Technical Review

Chapter 1. Introduction

In 1990, after a decade of rapid growth in the cost of physicians' services, Congress attempted to control Medicare expenditures on these services. One measure it implemented was to impose a fee schedule and a payment update system for physicians' services. The goal of this fee schedule was to set relative fees that would reflect the time, effort, and expense of providing each listed service. The goal of the payment update system, called the Volume Performance System (VPS), was to limit increases in physician fees and to control costs by linking increases in physician payments to historical rates of increase in the volume of physicians' services. This system led to high rates of growth in the early 1990s, and was criticized for distorting relative payment levels in its use of different updates for surgery versus primary care payments, for setting unrealistic expenditure targets (because of relying on historical trends and legislated reductions), and for relying on two-year old data to set targets.

In 1997, Congress established a new system for determining the annual update for Medicare payment rates for physicians' services. This system, known as the Sustainable Growth Rate (SGR) system, seeks to constrain costs by tying increases in physician payments to real per capita growth in the gross domestic product (GDP). In implementing the SGR, Congress agreed, in principle, that a system that would allow expenditures for physicians' services to grow at the same rate as the economy as a whole was affordable and reasonable. However, the SGR system is now under criticism by health care providers and the Medicare Payment Advisory Commission (MedPAC) who are calling for its revision. Intensifying the debate is the fact that for the year 2002, the fee paid per unit of physician service decreased by 5.4 percent.[5] This decrease is the result of a number of factors including the slowing economy and errors made in estimating expenditures in prior years.

The major problem with the SGR system, its critics maintain, is that, in setting fees, it does not directly consider changes in the actual costs of providing physician services to the Medicare population. Such changes are driven by a confluence of progress in medical technology, changes in provider productivity, and changing trends in the health of beneficiaries in the traditional Medicare fee-for-service (FFS) program. Other systems used by Medicare to update payment rates implicitly include allowances for such changes.

With Medicare physician payments currently exceeding $40 billion per year, the payment update factor has important implications for the Medicare budget, as well as other possible consequences. Too small an update might limit beneficiary access to care, "unfairly" penalize physicians, or create incentives to funnel treatment to other types of services having no expenditure target. In the longer term, inadequate payment updates might discourage the development and adoption of new technologies for treating Medicare patients.

To address some of the concerns about the SGR system, Congress mandated a study to examine the sources of changes in fee-for-service Medicare expenditures for physicians' services. The Balanced Budget Reconciliation Act (BBRA) of 1999 specifically calls for the estimation of the economic impact on expenditures for physicians' services of changes in

[5] The SGR system reduced payments to physicians by 4.8 percent in 2002. There was an additional reduction of 0.18 percent applied to the physician fee schedule conversion factor to account for an anticipated increase in the volume and intensity of services in response to the final year of implementation of resource-based practice expense RVUs. As required by law, an additional budget neutrality adjustment of 0.46 percent was also applied to the conversion factor to account for increases in physician work RVUs resulting from the 5-year review of physician work.

medical capabilities, technology, demographic characteristics of enrollees, service delivery locations, utilization, and other factors. These factors are listed in Table 1.

This report responds to the legislative mandate of the BBRA of 1999 by (1) analyzing changes in expenditures for physicians' services and (2) disaggregating, to the extent possible, the changes in Medicare expenditures for physicians' services into the components specified in the legislation. We begin the analysis of physicians' services expenditures in the Background section by briefly describing how the methods used to determine expenditures for physicians' services were updated during our study period, including the changes in services targeted by both the SGR and VPS and how these targets are calculated.

The Chapter 2 of the report presents the results of our comparison, beginning with a comparison of physicians' services expenditures by fee-for-service (FFS) Medicare with expenditures by other payers.

In Chapter 3, we present the results of our analyses of the determinants of those trends in the Medicare program over the period 1993-1998. Our overall approach is to estimate the effects of price changes, demographic and case-mix changes, and changes in the sites of service delivery using survey and medical claims data about Medicare beneficiaries. We draw on expert clinical opinion to explain the remaining "unexplained" changes resulting from technology, productivity, and other factors.

