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# Setting Physicians' Prices in FFS Medicare: An Economic Perspective

## **Abstract**

Recent policy discussions by the Medicare Payment Advisory Commission (MedPAC) regarding physician prices in the traditional fee-for-service (FFS) Medicare Program reflect movement toward a market pricing model. Earlier objectives such as sustainable levels of spending have given way to concerns over the relationship between fees and actual costs, access to care, and the importance of demand and supply in local markets. An important objective in other policy settings is economically efficient distribution of services. We explain the meaning of economic efficiency for Medicare physician prices and explore difficulties one might encounter in pursuing economic efficiency, as well as the cost of not pursuing it.

## **Disciplines**

Benefits and Compensation | Health and Medical Administration | Health Economics

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# Setting Physicians' Prices in FFS Medicare: An Economic Perspective

Bryan Dowd, Ph.D., Roger Feldman, Ph.D., John Nyman, Ph.D., and Bob Town, Ph.D.

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*Recent policy discussions by the Medicare Payment Advisory Commission (MedPAC) regarding physician prices in the traditional fee-for-service (FFS) Medicare Program reflect movement toward a market pricing model. Earlier objectives such as sustainable levels of spending have given way to concerns over the relationship between fees and actual costs, access to care, and the importance of demand and supply in local markets. An important objective in other policy settings is economically efficient distribution of services. We explain the meaning of economic efficiency for Medicare physician prices and explore difficulties one might encounter in pursuing economic efficiency, as well as the cost of not pursuing it.*

## INTRODUCTION

Setting prices for physicians' services in the traditional FFS Medicare Program is a topic of great importance to physicians, taxpayers, Medicare beneficiaries, and policymakers. Doctors are concerned about their practice revenue, taxpayers about taxes, beneficiaries about the cost of care and access to physician services, and policymakers about the cost and performance of the Medicare Program.

Despite the importance of setting FFS Medicare prices, the objectives of the price-setting process have not always been clear (Pauly, 1991). In this article, we review recent discussions of Medicare payment

policy that have appeared in MedPAC reports. MedPAC was established by the 1997 Balanced Budget Act to advise Congress on the Medicare Program and is the successor to both the Physician Payment Review Commission (PPRC) and the Prospective Payment Assessment Commission. MedPAC's reports not only present extensive analyses of policy issues, but also carry substantial political influence, and thus provide a reasonable focus for this analysis.

Reviewing MedPAC's Reports to Congress (2000-2005), we find a gradual movement toward the goal of setting efficient prices in the Medicare Program. We discuss how economic efficiency might be interpreted for Medicare physician prices and some of the difficulties one might encounter in pursuing it, as well as the cost of not pursuing it.

We assume that Medicare will continue to pay physicians on the basis of a fee schedule, but otherwise our analysis is general. We do not assume that the types of services covered by Medicare will remain the same, or even that FFS Medicare will be administered by the government. The government might contract administration of FFS Medicare to private organizations, which already process claims and conduct quality assurance activities.<sup>1</sup> Although we couch the discussion in terms of physician fees, much of the analysis could apply to setting prices for other types of services, including hospital services and prescription drugs.

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The authors are with the University of Minnesota. The statements expressed in this article are those of the authors and do not necessarily reflect the views or policies of the University of Minnesota or the Centers for Medicare & Medicaid Services (CMS).

<sup>1</sup> Some of the issues discussed in this analysis would be obviated if local private organizations had the authority to set fees.

## Medicare's Physician Pricing Objectives

Two primary features of any FFS payment system are the ways in which the quantity of services is defined and unit prices are set. Different Medicare policy initiatives have focused on each feature. In the 1980s, resource-based relative value units (RBRVUs) represented a new way to define the quantity of physician services (Hsiao et al., 1988). Equally important, however, is the unit price of services, or the multiplier that converts RBRVUs into payment amounts, because it influences the supply of services by physicians. This analysis focuses on the objectives that Medicare might pursue when it sets the multiplier to determine unit prices.

One of the earliest objectives of setting FFS Medicare prices was controlling total expenditures. Concern over total spending began shortly after the program was established in 1965 (Dowd, Feldman, and Christianson, 1996). Physician pricing provisions in the 1989 Omnibus Budget Reconciliation Act (OBRA) were a response to the widely held perception that the usual, customary, and reasonable method of paying physicians was inherently inflationary. In addition to establishing the RBRVU fee schedule, OBRA established volume performance standards, designed to control expenditures on physician services. These standards linked the growth in physician fees to growth in the volume of services provided by all physicians. This method of regulating fees also proved to be inherently inflationary. In response, Congress established a sustainable growth rate as part of the 1997 Balanced Budget Act. This linked growth in physician fees to growth in the gross domestic product, adjusted for physician practice cost inflation, changes in FFS Medicare enrollment, and the effects of laws and regulations (Hackbarth, 2005).

MedPAC (2001) modified the goal of FFS pricing to be maintenance of sustainable expenditure growth while "...accounting for factors that affect the cost of providing care." In their report they suggested that Congress consider a new approach to updating the FFS Medicare fee schedule that would reflect more accurately changes in the unit costs of providing physician services. This interest in providers' costs could be interpreted as greater emphasis on supply, as opposed to consumer demand.

The objective of payment adequacy was introduced by Med PAC (2002) and defined operationally as access to physician services. The emphasis on payment adequacy could be interpreted as recognition that both supply and demand determine the quantity of Medicare services supplied by physicians. However, there was no discussion of possible disparities between supply and demand or of the notion that Medicare might wish to adjust prices on the basis of such disparities.

The emphasis on access intensified after 2002. Anecdotal reports of access problems were beginning to surface in selected markets (e.g., Seattle, Denver, and Austin). However, it was not clear that these problems were specific to Medicare, if they existed at all. Data from the 2000-2003 Consumer Assessment of Health Plans Surveys showed that about 90 percent of beneficiaries seeking a new physician reported minor or no problems doing so, while special Targeted Beneficiary Surveys commissioned by CMS found that physician access generally was better for Medicare beneficiaries than for the privately insured population. MedPAC (2004) also began reporting comparisons of Medicare physician fees to those of private insurers. Although Medicare's prices were 66 percent of private fees in 1994, they were 83 percent of private fees in 2001, primarily due to a decline in private fees.

