Volume Performance Standards: Can They Control Growth in Medicare Services?

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IN NOVEMBER 1989, CONGRESS APPROVED SWEEPING changes in the way physicians are to be paid under the Medicare program. Perhaps the most novel aspect of the legislation was the institution of volume performance standards as a way to control growth in the volume and cost of physician services provided to program beneficiaries. This article describes the system and evaluates the factors affecting the likelihood of its success.

Volume performance standards (VPSs) differ from previous efforts aimed at cost control in that they do not provide direct incentives to individual providers or consumers to change their behavior. Under the system, annual-fee updates for all physicians are based on the volume of services provided by all physicians. An individual physician is not penalized if he or she increases service volume or intensity. In fact, to the extent that providing more services or more complex ones is profitable, a physician could gain by doing so. In contrast, most previous efforts—utilization review, patient cost sharing, diagnosis-related groups (DRGs), and health maintenance organizations (HMOs)—have targeted individuals, be they organizations, providers, or patients.

Nevertheless, there are ways in which a system based on collective rather than individual incentives, as VPSs are, could succeed in controlling the volume and cost of services. Our primary purpose is to out-

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line how such a scenario could unfold to guide policy makers as they develop ways to refine the system that was enacted.

The article is divided into five sections. The first describes the way VPSs will work, and the second, why VPSs have been chosen for the Medicare program. Third, we assess their possible effects on the volume of Medicare services provided. In the fourth section, we discuss how two other countries—West Germany and Canada—have adopted similar systems for targeting aggregate expenditure growth. Lessons from these countries will be used in the concluding section, where we discuss the types of refinements in the VPS system that can enhance its success.

How VPSs Work

Volume performance standards are just one part of a systematic package of Medicare physician-payment reforms that were approved by Congress as part of the Omnibus Budget Reconciliation Act (OBRA) of 1989 (P.L. 101-239). The other aspects of the legislation were the establishment of a Medicare fee schedule based on the cost of providing services, which replaces the much criticized charge-based customary, prevailing, and reasonable charge (CPR) system; institution of beneficiary protections, primarily through strict limitations on physicians' ability to charge amounts in excess of the fee schedule; and increased research on medical-care effectiveness and related topics, in part through the establishment of the Agency for Health Care Policy and Research, which replaces the National Center for Health Services Research. (More information on these aspects of the reform legislation is contained in Ginsburg, LeRoy, and Hammons 1990.)

The VPS system provides a framework under which Congress updates physician fees each year. In most fee schedules, payments per service are determined by multiplying a relative value by a conversion factor. The relative value is usually some measure of the effort and costs involved in providing one service, compared with others. The conversion factor is a dollar amount per relative value unit (RVU). For example, if a brief office visit has a relative value of 5.0 and the conversion factor equals $4.00, then the fee for the visit is $20.00. The VPS system simply supplies a means of making annual adjustments to the conversion factor.

There are two steps involved in updating physician fees each year:

setting the annual performance standards and updating the conversion factors.

Setting Annual Performance Standards

Each year Congress is required to set annual performance standards for the next fiscal year. These standards are later used in determining the appropriateness of actual expenditure growth during that year. If actual expenditures exceed the performance standards, Congress would be expected to raise the conversion factor less than it would otherwise. Conversely, if actual expenditures are lower than the standards, higher updates would be expected. Congress, however, is not bound by any strict formula. It can choose any conversion factor that it wishes, irrespective of how closely actual performance conforms to the standards.

The formal process of setting performance standards begins on April 15 of each year, when the Secretary of Health and Human Services recommends increases in expenditures (i.e., performance standards) to Congress for the following fiscal year. One month later, the Physician Payment Review Commission (PPRC) makes its own recommendation to Congress. OBRA also specifies that separate performance-standard recommendations be made for surgical and nonsurgical services.

On April 15, 1990, the Secretary recommended an increase in expenditures of 8.7 percent for surgery and 10.5 percent for nonsurgical services for fiscal year 1991. Nonsurgical services received a higher recommended increase because expansions in Medicare benefits for mental-health services and for Pap smears were expected to raise medical, but not surgical, expenditures (Sullivan 1990). PPRC's recommendation for fiscal year 1991 was for an increase of 9.3 percent for surgery and 12.1 percent for nonsurgical services. The Commission recommended a larger differential than the Secretary proposed between surgery and nonsurgical services because prior volume-trend data indicated that surgical volume already was growing less rapidly than the volume of other services (Lee 1990). In effect, the Commission believed that surgeons should not be rewarded for lower volume increases when those trends predated the new legislation.

In the future, the Secretary may define additional service categories besides surgery. If this occurs, separate performance-standard recommendations are to be made for each one. In theory, it would be possible to have performance standards for very specific types of procedures,

such as coronary-artery bypass or cataract operations, if the Secretary chose a narrow definition of service categories. Whether or not this is done, it is likely that most future data collection and appropriateness-review activities will focus on individual types of services.

