Technical Review 7

Determinants of Increases in Medicare Expenditures for Physicians' Services

Front Matter

Table of Contents

Summary.....1

Technical Review

Chapter 1. Introduction.....11

Chapter 2. Historical Trends in Medicare Expenditure Growth.....21

Chapter 3. Decomposing the Change in Medicare Expenditure for Physicians' Services.....41

Chapter 4. Limitations.....67

Chapter 5. Conclusions.....69

References.....73

Appendixes.....75

Tables

This report may be used, in whole or in part, as the basis for development of clinical practice guidelines and other quality enhancement tools, or a basis for reimbursement and coverage policies. AHRQ or U.S. Department of Health and Human Services endorsement of such derivative products may not be stated or implied.

AHRQ is the lead Federal agency charged with supporting research designed to improve the quality of health care, reduce its cost, address patient safety and medical errors, and broaden access to essential services. AHRQ sponsors and conducts research that provides evidence-based information on health care outcomes; quality; and cost, use, and access. The information helps health care decisionmakers—patients and clinicians, health system leaders, and policymakers—make more informed decisions and improve the quality of health care services.

Technical Review
Number 7

Determinants of Increases in Medicare Expenditures for Physicians' Services

Prepared for:
Agency for Healthcare Research and Quality
Department of Health and Human Services
540 Gaither Road
Rockville, MD 20850
www.ahrq.gov

Contract No. 290-97-0001

Prepared by:
Southern California–RAND Evidence-Based Practice Center, Santa Monica, CA

Paul Shekelle, M.D., Ph.D.
Program Director

Sally Morton, Ph.D.
Program Co-Director

Task Order Director	Paul Shekelle, M.D., Ph.D.
Task Order Co-Director	Melinda Beeuwkes Buntin, Ph.D.
Research Analyst	Miriam Laugesen, Ph.D.
Senior Economist	Dana Goldman, Ph.D.
Data Analyst	Hongjan Kan, M.A.
Health Economics Expert	Jose Escarce, M.D., Ph.D.
Staff Assistants	Eileen McKinnon
	Shannon Rhodes

AHRQ Publication No. 04-0008
October 2003

This document is in the public domain and may be used and reprinted without permission except those copyrighted materials noted for which further reproduction is prohibited without the specific permission of copyright holders.

Suggested Citation:
Buntin MB, Escarce J, Goldman D, et al. Determinants of Increases in Medicare Expenditures for Physicians' Services. Technical Review 7 (Prepared by Southern California–RAND Evidence-based Practice Center, under Contract No 290-97-0001). AHRQ Publication No. 04-0008. Rockville, MD: Agency for Healthcare Research and Quality. October 2003.

Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Evidence-Based Practice Centers (EPCs), sponsors the development of evidence reports and technology assessments to assist public- and private-sector organizations in their efforts to improve the quality of health care in the United States. The reports and assessments provide organizations with comprehensive, science-based information on common, costly medical conditions and new health care technologies. The EPCs systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

To bring the broadest range of experts into the development of evidence reports and health technology assessments, AHRQ encourages the EPCs to form partnerships and enter into collaborations with other medical and research organizations. The EPCs work with these partner organizations to ensure that the evidence reports and technology assessments they produce will become building blocks for health care quality improvement projects throughout the Nation. The reports undergo peer review prior to their release.

AHRQ expects that the EPC evidence reports and technology assessments will inform individual health plans, providers, and purchasers as well as the health care system as a whole by providing important information to help improve health care quality.

We welcome written comments on this technical review. They may be sent to: Director, Center for Outcomes and Evidence, Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, MD 20850.

Carolyn M. Clancy, M.D.
Director
Agency for Healthcare Research and Quality

Jean Slutsky, P.A., M.S.P.H.
Acting Director, Center for Outcomes and Evidence
Agency for Healthcare Research and Quality

The authors of this report are responsible for its content. Statements in the report should not be construed as endorsement by the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services of a particular drug, device, test, treatment, or other clinical service.

Contents

Summary 1
Chapter 1. Introduction 11
Background 12
Expenditure Targets 13
Performance Adjustments 14
Updates and Conversion Factors 14
Other Physicians' Services 14
Chapter 2. Historical Trends in Medicare Expenditure Growth 21
Trends in Performance Targets and Updates 21
Updates and Conversion Factors 21
Historical Trends in Health Expenditures 23
Data and Methods 23
Expenditure Trends 24
Discussion 27
Chapter 3: Decomposing the Change in Medicare Expenditures for Physicians' Services 41
Policy Changes in Prices and Coverage Rules 41
Changes in the Volume and Intensity of Services Delivered 42
Methods 44
Results 47
RVU Use by Beneficiary Types 48
Site of Care Delivery 50
Changes in Clinical Technology and Productivity 51
Effect of Medicare Managed Care Enrollment 52
Other Physicians' Services 53
Discussion 54
Chapter 4. Limitations 67
Chapter 5. Conclusions 69
Implications 69
Future Research 70
References 73
Appendixes 75
Appendix A. Payment for Physicians' Services Under the Resource Based Relative Value Scale 79
Appendix B. 1993 OLS Model Estimation Results 83
Appendix C. 1993 Two-part Model Estimation Results 87
Appendix D. Actual Characteristics of the 1993 FFS, 1993 HMO, 1998 FFS, and 1998 HMO Samples 91
Appendix E. Total Actual RVU Use by Beneficiary Age/Gender Categories, 1993 and 1998 95
Appendix F. Legislative Changes to Prices and Coverage, 1994-1998 99
Exhibit A 101

Tables

Table 1: Balanced Budget Reconciliation Act (1999) mandates 16
Table 2: Expenditure targets and performance adjustment factors that determined update factors between 1992 and 1998 17
Table 3: Medicare volume performance standard and sustainable growth rate, performance adjustments and updates 1992-1998 18
Table 4: Services defined in Medicare Part B as physicians' services (1993-1998) 19
Table 5: Medicare volume performance standard, 1990-1997, and sustainable growth rate 1998[1] 28
Table 6: Physician fee schedule updates and conversion factors by service type, 1993-1998 29
Table 7: Average annual percentage change in all conversion factors 30
Table 8: Average annual growth in per enrollee Medicare and private health insurance expenditure for all services 31
Table 9: Year-to-year percentage increase in health expenditure (all payers) 32
Table 10: Sources of payments for physician and clinical services, selected calendar years, 1970-1999 33
Table 11: Sources of payments for other health professional services, selected calendar years, 1970-1999 34
Table 12: Total and per person private insurance and out-of-pocket expenditures, 1990-1999, in 1990 constant dollars 35
Table 13: Total Medicaid expenditure on physician, clinical, and other professional services, 1990-1999, in 1990 constant dollars 36
Table 14: Medicaid expenditure on physicians' services per recipient, 1990-1998, in 1990 constant dollars 37
Table 15. Average annual Medicare expenditure growth rates by provider sector: before and after the Balanced Budget Act 38
Table 16: Total Medicare expenditure on physician services, 1990-1998, in 1990 constant dollars 39
Table 17: Annual Medicare expenditures per enrollee, 1990-1999, in 1990 constant dollars 40
Table 18. Projected percentage increase in expenditures for physicians' services resulting from changes in law or regulations 55
Table 19. RVU use by year and service categories, 1993 & 1998 56
Table 20: Probabilities of any use of physicians' services 57
Table 21: RVU consumption for physician services 58
Table 22: Decomposing the predicted change in RVU for physician services use 59
Table 23: RVU for physician services use by year 60
Table 24: Differences between predicted and actual use of RVUs for physician services in 1998, sorted from highest to lowest unexplained change 61
Table 25: Differences between predicted and actual use of RVUs in 1998, inpatient 62
Table 26: Differences between predicted and actual use of RVUs in 1998, outpatient 63
Table 27: Mean per beneficiary payments for non-RVU services, 1993 and 1998 64
Table 28: Differences between predicted and actual use of and expenditures for diagnostic labs and x-rays in 1993 and 1998 65
Table 29: Differences between predicted and actual use of and expenditures for anesthesia in 1993 and 1998 66

Summary

Background

In 1990, after a decade of rapid cost growth, Congress made two major changes to the Medicare program in an attempt to control expenditures for physicians' services. It implemented a fee schedule and a payment update system for physicians' services. The goal of this fee schedule was to set relative payment rates 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 by linking them 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, members of Congress, 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.[1] 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 changes 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.

