CBO PAPERS

TRENDS IN HEALTH EXPENDITURES

BY MEDICARE AND THE NATION

JANUARY 1991

CONGRESSIONAL BUDGET OFFICE
SECOND AND D STREETS, S.W.
WASHINGTON, D.C. 20515

PREFACE

This paper is the first part of the Congressional Budget Office's (CBO's) response to a request from the Senate Committee on Finance for a study of trends in spending on health and the effectiveness of strategies for controlling these costs. The Subcommittee on Health of the House Committee on Ways and Means and the Senate Committee on the Budget also requested much of the data reported here. The paper provides information on national trends in spending for health since 1965, when the Medicare and Medicaid programs were enacted, and then compares these trends with patterns in spending by Medicare, overall and for services provided by hospitals and physicians. A subsequent report will examine various cost containment strategies and the extent to which those strategies have affected the level or rate of growth of health spending. In keeping with CBO's mandate to provide objective and impartial analysis, this report contains no recommendations.

This paper was prepared by Kathryn Langwell, of CBO's Human Resources and Community Development Division, under the supervision of Nancy M. Gordon. Many people in the division also contributed to this project--Sandra Christensen, Scott Harrison, Harriet Komisar, Wilhelmina A. Leigh, Stephen H. Long, Jack Rodgers, Murray Ross, Ralph Smith, Verdon Staines, and Bruce Vavrichek. Eric Guille helped prepare the graphs. Sharon Corbin-Jallow typed the numerous drafts, with assistance from Jill Bury and Ronald Moore, and prepared the final version.

Robert D. Reischauer
Director

January 1991

NOTES

Calendar year data are used throughout this paper.

Data presented in real (that is, inflation-adjusted) terms have been converted to 1987 dollars using the GNP fixed-weighted deflator. Exceptions are indicated in footnotes to graphs and tables.

The data represented in each figure in the text also are provided in tables in the appendix.

CONTENTS

INTRODUCTION 1

TRENDS IN NATIONAL HEALTH SPENDING 5

TRENDS IN SOURCES OF PAYMENTS FOR HEALTH SERVICES 11

INTERNATIONAL COMPARISONS OF NATIONAL HEALTH EXPENDITURES 15

TRENDS IN THE HOSPITAL MARKET 19

TRENDS IN THE PHYSICIAN MARKET 31

COMPARISON OF TRENDS IN MEDICARE AND NATIONAL HEALTH SPENDING 39
- Trends in Spending 39
- Trends in Consumer Spending 45
- Factors Affecting Growth in Spending 47

MEDICARE SPENDING AND THE FEDERAL BUDGET 53

APPENDIX 59

TABLES

1. Trends in the Hospital Market, 1965-1988 20

2. Uncompensated and Unsponsored Care, by Type of Hospital, 1981 and 1988 (As a percentage of costs) 29

3. OECD Countries Ranked by Ratio of Physicians to 1,000 Population, 1987 34

4. Household Spending for Health as a Percentage of After-Tax Income 46

5. Change in Hospital Admissions and Length of Stay, 1978-1989 (In percent) 48

6. Total, Medicare PPS, and Non-PPS Margins, by Type of Hospital, First and Fifth Years of the PPS (In percent) 50

7. Distribution of Federal Outlays for Health, by Component, 1970-1990 (In percent) 55

FIGURES

1. Real National Health Expenditures, 1965-1988, and Projected to 2000 6

2. Real Per Capita Health Expenditures, 1965-1988, and Projected to 2000 7

3. National Health Expenditures as a Percentage of Gross National Product, 1965-1988 9

4. Distribution of Health Spending by Payer, 1965-1987 12

5. Real Per Capita Health Expenditures, United States and Selected Countries, 1965-1987 16

6. Health Expenditures as a Percentage of Gross Domestic Product, United States and Selected Countries, 1965-1987 18

7. Total Real Spending for Hospital Services, 1965-1988 22

8. Distribution of Spending for Hospital Services by Source of Payment, 1965-1988 24

9. Hospital Margins Based on Total Revenues, 1965-1989 26

10. Real Uncompensated and Unsponsored Care Provided by Hospitals, 1980-1988 27

11. Total Real Spending for Physicians' Services, 1965-1988 32

12. Distribution of Spending for Physicians' Services by Source of Payment, 1965-1988 33

13. Average Real Physician Income, United States and Selected Countries, 1965-1987 36

14. Ratio of Average Income of Physicians to Average Compensation of All Employees, United States and Selected Countries, 1965-1987 38

15. Real Per Capita National Expenditures and Per Enrollee Medicare Expenditures for Health, 1965-1988 41

16. Average Annual Growth Rates of Real National and Medicare Expenditures for Health, Total and Per Capita, 1970-1988 42

17. Average Annual Growth Rates of Real National and Medicare Expenditures, for Hospital and Physician Services, Total and Per Capita, 1970-1988 43

18. Average Annual Rates of Growth of Federal Outlays, Selected Components, 1970-1990 54

19. Average Annual Growth Rates of Real Medicare Spending Per Enrollee, by Component, 1975-1990 57

APPENDIX TABLES

1. Real National Health Expenditures, 1965-1988, and Projected to 2000 60

2. Real Per Capita Health Expenditures, 1965-1988, and Projected to 2000 61

3. National Health Expenditures as a Percentage of Gross National Product, 1965-1988 62

4. Distribution of Health Spending by Payer, 1965-1987 63

5. Real Per Capita Health Expenditures, United States and Selected Countries, 1965-1987 64

6. Health Expenditures as a Percentage of Gross Domestic Product, United States and Selected Countries, 1965-1987 65

7. Total Real Spending for Hospital Services, 1965-1988 66

8. Distribution of Spending for Hospital Services by Source of Payment, 1965-1988 67

9. Hospital Margins Based on Total Revenues, 1965-1989 68

10. Real Uncompensated and Unsponsored Care Provided by Hospitals, 1980-1988 69

11. Total Real Spending for Physicians' Services, 1965-1988 70

12. Distribution of Spending for Physicians' Services by Source of Payment, 1965-1988 71

13. Average Real Physician Income, United States and Selected Countries, 1965-1987 72

14. Ratio of Average Income of Physicians to Average Compensation of All Employees, United States and Selected Countries, 1965-1987 73

15. Real Per Capita National Expenditures, and Per Enrollee Medicare Expenditures for Health Care, 1965-1988 74

16. Average Annual Growth Rates of Real National and Medicare Expenditures for Health, Total and Per Capita, 1970-1988 75

17. Average Annual Growth Rates of Real National and Medicare Expenditures, for Hospital and Physician Services, Total and Per Capita, 1970-1988 76

18. Average Annual Rates of Growth of Federal Outlays, Selected Components, 1970-1990 77

19. Average Annual Growth Rates of Real Medicare Spending Per Enrollee, by Component, 1975-1990 78

INTRODUCTION

In 1965, Congress enacted the Medicare and Medicaid programs in order to ensure that the elderly and the poor would have access to necessary health care, whether or not they could pay the full cost of those services. In that year, total spending for health care in the nation was $41.6 billion, about 5.9 percent of the gross national product (GNP), and per capita spending was $204.

National health care expenditures have risen at a rapid rate in the ensuing years, reaching 11.1 percent of GNP by 1988. The Medicare and Medicaid programs, over the same period, have become a substantial and rising share of the federal budget, despite efforts to control their growth.

This paper examines trends in the market for health services since 1965, in order to provide background and context for deliberations on proposals to reduce the rate of increase in federal expenditures for Medicare. These trends indicate that spending on health in the United States has grown at a rate that substantially exceeds the rise in GNP. Between 1965 and 1988, health spending increased from 5.9 percent of GNP to 11.1 percent of GNP. On a per capita basis, spending rose (in 1987 dollars) from $606 in 1965 to $2,038 in 1988.

The per capita amount that the United States spends on health is substantially higher than spending in many other countries. In 1987, the nation spent 35 percent more per capita than Canada, 91 percent more than West

Germany, 124 percent more than Japan, and 173 percent more than the United Kingdom.

As spending for health has increased, hospitals' and physicians' revenues have grown. Despite a substantial decline in hospital admissions, inpatient days, and occupancy rates, total national spending on hospital services rose from $42 billion in 1965 to $203 billion in 1988--nearly a fivefold increase. Over this period, hospital margins--the difference between the revenues received by hospitals and costs--also increased from 2.3 percent in 1965 to 5 percent in 1989.

Physicians' incomes also have risen. In 1986, U.S. physicians earned about 50 percent more than physicians in West Germany and Canada, and three times as much as physicians in the United Kingdom.

When trends in Medicare spending are compared with trends in national health expenditures, it is clear that until recently Medicare has grown more rapidly than has spending for health in the nation on a per capita basis. Between 1980 and 1985, Medicare spending per enrollee rose at a rate of 6.1 percent annually, compared with per capita growth of 4.3 percent annually for the nation. The annual rate of growth of Medicare spending per enrollee declined to 2.9 percent between 1985 and 1988, while national spending continued to increase at a 4 percent annual rate.

Despite the slowing of the rate of growth in Medicare spending, the household spending of Medicare enrollees is continuing to rise. In 1972, Medicare enrollees spent 7.8 percent of after-tax income on health. By 1988, this share had risen to 12.5 percent. This increase in spending by Medicare enrollees is much greater than the increase in the share of income spent on health care by all households in the nation--4.9 percent in 1972 and 5 percent in 1988.