OBRA specifies that the Secretary consider several factors in setting annual performance standards: (1) inflation; (2) changes in the number and age of Medicare beneficiaries; (3) changes in technology; (4) evidence of inappropriate utilization; (5) evidence of lack of access to necessary services; and (6) other factors deemed necessary by the Secretary. Although not explicitly stated in the legislation, it appears that the intent is to allow the performance standards to completely reflect increases in the first three factors. The fourth and fifth factors would then be used to "fine tune" the performance standards. For example, if it is determined that a great deal of utilization is inappropriate, lower performance standards might be adopted to reflect the belief that current spending levels are too high. Conversely, if lack of access is considered to be a serious problem, then higher performance standards could be set.

Congress may use the recommendations provided by the Secretary and by PPRC in determining the performance standards, but it is not required to do so. If Congress is unable to agree on these standards, a default formula applies. This formula is based on the growth in the volume and intensity (hereafter referred to simply as "volume") of services over the past five years, minus a factor that, after a phase-in period, will equal two percentage points. The Health Care Financing Administration (HCFA) estimates that volume rose at 7.3 percent per year in the five years previous to 1989 (54 FR 53819, December 29, 1990). Persistence of these rates would imply a default allowance for volume growth of just over 5 percent per year. This figure would be added to changes in inflation and Medicare enrollment to arrive at the default performance standards for expenditure growth.

However, most observers believe that, rather than rely on the default factors, Congress is likely to set explicit performance standards and conversion-factor updates each year. If Congress relies on the default mechanisms, it will not achieve any budget savings because baseline budget estimates are based on the amount of spending that would occur if the defaults were in place. Budget savings, therefore, are possible only if Congress sets standards and conversion-factor updates that are stricter than those included in the defaults. Such savings may be necessary to

avoid the automatic budget cuts that take place when Congress does not meet its overall Gramm-Rudman-Hollings budgetary requirements.

Updating the Conversion Factors

Congress's second task is to update the conversion factors that translate relative values into actual fee levels. Like the setting of performance standards, this will be done annually, beginning in 1991. On April 15, 1991, and annually thereafter, the Secretary will recommend to Congress updates in the conversion factors to be used during the following calendar year. (PPRC is again to make its recommendations one month later.) Although the Secretary is permitted to recommend the same update for different service categories, at a minimum, explicit recommendations must be made for each category of service defined by the Secretary and for nonsurgical services, visits, consultations, and emergency-room services.

In making the recommendation, the Secretary is to take into account a number of factors: The two primary ones appear to be changes in the cost of providing services (as measured by the Medicare Economic Index, or MEI) and the difference between actual expenditure increases and those set forth in the performance standard. Suppose, for example, that the MEI was expected to increase by 4 percent during the following year, and actual expenditures exceeded the performance standard by 1 percent during the most recent year. The Secretary might therefore recommend a 3 percent increase in the conversion factor. However, this will not necessarily be the case because OBRA lists several other factors that can be considered: changes in the volume of services; access to services; unexpected physician response to the Medicare fee schedule; and changes in the quality and appropriateness of services. Furthermore, Congress still can choose to enact any conversion-factor update that it wishes.

There is a fairly long lag between the time services are provided and when they are reflected in the conversion-factor updates. For example, the conversion-factor update for calendar year 1992 (which the Secretary makes in April of 1991) is based on services provided during fiscal year 1990 (October 1989 through September 1990). This is because when the Secretary makes the recommendations, fiscal 1990 is the last year for which complete data will be available. The lag implies that even though it may be possible to achieve long-run budgetary goals

through the VPS system, it is not possible to meet budgetary targets in any given year.

If Congress does not act to set conversion-factor updates, defaults will go into effect. Basically, the default formula takes the MEI and adjusts it upward or downward based on the difference between actual expenditures and targeted amounts. For the defaults, however, there are limits on how much the MEI can be reduced: a maximum of 2 percent in 1992, rising to a maximum of 3 percent by 1996.

Why VPSs Were Adopted

Volume performance standards represent a reaction to the failure of previous efforts to control Medicare spending for physicians' services. In the decade ending in 1987, for example, Medicare physician expenditures rose by an annual rate of 16 percent, thus doubling every five years. It is estimated that if these growth rates continue, by the year 2005 total Medicare spending will exceed that of the Social Security System (Sullivan 1990).

Previous cost-control efforts tended to focus on only one component of expenditure growth—unit prices. One early effort was the development and use of the MEI to limit increases in fees to factors beyond the control of individual physicians. Before 1972, when this legislation was adopted, unit fees were based in part on physicians' billed charges. This resulted in a collective incentive for physicians to raise prices, which in turn resulted in rapid inflation (Burney et al. 1979). The introduction of the MEI loosened the link between physician billed charges and Medicare payments by basing one component of the Medicare payment (the prevailing charge) on factors beyond the control of the individual physician: practice costs and areawide wage rates (Dutton and McMenamin 1981). The introduction of the Medicare fee schedule will completely break any remaining link between physician charges and Medicare program payments.