MedPAC's reports reflect a gradual, but important, trend in their thinking about setting FFS Medicare prices. In one sense, their objectives have evolved from global objectives (sustainable growth in total program expenditures) toward recognition of the importance of local variations in supply and demand. Nonetheless, MedPAC continues to recommend basing physician price increases on nationwide estimates of inflation in the prices of inputs to physician services and increased productivity.

The evolution of MedPAC's thinking also can be viewed as a process of refinement—from the early focus on total expenditures (sustainable growth), to interest in supply curves (accurate accounting for cost factors and providers' willingness to see patients), and most recently, a combination of supply and demand factors (access to care). Finally, MedPAC's comparisons of Medicare fees to those of private insurers reflect the recognition that FFS Medicare is not the only payer in the market.

MedPAC's growing concern over the supply and demand for physicians' services in the Medicare Program suggests movement toward a market model of pricing. But what would a market pricing model for physician services look like?

A perfectly competitive market produces a competitive equilibrium in which supply and demand are equal. There is no unsatisfied demand for services, given beneficiaries' income and preferences, and no unsatisfied supply of services, given physicians' cost functions. The competitive equilibrium is ideal in the narrow, but important sense of economic efficiency. Efficiency means that no provider or consumer can be made better off without making another provider or consumer worse off. An efficient distribution of resources is termed "Pareto optimal." There are many Pareto optimal distributions of resources. Society

must choose among them using some type of decision rule. However, any efficient distribution of resources can be achieved by adjusting the initial distribution of income, either through cash or in-kind transfers, and then allowing a competitive market to reach equilibrium. This is the second fundamental theorem of welfare economics (Rosen, 2002; Varian, 1992).

Income could be redistributed to the poor and disabled elderly through Social Security, leaving Medicare free to pursue efficient prices. Our discussion of Medicare pricing focuses primarily on economic efficiency, but we point out that Medicare fees could have an important impact on fairness of access to services by privately insured consumers.

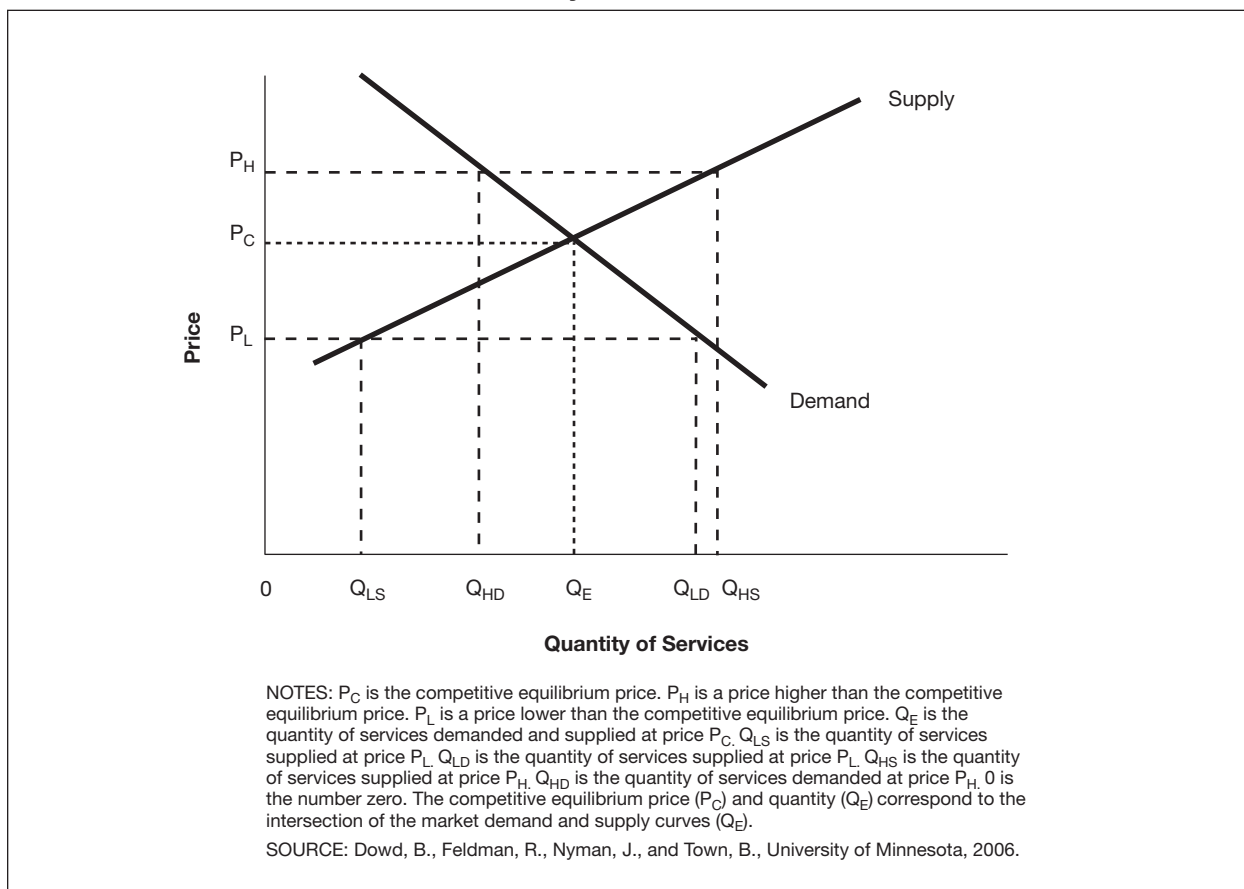
## DIAGRAMMATIC EXPOSITION OF MEDICARE PRICING OBJECTIVES

### Competitive Market for Physicians' Services

Figure 1 shows the simplest competitive market for physician services. In this simplest model, there is no insurance so consumers pay out-of-pocket expenses for physician services. At the competitive equilibrium price ( $P_C$ ) the amount of services demanded by consumers equals the amount of services that providers are willing to supply ( $Q_E$ ). Total expenditures for services are the product of  $P_C$  times  $Q_E$ .