In light of these concerns, Congress mandated a study of sources of changes in FFS Medicare expenditures for physicians' services.

---

[1] 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.

Approach

The tasks we undertook in response to the Congressional mandate were the following:

- Describe the processes used to update payment rates for Medicare physicians' services;
- Analyze national trends in expenditures for physicians' services; and
- Disaggregate the changes in Medicare expenditures for physicians' services into the components specified in the legislation, to the extent possible.

In order to describe the processes used to update payment rates for Medicare physicians' services we reviewed Federal Register Notices about the payment system, reports of the Medicare Actuary, and reports of the Physician Payment Review Commission and its successor, MedPAC. We also compiled information from these sources and from the National Health Accounts in order to analyze national trends in expenditures for physicians' services.

We assessed the changes in Medicare expenditures for the period between 1993 and 1998, a period for which we have both national estimates of expenditure trends and beneficiary-level data on the use of services.

Our overall approach was to estimate the effects of changes in demographics, case-mix, and sites of service delivery on the delivery of services over time, using survey and medical claims data about Medicare beneficiaries. We then drew on expert clinical opinion to help us account for the rest of the changes in service use, which might be due to changes in technology, productivity, and other factors.

The volume and intensity of physician services on the Medicare physician fee schedule are measured using a system called the Resource Based Relative Value Scale (RBRVS). Each service on the physician fee schedule is assigned a number of Relative Value Units (RVUs) that reflect the time, skill, expense, and other resources used in providing the service. We can thus quantify the volume and intensity of physicians' services consumed by counting the number of RVUs delivered to beneficiaries. In addition, a panel of physicians makes periodic recommendations to the Center for Medicare and Medicaid Services (CMS) about changes that are needed to update the fee schedule because of newly available services or services that have changed. Services that are added to the Medicare benefits package are also added to the fee schedule. We measured the changes in volume and intensity of physicians' services in the fee schedule updates and used them as an index of changes in medical practices, technology, and coverage.

Medicare phased the fee schedule into use over a five-year period beginning in 1992. Since most of the changes that resulted from the new payment system occurred in 1992, 1993 was the first year for which a baseline level of physicians' services volume could be established in terms of RVUs. 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 in traditional FFS Medicare. The MCBS is an annual survey of a sample of Medicare beneficiaries conducted by CMS. It collects information about beneficiaries' health status and use of health care services. It also collects information about beneficiary spending on health care, health insurance

status, and other beneficiary characteristics. This information is linked to Medicare administrative data on respondents' use of services paid for by Medicare.

We modeled the volume of services (in RVUs) used by individual beneficiaries in our 1993 analysis sample as a function of beneficiary characteristics including age and health conditions. Our analysis was restricted to FFS enrollees who did not have end-stage renal disease (ESRD) and were not institutionalized, because both these groups had physician care patterns that differed from other Medicare beneficiaries and ESRD services were not added to the fee schedule until the middle of our study period.

We modeled the volume of services (in RVUs) used by individual beneficiaries in our 1993 analysis sample as a function of beneficiary characteristics including age and health conditions (case mix). Having fit our model to 1993 data, we then used the estimated coefficients from the 1993 model to predict service volume in terms of RVUs for future years. We compared the total predicted growth to the total volume of growth to see how much of the change in volume could be attributed to the demographic and case-mix factors in the model.

Results

Processes for Updating Payments for Physicians' Services in Medicare

Both the VPS and the SGR were designed to restrain growth in expenditures for physicians' services. The VPS expenditure target for growth in Medicare physicians' services spending consisted of four factors. These factors were the projected changes in the cost of providing physicians' services (measured using the Medicare Economic Index and the Consumer Price Index); projected changes in the number of Medicare beneficiaries; growth in volume and intensity of physicians' services over the previous five years; and changes in projected spending due to changes in law or regulation. In the SGR target formula, a factor tied to changes in real per capita growth in the GDP replaced the VPS factor based on the five-year historical trend in volume increases. This change was designed to ensure that physician expenditures would grow only as fast as the economy as a whole.

The expenditure targets are calculated and implemented by CMS. The targets set by the VPS and the SGR determine the year-to-year increases in the payment rates for physicians' services. The VPS targets for growth in physicians' services expenditures during our study period ranged from a high of 10 percent in 1993 to a low of –0.3 percent in 1997. Payment rate increases are then set by CMS so as to meet these targets: if actual expenditures are lower than the target, the payment rate increase is inflated to help meet the target and vice versa. The targets translated into physician payment updates that ranged from 0.6 percent to 7.7 percent over the 1993-1998 period. In turn, these updates dictate the increase (or decrease) in the dollar amount at which RVUs on the physician fee schedule are reimbursed.

Setting the physician expenditure targets also takes into account a number of ancillary ("Other") services included in the statutory definition of physicians' services (diagnostic laboratory tests and x-rays; physician-administered drugs, biologicals, and antigens; the services of particular non-physician health professionals; and services and supplies incidental to physicians' services). However, some of these services are not measured in RVUs, and the

prices paid for these services are not updated using the VPS or SGR. Instead, update methods span a range and include changes in charges and average wholesale prices.

Trends in Expenditures for Physicians' Services Across Payers

Expenditure changes during the mid-1990s for physicians' services showed broadly similar trends across payers. National Health Accounts estimates of per capita physician services expenditures show that expenditures grew at an inflation-adjusted average annual rate of 4.8 percent between 1993 and 1998. Per person expenditures from private insurance and out-of-pocket sources had an inflation-adjusted average annual rate of increase of 2.8 percent. Medicare per capita program expenditures for physician and supplier services grew 4.4 percent annualized; per capita physician fee schedule services grew 3.4 percent annualized.[2] Thus, the increases in expenditures allowed under the VPS system over this time period were not markedly different than those experienced by other payers.

Disaggregating Changes in Medicare Expenditures for Physicians' Services

To determine the causes of increased Medicare spending for physicians' services, we looked at changes in pricing and coverage policy and in the volume and intensity of physicians' services delivered. We also examined the use of and spending for other services that are included under the statutory definition of Medicare physicians' services.

Policy Changes in Prices and Coverage Rules

Policy changes that affect Medicare spending on physicians' services are of two types: changes that affect the price paid per service and changes in the services covered. The dollar conversion factor used to set prices for services on the physician fee schedule increased from $31.50 in 1993 to $36.70 in 1998, an increase of 16.6 percent in the amount paid per unit of service delivered. Over the period we examined, regulatory changes to the services covered by Medicare were projected to increase expenditures by approximately 5 percent.