Another method used to control Part B of Medicare expenditures has been freezing or limiting increases in physician fees. This was done twice: between 1971 and 1974 as part of economywide wage and price controls established under the Economic Stabilization Program, and between 1984 and 1986 as part of the Deficit Reduction Act of 1984. Neither of these efforts appears to have been successful, however. Hola-

han and Scanlon (1979) concluded that the earlier effort failed to control expenditures because "physicians thwarted any intent to limit expenditures by (1) changing to a more complex service mix and (2) increasing the number of services provided." Mitchell, Wedig, and Cromwell (1989) showed that the volume of services continued to climb during the latter effort, although their data did not allow them to draw specific conclusions about the effect of the fee controls. In reviewing evidence from a number of natural experiments, Gabel and Rice (1985) concluded that "freezing or reducing payment levels is not effective in controlling program expenditures, because physicians respond by increasing the quantity and complexity of services provided."

To understand fully Congress's frustration with inflation in Part B of Medicare, it is necessary to consider the experience of Part A. In 1983, Medicare hospital payment was overhauled, from an inflationary cost-based system to payment per admission based on DRGs. Subsequently, between 1985 and 1989, the growth in Part A expenditures was one-third that of Part B (Physician Payment Review Commission 1990). Although part of this difference is undoubtedly due to a more general trend toward fewer and shorter hospital stays, many observers seem to agree that DRGs have been successful in controlling costs. Physician payment, therefore, was next on the political agenda.

As part of the Consolidated Omnibus Budget Reconciliation Act of 1985, Congress established two mechanisms that ultimately were instrumental in enacting the recent payment-reform legislation. First, it required the Secretary to develop a relative value scale (RVS) for paying physicians under Medicare. This study was conducted by William Hsiao and his colleagues at Harvard University. Second, it established PPRC, also giving it the charge to develop an RVS.

In soon became apparent to Congress that an RVS would not provide an effective means of attaining cost control. Rather, it would redistribute existing dollars away from procedures and toward primary care. Although many consider this to be a desirable change, the need to control costs had become stronger than ever. Consequently, in 1988, the charge to PPRC was broadened to "consider policies for moderating the rate of increase in expenditures" under Part B of Medicare (102 STAT 3803, Nov. 10, 1988).

In its 1989 report to Congress, PPRC recommended that Medicare adopt expenditure targets (ETs) as a means of controlling expenditures. This recommendation later was reflected in the physician payment-

reform legislation included in the 1989 OBRA legislation. As a concession to the American Medical Association, which vigorously lobbied against targets, the term "expenditure targets" was changed to "volume performance standards." This change in name is merely cosmetic: under the VPS system, expenditures, rather than volume, are targeted.

The United States is not the first country to adopt an ET-type system. Germany adopted such a system in the late 1970s, although since then the system has been tightened so that there is now an actual cap on expenditure growth (Kirkman-Liff 1990). Several of the larger Canadian provinces have also begun to institute methods of accounting for volume increases in their process of updating physician fees (Lomas et al. 1989).

Expenditure targets are a blunt instrument. The incentives for individual providers created by such a system can cause a number of problems. Governments that have adopted ET-type systems have not done so lightly. Rather, their adoption is a *reaction* to their inability to control the volume and cost of medical services under a fee-for-service system. This, in a nutshell, was what Congress faced with Medicare. There was little political support for moving away from fee for service, but at the same time there was a strong need to control total physician expenditures. Volume performance standards are an attempt to exert budgetary controls while retaining fee-for-service medicine. We will next examine the extent to which they are likely to achieve savings without creating undesirable side effects.

Possible Impact of VPSs on Medicare Volume Growth

The primary goal of the VPS system is to control the rate of growth in Medicare payments for physician services (Physician Payment Review Commission 1990). This goal can be attained in different ways. Even if the volume of services continues to rise quickly, expenditure control is possible if Congress responds by paying less per service (through lower updates in the conversion factors). However, because many services are generally agreed to be inappropriate (General Accounting Office 1989), a more desirable way to control expenditures—as envisioned by the framers of the legislation—is for VPSs to create incentives for physicians to control growth in the volume of services.

Unfortunately, the question of how the VPS system will affect Medicare volume growth cannot be answered with much confidence now for two reasons: First, we do not have an adequate understanding of physicians' economic behavior. Second, we do not know how the private insurance market will respond to the recent Medicare physician-payment reforms, nor do we adequately understand the interaction between the private insurance and Medicare markets.