In Figure 1, any price other than  $P_C$  is inefficient. At  $P_H$ , for example, providers would be willing to supply  $Q_{HS}$  services, but beneficiaries would demand only  $Q_{HD}$ . Similarly, at  $P_L$ , beneficiaries would demand  $Q_{LD}$  services, but providers would supply only  $Q_{LS}$ . Once price departs from  $P_C$ , the quantity of services observed in the market is determined by the lesser of demand or supply, and there will be either excess

**Figure 1**  
**Model of the Market for Physicians' Services Without Insurance**



supply (beyond the quantity demanded by consumers) or excess demand (beyond the quantity supplied by providers).

### Advantages and Disadvantages of Insurance Coverage

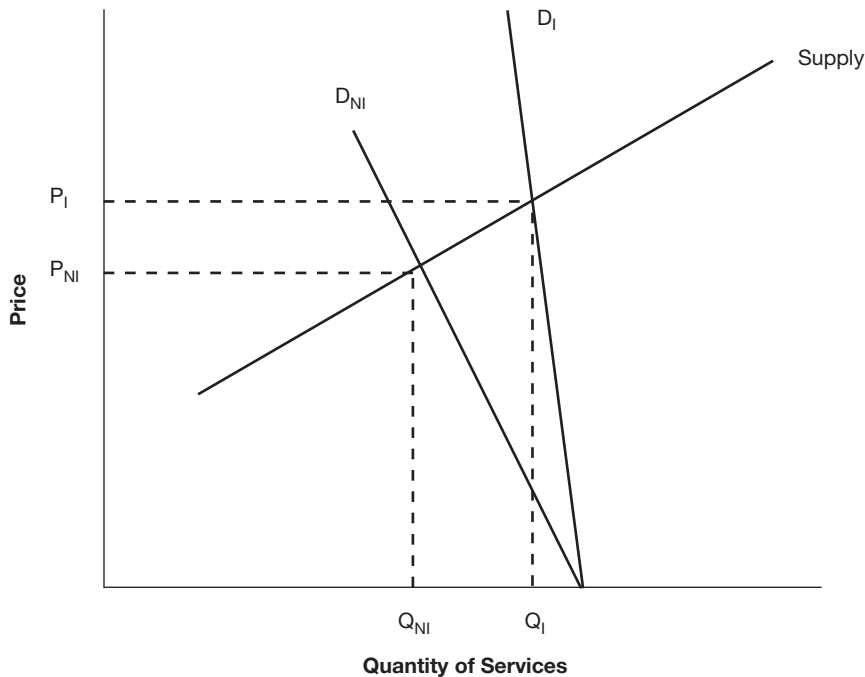
The perfectly competitive market without insurance ignores an important problem: demand for health care is uncertain and treatments for many illnesses are extremely expensive. Risk-averse consumers seek financial protection from these events by purchasing health insurance.

The primary advantage of health insurance is that it protects consumers from the costs associated with adverse health events by spreading the risk over a pool of individuals. However, in its most common

form, health insurance pays off in the event of illness by reducing the consumer's out-of-pocket price of services. For example, insurance might cover 80 percent of medical expenditures, while the consumer pays the remaining 20 percent. This type of price-reduction insurance distorts the consumer's price of health care services, resulting in increased consumer demand for services. Economists refer to the extra consumption induced by insurance as moral hazard.

Figure 2 illustrates the effect of insurance on the demand for medical care. There are two demand curves: one representing demand with insurance, ( $D_I$ ), and one representing demand without insurance ( $D_{NI}$ ).  $D_I$  is the demand curve seen by the providers of services to insured consumers.

**Figure 2**  
**Competitive Market for Medical Care with Insurance**



NOTES:  $P_I$  is the consumer's out-of-pocket price of services with insurance.  $P_{NI}$  is the consumer's out-of-pocket price of services without insurance.  $Q_I$  is the quantity of services demanded by the consumer at  $P_I$ .  $Q_{NI}$  is the quantity of services demanded by the consumer at  $P_{NI}$ .  $D_I$  is demand with insurance.  $D_{NI}$  is demand without insurance.  
 SOURCE: Dowd, B., Feldman, R., Nyman, J., and Town, B., University of Minnesota, 2006.