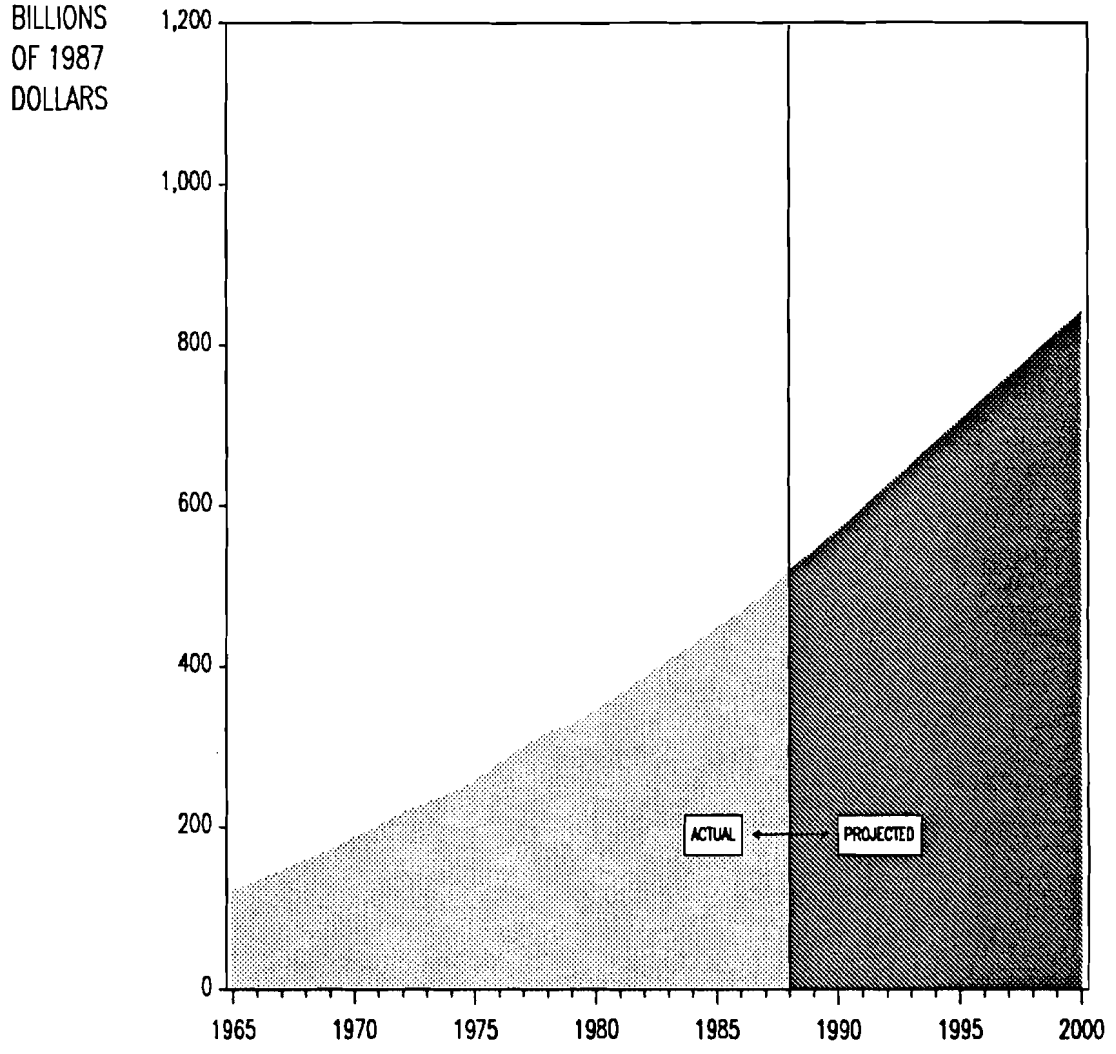
The trends in health spending observed for the nation and for the Medicare program have significant implications for the federal budget. Spending on health was 7.6 percent of the federal budget in 1970, but rose to 14.4 percent by 1990. Medicare accounts for over 60 percent of federal spending for health, and growth in Medicare spending has persisted despite consistent legislative efforts to constrain it. There is, however, some evidence that in the last half of the 1980s real spending per enrollee for Medicare was declining.

In 1965, just before implementation of the Medicare and Medicaid programs, the United States spent (in 1987 dollars) $124 billion on health care (see Figure 1). By 1988, health care costs had risen to $518 billion. Under the assumptions developed for the National Institute of Aging's (NIA's) Macroeconomic-Demographic Model, real health care spending is projected to rise at an average annual rate of 4 percent during the 1990s--reaching $840 billion in 1987 dollars by the year 2000.

Some of the increase in health care spending merely reflects the fact that the U.S. population is increasing over time. Nonetheless, real health care spending per capita grew substantially over the 1965-1988 period--from $606 to $2,038 (see Figure 2). If real per capita health care spending rises through the 1990s at an average annual rate of 3.3 percent--the rate projected by the NIA Macroeconomic-Demographic Model--then real per capita health care expenditures would reach $3,021 in the year 2000.

To place these health-sector trends in a broader context, it is useful to compare them with trends in spending for other items. Real annual rates of increase in total health care spending were nearly 6 percent between 1970 and 1988. In comparison, spending for food over the 1970-1988 period increased at an average annual rate of 1 percent; spending for housing increased at 3 percent annually; and spending on air travel increased 7 percent annually. In other words, the rapid

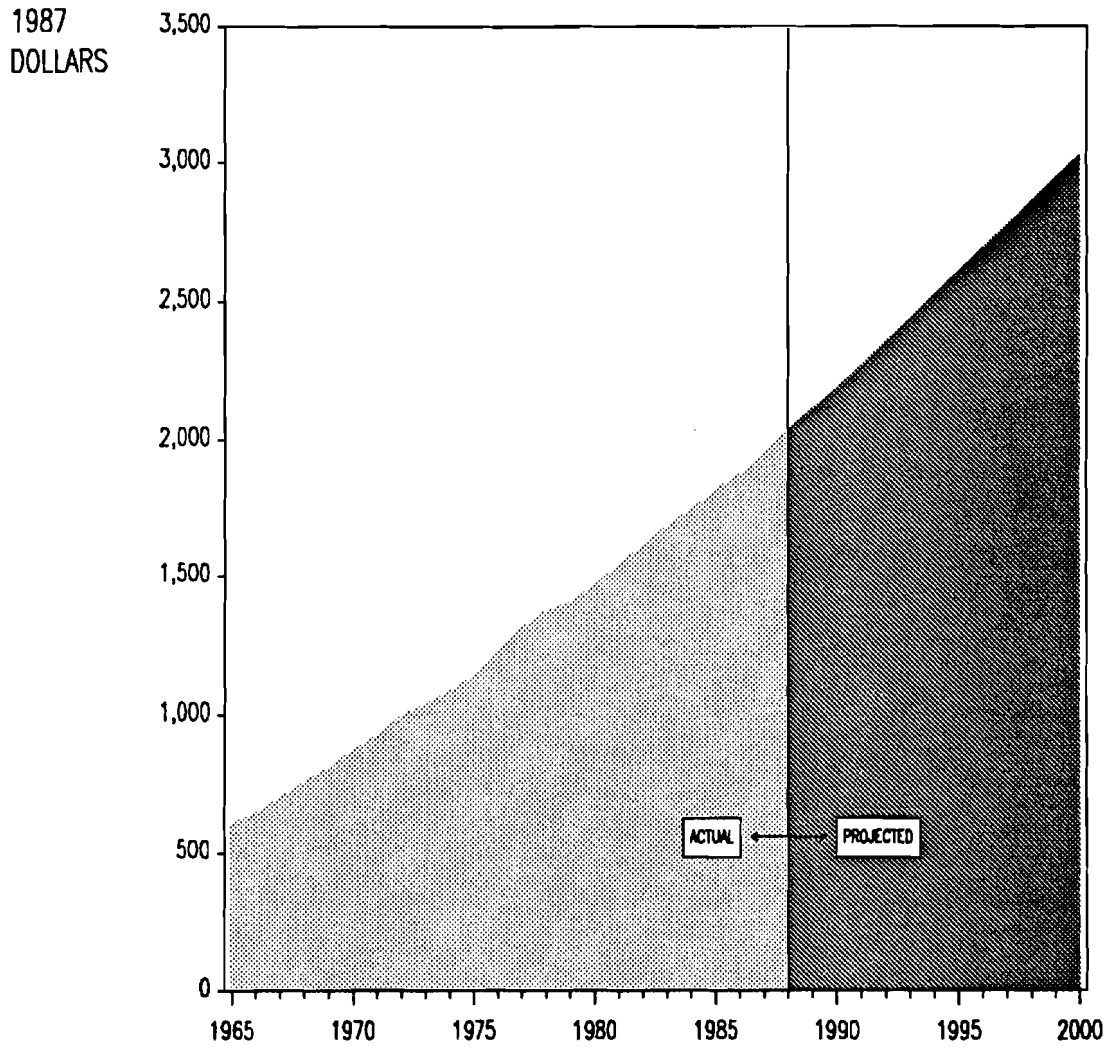
FIGURE 1. REAL NATIONAL HEALTH EXPENDITURES, 1965–1988, AND PROJECTED TO 2000



SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, and Committee on Ways and Means, staff projections for 1990 and 2000. The latter are based on assumed rates of increase in health expenditures from the National Institute of Aging, Macroeconomic–Demographic Model.

NOTE: The projections assume an average annual real rate of growth of 5.1 percent between 1988 and 1990 and of 4.0 percent between 1990 and 2000.

FIGURE 2. REAL PER CAPITA HEALTH EXPENDITURES, 1965–1988, AND PROJECTED TO 2000



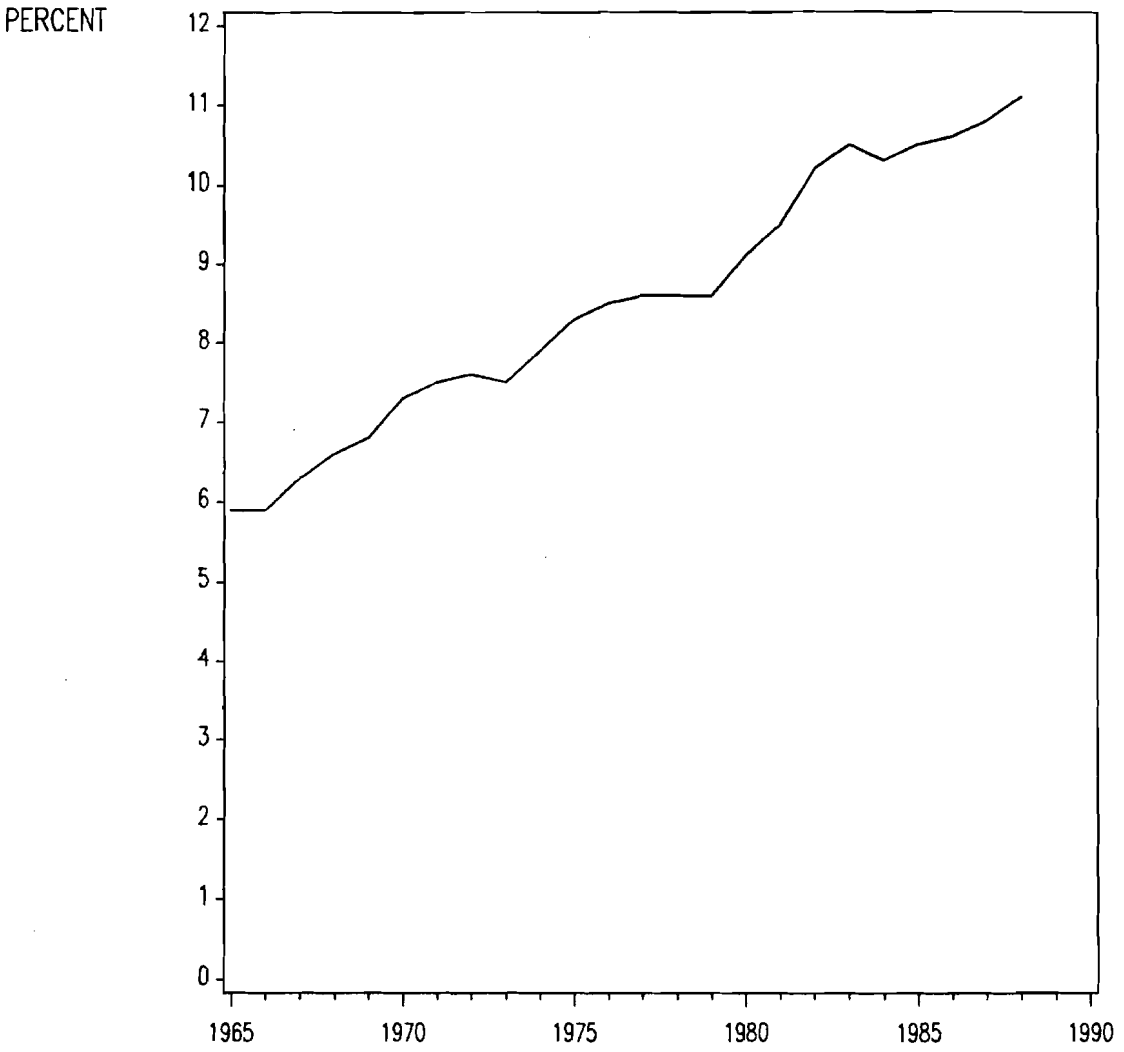
SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, and Committee on Ways and Means, staff projections for 1990 and 2000. The latter are based on assumed rates of increase in health expenditures from the National Institute of Aging, Macroeconomic–Demographic Model.