To predict physician response to a change in payment rates, it is necessary to have a theory of physicians' economic behavior. Unfortunately, there is no one generally agreed-upon theory. Rather, there are two schools of thought: One espouses the view that the physician market operates in a reasonably competitive manner (Sloan and Feldman 1977; Feldman and Sloan 1988), whereas the other asserts that physicians can manipulate the market by inducing demand for their services (Reinhardt 1977; Rice and Labelle 1989).

In a competitive market, the VPS system might affect the total volume of services, but the effects would tend to occur gradually, over time. Although the initial conversion factor to be used in 1992 is budget neutral, eventually Congress may feel compelled to elicit substantial savings through very low updates in the conversion factors. If this occurs, there could be a variety of effects on the quantity of Medicare services provided by physicians, most of which would tend to result in a *reduction* in service volume.

Lower fee updates could result in Medicare fees for certain procedures falling below some physicians' costs, leading the physicians to stop providing the services to Medicare patients. Similarly, if the fees paid by private insurers do not follow Medicare's (potentially) downward expenditure trends, physicians may choose to focus more of their efforts on the private market, and less on Medicare. Not all of the volume effects would be in this direction, however. Lower Medicare fees will result in lower patient coinsurance liabilities because patients are responsible for paying 20 percent of Medicare-approved charges. The quantity of Medicare services demanded would thus tend to increase. However, it is very unlikely that this outcome will override the other effects. Few Medicare beneficiaries pay any of the coinsurance. Almost 80 percent have some form of Medicare supplementation, either through a private insurance policy or through Medicaid (Gordon 1986). Consequently, few would see any reduction in out-of-pocket costs if Medicare fees were reduced.

Thus, under a competitive model, if fee updates are low (as expected), the effects of VPSs would be likely to appear gradually over time, and in the form of reductions in the quantity of services provided. Greater problems in controlling the volume of services may arise if one adopts the induced-demand approach.

The demand-inducement model predicts that physicians would react to declining fees by billing for more services. Although there will not necessarily be a decline in overall Medicare fee levels initially, inducement behavior could be triggered if some physicians fear that other physicians will bill for more services under the VPS system, thus resulting in a decline in all physicians' fees. Such a scenario could arise if physicians view the Medicare budget as a resource of fixed size, with each trying to obtain a larger share by billing for more services. This is an example of the "tragedy of the commons," where individuals, driven by their own self-interest, behave in a way that is harmful to the group's collective well-being (Hardin 1968).

Volume increases are more likely to occur over time if Congress enacts small annual updates in physician fees. The impact of these small updates on the volume of Medicare services, however, would depend in large part on the interaction between Medicare and private insurers. If physicians have the ability to induce sufficient demand in the private insurance market, where fees tend to be higher than for Medicare, then they are likely to do so. Thus, aggregate volume would rise for physicians, but not necessarily for Medicare.

It is not clear that physicians will be able to generate much additional demand in the private market. Insurers are likely to respond both by eliciting discounts from physicians (through preferred-provider organizations, for example) and by enhanced utilization review in order to ensure that costs are not shifted onto them. Surprisingly, there appears to be no firm evidence available to indicate the extent of so-called cost shifting in the market for physician (as opposed to hospital) services. However, there is little doubt that private insurers will do their best to confine the response to VPSs to the Medicare program.

Thus, as is the case with the competitive model, the demand-inducement model does not allow one to derive unambiguous predictions about the effects of VPSs. What is clear is that Medicare will face the greatest problems if VPSs lead to an increase in service volume. Higher volumes will act in a spiraling fashion, leading to lower fee updates in future years. Although some physicians may continue to in-

crease the provision of services year after year as fees decline, others may not. Rather, they might react to lower fee updates by reducing their participation in Medicare.

What types of physicians are likely to reduce their participation in Medicare, rather than increase volume? We believe they are of two kinds: those whose opportunity costs are so high that they no longer find treating Medicare patients worthwhile, and those who have a strong distaste for inducing increasingly high volumes of services. It is impossible to predict what proportion of physicians would choose to reduce their participation in Medicare. Even a good understanding of physician behavior would not suffice because we do not know how future Medicare fees will compare with those paid by private insurers.

Under this scenario, over time total Medicare volume would increase, but simultaneously, some physicians would move away from the Medicare market. However, those physicians moving away would not be representative of all physicians: they might be among the highest quality (as reflected in their high opportunity costs) and among the most ethical (in terms of their distaste for generating additional services).

This scenario is one that policy makers would prefer to avoid because it implies the beginnings of a two-tiered system of medicine for the Medicare population. It can be avoided by developing ways to ensure that the volume of services does not rise in the wake of VPSs. We will describe the experiences of other countries to suggest ways in which this can be accomplished.

How Volume Controls Work Elsewhere

The logic behind the Medicare volume performance standards rests in large part on a notion of "collective incentives." The Medicare payment-reform legislation does not create a structure within which individual physicians can focus on controlling volume, nor does it delineate a framework for collective response by different groups of physicians. Rather, the legislation leaves much room for evolutionary change, both through the possible creation of separate regional, service-specific, or specialty performance standards, and the development of systems for monitoring utilization patterns and providing feedback to physicians on appropriate use of services.