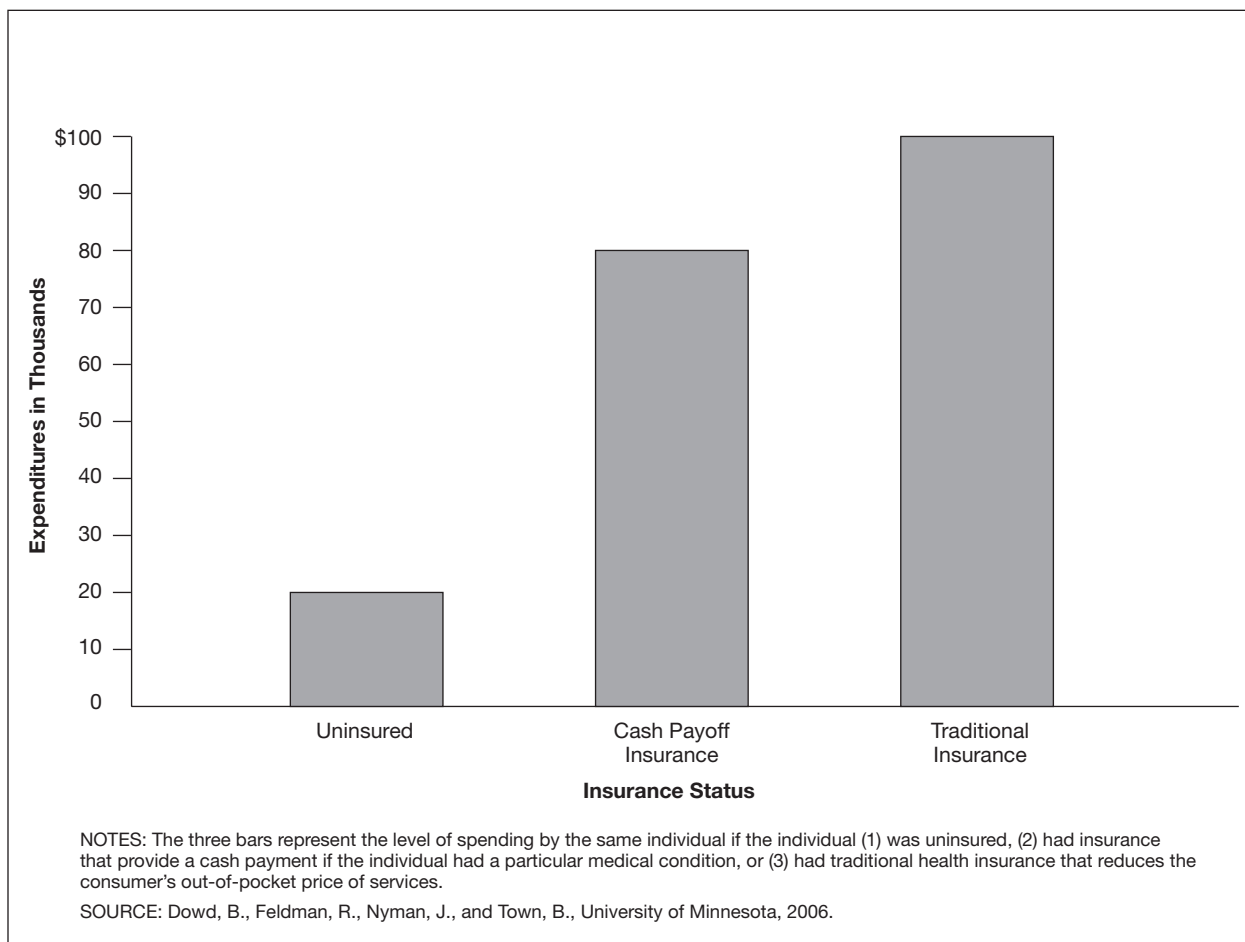
The  $D_I$  is nearly vertical reflecting our assumption that most Medicare beneficiaries in FFS Medicare have supplementary Medigap insurance that substantially reduces the consumer's out-of-pocket price so that changing the supply price of services has little effect on demand.

The conventional view of moral hazard is that although consumers derive some benefit from the additional services triggered by price-reduction insurance, the additional services are valued by consumers at less than their cost. (If the services were valued at least as much as their cost, consumers would have purchased them in the absence of insurance.) The distortion of prices induced by price-reduction insurance thus is a form of market failure, resulting in an

inefficient distribution of health care services relative to other goods and services in the market.

However, Nyman (2003) has suggested that moral hazard has both an efficient and an inefficient component. He uses the following thought experiment to distinguish between efficient and inefficient moral hazard. Conventional health insurance pays off by reducing the price of health care services. Suppose, however, that health insurance paid off by giving policyholders a cash payment equal to the amount that insured consumers spend under the traditional price-reduction form of insurance. Consumers would be free to spend the cash payment on health care or anything else.

**Figure 3**  
**Efficient and Inefficient Moral Hazard**



Now suppose that individuals were assigned randomly to (1) no insurance, (2) cash payoff policies, or (3) traditional price-reduction insurance. Comparing the expenditure on health care by uninsured individuals and individuals with traditional price-reduction insurance would yield an estimate of total moral hazard. Comparing the expenditure on health care by individuals with traditional insurance versus cash payoff policies would estimate the amount of inefficient moral hazard. The comparison is illustrated in Figure 3. In this example, expenditures in response to a particular illness by uninsured consumers are \$20,000, while individuals with traditional price reducing insurance spend

\$100,000, so total moral hazard is \$80,000 (\$100,000 - \$20,000). Individuals with cash payoff policies spend \$80,000 on health care, and thus the amount of inefficient moral hazard is \$20,000 (\$100,000 - \$80,000). By subtraction, the remaining moral hazard of \$60,000 is efficient (\$80,000 - \$20,000). Thus, the inefficient portion of moral hazard is the additional health care demand attributable to the use of price-reduction insurance versus cash payoff insurance.

If Medicare beneficiaries paid their entire health insurance premiums out-of-pocket, then we might assume that the policies they demanded reflected the best balance of moral hazard and protection against risk. However, Medicare premiums are



heavily subsidized by the government, even when prepayment of premiums during the beneficiary's income-earning years is considered.<sup>2</sup> Medicare beneficiaries retiring in 1994 received, on average, \$5.19 in Part A benefits for every dollar they paid into the system (King, 1994). Part B premiums are designed to cover only 25 percent of costs. Thus, beneficiaries lobby the government for more Medicare coverage, with greater levels of moral hazard, than one would observe in the absence of those subsidies.

The subsidy of Medicare premiums obligates Medicare to distinguish between efficient and inefficient moral hazard. Furthermore, because Medicare pays for health services with taxes (primarily income and wage taxes), the calculation of efficient moral hazard should include a comparison of the benefits associated with another dollar of Medicare spending to the administrative cost of collecting the additional dollar of tax revenue and the effect of those taxes on productivity (known as the deadweight loss of tax revenue).

In theory, Medicare could reduce demand by increasing beneficiaries' coinsurance and deductibles. However, most FFS Medicare beneficiaries purchase supplementary insurance that covers much of their point-of-purchase cost sharing, and the government subsidizes the purchase of that supplementary coverage.<sup>3</sup> We assume that such supplementary coverage will remain legal, unrestricted, and subsidized, so most beneficiaries will continue to purchase it. Thus, manipulating point-of-purchase cost sharing (i.e., coinsurance and deductible) is likely to be a way to regulate consumption.

<sup>2</sup> Employment-based health insurance premiums and out-of-pocket spending on health care services also receive implicit subsidy through exemption from State and Federal personal income and FICA taxes.