Changes in the price and volume of services delivered are tracked by looking at changes in the number of "relative value units" (RVUs) worth of services and the prices assigned to those RVUs over time (see Appendix E). The Resource-Based Relative Value System (RBRVS) was phased into use by Medicare over a five-year period beginning in 1992. We use 1993 as our base year, since most of the changes that resulted from the new payment system occurred in 1992; thus 1993 is the first year for which a baseline level of physicians' services volume in terms of RVUs can be established (PPRC, 1994a). The baseline was constructed using data from the 1993 Medicare Current Beneficiary Survey (MCBS) Cost and Use File and linked claims data for MCBS respondents for beneficiaries in traditional FFS Medicare. We then determine how much of the volume change (in RVUs) can be attributed to demographic and case-mix changes. These changes were tracked using data elements directly from the MCBS including age, gender, place of residence, self-reported health status and medical conditions, and geographic location. We examine the volume of services delivered in both types of settings. We provide clinical information changes in the medical technology applied to beneficiaries with selected conditions. Finally, we discuss the percentage of the increase in expenditures for physicians' services that is due to enrollment in Medicare+Choice plans.

Chapter 4 discusses the limitations of this study and Chapter 5 summarizes our findings about the determinants of increases in expenditures for physicians' services.

Background

The aim of this study is to investigate the sources of changes in Medicare expenditures for physicians' services over the middle of the last decade. In order to understand physician expenditure increases between 1993 and 1998, it is important to consider the policies *within* Medicare that influence physician expenditures by increasing reimbursement (prices) over time.

Table 2 summarizes the expenditure targets and performance adjustments applied to Medicare Part B physicians' services between 1992 and 1998. These factors influence Medicare

payment rates for physicians' services. Column 1 shows the components of the expenditure targets, and Column 2 shows the performance adjustments. The expenditure targets in Column 1 are designed to track changes in demand for Medicare physicians' services and adjust prices for these changes in demand. Expenditure targets are also designed to restrain volume increases to these identified sources of change. The performance adjustments compare actual expenditures with the expenditure targets. The annual update factor used to increase or decrease physician reimbursement rates reflects the expenditure target for the year and the performance adjustment needed to align spending with the target.

The update factor used to increase (or decrease) reimbursement rates for physicians' services over time has multiple implications, not only for physician expenditures but also for access and quality of care. The amount of the physician payment increase may affect beneficiary access to care, since beneficiaries are responsible for 20 percent of the payment the physician receives, and physician willingness to provide care to beneficiaries depends on its profitability. The magnitude of the updates may affect quality of care by influencing the development and adoption of new technologies for the Medicare population over time. Finally, the method for determining payment increases is also important because it has a direct effect on the Medicare budget.

Next, we will describe in more detail the expenditure targets and updates used in the SGR and the VPS, as shown in Table 2.

Expenditure Targets

Two expenditure targets were used in the 1990s: the VPS was used between 1992 and 1997, and the SGR was used from 1998 onward. The VPS (Table 2, column 1, row 1) target was based on physician input price changes, the change in the number of FFS enrollees, and changes in the volume or intensity of services over the previous five years, with an estimate of how legislative and regulatory factors would influence physician expenditures.[6] The sum of these factors was then reduced by a performance adjustment standard factor shown in Table 2, Column 2, Row 1. In addition, a performance "standard deduction" was created to offset what policymakers believed were historical trends that incorporated a certain amount of inefficient and inappropriate care (PPRC, 1995) .[7]

The input factors for the SGR system are shown in the second row of Column 1 in Table 2. The scope of physicians' services covered by the SGR is identical to that covered by the VPS. However, the SGR differs from the VPS, because the SGR ties increases in physician payments to real per capita growth in the GDP. The SGR formula does not consider historical changes in volume and intensity.

