideal prices we have outlined in this paper.

Appendix: Medicare Payment Changes in the Affordable Care Act

The Patient Protection and Affordable Care Act of 2010 (Pub. L. 111-148, 124 Stat. 119, H.R. 3590, enacted March 23, 2010) made numerous changes to the FFS Medicare payment system.

The ACA reduced the annual market-basket updates for inpatient hospital, home health, skilled nursing facility, hospice, and other nonphysician Medicare providers. These adjustments are based on the assumption that providers can match the 10-year moving average of economy-wide private, nonfarm productivity gains, approximately 1.1 percent per year. In addition to the adjustment for productivity increases, specific reductions in the update factors will be in place for fiscal years 2014 through 2019.

Effective in 2014, the ACA reduced Medicare's "disproportionate hospital share" payments to hospitals. Medicare payments that would otherwise be made to hospitals were reduced by specified percentages to account for "excess" (preventable) hospital admissions (effective 2012).

In 2015, payments will be reduced by 1 percent for hospital-acquired conditions. Under the hospital value-based purchasing program, a percentage of hospital payment is tied to performance on quality measures related to common and high-cost conditions, such as cardiac and pneumonia care.

Physicians who see FFS Medicare patients are not subject to the productivity adjustments applied to hospital payments. However, until recently they were subject to the SGR, which specified a formula for updating the Part B physician fee schedule according to a comparison of actual spending with a target spending growth rate that is based on changes in the number of FFS Medicare beneficiaries, the 10-year average annual change in real gross domestic product per capita, and the estimated annual change in expenditures caused by changes in law or regulations.

Under the new legislation, explained elsewhere in this paper, they will receive zero or small increases in the update factor for the foreseeable future.

Section 1202 of the ACA required state Medicaid agencies to pay at least the Medicare rates in effect in calendar years 2013 and 2014 for primary care services delivered by a physician with a specialty designation of family medicine, general internal medicine, or pediatric medicine.

Section 3007 creates a value-based modifier under the physician fee schedule. FFS payments will be adjusted based on the cost and quality of care physicians deliver (effective 2015).

The ACA allowed providers organized as ACOs that meet quality thresholds to share in the cost savings they create for the Medicare program. The ACO providers receive a bonus for holding spending for a population of attributed beneficiaries below certain targets. Some ACOs also are held accountable for overspending the targets.

The ACA established a national pilot program to develop and evaluate a bundled payment approach for inpatient, physician, outpatient, and post–acute care services for an episode of care. The pilot program could be expended if it achieves its stated goals.

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