In searching for a workable model for implementing volume controls, considerable attention has been focused on the perceived successes of other nations' physician-payment systems. Although most developed countries have been more successful than the United States in controlling the rate of growth in medical expenditures, basic differences among national systems make comparisons, or discussions of "what is to be learned," difficult, and sometimes misleading. In fact, some of the most salient differences between the United States and other countries reside in the reaction of individual physicians to volume (or spending) targets. In most other national health-care systems, there is a relatively uniform pricing system for physician services, so that physicians have far less incentive to treat one type of patient and not another (i.e., "cost shift"). Furthermore, many countries, including those discussed here (West Germany and Canada) do not permit physicians to bill amounts in excess of the insurance plan's approved rate. Thus, the basic structure of the health-care systems themselves present physicians with a more uniform set of economic incentives than is the case here.

Nevertheless, following the lead of Kirkman-Liff (1990), Glaser (1989), Rodwin (1989), and Cahill et al. (1989)—whose work was influential in shaping PPRC's legislative proposal for expenditure targets—we believe that certain aspects of other health-care systems are important in understanding how a VPS system could control volume growth, rather than simply being a crude tool for ratcheting down Medicare fees.

For different reasons, the experience of two countries, West Germany and Canada, are particularly relevant. Both West Germany and several Canadian provinces have implemented expenditure-target approaches linking the unit fees paid to physicians to overall utilization of health services. Both countries utilize a fee-for-service payment system based on fee-schedule payments. Under these systems, the rate of increase in physician fees is linked to the rate of increase in total expenditures for physician services.

The main reasons for the attention generated by these countries stem from certain characteristics that physicians and policy makers in the United States can readily appreciate. In the case of West Germany, it is that physician payment is made predominantly through a system of private nonprofit insurance funds, as is a fairly large proportion of health insurance in the United States. In the case of Canada, the cul-

tural similarities and close professional ties between Canadian and U.S. physicians make it difficult to dismiss the Canadians' very different manner of dealing with health-care cost control as something that "can't happen here."

In West Germany, the majority of the population participates in the national health-insurance program, with most aspects of medical-care delivery and financing administered by the private sector, which is subject to federal regulation (Cahill et al. 1989). The German system for establishing physicians' fees involves organizations at the national, state, and local levels. Ambulatory-care physicians are paid on a fee-for-service basis according to a fee schedule that is based on a national relative value scale. (Physicians providing inpatient care are salaried.) A national commission determines total health expenditures, but payer and provider organizations in each region negotiate expenditure ceilings within federally set constraints. Fixed pools of funds, based on a capitated payment for each insurance-fund member (with different capitation rates for pensioners, i.e., those over 60), are allocated to each region. In most regions, the capitation pools are further divided into separate risk pools for certain types of services such as physician consultation and laboratory testing (Kirkman-Liff 1990). The number of relative value points billed by physicians is periodically tallied, and the pool funds are divided by the number of points to determine a conversion factor that can be used to convert points to payments. The higher the volume of services, the lower the conversion factor (Kirkman-Liff 1990).

One novel and very important aspect of the system is that conversion factors are determined, and payments are made, retrospectively. That is, physician fees are not established until it is known exactly how many services were provided. Consequently, if some physicians raise volume, other physicians will be paid less for services already provided.

In Germany, monitoring physician performance and identifying utilization problems are the joint responsibility of physician organizations and the insurance funds. The major activity, generally referred to as economic monitoring, centers on the analysis of physician practice profiles developed from the insurance-fund data files. However, the profiling is actually performed by the physicians from the physicians associations formed to negotiate with the insurance funds, under the direction of a joint committee that includes representatives of both physicians associations and the insurance funds themselves.

Canada has a system of provincially administered, national health insurance supported by a combination of federal and provincial funds. As in the United States, most services are provided by private practitioners and private not-for-profit hospitals. Physicians are paid on a fee-for-service basis in accordance with a fee schedule that is negotiated between the provincial government and the medical association of the province. Five of the ten Canadian provinces, representing over 80 percent of the country's population, currently have incorporated some method of accounting for utilization increases in their fee-schedule negotiations with medical associations (Lomas et al. 1989). Responsibility for monitoring the volume of services provided by individual Canadian physicians is shared by provincial health-insurance plans and physician organizations. (A detailed discussion of physician profiling in both West Germany and Canada is presented in PPRC's 1990 *Annual Report to Congress.)*

Recent analyses of the West German and Canadian approaches to controlling the volume of physician services have focused primarily on two aspects: regional/decentralized organization and professional control over utilization review (e.g., see Jonsson 1989; Reinhardt 1989; and Cahill et al. 1989). The two are, in fact, closely related. By establishing expenditure targets or caps for relatively small and politically defined areas, these systems seem to have brought the incentives associated with the volume/expenditure limits down to a level that is meaningful to physicians. The local organizations of physicians, at the same time, have assumed responsibility for monitoring utilization and determining what actions to take in the case of colleagues who abuse the system. The systems used by these two countries seem to involve far less intrusive "micromanagement" of clinical practice than the increasingly complex myriad of utilization and peer-review programs operating in the United States (Reinhardt 1989; Evans et al. 1989).