<sup>3</sup> Medigap premiums are subsidized because Medicare pays approximately 80 percent of the cost of additional utilization induced by filling the gaps in the entitlement coverage (Christensen, 1987).

Alternatively, Medicare could reduce consumption by reducing the supply price of services—for example, to  $P_L$  in Figure 1. For the remainder of the analysis, we assume that Medicare influences consumption primarily by setting the supply price of services, rather than the demand price faced by beneficiaries. Thus, when we refer to the price of physician services we are referring to the price paid to providers, rather than the price faced by beneficiaries.

We denote the quantity of services deemed efficient by Medicare as  $Q_M$  and we assume that the government's objective is to purchase  $Q_M$  for FFS Medicare beneficiaries.  $Q_M$  is not necessarily equal to  $Q_{NI}$  (or to  $Q_I$ ), but may reflect efficient moral hazard and other considerations as described in the remainder of the article.

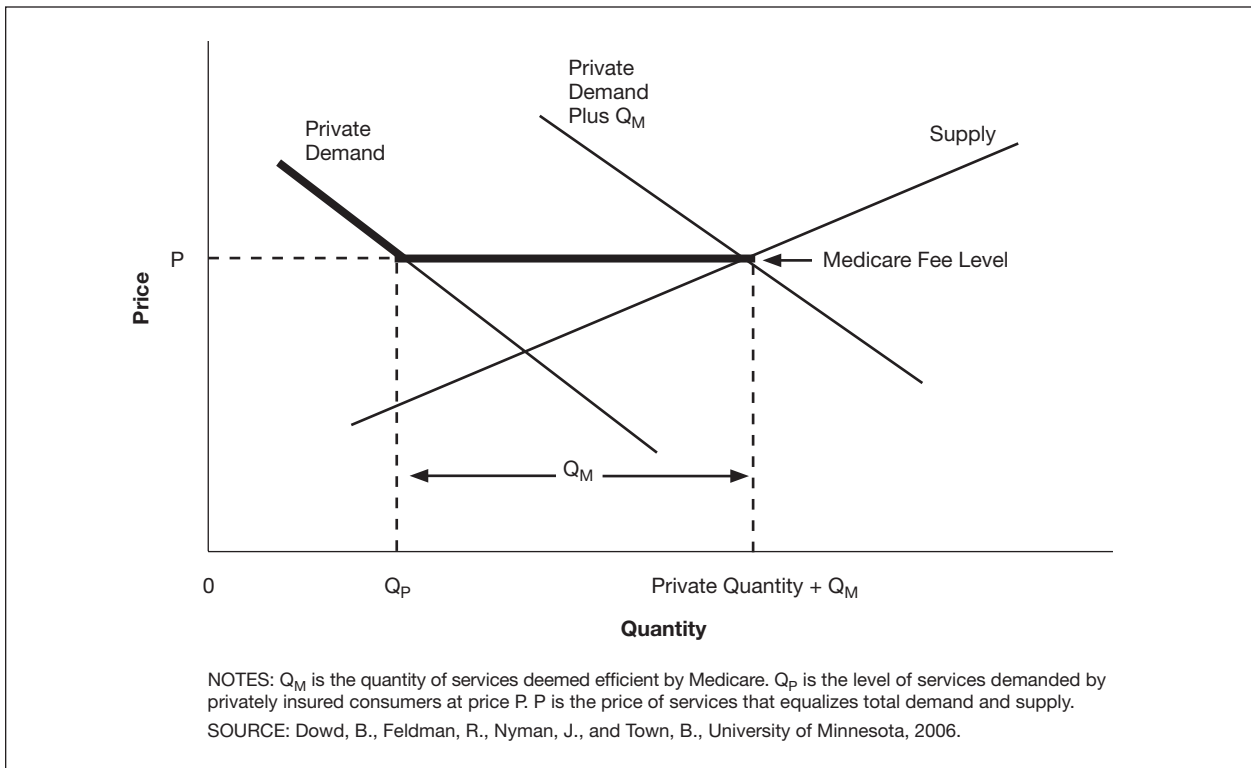
## Multiple Payers

Despite MedPAC's recent comparison of Medicare physician fees to those of private insurers, Medicare's current price-setting policy does not recognize explicitly any interaction of its prices with activity in the private health insurance market. But the FFS Medicare Program does not exist in isolation from private health insurance. Virtually all types of medical care (with the possible exception of treatment for end stage renal disease) consumed by Medicare beneficiaries also are consumed by individuals with private insurance.

Figure 4 shows the private demand and adjusted total demand curves for physician services, along with the market supply curve. Total demand is the sum of private demand and  $Q_M$ . The efficient total quantity of services is found where total demand is equal to supply.

Figure 4 also illustrates an important fact about the Medicare Program: because Medicare is a large health plan and competes with private insurers for the services

**Figure 4**  
**Efficient Medicare Price in a Competitive Market with Multiple Payers**



of the same set of physicians, the prices that Medicare pays for services influence the level of consumption by privately insured consumers. If the Medicare price is higher than  $P$ , then consumption by Medicare beneficiaries will increase (assuming  $Q_M$  is less than the amount of services that beneficiaries would demand at zero out-of-pocket price) and consumption by privately insured consumers will decrease. The opposite outcome will happen if the Medicare price is lower than  $P$ .

Price  $P$  is economically efficient, given an initial distribution of resources and determination of  $Q_M$ . However, two problems could arise. First, the resulting level of private consumption ( $Q_P$ ) could be considered unfair if the initial distribution of resources was unfair. With over 40 million uninsured Americans under age 65, the government needs to consider carefully its policies regarding unmet demand by Medicare beneficiaries. Should the government set

Medicare fees high enough to eliminate all excess demand by Medicare beneficiaries? Recall that many FFS Medicare beneficiaries face out-of-pocket prices that are close to zero.