NOTE: The projections assume an average annual real rate of growth of 4.0 percent between 1988 and 1990 and of 3.3 percent between 1990 and 2000.

growth in health spending is not unique, but some other "essentials" have increased much more slowly.

National health expenditures also have risen more rapidly than many components of the economy overall and, as a result, have increased as a share of gross national product from 5.9 percent to 11.1 percent over the 1965-1988 period (see Figure 3). In 1987, the most recent year for which data are available for all industries, the nation spent 1.6 percent of GNP on food, 3.3 percent on transportation, 2.7 percent on communications, and 10.8 percent on health. The Office of the Actuary of the Health Care Financing Administration has projected that health spending will reach 15 percent of GNP by the year 2000, in the absence of any significant change in the observed trend.

FIGURE 3. NATIONAL HEALTH EXPENDITURES AS A PERCENTAGE OF GROSS NATIONAL PRODUCT, 1965–1988



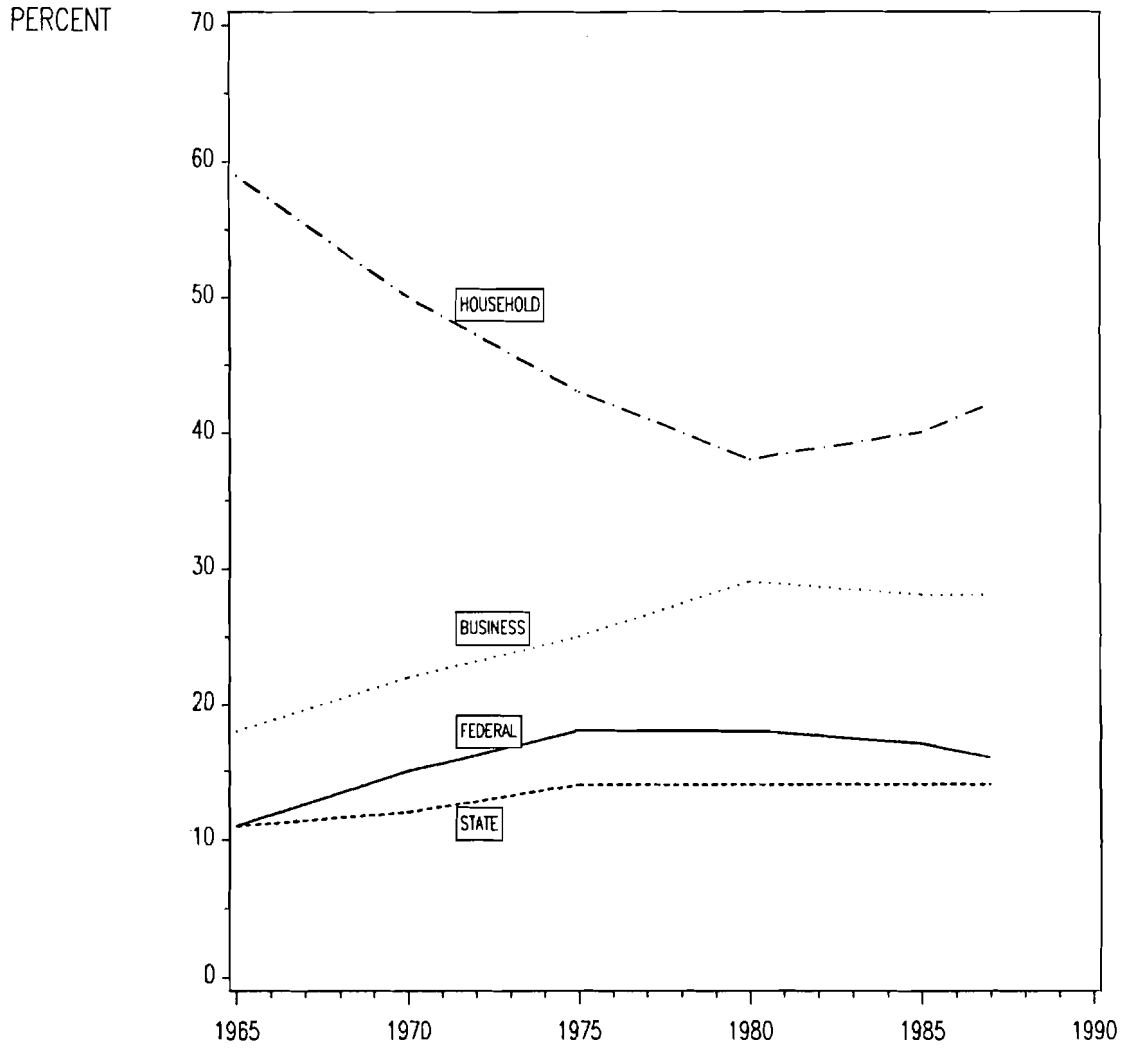
SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of National Cost Estimates.

TRENDS IN SOURCES OF PAYMENT FOR HEALTH SERVICES

The share of payments for health services borne by households, businesses, and government changed substantially between 1965 and 1987, the most recent year for which data are available (see Figure 4). Spending by households (direct payments for health care and households' share of health insurance premiums) accounted for 59 percent of total spending in 1965, but less than 40 percent in 1980. By 1987, household spending had increased slightly, to 42 percent of the total amount spent on health care. Other payers paid a higher proportion of health costs in 1987 than in 1965. Businesses' share of total spending rose from 18 percent in 1965 to 29 percent in 1980 and since has remained at about the same share. The federal share rose only from 11 percent in 1965 to 16 percent by 1987. After the introduction of Medicaid, state spending as a share of the total rose from 11 percent in 1965 to 14 percent in 1975 and remained at that level through 1987.

Notwithstanding the recent concern about the cost of health care to businesses, the business share of total U.S. health care spending has been essentially constant since 1980. The fact that health care has grown as a share of total business receipts, profits, and total labor compensation reflects the rapid rise in total health care spending in the economy--which has exceeded the average rate of increase of business receipts and profits--rather than an increasing share of that spending paid by business.

FIGURE 4. DISTRIBUTION OF HEALTH SPENDING BY PAYER, 1965–1987



SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, Health Care Financing Review (Spring 1989), 10:1–11.

NOTE: Households' spending includes direct payments by individuals, their share of health insurance premiums, and Medicare taxes.

The declining proportion of health care spending paid by households has resulted from greater private insurance subsidies from employers and expanded federal and state shares of total spending since 1965. Spending has not, however, declined as a proportion of consumers' disposable income. In 1972, Americans spent 4.9 percent of after-tax income on health care (including insurance premiums), compared with 5 percent in 1988. This observed stability of spending-to-income has been possible, even though total health expenditures rose much more rapidly than income, because workers have received a higher proportion of total labor compensation in the form of health insurance and a lower proportion in wages. Health care benefits accounted for over 6 percent of total labor compensation in 1987, compared with only 2 percent in 1965.

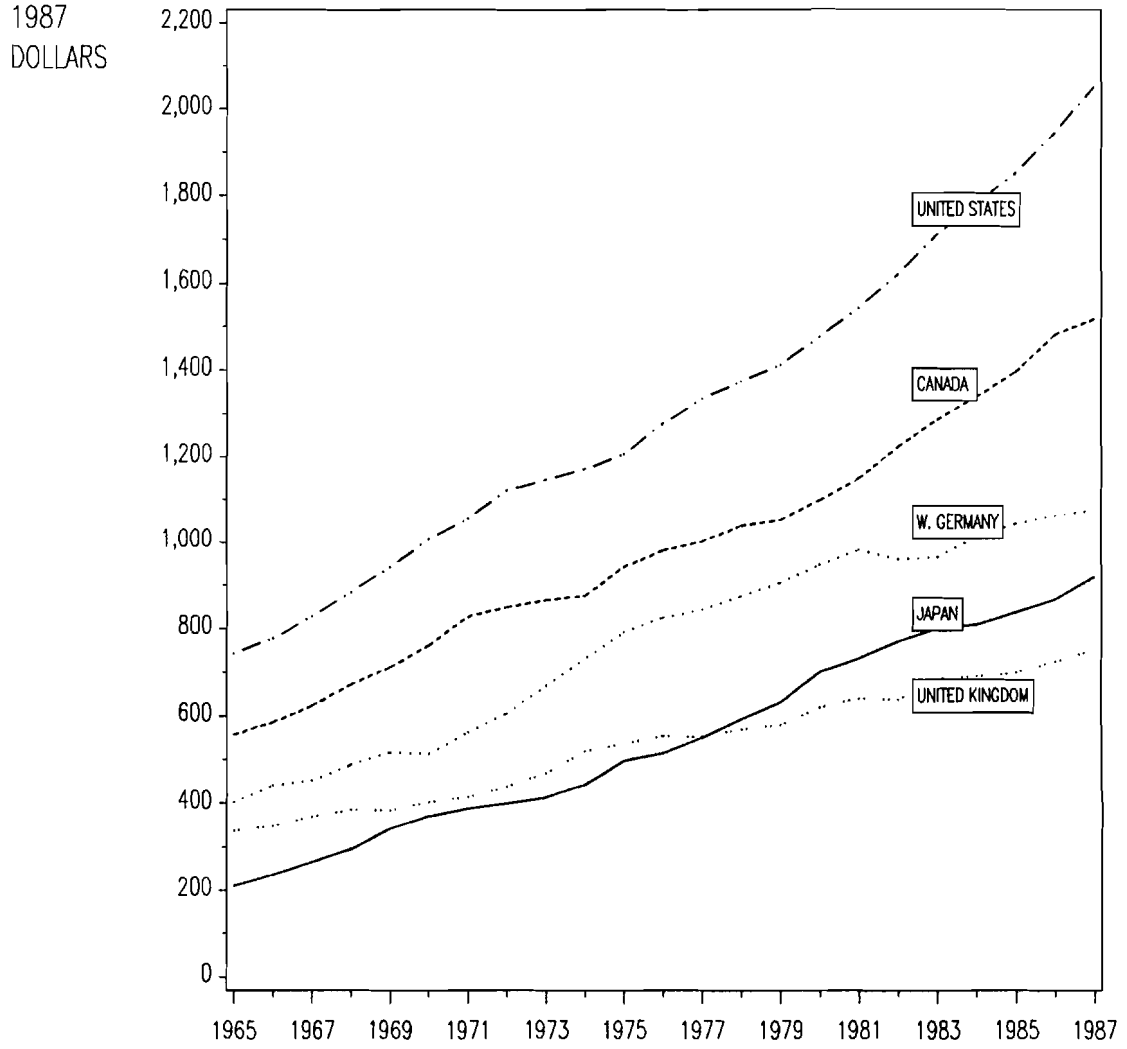
INTERNATIONAL COMPARISONS OF NATIONAL HEALTH EXPENDITURES

The United States spends more per capita on health than do many other developed countries. In 1965, real per capita spending for health care in the United States was $742, compared with $557 in Canada, $402 in West Germany, $335 in the United Kingdom, and $209 in Japan (see Figure 5). By 1987, per capita spending had risen to $2,051 in the United States compared with $1,515 in Canada, about $1,000 in West Germany and Japan, and only $751 in the United Kingdom.