The two systems, however, are not ideal. Physicians are not appreciably more happy to have to explain their practice patterns before colleagues in their physician association than to a peer-review organization (PRO) working for an insurance fund directly, such as a Medicare PRO (Kirkman-Liff 1990). At the same time, utilization review conducted in Canada and West Germany is not only nonintrusive by United States standards; it may also be perfunctory. In Canada, for example, only a very small proportion of Canadian physicians are ever investigated for misconduct, much less actually sanctioned (Lomas 1990). More impor-

tant, the Canadian and German systems are basically oriented toward maintaining practice norms, not toward promoting "good" or efficient practice (Physicians Payment Review Commission 1990; Kirkman-Liff 1990; Lomas et al. 1989). In short, although these systems appear to provide effective mechanisms for controlling expenditures, they have not yet been integrated into effective programs for regulating utilization of services.

There are, then, two basic lessons to be learned from abroad. First, the West German and Canadian systems strongly suggest that physicians need an economic incentive to control service volume. This incentive is far clearer when there is a fixed budget for physicians' services at a state (i.e., province or "lander") level, so that each physician has a stake in ensuring that other physicians in their area do not abuse the system. Second, these two countries demonstrate that financial incentives alone are not enough to change the way physicians think about the practice of medicine. Physician organizations require not only the means of monitoring member physicians' practices, but also the incentive and the will to impose (or recommend) sanctions against those who abuse the system.

Building a Better Mousetrap

Under the purely national VPS system just enacted, individual physicians in the United States have no economic incentive to control the volume of services they provide. Groups of physicians may have such an incentive, but currently they have very limited means of enforcing limits on the use of inappropriate services. West German and Canadian experiences suggest that systems for controlling volume or expenditures appear to work best when they are regional rather than national in scope. In the United States, this implies that the VPS system should be organized at the state level.

Furthermore, to act effectively within such a state system, physicians in the United States need the power to assert their professional authority in the area of utilization and quality review. Legitimate exercise of such power requires a sound scientific basis for making decisions about the appropriate use of medical services. With health-services research in the United States leaning toward an emphasis on medical effectiveness, clinical outcomes, and practice guidelines, we may not have to dupli-

cate the experiences of other countries in controlling payment for physician services. Rather, we can improve upon them.

A State-level VPS System

A state-level VPS system would establish separate annual performance standards for Medicare physician expenditures in each state. Fee updates would reflect physicians' success in meeting these standards, based on how well they control the volume of services they provide.

Although a state-level system may be appealing, we acknowledge that there are a number of difficulties with it. Some of the most serious include devising a formula for establishing each state's performance standard; ensuring that this formula rather than political influence is the driving force behind the standards and fee updates; dealing with the problem of patient "border crossing"; and improving the Medicare data systems in order to monitor physician utilization and expenditures. These and a number of related issues, ranging from data problems to anti-trust concerns, are discussed by the Physician Payment Review Commission (1990) and Cahill et al. (1989).

Nevertheless, we believe that these problems can be overcome, as they have been elsewhere. For example, to ensure equity between states, the performance-standard formula could account for differences in historical utilization. States with relatively low utilization could be given higher performance standards than others, thereby encouraging beneficiary access where it is most needed and discouraging overutilization in high-use areas. Furthermore, creation of an objective, fair way to establish performance standards would minimize political influence. Central to this argument is the fact that Medicare is a national program fully funded by the federal government, with nationally prescribed coverage and eligibility standards. Thus, the political rhetoric as well as a number of substantive concerns should not rise to the level encountered in programs jointly funded by states (e.g., Medicaid).

States are the logical unit through which to organize health care in a country as large as the United States. Historically, states have been responsible for most health-care regulation in this country, ranging from licensure of physicians and other health professionals, to health-care planning, to the regulation of private health insurance. Moreover, in the current political climate, it appears that major innovations in health-care policy are occurring at the state rather than federal level.

Physicians in clearly defined jurisdictions, such as states, are also more likely to accept some level of collective responsibility for their actions than are heterogeneous populations of physicians who live in vastly different environments throughout the United States and who have very different types of practices. Practically speaking, it is far easier to monitor the actions of physicians in smaller areas. At the same time, the significant role played by the medical profession in designing and operating utilization controls abroad suggests a more prominent role for professional organizations in the United States in implementing Medicare volume controls than has been the case to date. These factors argue for the design of a VPS system that builds upon Medicare's existing regionalized, predominantly state-level utilization and peer-review programs, while increasing the ability of the medical community to take responsibility for the volume of services provided by physicians.