Changes in the Volume and Intensity of Services Delivered

The other major determinant of increases in expenditures is the increase in the volume and intensity of services delivered. Volume and intensity can increase or decrease because of changes in medical practice, technology, the case mix of the population being served, and the supply of and demand for physicians' services. The price paid per service can also influence the number of services provided.

We found that the per capita volume of physicians' services used by Medicare beneficiaries increased more than 30 percent between 1993 and 1998 (from 38.1 to 49.9 RVUs; see table below). Using our model to control for the changing demographics and observable health status of the Medicare population, we found that the 1998 Medicare FFS population would have been

[2] The National Health accounts and Medicare estimates cover somewhat different sets of services and beneficiaries (e.g. HMO expenditures are treated differently). Theses differences are described in detail in Chapter 2.

expected to use slightly fewer services per capita than the 1993 Medicare FFS population. Thus, the changing age/gender composition, place of residence, and observable aspects of health status of the 1998 Medicare population were not responsible for the volume increase.

We disaggregated the volume increase into increases in the use of physicians' service codes that existed in 1993 (our base year) and "new" codes. The new codes include codes for established services that were newly covered by Medicare, new codes for new health care services, and codes that had been updated since 1993.[3] Fifty-eight percent of the total difference between 1993 and 1998 RVU use (7.5 out of 12.9 RVUs) was due to the increased use of codes that existed in 1993. Forty-two percent of the total difference between actual 1998 RVU use and predicted use was due to the use of new or updated codes.

Table: RVU for physician services use 1993 and 1998

Year	Predicted RVU Use	RVUs Based on 1993 Fee Schedule	Actual RVU Use in 1998	Mean Unexplained Change	Increase in Use of Existing Codes	New and Updated Codes	Number of Observations
	(1)	(2)	(3)	(3) minus (1)	(2) minus (1)	(3) minus (2)	
1993	38.1	38.1	-	-	-	-	9,627
1998	37.0	44.5	49.9	12.9	7.5	5.4	8,986

Source: Authors' analyses of Medicare Current Beneficiary Survey.

We also assessed changes in the relative proportion of physicians' services delivered in inpatient and outpatient settings. The number of inpatient RVUs increased only slightly, but the use of physicians' services in outpatient settings increased significantly. The proportion of total per-beneficiary RVUs associated with inpatient care declined from 36.7 percent to 29.9 percent of total RVU use.

We then looked at the patterns of increase in use by groups of beneficiaries who reported a history of particular diseases on the MCBS survey. Most of these groups had very similar levels of increase in RVU use. Many disease groups that were expected to show large increases in service use owing to technological change did not show such increases (at least relative to disease groups not expected to show such increases). Of the self-reported medical conditions we considered, only strokes, osteoporosis, and unspecified heart conditions were associated with a significant unexplained increase in RVU use compared to the absence of those conditions. A large increase in RVU use was also observed in beneficiaries just prior to death. In contrast, the

[3] Only the amount by which the RVUs for updated services were increased (or decreased) is included in the "new" codes category. Thus, if the use of an existing code that had been updated increased, then the 1993 number of RVUs times the increase in use would be reflected in the existing codes category, and the amount of the update times the increase in use would be in the new codes category.

care of patients with hip fracture and those with no reported medical conditions was associated with the decrease in RVU use, and lung cancer was associated with the largest drop in the use of inpatient services (fifty-four percent).

Changes in Clinical Technology and Productivity

Clinical experts identified a number of potential reasons for the increases in the use of physicians' services by stroke patients and osteoporosis patients and the large decline in the use of inpatient services by lung cancer patients. These reasons included the extension of Medicare coverage for bone scans for persons at risk for osteoporosis, new pharmaceutical therapies that may require additional office visits, a greater appreciation for aggressive rehabilitation of stroke patients and aggressive treatment of risk factors for stroke, and improvements in medical imaging. The reductions in RVUs for lung cancer treatment were postulated to be due to some combination of improved cancer staging, shifts in the site of chemotherapy, and the increased use of hospice care.

Effect of Medicare Managed Care Enrollment on Service Use

During the period 1993-1998, enrollment in Medicare managed care plans increased significantly. Numerous studies have shown that Medicare beneficiaries who choose to join managed care plans are healthier than average. The negative selection brought about by this exodus from traditional-fee-for service Medicare produces a concomitant rise in per-capita utilization (as measured by RVUs). However, our estimates suggest that this effect is small, ranging from negligible to 5.6 percent at most.

Use of Other Physicians' Services

In our sample, per beneficiary payments for all ancillary medical services not reimbursed through the fee schedule increased 5 percent, from $317 in 1993 to $333 in 1998 in our sample. The increase was largely due to the increase in the frequency of use of diagnostic laboratory and x-ray services.

Conclusions

In our sample of Medicare beneficiaries, per capita expenditures for physicians' services increased 19 percent in nominal dollars from $898 in 1993 to $1073 in 1998. Expenditures for physician fee schedule services increased 27 percent from $581 to $740, and other services included in the statutory definition of physicians' services increased 5 percent from $317 to $333. During that period, the physician fee schedule dollar conversion factor increased by 16.6 percent from $31.50 to $36.70.[4]

Changes in laws and regulations and increasing enrollment in managed care can account for at most one-half of the observed change in expenditures. According to CMS, changes in laws and regulations should have led to an increase of 5 percent in total expenditures for physicians'

[4] Note, however, that conversion factor increase does not translate into a commensurate increase in expenditures, owing to beneficiary cost sharing, the phase-in of the fee schedule, and other factors discussed in detail in the report.

services. We estimate that HMO enrollment can account for no more than a 5.6 percent increase in expenditures.

The per capita volume of physicians' services (in RVUs) delivered to non-ESRD, non-institutionalized fee-for-service Medicare beneficiaries increased 30 percent over the mid-1990s. Our analyses do not indicate that this increase is due to measurable changes in the demographic composition, the places of residence, the prevalence of health conditions, or other characteristics of the Medicare population. Indeed, our analysis indicates that, all else being equal, the 1998 FFS population should have used slightly fewer RVUs than the 1993 population. In addition, while we found that the use of services in outpatient settings increased substantially, the increase in expenditures could not be attributed directly to shifts in site of care from inpatient to outpatient settings.

Overall, the main driver of change in the volume and intensity of services was a general increase in the use of care by all categories of beneficiaries. Only a few medical conditions emerged as having unusual RVU growth. For these conditions, clinical experts were able to point to changes in medical knowledge and technology that could have contributed to the increase. Large increases in the use of physicians' services were also seen in patients just prior to death. Thus, changing medical technology appears to increase use of physicians' services in ways that are strong and pervasive. Furthermore, the increases in Medicare expenditures for physicians' services seem comparable to those of other payers. This finding indicates that the trends in Medicare beneficiaries' use of physicians' services are likely driven by the same set of factors as those driving the increase in overall health care spending.

This study has four main limitations. First, as with nearly all models of health care utilization and spending, our model can explain very little of the variation in service utilization across beneficiaries. Second, while we were able to attribute the unexplained increase in RVUs to both "new and updated" and "existing" service codes, this distinction does not isolate the effect of new technology, since existing services can undergo technological changes that are not captured in the fee schedule. Third, while we tried to control for patient characteristics, unobserved differences in severity of illness may have existed between the patients in our 1993 and 1998 samples. Finally, we cannot say whether or not the observed increases in service use are medically appropriate or whether they would have been different in magnitude if an alternative payment update system has been used.