Although there is a substantial difference in the level of spending per capita between the United States and these other four countries, the growth in spending has been comparable over the 1965-1987 period. U.S. spending per capita rose 176 percent over the 1965-1987 period. West Germany, Canada, and Japan experienced comparable or higher rates of growth--167 percent, 172 percent, and 339 percent, respectively. In the United Kingdom, the increase over the 23-year period was substantially lower--124 percent. During the 1980-1987 period, per capita spending continued to rise rapidly in the United States (39 percent), Canada (38 percent), and Japan (31 percent), but in West Germany the rate of growth dropped considerably--to only 13 percent. Spending in the United Kingdom grew only 22 percent between 1980 and 1987.

Health spending in these countries can also be compared as a percentage of gross domestic product (GDP). In 1965, the differences among them were relatively

FIGURE 5. REAL PER CAPITA HEALTH EXPENDITURES, UNITED STATES AND SELECTED COUNTRIES, 1965–1987



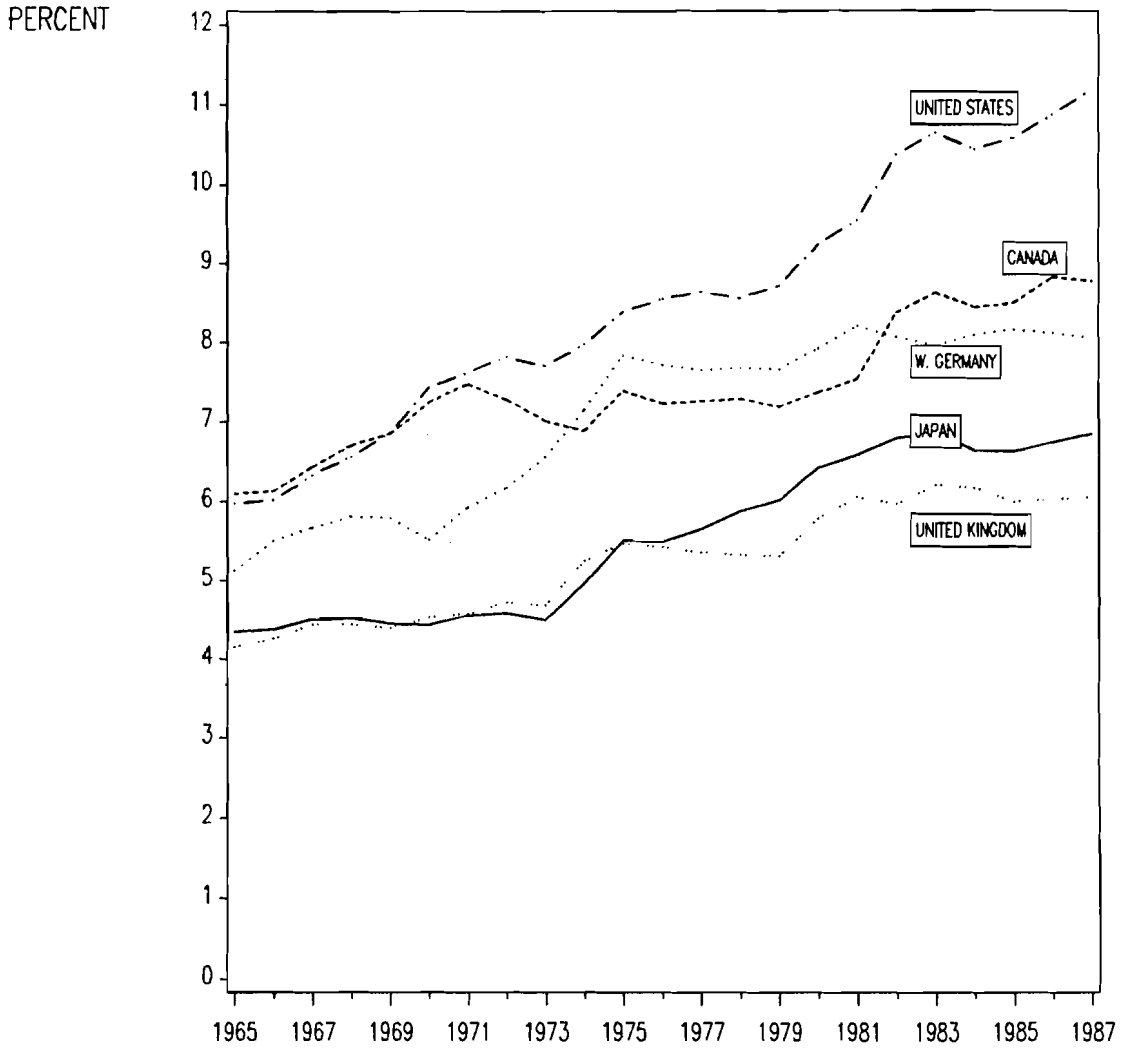
SOURCE: Congressional Budget Office calculations based on data from the Organization for Economic Cooperation and Development, Health Data File, 1989, as reported in Health Care Financing Review, 1989 Annual Supplement.

NOTES: Expenditures in different countries were expressed in a common currency (U.S. dollars) using OECD estimates of a "purchasing power parity"(PPP) rate of exchange between national currencies. PPP is an estimate of the exchange rate at which a dollar can buy the same basket of goods in each country.

Nominal currency values have been converted to 1987 dollars using the GDP deflator, because the GNP fixed-weighted deflator is not available for other countries. The use of different deflators accounts for the differences in real per capita health spending between this figure and Figure 2.

modest--4.2 percent in the United Kingdom, 4.3 percent in Japan, 5.1 percent in West Germany, 6.1 percent in Canada, and 6.0 percent in the United States. By 1987, that range had widened considerably, and the United States was spending a much higher fraction of GDP on health care than the other four countries: 11.2 percent compared with 8.8 percent in Canada, 8 percent in West Germany, 6.8 percent in Japan, and 6 percent in the United Kingdom (see Figure 6).

FIGURE 6. HEALTH EXPENDITURES AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT, UNITED STATES AND SELECTED COUNTRIES, 1965–1987



SOURCE: Congressional Budget Office calculations based on data from the Organization for Economic Cooperation and Development, Health Data File, 1989, as reported in Health Care Financing Review, 1989 Annual Supplement.

The hospital market changed dramatically over the 1965-1988 period. The American Hospital Association (AHA) reports there were 7,123 registered hospitals in the United States in 1965; by 1988, the number had declined 4.8 percent, to 6,780, as shown in Table 1.[1] While there were eight hospital beds per 1,000 population in 1965, by 1988 there were only five. Hospital admission rates rose from 140 per 1,000 population in 1965 to a high of 170 in 1980, but declined rapidly between 1980 and 1988 to a low of 130 per 1,000 population in the latter year. Overall, the drop in the number of hospital beds was not sufficient to offset the decline in admissions during the 1980s. As a result, occupancy rates fell from 82 percent in 1965 to 69 percent in 1988. Staffing per bed and per admission, however, rose over this period--perhaps reflecting more severely ill patients as admissions declined, increased staffing of outpatient departments as more procedures were shifted to that setting, or other factors. Outpatient visits increased by 167 percent over the 1965-1988 period, and by 28 percent between 1980 and 1988.

The patterns observed nationally in the hospital market occurred among rural and urban hospitals at considerably different rates, with the more dramatic changes occurring in rural areas. The number of community hospitals in rural areas declined by 11.3 percent between 1980 and 1988, while the number of community

1. The AHA estimates there were 177 nonregistered hospitals in 1988 for which they did not obtain data.

TABLE 1. TRENDS IN THE HOSPITAL MARKET, 1965-1988

Year	Number of Hospitals	Hospital Beds		Admissions		Occupancy [a] (Percent)	Staffing	
		Total (Thousands)	Per 1,000 Population	Total (Thousands)	Per 1,000 Population		FTEs/ Bed [b]	FTEs/ Admission [b]
1965	7,123	1,704	8	28,812	140	82.3	1.1	.07
1970	7,123	1,616	8	31,759	150	80.3	1.6	.08
1971	7,097	1,556	7	32,664	150	79.5	1.7	.08
1972	7,061	1,550	7	33,265	150	78.0	1.7	.08
1973	7,123	1,535	7	34,352	160	77.5	1.8	.08
1974	7,174	1,513	7	35,506	160	77.2	1.9	.08
1975	7,156	1,466	7	36,157	160	76.7	2.1	.08
1976	7,082	1,434	6	36,776	160	76.0	2.2	.08
1977	7,099	1,407	6	37,060	160	75.8	2.3	.09
1978	7,015	1,381	6	37,243	160	75.5	2.4	.09
1979	6,988	1,372	6	37,802	160	76.1	2.5	.09
1980	6,965	1,365	6	38,892	170	77.7	2.6	.09
1981	6,933	1,362	6	39,169	160	77.9	2.7	.09
1982	6,915	1,360	6	39,095	160	77.4	2.8	.10
1983	6,888	1,350	6	38,887	160	76.1	2.7	.10
1984	6,872	1,339	6	37,938	160	72.5	2.7	.10
1985	6,872	1,318	5	36,304	150	69.0	2.8	.10
1986	6,841	1,290	5	35,219	140	68.4	2.8	.10
1987	6,821	1,267	5	34,439	140	68.9	3.0	.11
1988	6,780	1,248	5	34,107	130	69.2	3.1	.11

SOURCE: Congressional Budget Office using data from the American Hospital Association, *Hospital Statistics, 1989-1990* (Chicago, Illinois, 1989).

NOTE: Data refer to all AHA-registered hospitals in the United States including community hospitals, federal hospitals, long-term care hospitals, and psychiatric and other specialty hospitals.

a. Occupancy is the average daily census in all hospitals divided by the number of beds in all hospitals, expressed as a percentage. Thus, it is a measure of aggregate utilization, not a hospital-weighted measure of average occupancy.

b. FTEs are full-time equivalent staff.