Significant changes already taking place in medical practice in the United States provide some reason for optimism about the potential for reform of systems that control service volume. One fundamental change has occurred in the role of professional organizations. The current environment is increasingly dominated by large public and private organizations that must weigh legitimate concerns of efficiency, effectiveness, quality, and equity against the preferences of individual practitioners and patients. Professional medical organizations therefore are finding it necessary to represent their members' interests both at the level of individual groups of medical practitioners and in state as well as national policy making.

Efforts to deal with the complexities of Medicare, Medicaid, and private-sector insurance are leading the profession to recognize the importance of regional, and generally state, organization. Many specialty societies are turning their attention toward state-level organizations. The American Academy of Family Physicians, American College of Physicians, American College of Surgeons, the American College of Cardiology, and the American College of Obstetrics and Gynecology are among the major specialty societies that maintain regional chapters or districts generally along state lines. State medical societies, which are the constituent parts of the federation of organizations constituting the American Medical Association, are increasingly active in continuing medical education, technology assessment, and dissemination of information, and many medical societies work closely with PROs on

medical-review activities. A growing number of medical societies are also involved in the development of practice standards or guidelines (Physician Payment Review Commission 1990).

As they become more active in developing and disseminating information about practice patterns and effective medical care, professional organizations not only influence the direction of policies related to patient care, but they also increase their legitimacy as responsible actors in the larger policy arena. This organizational evolution may, in effect, lead to a "corporate" approach to health policy, in which basic policy issues are negotiated between government and organizations representing health-care providers (Brown 1985; Kirkman-Liff 1990).

A second change in the organizational environment centers on the growing importance of information. Formal bureaucratic organizations responsible for the delivery and oversight of medical care require better information in order to make decisions about how to control volume. The demand for information comes not just from payers, or from providers, but also from beneficiaries. Whereas in many "corporatist" systems in Western Europe there is little or no formal role for consumers in the negotiations that determine physician payment rates or volume-control mechanisms (Rodwin 1989), in the United States the political clout of Medicare beneficiaries must be considered when structuring a workable system for controlling the volume of physician services. Beneficiaries, like physicians, are increasingly demanding access to information and marshaling organizational resources of their own to participate in the decisions that affect the use of health services. The openness of the process of setting VPS updates places increasing pressure on the medical and health-services research communities to produce objective information about what services and treatments are "appropriate" or "effective."

Organizing a State-level VPS System

Taking advantage of an environment that appears ready for reform means creating more focused incentives to control the volume of physician services and empowering physicians to take responsibility for controlling the provision of services by their colleagues. Table 1 provides a summary of the three areas of activity that could help ensure effective responses to a VPS system: analyzing utilization data; reviewing physi-

cian practice; and reviewing, modifying and disseminating practice guidelines.

A VPS system requires that Medicare monitor and report on trends in utilization and expenditures. Updating physicians' fees to reflect actual versus targeted volume depends on timely data. In addition, cross-sectional and longitudinal data on utilization by type of service, site of service, geographic area, and specialty of provider are necessary to identify any barriers to access to appropriate care. The new Common Working File, designed by the Health Care Financing Administration (HCFA) to create consistently formatted, merged Part A and B claims files for all beneficiaries on an ongoing basis should substantially improve Medicare's ability to monitor utilization over time and across various geographic, service, and specialty categories.

Both peer-review and educational functions would be strengthened by timely data on actual clinical practice and resource use. Comparative data on practice patterns, along with information on the appropriate use of services, would help physicians identify specific changes they could make in their practices. When used in conjunction with peer-review activities, integrated Part A and B claims data could be quite useful for selecting samples of particular cases for review. They could also identify trends in medical practice as well as possible inappropriate or aberrant practice patterns for further investigation. In addition, reliable and timely longitudinal claims data are essential to assess the effects of peer-review and educational programs.

Physicians and their organizations could respond to volume standards by providing greater support for peer-review activities and utilization review. Peer review serves to identify medical-practice problems that can be corrected through education programs or, when necessary, through mechanisms such as claims denial or professional credentialing. Developing practice guidelines and enhancing peer review are related functions: one way to improve the effectiveness of peer-review activities is through the use of better review criteria. Improved knowledge of what is and is not appropriate could also lead to more effective and less intrusive utilization review.