Implications

Our analyses have several implications for the debate about the SGR payment update system:

1. Technical adjustments to the SGR targets are not a ready solution to the criticisms raised about the SGR. Such adjustments could be made to account for the changing composition of the FFS population, but they would be small adjustments relative to the overall increases in service use.
2. A payment update system that systematically attempted to measure "appropriate" increases in use due to changing technology would not be feasible. Such a system would have to consider changes across an extraordinarily broad set of dimensions and conditions to capture all of the possible ways in which technology can influence service provision.

3. Our analyses indicate that some of the largest increases in the use of physicians' services cannot be ascribed to discrete causes. These increases are surprisingly uniform across medical conditions, suggesting that a single update factor for physicians' services may be appropriate. However, what that factor should be remains an open policy question.

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.

Chapter 2. Historical Trends in Medicare Expenditure Growth

This chapter reviews trends in aggregate Medicare expenditures for physicians' services and compares them to expenditures by other payers. To provide further context, it also reviews trends in aggregate Medicare payments and compares them to aggregate expenditures for other payers.

The first part of the chapter reviews trends in the Medicare expenditure targets and updates, including the Volume Performance Standard (VPS) and the Sustainable Growth Rate (SGR). Trends in price updates for services included in the Medicare Physician Fee Schedule are also described. The second part of the chapter compares trends in Medicare physicians' services expenditures with trends in other types of national health expenditures, trends in other types of Medicare services, and trends in expenditures by other payers. Medicare expenditures for physician services are compared to similar expenditures for Medicaid beneficiaries and privately insured Americans.

Trends in Performance Targets and Updates

Trend data for updates, targets, and conversion factors for Medicare physician services were collected from final rules published for physician payment updates, volume performance standards, and the sustainable growth rate in the *Federal Register* between 1991and 1998. Data on updates and targets are reported in their original form.

Targets for growth in Part B expenditures for physician services during the 1990s are shown in Table 5. In 1990, physicians were collectively expected to hold expenditure growth to 9.1 percent; overall, the targets for expenditure growth remained between 7.3 and 10 percent until 1996. In 1996 the target was reduced to 1.8 percent, and then to –0.3% in 1997.

When the VPS was introduced, there were separate targets for surgical and other nonsurgical services. The surgical services target was 3.3 percent in 1991 and increased to 8.4 percent in 1993 and to 9.1 percent in 1994 and 1995. In 1996, the surgical target decreased to –0.5 percent and then to –3.7 percent in 1997. In 1994, the primary care target was introduced and set at 10.5 percent. Primary care targets increased substantially between 1994 and 1997, peaking at 13.8 percent in 1995. Targets for other nonsurgical services increased in the 1990s between 8.6 percent in 1991 and 9.2 percent in 1994, falling to 0.5 percent in 1997. In 1998, the Sustainable Growth Rate of 1.5 percent replaced the other separate targets.

Updates and Conversion Factors

Update factors determine the year-to-year change in the dollar conversion factor, used to reimburse physicians and others reimbursed through the physician fee schedule. Table 6 shows the trends in the updates to the fee schedules between 1992 and 1997 and the single conversion factor introduced in 1998. The update to the fee schedule in 1993 was below 2 percent. In 1994 and 1995 the weighted average update surged to around 7 percent, but then the update factor dropped below 1 percent in 1996 through 1998. Between 1993 and 1997 the fee schedule updates contained different update factors for surgical services, primary care (after 1994), and

nonsurgical services; but the Balanced Budget Act replaced these updates with a single update factor and conversion factor.[11]

The update factors determine the changes in prices paid per RVU over the period 1993 to 1998. Table 6 shows the update factors and correspondingly updated dollar conversion factors. (The conversion factors are multiplied by the RVUs for a physician service to produce payment amount.) Updates are shown in percentages while conversion factors are shown in dollars (rounded to two decimal places). In 1998 the single conversion factor was rebased at $36.69.

The Balanced Budget Act and the move to a single rebased conversion factor had the most significant impact on surgical services. The surgical conversion factor increased from $31.96 in 1993 to $41.00 in 1997. After the introduction of the single conversion factor, surgical services were reimbursed at the uniform conversion factor of $36.70 in 1998.

The first column of Table 7 shows the cumulative increase in the conversion factors for different service types between 1993 and 1998. The cumulative increase in the conversion factor for surgical services was 14.7 percent. Primary care and nonsurgical services increased by 17.3 percent between 1993 and 1998. The cumulative increase for surgical services over this period was lower than the increase for other services because of introduction of the uniform conversion factor in 1998. Table 6 shows the difference between primary and nonsurgical conversion factors, which is not reflected in the cumulative growth of 17.3 between 1993 and 1998 in Table 7. The cumulative primary and nonsurgical rate is the same because primary services were updated by the nonsurgical update in 1993, and in 1998 the conversion factors were also identical.

Table 7 compares the annualized growth rate between 1993 and 1997 (center column) and 1993 and 1998, shown in the final column. The impact of the single conversion factor introduced in 1998 is shown in the final column. Between 1993 and 1997 the annualized growth rate for surgical services was 6.4 percent, but between 1993 and 1998 the growth rate was lower at 2.8 percent, reflecting the influence of the lower uniform conversion factor. Primary care services grew at relatively similar rates between 1993 and 1997 and between 1993 and 1998, mainly because the 1998 uniform conversion factor was based on the 1997 primary care services conversion factor. Nonsurgical services grew at an average rate of 2 percent between 1993 and 1997 and by 3.2 percent between 1993 and 1998.

Changes in the update factors during the study period largely reflect the feedback loop between target and actual expenditures. As reported in Table 3 of Chapter 1, the Performance Adjustment Factor for surgical services was 0.4 percent in 1993, 12.8 percent in 1995 and –0.1 percent in 1997. This was because expenditures in years prior to 1995 had not met the VPS targets, while those in 1993 and 1997 were close to targets. The Medicare Economic Index was fairly stable between 1993 and 1998. During the study period, the Medicare Economic Index ranged between 2.0 and 2.7 percent. The fee schedule update ranged between 0.6 percent and 7.5 percent. In addition, especially in the early years of the 1990s, there were relatively high initial expenditure targets for most types of services.

[11] Prior to 1994, primary care services were updated using the nonsurgical services update. When the primary care update and conversion factor was introduced in 1994, the name of the nonsurgical update was changed to “other nonsurgical services.”

Historical Trends in Health Expenditures

Data and Methods

To describe the trends between 1993 and 1998 in expenditures for physician services, we collected data from a variety of sources. National health expenditure data from the Health Care Financing Administration's National Health Accounts data set *National Health Expenditures*, released in March 2001, were used. This data set contains national health expenditures for categories of services from 1960 and 1999. Data were also gathered from Physician Payment Review Commission reports, MedPAC reports, reports of the Supplementary Medical Insurance Trust Fund, and various issues of the *Green Book* data compilations published by the House Ways and Means Committee of the United States Congress. Medicare benefit payments data for Part B services and Medicare enrollment data for managed care and fee-for-service enrollees were collected from Health Care Financing Administration publications, including the *Health Care Financing Review's Medicare and Medicaid Statistical Supplement* and from various issues of the *Statistical Abstract of the United States.* Below we describe the composition of the National Health Accounts, other data sources, and some of the strengths and limitations of the data sources.