Second, the efficiency of price  $P$  could be threatened by the way in which physicians respond to a reduction in the Medicare price. Individual physicians could respond to Medicare fee changes by altering either the quantity or quality of services provided to Medicare beneficiaries. If physicians responded to a price decrease by rationing medical care according to any method other than willingness to pay, the resulting distribution of Medicare services would be inefficient (in the absence of other sources of market failure), even though the total quantity of services consumed by Medicare beneficiaries remained at  $Q_M$ . For example, rationing on the basis of the beneficiary's willingness to wait in the office would be inefficient.

Allowing physicians to charge some Medicare beneficiaries a fee in addition to the government payment rate would alleviate that inefficiency. This practice is known as balance billing. Physicians have a limited ability to balance bill Medicare patients, but only if they do not accept assignment. Accepting assignment means that physicians agree to accept Medicare's price as payment in full. In return, the physician can bill Medicare directly, collecting only the coinsurance and deductible from the patient. Physicians who agree to accept assignment on all allowed claims are referred to as participating physicians and receive a 5-percent increase in fees. However, participation does not carry an obligation to see Medicare patients. Limits on balance billing effectively limit the physician's additional revenue to 9.25 percent (MedPAC, 2004) and some States have passed legislation prohibiting balance billing of Medicare patients (McKnight, 2004).

It appears doubtful that balance billing is needed on a large scale. Ninety-nine percent of allowed Medicare charges were assigned in 2003. Moreover, physician participation and assignment rates in Medicare have been rising in recent years (MedPAC, 2004). These data, taken in conjunction with the rising rate at which physicians are accepting new Medicare patients and MedPAC's surveys that show a narrowing gap between Medicare and private physician prices, suggest that the marginal net revenue of Medicare versus privately-insured patients is not substantially different. McKnight (2004) finds little effect of balance billing on the quality or quantity of Medicare physician services.

In response to an early draft of this article, MedPAC staff expressed concern that if payments were not adjusted adequately for differences in patient costs, then lowering Medicare fees might result in physi-

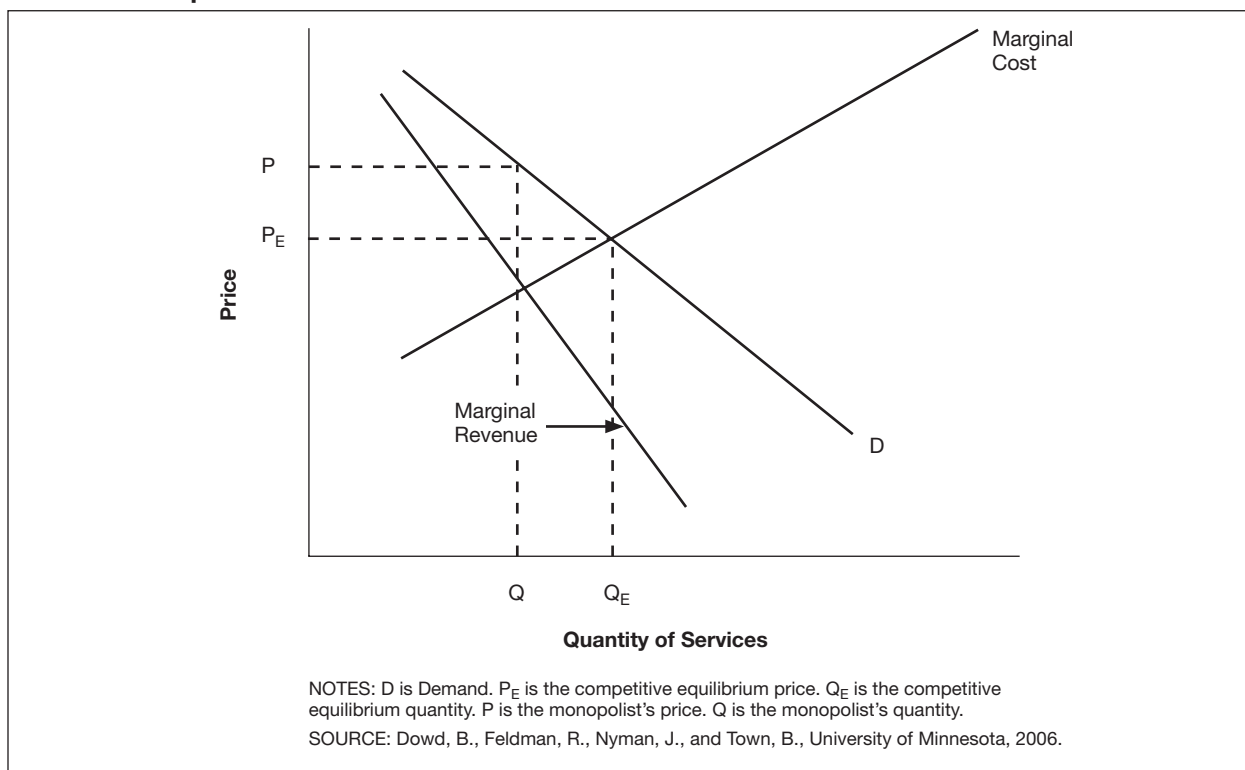
cians dropping higher-cost patients. The presumption was that these patients likely would be Medicare beneficiaries. MedPAC's concern implies that Medicare has not adjusted physician prices adequately for the extra complexity of Medicare patients. If that is the case, then patients with uncompensated levels of complexity will be discriminated against in the current payment system. The preferred solution would be to correct the relative fees and then pursue efficient pricing.

Manipulating the general supply price of physician services would not address other important problems. Analyses by Baicker et al. (2004), Fisher et al. (2004; 2003a,b), and Wennberg, Fisher, and Skinner (2002), suggest that a significant percentage of medical spending may not be associated with improvements in patient health. Addressing that issue could require adjustments in the prices of specific services to specific patients, rather than overall adjustment to the fee schedule. Another approach might be better consumer information. Primary care physicians and their patients will respond to improved information on the risks and benefits of some surgical interventions (Kolata, 2006).