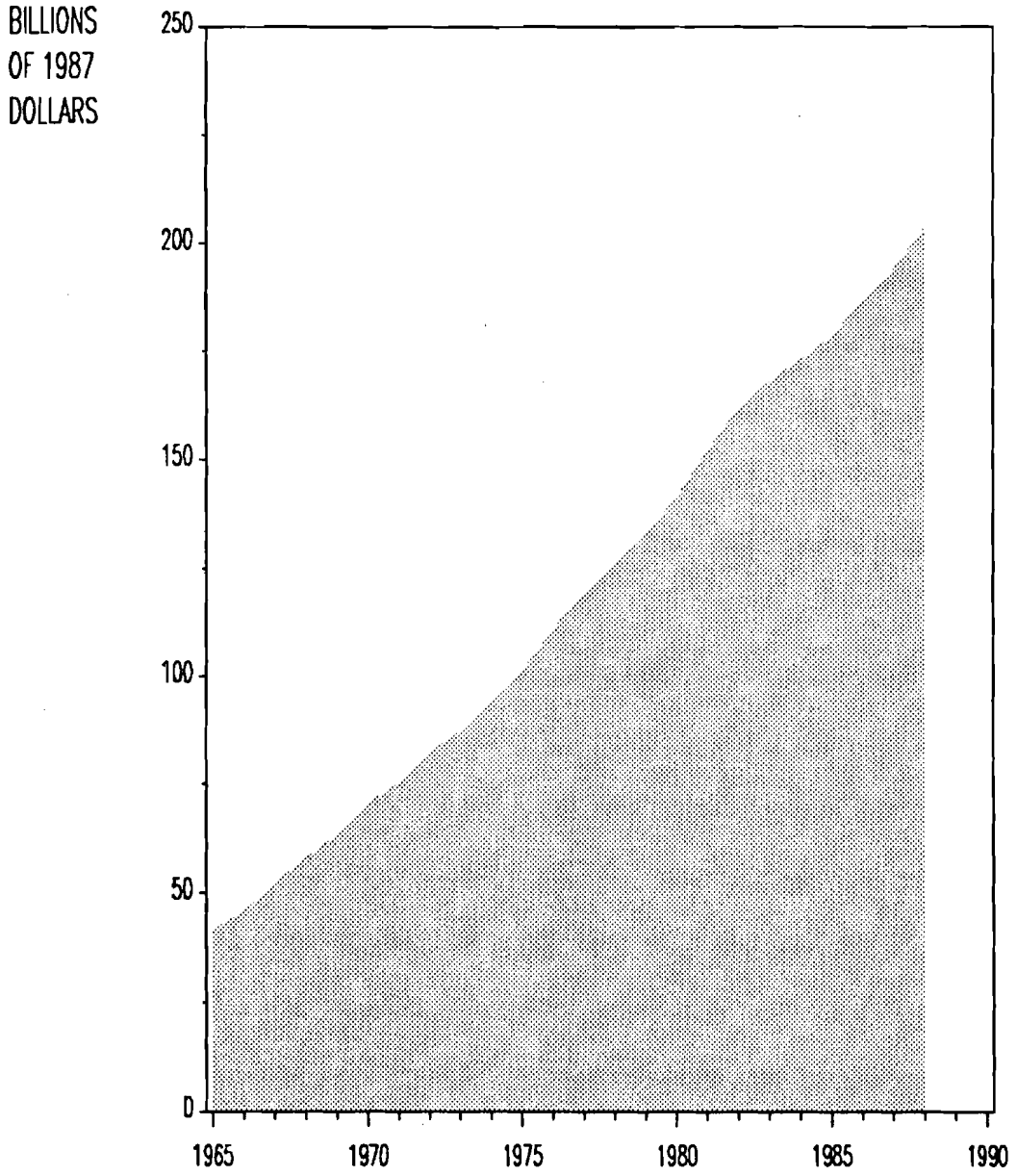
hospitals in urban areas grew by 1 percent over that period.[2] Between 1980 and 1988, 443 community hospitals closed in the United States. Of these closures, 208 were in rural areas and 235 were in urban areas. The number of hospital beds declined 15 percent in rural areas but less than 1 percent in urban areas. Similarly, admissions and inpatient days fell much more precipitously in rural than in urban areas--35 percent and 31 percent, respectively, in rural areas compared with 6 percent and 13 percent in urban areas. With these dramatic reductions in admissions and inpatient days over an eight-year period, it is not surprising that occupancy rates in rural areas fell by 19 percent--from 69 percent in 1980 to 56 percent in 1988. By comparison, the hospital occupancy rate in urban areas fell only 12 percent between 1980 and 1988, to 68 percent in the later year.

Despite the substantial declines in hospital admissions, inpatient days, and occupancy rates, total national spending on hospital services--inpatient and outpatient--increased rapidly over the entire 1965-1988 period (see Figure 7). Real spending on hospital services, in 1987 dollars, rose from $42 billion in 1965 to $203 billion in 1988--nearly a fivefold increase. The underlying growth rates that produced this level of spending by 1988 averaged 7.2 percent annually between 1970 and 1980, 4.7 percent annually between 1980 and 1985, and 4.5 percent from 1985 to 1988.

---

2. All AHA-registered hospitals include community hospitals, federal hospitals, long-term hospitals, and psychiatric and other specialty hospitals. In 1988, 82 percent of all hospitals were community hospitals.

FIGURE 7. TOTAL REAL SPENDING FOR HOSPITAL SERVICES, 1965–1988

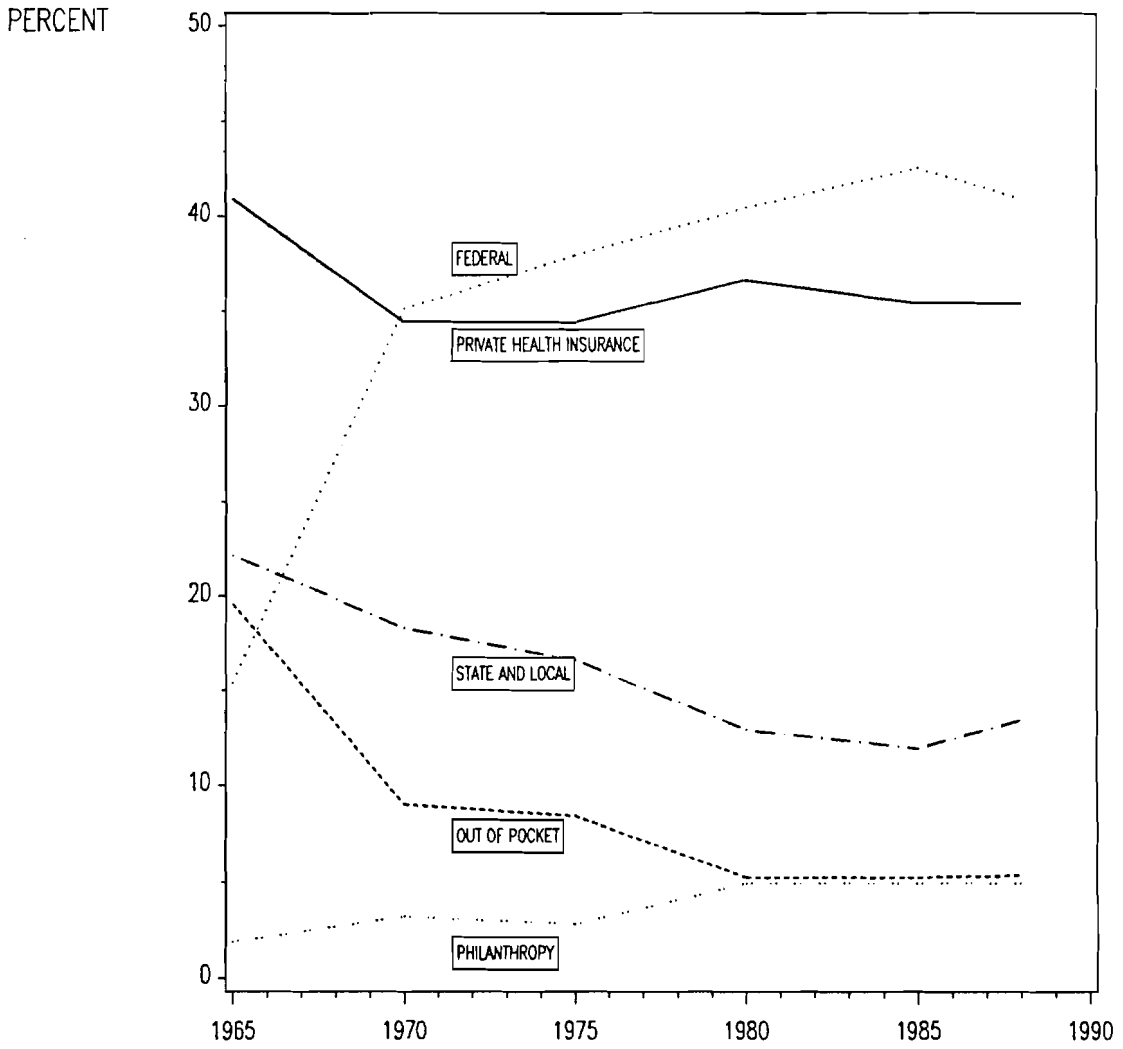


SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

Although spending continued to rise, the average annual real rate of increase in per capita spending for hospital services fell from 6.3 percent for the 1970-1980 period to 3.6 percent for the years 1985 through 1988. This growth in real spending per capita should be considered in the context of the trends in the hospital market already noted--real spending per capita continued to grow at an annual rate of 3.6 percent during a period when the numbers of hospitals and beds fell, admissions and patient days declined, and overall hospital occupancy rates dropped to less than 70 percent. At the same time, however, outpatient visits to hospitals increased substantially, nearly 20 percent between 1985 and 1988, accounting for some of the increase in hospital revenues. Real spending per admission rose from $1,447 in 1965 to $5,961 in 1988--a 312 percent increase. More recently, between 1980 and 1988, real spending per admission increased 64 percent.

This rise in revenues per admission may be related to changes in the sources of payment for hospital services. In 1965, nearly 20 percent of hospital spending was paid directly (that is, out-of-pocket) by consumers (see Figure 8). Private insurance paid about 41 percent of these expenses, while the federal share and the state and local government share were 15 percent and 22 percent, respectively. By 1980, direct consumer spending had dropped to 5.2 percent, about where it was through 1988. This reduction in consumer spending was primarily accounted for by an increase in federal spending, since the share paid by both private health insurance and state and local governments also declined over that period. Between 1985 and 1988, however, this trend reversed, with the federal share dropping slightly from 42.5 percent to 40.9