National Health Accounts data disaggregate expenditures according to standard categories. In the National Health Accounts, the type of product consumed or, in the case of services, the type of establishment providing the service determines what is included or excluded from health care spending (Health Care Financing Administration, 2001). We used expenditure categories from the National Health Accounts to quantify trends in physician service expenditure. The first expenditure category is "physician and clinical services." This category of expenditure comprises services provided in establishments operated by Doctors of Medicine (M.D.) and Doctors of Osteopathy (D.O.), outpatient care centers, plus the portion of medical laboratories services that are billed independently by the laboratories. This category also includes services rendered by a doctor of medicine (M.D.) or doctor of osteopathy (D.O.) in hospitals, if the physician bills independently for those services. The second major category of health expenditure classification used in the National Health Accounts is "other professional services," which includes services of registered and practical nurses in private duty, podiatrists, optometrists, physical therapists, clinical psychologists, chiropractors, naturopaths, and Christian Science practitioners. Finally, the National Health Accounts separately list expenditures for dental services.

The second major type of data used is Medicare program expenditures, the amounts Medicare paid physicians or other suppliers.[12] These data have various strengths and weaknesses. Published Medicare expenditure data are highly aggregated and do not break down expenditures to a high level of detail (Welch, 1998). Available expenditure data do not correspond to the statutory definition of physician services.[13] Published Medicare program

[12] These do not include beneficiary out-of-pocket expenditures.

[13] In our analyses in chapter 3 we use raw claims level data that we can aggregate to match the statutory definition of physicians' services.

expenditures are not compiled consistently.[14] Medicare data are reported in different ways between 1990 and 1998 in the statistical sources examined, with two conventions used: "physicians and suppliers" or expenditure reimbursed under the "Physician Fee Schedule." Data showing expenditures for Physicians and Suppliers are available between 1990 and 1998. Physician Fee Schedule expenditure data are available between 1993 and 1998. "Physicians and suppliers" includes a wider range of services[15] than "physician fee schedule." Medicare Physician Fee Schedule expenditures include expenditures for services reimbursed under the Medicare Fee Schedule, and include both physicians and other providers. However, one of the advantages of Medicare program expenditure data is that program expenditures exclude Part B managed care enrollee expenditures, whereas National Health Accounts includes this group. With increasing enrollment in Medicare managed care plans in the 1990s, this factor is particularly important. We report both estimates of program expenditures.

The National Health Accounts and the Medicare program expenditure data sources provide different, but complementary, estimates of Part B physician expenditures. National health accounts data enable comparisons between public and private expenditures over time, and between Medicare and Medicaid expenditures. Differences exist in the age, income, and health status of these population groups, however, and their benefit packages are not comparable. Despite differences in the populations served and the services provided, the National Health Accounts have the strong advantage of using a consistent method of compiling annual data over time.

Population and enrollee data were used to develop per person expenditure estimates. The number of Medicare beneficiaries was growing more rapidly than the number of persons covered by private insurance over this time period, making comparisons of per capita expenditures important (Moon, 1999). Medicare fee-for-service Part B enrollee counts were used to create Medicare Part B per capita expenditures. Where Medicare expenditures are disaggregated as fee-for-service and managed care expenditures, the appropriate enrollee population was used to estimate fee-for-service or managed care cost estimates. National population data from the Census were used to create per capita figures for other population groups in the National Health Accounts.

In sum, comparing per person physician expenditures across payers and across times requires data from a variety of data sources. The mix of data sources provides complementary estimates of physician expenditures during the study period.

Expenditure Trends

The 1990s saw major shifts in the financing of health care, which influenced the rate of health care inflation in the public and private sectors. Whereas in 1990 total health expenditures

[14] Published data on Medicare physician program expenditures are based on Health Care Financing Administration data. The published sources consulted included *Health Care Financing Review Statistical Abstract* (1999), the House Ways and Means *Green Book* series, and the *Statistical Abstract of the United States*.

[15] Medicare Program expenditures for "physician and suppliers" under Medicare Supplementary Medical Insurance (Part B) includes the package of services defined in the introduction. For example, this includes medical care; anesthesia; X-rays; mammography; psychological, physical and occupational therapy; lab tests; and some drugs. "Physicians and Suppliers" excludes expenditures for prepaid or managed care plans, home health agencies, and independent laboratories. However, this category also includes "durable medical equipment" and "other services" that are not part of the package of services included in this study. Therefore, this estimate will tend to overstate expenditures.

grew from the previous year by almost 12 percent, expenditure growth was 5.4 percent over the previous year in 1995, and 5.6 percent in 1999. These lower growth rates for health expenditure were experienced by private, Federal, State and local payers, and across all types of care except for drugs, home health services, and some types of personal health care services and supplies.

Table 8 compares the trends in total (per capita) health expenditures of privately insured Americans over the last thirty years compared to Americans insured under Medicare. The real average annual change in expenditures for the Medicare insured was 5.3 percent, compared to 6.5 percent for privately insured Americans. Between 1985 and 1991, Medicare's inflation-adjusted annual growth slowed to around 3.3 percent compared to 8.1 percent per enrollee for the privately insured. As more privately insured Americans enrolled in managed care insurance plans in the early and mid-1990s, average growth rates fell for this group compared to Medicare. Private insurance expenditures began to grow more rapidly towards the end of the 1990s. Between 1997 and 1998, Medicare's expenditures fell by .1 percent in real terms while expenditures for privately insured Americans increased 5.9 percent.

Although year-to-year growth in total national health expenditures was slowing in the middle years of the 1990s, personal health expenditures were increasing at a faster rate than all health expenditures (see Table 9). Expenditure trends for physicians' services mirrored the trends of slower growth in total health expenditures during most of the 1990s. Physician and clinical service expenditure increased at a faster rate than hospital care, but not as fast as total personal health expenditure. Hospital services grew at a much slower rate than physician and clinical services in the latter half of the 1990s.

Table 10 shows that between 1970 and 1999 third party payments increased as a proportion of total expenditures for physician and clinical services. Direct consumer payments decreased as a percentage of all payments while third party payments increased. Third party payers accounted for 54 percent of physician service expenditure in 1970. By 1990 third party payers were funding 81 percent of physician service expenditure. Through the 1990s this trend continued and by 1999 third party payers were responsible for almost 89 percent of physician expenditures.

Direct consumer payments for physician and clinical services declined from 19 percent in 1990 to 11 percent of total expenditures in 1999. The decreasing share of out-of-pocket payments for physician services reflects changing insurance coverage and the role of public programs such as Medicaid and Medicare in paying for physician services. The proportion of payments for physicians' services made by private insurance grew between 1970 and 1999, from 30 percent to 43 percent in 1990 and to 48 percent of physician expenditures by 1999. Medicare's share of payments increased from 12 percent in 1970 to 19 percent in 1990. Throughout the 1990s Medicare's share remained between 18 and 20 percent of total physician expenditures.

For services provided by other health professionals, out-of-pocket payments also fell as private third party payments for these services increased between 1970 and 1999. Out-of-pocket payments for other professional services fell from 44 to 30 percent of all expenditures for these services, as shown in Table 11. Whereas the public sector has increased its expenditures over time for physician services, the share of expenditures paid by Federal, State, and local sources for other professional services declined in relation to other payers between 1970 and 1999. The decline in the share of public payments occurred outside of the Medicare and Medicaid programs. Medicare financed 5 percent of these services in 1970 and 11 percent in 1999, while Medicaid expenditures decreased by one percentage point relative to other payers.