[6] Within the MVPS, different targets were developed for primary, surgical, and nonsurgical services in the 1990s. In 1990 there was just one service category. Between 1991 and 1993 there were two MVPS categories, one for surgical services and one for all other services. The Omnibus Reconciliation Act (1993) introduced a primary care services category. Between 1994 and 1997 there were three categories, surgical services, primary care services, and all other services. The category of "other nonsurgical services" includes services such as diagnostic tests.

[7] The performance standard deduction was –0.5 percentage points in 1990, - 1.5 percentage points in 1992, 3.5 percentage points in 1994 and –4.0 percentage points in 1995.

Performance Adjustments

The performance adjustment factor is used to "adjust" fee schedule updates to account for under- or over-expenditure compared to the target (Table 2, Column 2). If actual Medicare spending is more than allowed spending, the update adjustment factor reduces the conversion factor to recoup the difference. If actual spending is less than allowed spending, the update adjustment factor increases the update factor.

Rates for the Performance Adjustments between 1992 and 1998 are shown in Table 3. Under the VPS, the performance adjustment was based on the difference between expenditures above or below the target expenditures two years prior and actual expenditure increases or decreases two years prior. Thus, an adjustment for 1996 was based on the projected physician expenditures for FY1994 compared to the actual expenditures for FY1994.

The creation of the SGR under the Balanced Budget Act of 1997 (BBA97) changed the calculation of the performance adjustment.[8] The SGR changed the emphasis of the performance adjustment from the growth of expenditures from year to year to cumulative expenditures. Since 1999, the formula has included the cumulative allowed and actual expenditures, rather than expenditure growth from two years prior. [9,10] The SGR performance adjustment factor is limited by legislation to a range within -7.0 and +3.0 percent.

Updates and Conversion Factors

Prior to 1992, the update system for physician payments was related to historical charges, updated by the Medicare Economic Index. The Omnibus Budget Reconciliation Act of 1989 and the BBA97 changed that system to the VPS and SGR systems, respectively. Since 1992, price updates for physician payments comprise three types of factors. First, the updates compensate physicians for changes in input prices (the MEI). Second, the price factor is then reduced or increased by the performance adjustment factor. A third factor affects the update only if the size of the update falls outside the bounds set by Congress. The physician service updates are used to modify the dollar conversion factors that establish payment rates per unit of physicians' services.

Other Physicians' Services

Medicare Part B includes a wide range of services in addition to those provided directly by medical doctors within the definition of "physician services." Table 4 summarizes the main types of physicians' services provided under Medicare Part B and how payments for them are calculated and updated.

The VPS and the SGR targets, the performance adjustment factors, and the updates form the context for analyzing physician expenditures in the subsequent chapters of the report. The VPS and the SGR were designed to set reasonable price increases and to hold physician expenditures

---

[8] The update published in 1997 for 1998 used the MVPS target and performance to calculate the 1998 update.

[9] The Medicare VPS compared target and actual expenditures in a fiscal year (October 1-September 30). Under the SGR, the percentage increase in the target was determined on the basis of a fiscal year and applied to expenditures from April 1- March 31. The multiple time periods used were complex and increased the potential instability of the payment system. These problems were resolved by the BBRA 1999, which changed all time periods involved in the SGR calculations to the calendar year.

[10] The target for cumulative allowed expenditures was projected to be exceeded in 2002, which was one of the reasons for the reduction in the dollar conversion factor this year.

to those targets. In the next chapter, we describe trends in these targets and analyze Medicare Part B physician expenditures compared to other types of personal health care services and compared to other payers in the health care system.

Table 1: Balanced Budget Reconciliation Act (1999) mandates

Potential influences on expenditures for physicians' services mandated to be investigated under the Balanced Budget Reconciliation Act (1999)
Improvements in medical capabilities
Advancements in scientific technology
Demographic changes in the types of Medicare beneficiaries who receive benefits under such programs
Geographic changes in locations where Medicare beneficiaries receive benefits under such programs
Estimates of the rates of use of services among beneficiaries in different age groups
Other factors that might predict use of physicians' services

Source: Balanced Budget Reconciliation Act (1999).