FIGURE 8. DISTRIBUTION OF SPENDING FOR HOSPITAL SERVICES BY SOURCE OF PAYMENT, 1965–1988



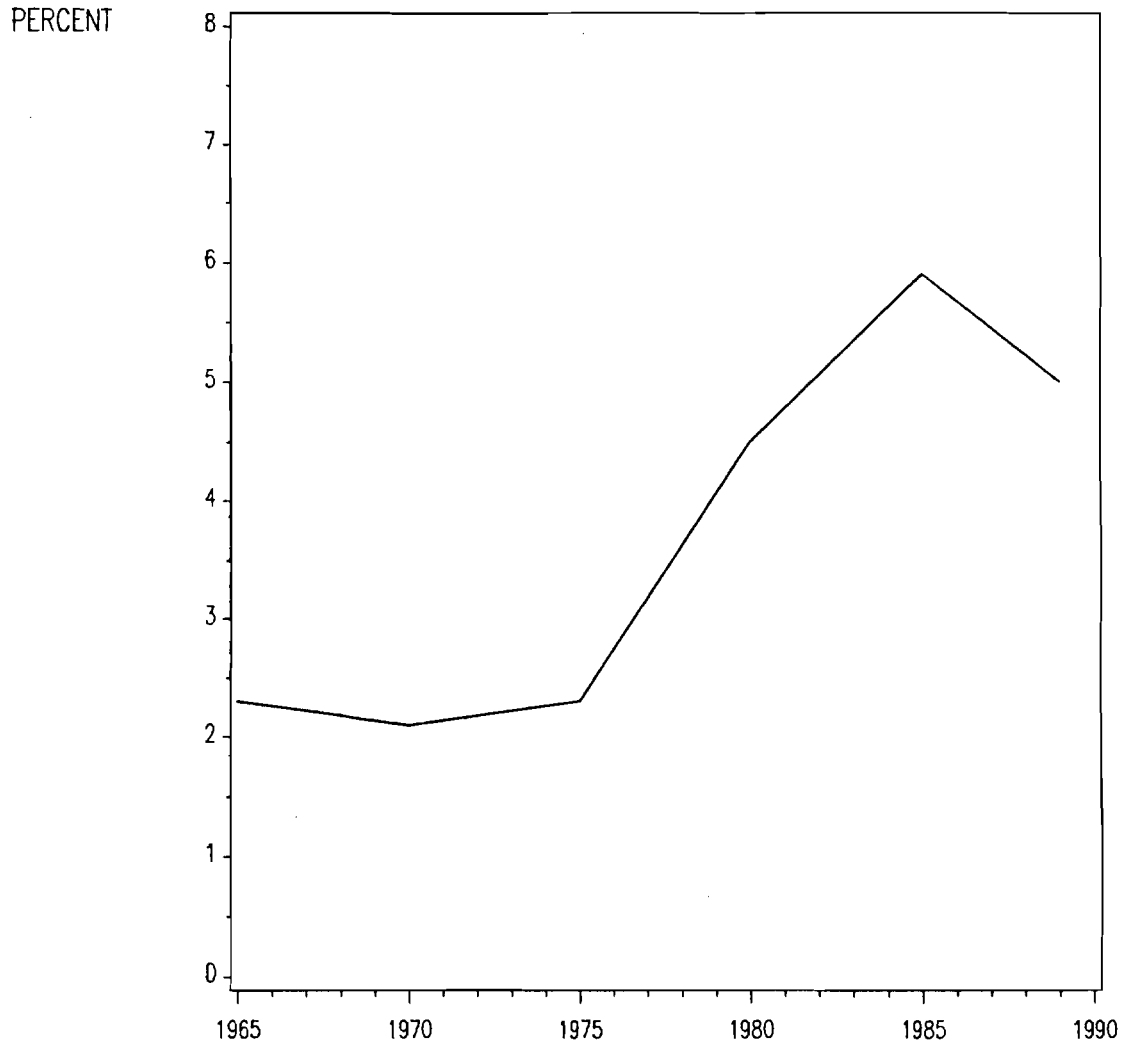
SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

percent. This drop was offset almost exactly by an increase in the share paid by state and local governments from 11.9 percent to 13.4 percent.

Greater third-party coverage of hospital services and the increasing revenues per admission have had a positive effect on hospital margins--the difference between the revenue received by hospitals and costs, as a percentage of revenues. Between 1965 and 1975, hospital margins were nearly constant at around 2.3 percent, but they began to rise in 1975, reaching nearly 6 percent in 1985 before declining to 5 percent in 1989 (see Figure 9). Even with the recent decline in margins, hospitals had substantially higher margins at the end of the 1980s than in the pre-1980 period.

Although hospital margins were higher, overall, during the 1980s than in the previous decade, the amount of uncompensated care--the costs of bad debt and charity care--provided by hospitals also was increasing. Uncompensated care grew from $5.6 billion (in 1987 dollars) to $10.2 billion between 1980 and 1988 (see Figure 10). At the same time, unsponsored care--the costs of uncompensated care that are not offset by payments from state and local governments--grew from $4.1 billion to $8 billion. In fact, unsponsored care rose more rapidly than uncompensated care over this period, because only 22 percent of uncompensated care was offset by state and local governments in 1988, compared with 27 percent in 1980.

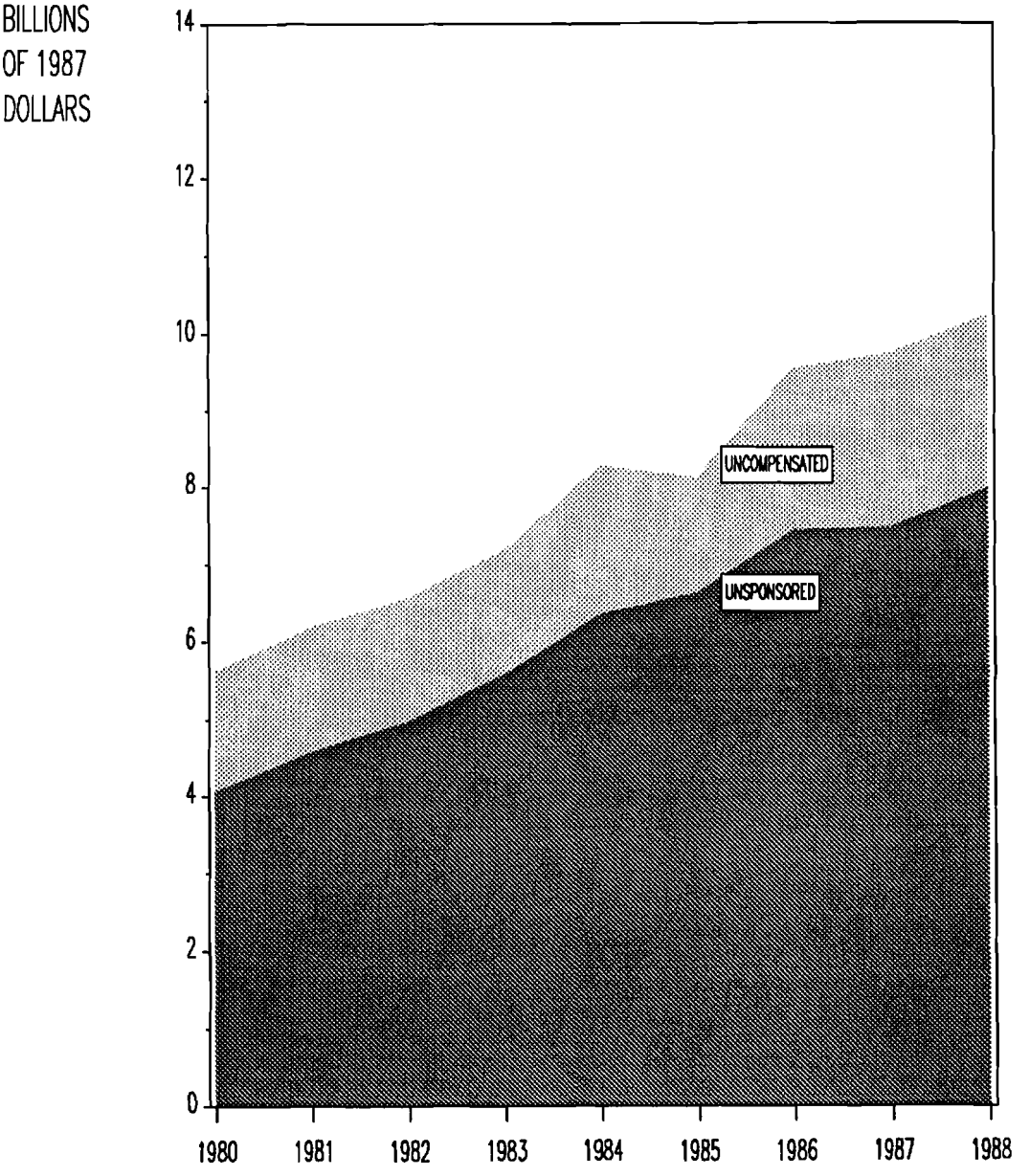
FIGURE 9. HOSPITAL MARGINS BASED ON TOTAL REVENUES, 1965–1989



SOURCE: Congressional Budget Office calculations based on data from the American Hospital Association, National Hospital Panel Surveys, 1965–1989.

NOTE: The total margin is defined as the ratio of total revenues minus total costs to total revenues.

FIGURE 10. REAL UNCOMPENSATED AND UNSPONSORED CARE PROVIDED BY HOSPITALS, 1980–1988



SOURCE: Congressional Budget Office calculations based on tabulations from the American Hospital Association, June 1990.

NOTES: Uncompensated care is the estimated cost of bad debt and charity care to the hospital. It is calculated for each hospital by multiplying the portion of the difference between total charges (gross patient revenue) and payments (net patient revenue) attributable to bad debt and charity care, by the hospital's ratio of total expenses to total charges.

Unsponsored care is equal to uncompensated care minus hospitals' revenues from state and local governmental tax appropriations.

Uncompensated care represented a varying proportion of costs for different types of hospitals, but unsponsored care was distributed much more evenly. In 1988, about 10 percent of the costs incurred by major teaching hospitals and about 15 percent of the costs incurred by urban public hospitals were uncompensated, but when state and local tax appropriations are added to these hospitals' revenues, this differential nearly disappears (see Table 2). Across all hospitals, unsponsored care accounted for about 5 percent of costs in 1988, ranging from a high of 5.7 percent of urban public hospitals' costs to 4.7 percent of all voluntary hospitals' costs, and a low of 4.5 percent of costs in hospitals designated under the Medicare program as not having a disproportionate share of low-income patients.

TABLE 2. UNCOMPENSATED AND UNSPONSORED CARE, BY TYPE OF HOSPITAL, 1981 AND 1988
(As a percentage of costs)

Type of Hospital	1981		1988	
	Uncompensated Care	Unsponsored Care	Uncompensated Care	Unsponsored Care
All Hospitals	5.0	3.8	6.1	4.9
Urban	5.1	3.7	6.2	4.8
Rural	4.4	3.9	5.4	4.9
Major Teaching	9.8	4.2	10.0	4.8
Other Teaching	4.0	3.8	5.4	5.0
Nonteaching	3.9	3.5	5.1	4.8
Voluntary	3.8	3.7	4.9	4.7
Urban Public	12.8	4.5	14.7	5.7
Rural Public	5.3	3.8	6.4	4.9
Investor-Owned	3.0	3.0	4.9	4.8
Disproportionate Share	6.9	4.4	8.0	5.4
Nondisproportionate Share	3.5	3.3	4.7	4.5

SOURCE: Congressional Budget Office using tabulations by the American Hospital Association (AHA), based on the AHA's 1981 and 1988 Annual Surveys and Medicare Cost Reports. Table reflects data reported or estimated for hospitals that were included in both data sets (4,841 in 1981 and 4,880 in 1988).

NOTES: The total amount of uncompensated care provided in 1981 was $4.9 billion, or $6.2 billion when expressed in 1987 dollars. The total amount of uncompensated care provided in 1988 was $10.7 billion, or $10.2 billion in 1987 dollars.