Table 12 shows the increases in expenditures by private insurers and individuals between 1990 and 1999. Per person expenditures for physician, clinical, other professional, and dental services increased from $411 in 1990 to $716 in 1999 (592 in constant 1990 dollars), real increase of 44 percent. Total private insurance expenditures increased by 57 percent for physician and clinical services.

Medicaid expenditures for physician and clinical services were considerably lower than expenditures in either Medicare or by private insurers (Table 10), but the rate of growth in total expenditures was higher (Table 13). In part this was a result of increased enrollment throughout this period, rather than comparatively faster increases in per person expenditures. Medicaid expenditures per enrollee increased nearly 27 percent in real terms between 1990 and 1998 (Table 14). Physician and other clinical service expenditures increased by almost 24 percent, and other professional service expenditures 49 percent in real terms.

Table 15 shows growth in Medicare expenditures in the 1990s and the effect of payment policy changes across different types of services. Expenditures for some services grew more rapidly than expenditures for others. Medicare inpatient hospital costs for the period 1992-1997 were increasing at a rate of almost 6 percent, while physician services grew on average by just under 5 percent. Between 1992 and 1997, the fastest growing areas of Medicare expenditure were skilled nursing facility providers and home health providers. Growth in expenditures per beneficiary was fastest before 1998, partly because of high growth in home health and skilled nursing facility expenditures. Following the Balanced Budget Act, the average change in expenditures for physician services was under 4 percent, and expenditures declined by 0.5 percent in the hospital sector.

Medicare expenditures for physician, clinical, dental, and other professional services between 1990-1999 are shown in Table 16. The rows at the top of the table are based on National Health Accounts and the lower rows show program expenditure estimates. National Health Accounts data show considerably higher overall expenditures, probably as a result of including managed care enrollees. Total expenditures on physician, clinical, dental, and other professional services increased from almost $32 billion in 1990 to almost $60 billion in 1999 (46.5 billion in 1990 constant dollars), a real increase of 46 percent between 1990 and 1998, with an average annual growth rate of 4.8 percent. Physician and clinical services increased by 42.6 percent over the period, with an average annual growth rate of 4.5 percent. Other professional service expenditures increased by 97 percent in real terms between 1990 and 1998, an average annual increase of 8.9 percent. (Dentists' expenditures were very low in dollar terms at the start of the decade ($2 million) but they increased at a rapid rate between 1990 and 1998.)

Data from benefits paid are shown in the lower section of the table. Medicare program expenditures on physicians and suppliers grew from $29.6 billion in 1990 to $44.2 billion in 1998 ($37 billion in 1990 dollars). These expenditures are for non-ESRD fee-for-service enrollees only, and during this period the number of Medicare enrollees enrolling in Medicare managed care plans increased. Over this period the expenditures grew 25 percent, with an average annual increase of 2.8 percent. Physician fee schedule expenditures, which are a subset of national health expenditures and physician and supplier expenditures, are also shown in Table 16. Total expenditures paid for under the physician fee schedule grew at similar rate. Medicare physician fee schedule expenditures grew by 2.3 percent annually between 1993 and 1998.

Per person (enrollee) estimates of Medicare expenditures are shown in Table 17. Medicare expenditure data for each year from the National Health Accounts was divided by the number of

Part B enrollees.[16] Physician fee schedule and physician and suppliers expenditures were divided by the number of fee-for-service or non-ESRD fee-for-service enrollees.

National Health Accounts data show that Medicare expenditures increased from $978 to $1590 per enrollee between 1990 and 1998 ($1316 in constant dollars), a real increase of 29.4 percent (Table 17). This parallels the expenditures for private health insurers discussed above. The real average annual percentage increase for per person physician services expenditures paid by Medicare was 3.4 percent. Physician and clinical services increased 26.5 percent and other professional service expenditures 73.9 percent in real terms between 1990 and 1999.

Medicare program expenditures show similar trends to National Health Accounts estimates, although the time periods available differ. Physician and supplier expenditures increased at a real average annual rate of 3.4 percent per year. This is close to the National Health Accounts average annual increase of 3.3 percent. Physician fee schedule expenditures increased at a real annualized rate of 3.2 percent, from $820 per person to $1065 per person in 1998 ($893 in constant dollars).

In conclusion, the real average annual increases for Medicare benefits paid for physicians and suppliers were 3.4 percent for the period 1990 through 1997. Medicare expenditures for physician and clinical services estimated by the National Health Accounts show a similar 3.3 percent annualized average growth rate for physician and clinical services for the period 1990 through 1998. These estimates are close to the annualized percentage growth rates shown in Table 9 for the period 1990 through 1998 of 3.7 percent for physician and clinical service expenditures across all payers. These growth rates suggest some similarities in expenditures for physician and clinical services, despite different enrollee populations.

Discussion

The 1990s were a period of important changes in the health care sector, as payers in the public and private sectors sought greater control over costs. Within the Medicare program, a number of policy changes were introduced that affected the financing of Medicare Part B services. The physician fee schedule update and the expenditure targets discussed in the Background and Introduction sections of Chapter 1 were the principal tools used to influence expenditure growth in the Medicare program.

The broad trends suggest similarities in expenditure increases during the 1990s for physician services across a variety of payers. Per person private expenditures increased at a real annual average rate of 4 percent between 1990 and 1999. Medicaid expenditures increased by 3.0 percent (Table 13 and 14). Per person National Health Accounts estimates of physician and clinical services expenditures financed by Medicare also showed a real annual average increase (between 1990 and 1999) of 3.3 percent, and Medicare program expenditure data showed a real average annual increase of 3.4 percent between 1990 and 1998.

Similar trends in expenditure growth by payers across National Health Accounts data raise the question of what common factors are driving these trends. Aggregate expenditure data do not enable us to understand the factors driving these trends. As mentioned in the Data and Methods section of this chapter, comparisons between public and private sector expenditures are made possible using the National Health Accounts, which have similar data collection strategies

[16] As mentioned in the discussion on data and methods, National Health Accounts data do not allocate expenditures to managed care and fee-for-service enrollees; therefore, the expenditures are divided by the number of total Part B enrollees.

and service definitions. However, there are differences between Medicare and private health insurance programs in terms of the health and demographic characteristics of the population covered and the range and level of benefits provided, among other factors.

These increases in Medicare expenditures may be explained by a number of factors, including the types of benefits provided, the mix and intensity of services utilized by Medicare beneficiaries, and changes in the enrolled population. The next chapter of the report assesses the direction of these trends by examining data on the utilization and expenditures of Medicare beneficiaries.

Table 5: Medicare volume performance standard, 1990-1997, and sustainable growth rate 1998[1]

	Medicare Volume Performance Standard 1990-1997								Sustainable Growth Rate 1998[1]
	1990	1991	1992	1993	1994	1995	1996	1997	
All/weighted average	9.10%	7.30%	10.00%	10.00%	9.40%	7.50%	1.80%	-0.30%	1.50%
Surgical services	….	3.30%	6.50%	8.40%	9.10%	9.20%	-0.5%	-3.70%	….
Primary care services	….	….	….	….	10.50%	13.80%	9.30%	4.50%	….
Nonsurgical	….	8.60%	11.20%	10.80%	9.20%	4.40%	0.6%	-0.50%	….

[1] The new and updated code effect for 1996 is -0.6. This is because while the median RVU use in 1996 was higher than the median use based on the 1993 schedule by 0.4 RVUs (due to the addition of new codes and the updating of existing ones), the mean value is lower. This is likely due to devaluing over the period 1994-1996 of the practice expense RVUs for certain services, largely provided in inpatient settings, that were thought to be overvalued.