Table 2: Expenditure targets and performance adjustment factors that determined update factors between 1992 and 1998

	Expenditure Targets	Performance Adjustments
1992-1997	Volume Performance Standard: Increase in input prices (Medicare Economic Index) Part B enrollment Changes in laws and regulations Increases in volume and intensity Minus a performance standard factor	Performance Adjustment Factor VPS from two years prior minus actual expenditure change
1998-	Sustainable Growth Rate Increases in input prices Part B enrollment Changes in laws and regulations Growth in per capita GDP	Performance Adjustment Factor The sum of the following: the difference between target prior-year expenditures and prior-year allowed expenditures, and the difference (which may be positive or negative) between the amount of the allowed expenditures for physicians' services from April 1, 1996 through the end of the prior year, and the amount of the actual expenditures for such services during that period (*Federal Register*, November 1, 2001 Volume 66, Number 212).

Source:
Federal Register September 4, 1990 Volume 55, No. FR 36178.
Final Rule, *Federal Register* Vol.56, No. 227, Monday, November 25, 1991.
Final Notice, *Federal Register*, Vol. 57, No. 228. Wednesday, November 25, 1992.
Final Notice with Comment Period, *Federal Register*, Vol. 58, No. 230, Thursday, December 2, 1993.
Final Notice, *Federal Register*, Vol. 59, No. 235, Thursday, December 8, 1994.
Final Notice, *Federal Register*, Vol. 60, No. 236, Friday, December 8, 1995.
Final Notice, *Federal Register*, Vol. 61, No. 227, Friday, November 22, 1996.
Final Notice, *Federal Register*, Vol. 62, No. 211, Friday, October 31, 1997.
Notice with Comment Period, *Federal Register*, Vol. 63. No. 211, Monday, November 2, 1998.

Table 3: Medicare volume performance standard and sustainable growth rate, performance adjustments and updates 1992-1998

Fee schedule/ conversion factor update (in percent)			
Calendar Year	**MVPS/SGR Target**	**Performance Adjustment**	**Update**
1992 Weighted average	10%	-0.9%	1.9%
Surgical	6.5%		
Primary care	11.2%		
1993 Weighted average	10%		1.4%
Surgical	8.4%	0.4%	3.1%
Nonsurgical	10.8%	-1.9%	0.8%
1994 Weighted average	9.4%		7%
Surgical	9.1%	11.3%	10%
Primary care	10.5%	5.6%	7.9%
Other nonsurgical	9.2%	5.6%	5.3%
1995 Weighted average	7.5%		7.7%
Surgical	9.2%	12.8%	12.2%
Primary care	13.8%	5.8%	7.9%
Other nonsurgical	4.4%	5.8%	5.2%
1996 Weighted average	1.8%		0.8%
Surgical	-0.5%	1.8%	3.8%
Primary care	9.3%	-4.3%	-2.3%
Other nonsurgical	0.6%	-1.6%	0.4%
1997 Weighted average	-0.3%		0.6%
Surgical	-3.7%	-0.1%	1.9%
Primary care	4.5%	0.5%	2.5%
Other nonsurgical	-0.5%	-2.8%	-0.8%
1998	1.5%	-0.3%	2.3%

Note: Between 1993 and 1997 there was no overall average payment category. We have provided the average of the payment categories, weighted by the dollar amount of claims in each group, in order to facilitate comparisons of the targets, adjustments, and updates over time. (*Federal Register*, Vol. 61, No. 227, November 22, 1996).