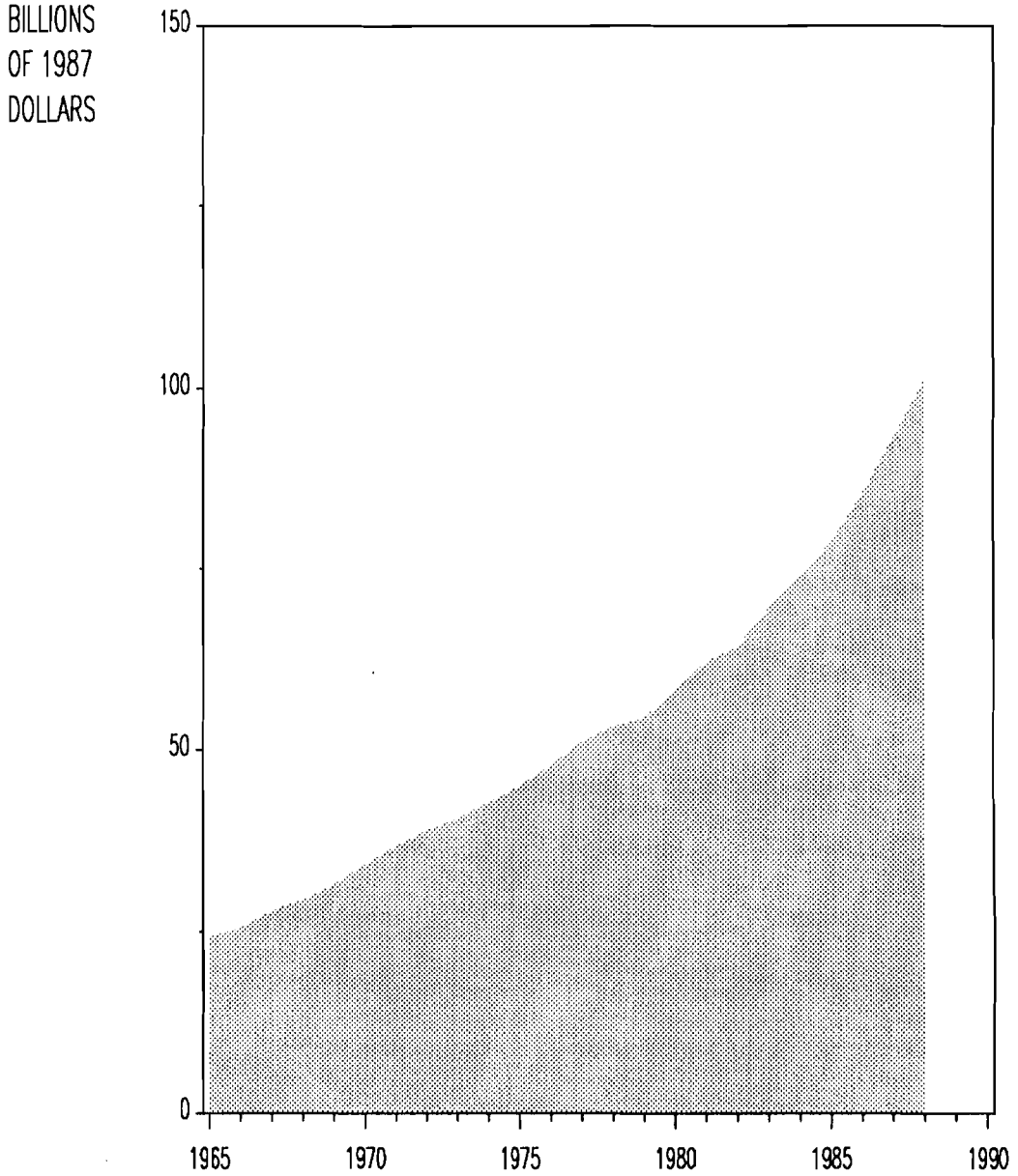
"Disproportionate share" hospitals are those that receive additional payments from the Medicare program because they serve a disproportionately large share of low-income patients.

Real expenditures for physicians' services more than quadrupled over the 1965-1988 period, rising from $24 billion to $101 billion (in 1987 dollars) as shown in Figure 11. As was the case for hospital services, the sources of payments to physicians changed considerably over this period. In 1965, consumers paid out of pocket for over 60 percent of total spending for physicians' services, but this share dropped to only 19 percent in 1988 (see Figure 12). This reduction was related to increases in the proportion paid by the federal government (which rose from 1 percent in 1965 to 27 percent in 1988) and in the proportion paid by private health insurance (which rose from 33 percent in 1965 to 48 percent in 1988). By comparison, the proportion paid by state and local governments grew only slightly, from 5 percent in 1965 to 6 percent in 1988.

Although the supply of physicians relative to population grew rapidly in the United States, it is not disproportionately large compared with that in other developed nations. In 1987, nine other OECD countries had more physicians per 1,000 population than the U.S. level of 2.3--including Greece (3.3), Belgium (3.2), West Germany (2.8), and France (2.5)--as shown in Table 3. Canada had 2.2 physicians per 1,000 population that year.

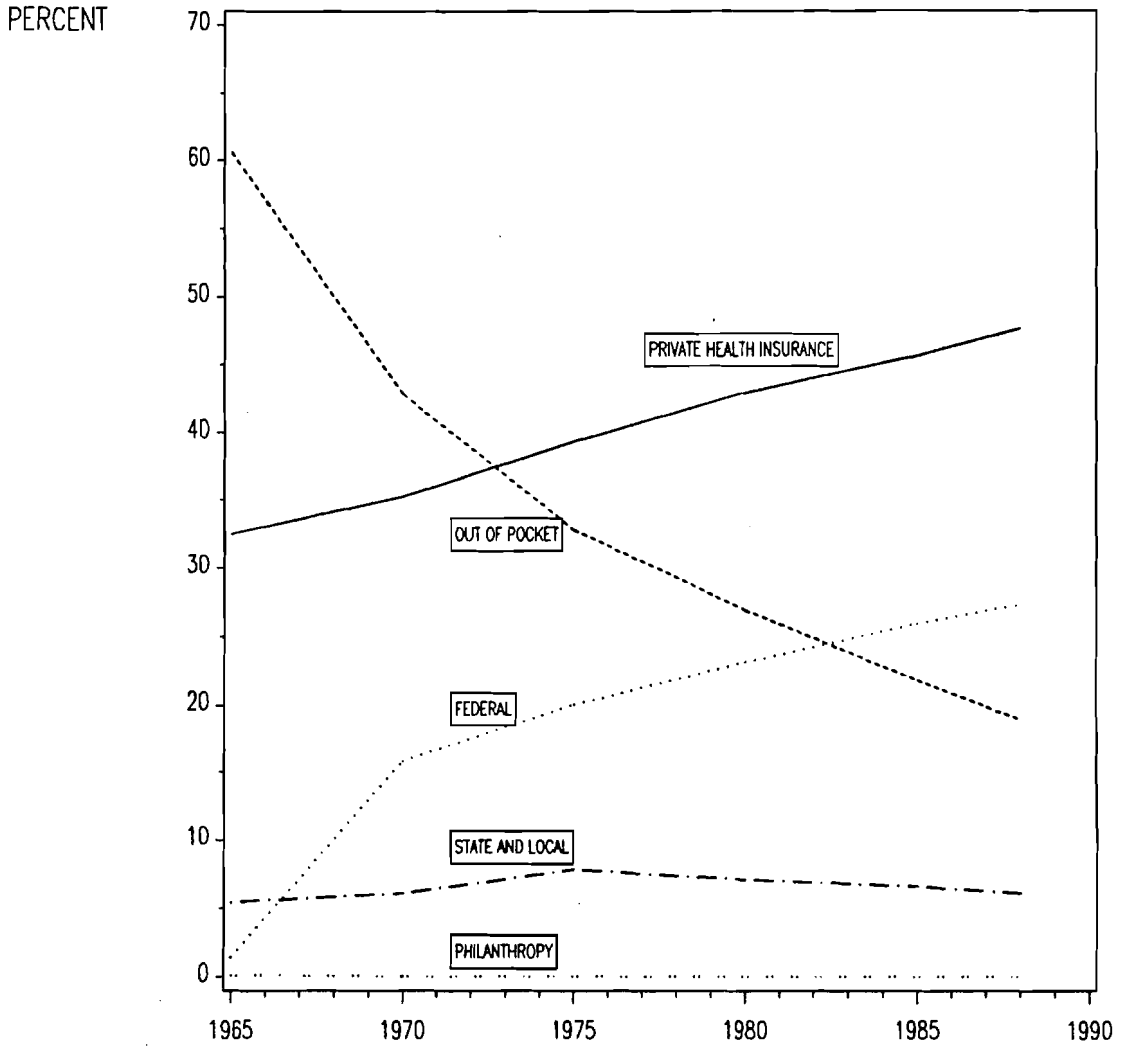
Physicians in the United States were, however, better paid for providing medical care than physicians in the 11 countries for which the OECD provides data. In 1986, the final year with data for the five countries examined in the previous

FIGURE 11. TOTAL REAL SPENDING FOR PHYSICIANS' SERVICES, 1965-1988



SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

FIGURE 12. DISTRIBUTION OF SPENDING FOR PHYSICIANS' SERVICES BY SOURCE OF PAYMENT, 1965–1988



SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

TABLE 3. OECD COUNTRIES RANKED BY RATIO OF PHYSICIANS TO 1,000 POPULATION, 1987

Country	Ratio
Greece	3.3
Belgium	3.2
West Germany	2.8
Iceland	2.7
Sweden	2.7
Portugal	2.6
Denmark	2.6
France	2.5
Netherlands	2.4
United States	**2.3**
Canada	2.2
Finland	1.9
Austria	1.9
Luxembourg	1.8
Japan	1.6
Switzerland	1.5
United Kingdom	1.4
Ireland	1.4
Italy	1.1
Turkey	0.7

SOURCE: Congressional Budget Office calculations based on data from the Organization for Economic Cooperation and Development, Health Data File, 1989, as reported in *Health Care Financing Review, 1989 Annual Supplement.*