### **Imperfect Competition Among Health Care Providers**

In addition to insurance itself, price distortions can arise if providers have market power. Market power can result from natural monopoly (decreasing marginal cost) or restricted entry that keeps new competitors out of the market when profits exceed the competitive rate of return. When a single provider controls the entire supply of a service, the provider's marginal cost curve is the same as the market supply curve. A monopolistic provider sets price at the intersection of marginal revenue and

**Figure 5**  
**Monopolistic Local Market for Health Care Services with Government-Set Prices**



marginal cost, resulting in restricted output and a higher price of services compared with the competitive equilibrium.

Figure 5 shows a monopolistic market where demand and marginal revenue are D and MR, respectively. The efficient price is  $P_E$  with demand  $Q_E$ . However, the profit-maximizing price for the monopolist is P with demand Q.

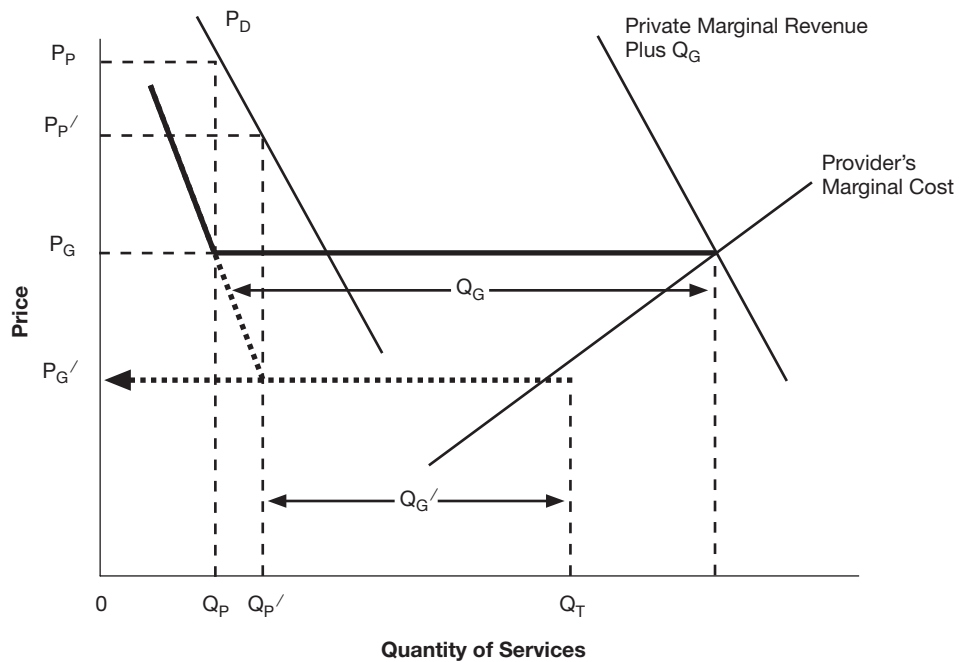
How should the government respond to this situation? In a market with only one type of consumer (e.g., Medicare beneficiaries), a public utility response would give the government the power to set prices. The perfectly informed regulator would set price at  $P_E$ . The monopolist would respond by supplying quantity  $Q_E$ , which corresponds to consumer demand at  $P_E$ , thus achieving the same result as the competitive market. But the real world is more complicated because there are multiple payers.

### Combination of Multiple Payers and a Monopolistic Provider

Figure 6 shows the combination of multiple payers and a monopolistic provider. Because health care services cannot be resold, a monopolistic provider can price discriminate between privately insured consumers and FFS Medicare beneficiaries. The monopolist will supply services to each payer so that the marginal revenue from privately insured consumers equals the government price and the marginal cost of services (assuming that costs are the same in the two markets).

The monopolistic provider's profit is:  $\pi = R_P(Q_P) + (P_G \times Q_M) - C(Q_P + Q_M)$  where  $\pi$  = profit;  $R_P$  = revenue from privately-insured patients;  $Q_P$  and  $Q_M$  are quantities of services supplied to privately-insured and FFS Medicare patients, respectively;  $P_G$  = the FFS Medicare fee; and C = cost. Profit maximization with respect to  $Q_P$  and  $Q_M$  yields

**Figure 6**  
**Market with Multiple Payers, Government Prices, and a Monopolistic Provider**



NOTES:  $P_G$  is the initial price of Medicare services set by the government.  $P_P$  is the monopolist's price when then government's price is  $P_G$ .  $P_G'$  is the new, lower price of Medicare services set by the government.  $P_P'$  is the monopolist's price when then government's price is  $P_G'$ .  $Q_P$  is the quantity of services demanded by privately insured consumers at price  $P_P$ .  $Q_P'$  is the quantity of services demanded by privately insured consumers at price  $P_P'$ .  $Q_T$  is the total quantity of services demanded by all consumers when the government's price is  $P_G'$ . 0 is the number zero.

SOURCE: Dowd, B., Feldman, R., Nyman, J., and Town, B., University of Minnesota, 2006.

$\partial R_P / \partial Q_P = P_G = \partial C / \partial (Q_P + Q_M)$ , which means the marginal revenue from private patients must equal the government fee and the marginal cost of services in both markets combined. We assume that  $\partial C / \partial Q_P = \partial C / \partial Q_M$  and that the potential number of Medicare patients is unlimited.

If FFS Medicare did not set prices and FFS Medicare beneficiaries were less price-sensitive than privately insured consumers, then beneficiaries would pay higher prices, and vice versa. However, FFS Medicare can set prices for its own beneficiaries. In that case, the monopolistic provider maximizes profit by supplying services to privately insured consumers up to the point ( $Q_P$ ) where marginal revenue in the private market equals the government-determined price for FFS Medicare services. The

amount of services supplied to FFS Medicare beneficiaries is determined by the intersection of the government price with overall marginal cost.

Suppose the government wanted to purchase  $Q_G$  physicians' services for Medicare beneficiaries based on supply and demand for Medicare services in a single market, adjusted for inefficient moral hazard. By setting price at  $P_G$ , the government could get providers to supply  $Q_G$ . But would that quantity of services be the efficient quantity that we refer to as  $Q_M$ ? The outcome shown in Figure 6 is inefficient due to the presence of monopoly power in the private insurance market. Privately insured consumers value an additional unit of service at  $P_P$  dollars, but Medicare values the same marginal service at only  $P_G$  dollars. Thus,

privately insured consumers would be willing to pay the government to reduce  $P_G$  to something like  $P_G'$ .