Source:
Federal Register September 4, 1990 Volume 55, No. FR 36178.
Final Rule, *Federal Register* Vol.56, No. 227, Monday, November 25, 1991.
Final Notice, *Federal Register*, Vol. 57, No. 228. Wednesday, November 25, 1992.
Final Notice with Comment Period, *Federal Register*, Vol. 58, No. 230, Thursday, December 2, 1993.
Final Notice, *Federal Register*, Vol. 59, No. 235, Thursday, December 8, 1994.
Final Notice, *Federal Register*, Vol. 60, No. 236, Friday, December 8, 1995.
Final Notice, *Federal Register*, Vol. 61, No. 227, Friday, November 22, 1996.
Final Notice, *Federal Register*, Vol. 62, No. 211, Friday, October 31, 1997.
Notice with Comment Period, *Federal Register*, Vol. 63. No. 211, Monday, November 2, 1998.

Table 4: Services defined in Medicare Part B as physicians' services (1993-1998)

Service Type	Payment Method	Update Method
Physicians' services (includes Doctors of Osteopathy, Optometry, Dentistry, and Medicine)	Resource Based Relative Value Scale (RBRVS).	Sustainable Growth Rate System (SGR) Fee Schedule update
Services and supplies furnished incident to physicians' services	Most included in the practice expense component of RBRVS. In other cases charges are determined by the carrier, relative to average wholesale price.	Practice Expenses – SGR Increase in Average Wholesale Price
Outpatient physical therapy and speech therapy, and outpatient occupational therapy services	Fee schedule, but some services are paid at a percentage of RBRVS.	SGR Fee Schedule update
Antigens prepared by or under the direct supervision of a physician	Antigens were paid under the physician payment schedule after Jan. 1 1995.	Consumers' Price Index (Urban Consumers) (CPI-U)
Drugs and biologicals	Coverage limited. For covered items, before January 1998 drugs were paid using a mix of methods (cost, prospective payment basis, or they were based on the lower of the billed charge or the average wholesale price). (American Medical Association, 2001:7). After January 1 1998, drugs and biologicals were paid according to the actual charge, or 95% of the AWP, whichever was lower.	Increase in Average Wholesale Prices
Services of physician assistants, certified registered nurse anesthetists, certified nurse midwives, clinical psychologists, clinical social workers, nurse practitioners, and clinical nurse specialists	RBRVS used, but reimbursement rates vary. Some professionals such as physician assistants receive a discounted percentage of the total RBRVS charge.	SGR Fee Schedule update

Table 4: Services defined in Medicare Part B as physicians' services (1993-1998) (continued)

Service Type	Payment Method	Update Method
Clinical laboratory tests	Reasonable and prevailing charges subject to national limits. The clinical lab fee schedule is set using national median submitted charges. The amount paid is the lesser of the actual charge, the local fee, or the national limitation amount. Before 1998, payment schedules were set at 60% of the prevailing charge level in each area. After 1998, the national limit became 74% of the median of the local fees for tests.	CPI-U (frozen from 1995-2002)
X-ray, radium, and radioactive isotope therapy	Reasonable and prevailing charges.	CPI-U
Surgical dressings, splints, casts, and other devices used for reduction of fractures and dislocations	Reasonable and prevailing charges.	Increase in charges

Source:
Federal Register September 4, 1990 Volume 55, No. FR 36178
Final Rule, *Federal Register* Vol. 56, No. 227, Monday, November 25, 1991.
Final Notice, *Federal Register*, Vol. 57, No. 228. Wednesday, November 25, 1992.
Final Notice with Comment Period, *Federal Register*, Vol. 58, No. 230, Thursday, December 2, 1993.
Final Notice, *Federal Register*, Vol. 59, No. 235, Thursday, December 8, 1994.
Final Notice, *Federal Register*, Vol. 60, No. 236, Friday, December 8, 1995.
Final Notice, *Federal Register*, Vol. 61, No. 227, Friday, November 22, 1996.
Final Notice, *Federal Register*, Vol. 62, No. 211, Friday, October 31, 1997.
Notice with Comment Period, *Federal Register*, Vol. 63. No. 211, Monday, November 2, 1998.
Program Memorandum AB-02-163, November 8, 2002.