Note: The Medicare Volume Performance Standard and the Sustainable Growth rates are shown in this table. The rates are expenditure target growth rates for Medicare. The targets are established prospectively and then performance (how the actual growth rate compared to the target for that year) is retrospectively assessed. The performance adjustment factor is then used to reduce or increase the physician fee schedule update relative to the Medicare Economic Index. The physician fee schedule update is used to update the conversion factor.

Sources:
Centers for Medicare & Medicaid Services Office of the Actuary (2002), *Estimated Sustainable Growth Rate and Final Conversion Factor, for Medicare Payments to Physicians in 2002*. February 4.
http://www.hcfa.gov/pubforms/actuary/SGR/sgr2002f.htm.
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.

Table 6: Physician fee schedule updates and conversion factors by service type, 1993-1998

	1993	$CF	1994	$CF	1995	$CF	1996	$CF	1997	$CF	1998	$CF
1998 Single conversion factor											0.60%	$36.69
All services	1.40%		7.00%		7.50%		0.80%		0.60%			
Surgical	3.10%	$32.00	10%	$35.20	12.20%	$39.50	3.80%	$40.80	1.90%	$41.00		
Primary care[1]			7.90%	$33.70	7.90%	$36.40	-2.30%	$35.40	2.50%	$35.80		
Nonsurgical	0.80%	$31.30	5.30%	$32.90	5.20%	$34.60	0.40%	$34.60	-0.80%	$33.90		

$CF = Dollar Conversion Factor.

[1] The primary care conversion factor commenced in 1993. In 1998 the separate conversion factors were replaced with a single conversion factor. Between 1993 and 1997 “all services” is a weighted mean of all services. This was not an update category between 1993 and 1997.

Sources:
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.

Table 7: Average annual percentage change in all conversion factors

	1993-1998[1] Cumulative Increase	1993-1997 Annualized Growth Rate	1993-1998 Annualized Growth Rate
Surgical	14.7%	6.4%	2.8%
Primary care, 1994-1998	17.3%	3.4%	3.2%
Nonsurgical	17.3%	2.0%	3.2%

[1] In 1993 there was no separate primary care conversion factor. The conversion factor used to calculate increases is the nonsurgical rate.

Source: Calculated from data reported in the *Federal Register*:
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.

Table 8: Average annual growth in per enrollee Medicare and private health insurance expenditure for all services

	1969-1998	1985-1991	1991-1993	1993-1997	1997-1998
Medicare	5.3%	3.3%	6.2%	5.5%	-.1%
Private insurance	6.5%	8.1%	5.4%	1.5%	5.9%

Source: *35-Year Anniversary Chart Book.* Health Care Financing Administration, 2000.

Note: All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html** Table 10)

Table 9: Year-to-year percentage increase in health expenditure (all payers)

	1990	1993	1994	1995	1996	1997	1998	Average Annualized Percentage Growth, 1993-1998
National health expenditures	7.9	6.0	3.2	3.3	3.3	3.7	3.5	3.8
All personal health expenditures[1]	8.9	7.9	2.5	9.2	6.3	6.4	6.2	6.2
Hospital care	6.3	5.5	1.6	1.3	1.7	1.6	1.3	2.0
Physician and clinical	7.3	5.9	2.9	3.9	3.4	3.4	3.2	3.7
Other professional services	7.4	6.0	2.3	2.7	2.1	3.4	4.2	3.4

[1] "Personal health expenditures" are a subset of national health expenditures. Personal health expenditures include hospital, physician and clinical, other professional services, and other goods and services such as drugs and nursing care.

Source: *Health Care Financing Review*, Summer 2001 Volume 22 (4):102.

Note: All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html** Table 10)

Table 10: Sources of payments for physician and clinical services, selected calendar years, 1970-1999

Percentage of Total Expenditures								
Year	**Medicare[1] (%)**	**Medicaid[1] (%)**	**Out-of-pocket Payments (%)**	**Private Health Insurance (%)**	**Other Private Funds (%)**	**Federal (%)**	**State and Local (%)**	**Total columns (3) – (7) (%)**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1970	12	5	46	30	2	16	6	100
1980	17	5	30	35	4	24	7	100
1990	19	5	19	43	7	25	6	100
1991	18	5	18	45	7	24	6	100
1992	17	6	16	46	7	24	7	100
1993	17	6	15	48	7	24	6	100
1994	18	7	13	48	8	25	6	100
1995	19	7	12	49	8	26	6	100
1996	19	7	12	49	8	26	6	100
1997	20	7	12	48	8	26	6	100
1998	20	7	12	48	8	27	5	100
1999	20	7	11	48	9	27	5	100

[1] Medicare and Medicaid are subsets of the Federal and State payments, but are given as percentages of total national expenditures on physician and clinical services.

Source: National Health Accounts, Health Care Financing Administration: http://www.hcfa.gov/stats/nheoact/tables/t6.htm#d.

Table 11: Sources of payments for other health professional services, selected calendar years, 1970-1999

Percentage of total								
Year	**Medicare[1] (%)**	**Medicaid[1] (%)**	**Out-of-pocket Payments (%)**	**Private Health Insurance (%)**	**Other Private Funds (%)**	**Federal (%)**	**State and Local (%)**	**Total columns (3) – (7) (%)**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1970	5	5	44	6	5	32	14	100
1980	8	5	46	23	8	13	10	100
1990	10	2	31	35	9	12	13	100
1991	11	3	29	34	9	14	13	100
1992	12	3	29	35	9	15	12	100
1993	12	3	28	36	9	15	11	100
1994	13	3	27	36	9	16	11	100
1995	13	4	27	38	9	16	10	100
1996	13	4	27	39	9	16	10	100
1997	12	4	28	39	9	15	9	100
1998	12	4	30	39	9	14	9	100
1999	11	4	30	39	8	14	9	100

[1] Medicare and Medicaid are subsets of the Federal and State payments, but are given as percentages of total national expenditures on physician and clinical services.

Source: National Health Accounts, Health Care Financing Administration: http://www.hcfa.gov/stats/nheoact/tables/t6.htm#d.

Table 12: Total and per person private insurance and out-of-pocket expenditures, 1990-1999, in 1990 constant dollars

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Growth 1990-99	Average Annual Growth
Population (in millions)	254	257	260	263	265	268	270	273	275	278	9%	1%
Physician and clinical -- Private health insurance (in millions)	$67,698	$75,709	$82,997	$88,514	$91,472	$94,392	$95,948	$98,687	$102,158	$106,448	57%	5%
Physician and clinical -- Out-of- pocket (in millions)	$30,401	$29,885	$28,928	$27,348	$25,137	$23,137	$23,299	$24,404	$25,086	$25,388	-16%	-2%
Other professional services – Private insurance (in millions)	$6,280	$6,466	$7,316	$8,094	$8,370	$9,446	$10,313	$11,000	$11,593	$12,342	97%	8%
Other professional services -- Out-of-pocket (in millions)	$5,699	$5,591	$6,033	$6,372	$6,296	$6,795	$7,100	$8,011	$8,943	$9,416	65%	6%
Dental – Private insurance (in millions)	$15,178	$15,565	$17,038	$17,443	$18,382	$19,563	$20,411	$21,049	$21,851	$22,916	51%	5%
Dental – Out-of-pocket (in millions)	$15,364	$15,403	$16,485	$16,509	$17,019	$17,720	$18,078	$19,526	$20,557	$21,224	38%	4%
Total national expenditure, (in millions)	$140,434	$148,781	$159,351	$165,214	$168,039	$172,896	$177,481	$184,200	$191,482	$199,427	42%	4%
Total expenditure, per person	$411	$441	$479	$500	$516	$533	$545	$556	$573	$592	44%	4%

Source: Centers for Medicare & Medicaid Services (2001) *National Health Accounts Data* (2001 edition). [Computer File] http://www.hcfa.gov/stats/nhe-oact/.