Development and use of practice guidelines based on clinical knowledge of effectiveness could enhance efforts to improve the appropriateness of clinical practice. The medical community is already beginning to take an active role in the development and dissemination of practice guidelines. The federal government, in partnership with the medical

TABLE 1
Framework for Responding to Volume Performance Standards

The Department of Health and Human Services takes the lead in analyzing national and state utilization data	State medical peer-review organizations take the lead in conducting reviews of physician practice	Professional and medical specialty organizations take the lead in reviewing, refining, and disseminating practice guidelines
Analyzes outlays and volume cross-sectionally and longitudinally by type of service, site of service, states and localities, specialty/type of practitioner, individual physician identifier	Identifies area-specific types of adverse health events or outcomes requiring concurrent or retrospective review	Provides clinical expertise for the development of practice guidelines
Identifies unexplained variations in utilization across geographic regions, sites of services, or type of practice	Builds profiles of utilization (payments by type of service, site of care, etc.) and outcomes (length of stay, mortality, comorbidities, complications, etc.)	Identifies guideline refinements required by the characteristics of local medical-care systems or populations
Develops methods for identifying unusual or aberrant patterns of utilization by individual practitioners	Builds profiles of physician practice (payments, types of services, and patient outcomes)	Informs national agencies of the rationale/nature of modifications or revisions needed to address problems using particular guidelines
Provides information: to national program administrators and policy makers on expenditures, utilization, quality to providers on utilization and expenditure patterns	Determines quality and utilization-review objectives: develops a plan to identify specific quality problems or utilization patterns occurring across the physician community	Provides technical assistance in the use of guidelines by practitioners and peer reviewers: serves as liaison between national bodies developing guidelines and medical organizations using guidelines such as state and local medical and specialty groups, medical boards, and hospital staffs

to state review organizations to help establish utilization and quality-review objectives

to national agencies to help them establish priorities for clinical effectiveness and practice guidelines initiatives

Funds research and development of:
clinical effectiveness and medical outcomes, practice guidelines, and medical-review standards and methods

develops a plan to identify particular physicians providing substandard or inappropriate care

Initiates corrective action plans for problem providers

Develops formal and informal counseling, supervision, tutorials, or mini-residencies; refers physicians to state licensing boards, the office of the inspector general, etc.

Provides information:
to providers, provider organizations, national program administrators and policy makers, and accreditation bodies on quality and utilization problems

to national agencies to help them establish priorities for clinical effectiveness, practice guidelines initiatives

coordinates the integration of guidelines into continuing education and remedial education programs

facilitates the incorporation of guidelines into state credentialing, licensure, and certification programs

Disseminates information on guidelines:
to physicians on the release of new guidelines and refinements to existing ones

to physicians on the adoption of guidelines by review organizations and payer groups

to consumers and consumer representative groups on new and refined guidelines

community, has assumed the responsibility for coordinating the development of valid, usable guidelines. The OBRA legislation of 1989 created the Agency for Health Care Policy and Research and charged it with responsibility for funding and oversight of the development of practice guidelines. The dissemination of information regarding the appropriate use of medical procedures and services should help individual physicians improve their medical practices and simultaneously reduce the overall volume of inappropriate services. Feedback from practicing physicians on the quality and usefulness of the guidelines could be used to refine the guidelines when necessary.

The magnitude of the work that needs to be done in the areas of basic data collection and analysis, as well as in research and development related to improving clinical practice, will require a sustained commitment of federal resources. However, responsibilities for reviewing physician practice are not as clearly defined. The generic model presented here is based only on the premise that whatever configuration of carrier and/or Medicare peer review is adopted, the system should: (1) have immediate access to timely, complete utilization and outcomes data; (2) be structured on a state basis, with close ties to local institutionally based peer review, accreditation, and licensure systems; and (3) be considered a credible and legitimate peer body by the community of physicians serving Medicare patients. Finally, the national medical community, including specialty organizations, as well as the clinical research and medical-education communities, needs to be involved in developing practice guidelines that can lead to the more appropriate use of services.

Conclusion

From an economic perspective, volume performance standards present few, if any, meaningful incentives for individual physicians to change their practice behavior. In addition, because they deal with only one payer (Medicare), any favorable incentives could be overwhelmed by cost shifting to the private sector. Instead, the promise of the VPS system is largely political. Currently, the ability of the various professional organizations to address major policy and research issues in a sophisticated manner is highly variable. But national medical organizations and specialty societies are already building their capacity to generate

and present data to inform the annual VPS update process. The commitment of a large pool of federal funds to support research on medical effectiveness, health-care outcomes, and practice guidelines, along with the haunting specter of expenditure caps if the VPS system fails, may also spur the development of the profession's "infrastructure."

Both the need to focus incentives in such a way that individual physicians change their practice behavior when appropriate, and the importance of state-level interests in the organization and control of medical care, argue for a system for controlling Medicare volume that can build on the existing foundations of state-based utilization and peer review. If the profession demonstrates that it has the will and the ability to control unnecessary and inappropriate utilization of Medicare services, it may be able to meet the needs of other insurance programs as well. Medicare volume performance standards might not only control the growth in the volume of Medicare services, but could even spur the development of more fundamental reform.

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