The government could increase efficiency by reducing its price below  $P_G$ , to the point that access problems start to appear in FFS Medicare. This would induce providers to reduce the private price to  $P_P'$  and increase the quantity of services supplied to privately insured consumers to  $Q_P'$ . Medicare beneficiaries then would be supplied only  $Q_G'$  services. The government must determine whether the target level of consumption for Medicare beneficiaries ( $Q_M$ ) is  $Q_G$ ,  $Q_G'$ , or some other level of consumption. The fairness of this outcome depends on the fairness of the processes that determine private demand and  $Q_M$ , including the initial distribution of income.

If private demand became less elastic (for example, because the prevalence of illness increased), the monopolist would raise its price to private consumers. If FFS Medicare chose to offset this effect, it would do so by lowering its price. The same approach would apply to a market in which providers had greater monopoly power—FFS Medicare should pay less in that market to induce the monopolist to reduce its price (and increase the supply) of services to privately insured consumers.

### **Local Market Variation in Demand and Supply**

Each topic discussed thus far could apply either to FFS Medicare as a whole or to individual local markets. If there are significant variations in demand and supply in local markets, then efficient pricing requires that Medicare recognize those differences. Cutler and Sheiner (1999) found that illness variables explained 66 percent of the variance in adjusted Medicare spending among hospital referral regions. Adding

demographic factors (e.g., Hispanic ethnicity and sex) explained 70 percent of the variance; and health maintenance organization and medical supply variables, including the percent of doctors who are specialists and the supply of hospital beds, added 10 percent to explained variance. In an earlier study with a different specification, Rizzo (1992) found that per capita income was negatively related to the probability of utilizing some Part A services, but positively related to the probability of utilizing some Part B services. These studies show that there is substantial variation in Medicare spending across markets due to variation in demand and supply factors.

Adjusting prices for demand-shift variables requires careful thought in efficient pricing systems. In a competitive market, changes in demand alter the efficient price only if the long-run supply curve is upward-sloping (Figure 1).<sup>4</sup> The supply curve slopes upward if the prices of inputs rise with the quantity of output. Thus, in competitive markets, Medicare could incorporate the effect of demand-shift variables into its price-setting decisions by adjusting the supply price of services for input prices. That is the purpose of the geographic practice cost index (GPCI), as explained by Zuckerman and Maxwell (2004) which adjusts prices for local variation in physician work, practice expense, and professional liability insurance (MedPAC, 2003). In its current form, however, the local markets that the GPCI uses to adjust prices are quite large. There are only 89 GPCI market areas for the entire U.S. If FFS Medicare adopted an efficient pricing model, it would be necessary to explore new market definitions that correspond more closely to geographic markets for physician services.

<sup>4</sup> The profit-maximizing monopoly price depends on the slope of the demand (and thus the marginal revenue) curve, but the efficient price always corresponds to the intersection of market supply and demand.

Factors related to the supply of services, including institutional differences in health care organizations, also can shift the local market supply curve. Currently, Medicare does not adjust prices for supply-shift variables other than input prices. For example, suppose that a State prohibits for-profit hospitals, which are more (or less) efficient than not-for-profit hospitals. Should Medicare raise (or lower) its fees in that State?

### Policy Implications

To implement efficient pricing, Medicare would need to determine the desired level of physician services for beneficiaries to consume ( $Q_M$ ) in each market area, and then set prices to achieve that level of supply. The first step would be to identify the level of consumption that would be observed in a competitive market with a single insurer and current insurance coverage. The level of competition varies among markets, but a regression model could be estimated that accounted for competition, as well as other factors. The estimated equation could be used to predict  $Q_M$  in each market with high levels of competition. Medicare also could identify markets that scored well on measures of health outcomes and consumer satisfaction with access to and quality of physician services.

Second, Medicare would need to adjust the desired level of utilization for inefficient moral hazard. The way to determine the amount of inefficient moral hazard is to turn Nyman's thought experiment into a real experiment. During the 1970s, the Federal Government spent 136 million (1984) dollars to determine the effect of coinsurance and deductibles on health care spending (Manning et al., 1987). To determine the amount of inefficient moral hazard, the government could conduct another experiment, randomizing subjects

to cash payoff policies and traditional price-reduction insurance. The difference in health care utilization between these two groups would be a measure of inefficient moral hazard.

Third, Medicare would need to decide if its prices should be adjusted to recognize the effect of Medicare prices on consumption by privately insured consumers. This approach would require monitoring of excess (i.e., unmet) demand in different markets. Such monitoring activity should take place regardless of Medicare's pricing approach.

Additional research would be needed on the extent to which the GPCI could be used to achieve efficient pricing in local markets. The current 89 GPCI regions might be too large to make effective adjustments for local variation in supply conditions.

The data required to set Medicare prices that are both efficient and fair are significant, but by no means prohibitive. Many of the variables currently are collected in an uncoordinated way, and others such as provider concentration should be collected whether or not FFS Medicare changes its pricing approach. Any data source used to adjust local prices would have to be transparent and probably publicly available, as would the methodology used to adjust prices.

It is important to understand that Medicare already makes implicit policy decisions regarding all the issues raised in this analysis. Medicare provides substantial subsidies for basic benefits and private supplementary insurance, regardless of the beneficiary's income, suggesting that moral hazard is not thought to be an important problem, or that all moral hazard is thought to be efficient. Medicare currently sets physician fees without regard to the effect on the quantity of services supplied to privately insured consumers. From an operational viewpoint, local variations in supply conditions other than

input prices have been deemed irrelevant, as well.

Clarifying the efficiency and fairness goals of setting FFS Medicare fees would bring many important topics into the open for careful analysis and debate, including local monopoly power, the role of supplementary coverage, the effect of Medicare prices on privately-insured consumers, and the efficiency of moral hazard.

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