Note: All figures inflation-adjusted using a GDP deflator (http://w3.access.gpo.gov/usbudget/fy2001/hist.html, Table 10)

Table 13: Total Medicaid expenditure on physician, clinical, and other professional services, 1990-1999, in 1990 constant dollars

National Health Expenditure Estimates, Millions of Dollars	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Growth 1990-99	Average Annual Growth
Medicaid physician and clinical services expenditures	$7,025	$8,784	$10,504	$11,652	$12,301	$12,997	$13,451	$13,780	$13,999	$14,643	108.4%	8.5%
Medicaid other professional services	$445	$529	$560	$767	$772	$893	$1,048	$1,116	$1,088	$1,144	157.2%	11.1%
Dental	$756	$911	$1,127	$1,540	$1,566	$1,590	$1,626	$1,681	$1,720	$1,825	141.5%	10.3%
Total Medicaid[1]	$7,470	$9,313	$11,064	$12,419	$13,073	$13,890	$14,499	$14,896	$15,087	$15,787	111.3%	8.7%

[1] Excludes Children's health insurance expansion programs.

Source: Centers for Medicare & Medicaid Services (2001) *National Health Accounts Data* (2001 edition). [Computer File] http://www.hcfa.gov/stats/nhe-oact/.

Note: All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html**, Table 10)

Table 14: Medicaid expenditure on physicians' services per recipient, 1990-1998, in 1990 constant dollars

	1990	1991	1992	1993	1994	1995	1996	1997	1998	Percentage Growth 1990-98	Average Annual Growth Rate (%)
Medicaid recipients (in millions)	25.255	28.28	30.926	33.432	35.053	36.282	35.118	34.872	40.649	61.0%	6.1%
Physician and clinical services (in dollars)	$278	$311	$339	$348	$351	$358	$383	$395	$345	23.9%	2.7%
Other professional services (in dollars)	$18	$18	$18	$23	$22	$25	$30	$32	$27	49.0%	5.1%
Dental (in dollars)	$30	$32	$37	$46	$45	$44	$47	$48	$42	39.7%	4.3%
Total (in dollars) per enrollee[1]	$326	$362	$394	$417	$418	$427	$459	$475	$413	26.8%	3.0%

[1] Excludes children's health insurance expansion programs.

Source: Centers for Medicare & Medicaid Services (2001) *National Health Accounts Data* (2001 edition). [Computer File] http://www.hcfa.gov/stats/nhe-oact/.

Note: All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html** ,Table 10)

Table 15. Average annual Medicare expenditure growth rates by provider sector: before and after the Balanced Budget Act

Percent Average Annual Expenditure Growth Rate per Medicare Fee-for-Service Beneficiary	1992–1997[1]	1997–1999[1]
Inpatient hospital	5.3	-1.8
Home health (combined Parts A and B)	21.4	-28.2
Skilled nursing facility	30.4	-0.9
Physician services	4.3	2.4
Outpatient hospital	6.2	-6.4
Medicare+Choice (per M+C beneficiary)	7.4	5.2
Total Medicare (per beneficiary)	7.5	-2.0

[1] Years are fiscal years.

Source: Office of the Actuary, HCFA. Reproduced from MedPAC. *Medicare Payment Policy: Report to Congress*, March 2000.

Note: These figures are not inflation-adjusted.

Table 16: Total Medicare expenditure on physician services, 1990-1998, in 1990 constant dollars

National Health Accounts[1] (in millions of dollars)	1990	1991	1992	1993	1994	1995	1996	1997	1998	Growth 1990-98	Average Annual Growth 1990-98
Physician and clinical services	$30,153	$30,646	$31,137	$31,950	$34,159	$36,655	$38,120	$40,229	$43,009	42.6%	4.5%
Other professional services	$1,755	$2,181	$2,467	$2,715	$2,966	$3,257	$3,376	$3,392	$3,459	97.1%	8.9%
Dental services	$2	$2	$5	$17	$22	$33	$47	$62	$76	3713.9%	57.6%
Total Medicare	$31,910	$32,829	$33,608	$34,681	$37,147	$39,945	$41,544	$43,684	$46,545	45.9%	4.8%
Medicare benefits paid (in millions of dollars)										**Change**	**Average Annual Increase**
Physician and suppliers	$29,609	$31,163	$30,593	$31,797	$33,191	$35,620	$35,605	$36,003	$37,026	25.0%	2.8%
Physician fee schedule				$24,060	$25,802	$27,485	$26,730	$26,618	$26,948	12.0%	2.3%

[1] National Health Accounts data, current dollars.

* Change 1993-1998.

Source: Medicare Trustees Report, 2002 and the Health Care Financing Review *Statistical Supplement* (1999 and 2000).

Note: All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html**, Table 10)

Table 17: Annual Medicare expenditures per enrollee, 1990-1999, in 1990 constant dollars

Enrollment	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Cumulative Growth 1990-1998	Average Annual Increase
non-ESRD enrollment				31.93	32.13	32.03	31.58	30.88	30.19			
Fee for service enrollees only	31.25	31.68	32.12	32.35	32.08	31.57	30.93	30.41	30.43	30.19	-2.6	-0.3
All Part B enrollees (in millions)	32.63	33.24	33.93	34.61	35.17	35.69	36.14	36.46	36.78	37.04	12.7	1.5
National Health Accounts (in millions of dollars)												
Physician and clinical services	$924	$922	$918	$923	$971	$1,027	$1,055	$1,104	$1,169	$1,221	26.5%	3.0%
Other professional services	$54	$66	$73	$78	$84	$92	$93	$93	$94	$113	73.9%	7.2%
Dentists[1]	$0	$0	$0	$1	$1	$1	$2	$2	$2	$2		
Total	$978	$988	$991	$1,002	$1,056	$1,119	$1,149	$1,198	$1,266	$1,316	29.4%	3.3%
Medicare benefits paid (in millions of dollars)											Change	Average annual increase
Physicians and suppliers	$947	$984	$952	$983	$1,034	$1,128	$1,151	$1,184	$1,217	….	28.5%	3.4%
Physician fee schedule				$754	$803	$858	$846	$862	$893	….	18.4%	3.2%

[1] Actual per person dental expenditures for Medicare were not zero between 1990 and 1992 but were less than one dollar for every enrollee.

Source: Centers for Medicare & Medicaid Services (2001), *National Health Accounts Data* (2001 edition). [Computer File] http://www.hcfa.gov/stats/nhe-oact/. Medicare benefits paid data from the *Statistical Abstract of the United States*, 2000, and the Health Care Financing Review *Statistical Supplement* (1999).

Note: Percentage changes are 1990-1997 for physician and suppliers, and 1995-1998 for physician fee schedule expenditures.

All figures inflation-adjusted using a GDP deflator (**http://w3.access.gpo.gov/usbudget/fy2001/hist.html** ,Table 10)