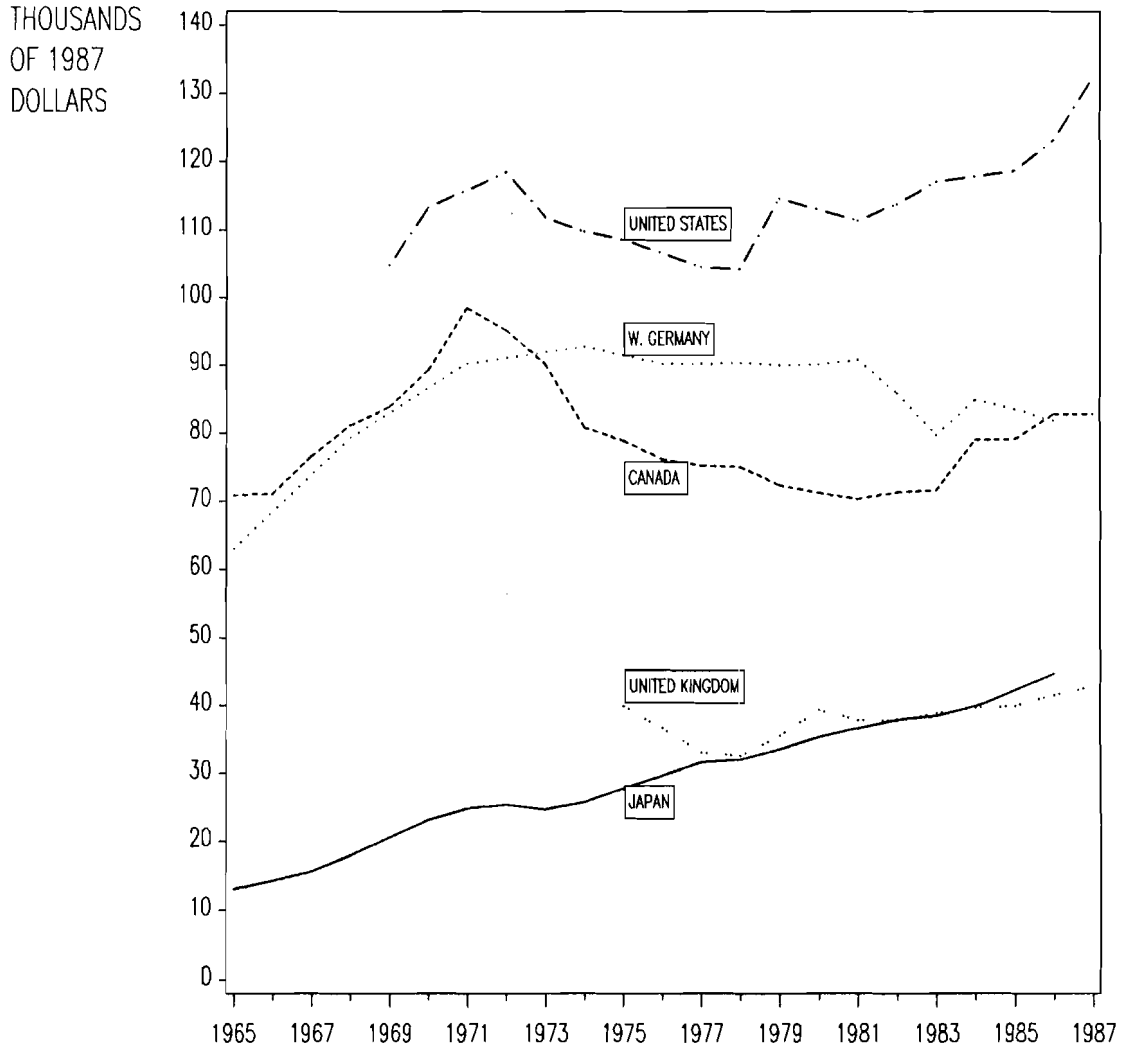
section, the average physician in the United States earned $123,000 (in 1987 dollars), compared with $83,000 in Canada, $82,000 in West Germany, $45,000 in Japan, and $41,000 in the United Kingdom (see Figure 13). U.S. physicians, therefore, earned about 50 percent more than physicians in Canada and West Germany, and three times as much as physicians in the United Kingdom.

Among these five countries, physicians' incomes grew fastest between 1975 and 1986 in the United States and Japan--at average annual rates of 1.2 percent and 4.4 percent, respectively. In Canada and the United Kingdom, the annual growth rate over this period was 0.4 percent, while physicians' real incomes fell an average of 1 percent per year in Germany.

The trends from 1981 to 1986 are somewhat different, however. Japan's growth rate remained high at 4 percent annually, while the incomes of Canadian physicians rose at 3.3 percent annually over this period, exceeding the growth rate of 2.1 percent annually for U.S. physicians. In the United Kingdom, the growth rate of physicians' income increased also, rising to an annual rate of 1.8 percent. Only in West Germany did real incomes of physicians fall over the 1981-1986 period--at a rate of 2 percent annually.

A somewhat different approach to assessing the growth in physicians' incomes over time is to compare trends in their average income with trends in the average compensation of all employees. In 1986, the ratio of the average physician's earnings to the average worker's earnings in the United States was 5.1. This ratio

FIGURE 13. AVERAGE REAL PHYSICIAN INCOME, UNITED STATES AND SELECTED COUNTRIES, 1965–1987



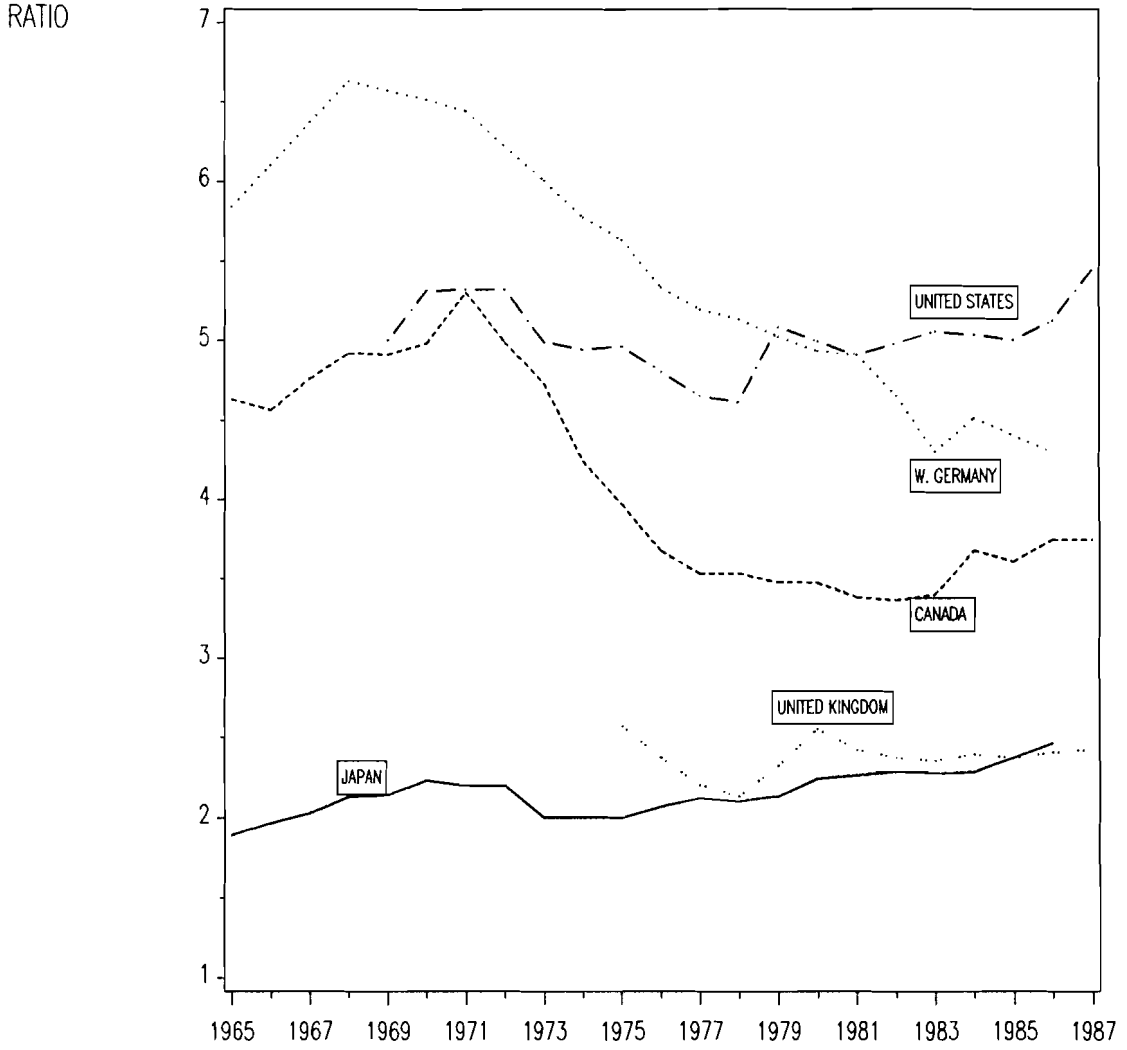
SOURCE: Congressional Budget Office calculations based on data from the Organization for Economic Cooperation and Development, Health Data File, 1989, as reported in the Health Care Financing Review, 1989 Annual Supplement.

NOTES: Data for the following were missing and values were imputed by the Congressional Budget Office: 1971, 1976, 1980, and 1984 for the United States; 1966, 1967, 1969, 1970, 1972, and 1973 for West Germany; and 1985 for Japan. Data missing at the beginning and end of the time periods were not imputed.

Incomes in different countries were expressed in a common currency (U.S. dollars) using OECD estimates of a "purchasing power parity" (PPP) rate of exchange between national currencies. PPP is an estimate of the exchange rate at which a dollar can buy the same basket of goods in each country.

is higher than in any of the four other countries compared (see Figure 14). Only in West Germany do physicians earn more than four times the average worker's compensation and, in West Germany, this ratio has been declining since 1968. Since 1971, when the ratio in Canada peaked at 5.3, the U.S. and Canadian ratios have increasingly diverged. By 1986, the ratios were 3.7 in Canada and 5.1 in the United States.

FIGURE 14. RATIO OF AVERAGE INCOME OF PHYSICIANS TO AVERAGE COMPENSATION OF ALL EMPLOYEES, UNITED STATES AND SELECTED COUNTRIES, 1965–1987



SOURCE: Congressional Budget Office calculations based on data from the Organization for Economic Cooperation and Development, Health Data File, 1989, as reported in the Health Care Financing Review, 1989 Annual Supplement.

NOTES: Data for the following were missing and values were imputed by the Congressional Budget Office: 1971, 1976, 1980, and 1984 for the United States; 1966, 1967, 1969, 1970, 1972, and 1973 for West Germany; and 1985 for Japan. Data missing at the beginning and end of the time periods were not imputed.

The concepts and estimating methodologies used to compile average compensation per employee are not the same across countries, nor necessarily within each country over time. Among the issues that cannot be taken fully into account are the regional or national basis of the estimates, whether or not both salaried and self-employed professionals are included in the figures, the exact nature of the professional groups covered, the treatment of part-time and female workers, and whether or not the income definitions used reflect income-tax, census, or national-accounts concepts.

COMPARISON OF TRENDS IN MEDICARE AND NATIONAL HEALTH SPENDING

Much of the concern about the rapid growth of health spending is focused on the impact of rising Medicare expenditures on the federal budget. Medicare spending may have increased at a different rate than national spending for a number of reasons--increases in the number of people eligible for Medicare that exceeded the growth of the general population, changes in Medicare reimbursement policies, and new, more costly technologies that may be used disproportionately by the Medicare population. In this section, trends in Medicare spending are compared with overall national spending trends, in order to assess whether Medicare's spending patterns merely reflect the underlying national trends or suggest that other forces may also be affecting this segment of the market for health services.

Trends in Spending

Medicare was implemented in 1966 and, by 1970, federal spending for it had risen to $19.2 billion (in 1987 dollars), or to an average of $939 per Medicare enrollee. By 1988, real federal spending for Medicare had more than quadrupled, reaching $88.1 billion, or an average expenditure of $2,671 per enrollee.

In contrast, total national health spending rose more slowly, nearly tripling over the 1970-1988 period--rising from $188 billion (in 1987 dollars) to $518 billion. In part, the more rapid growth of federal spending for Medicare reflects expansions

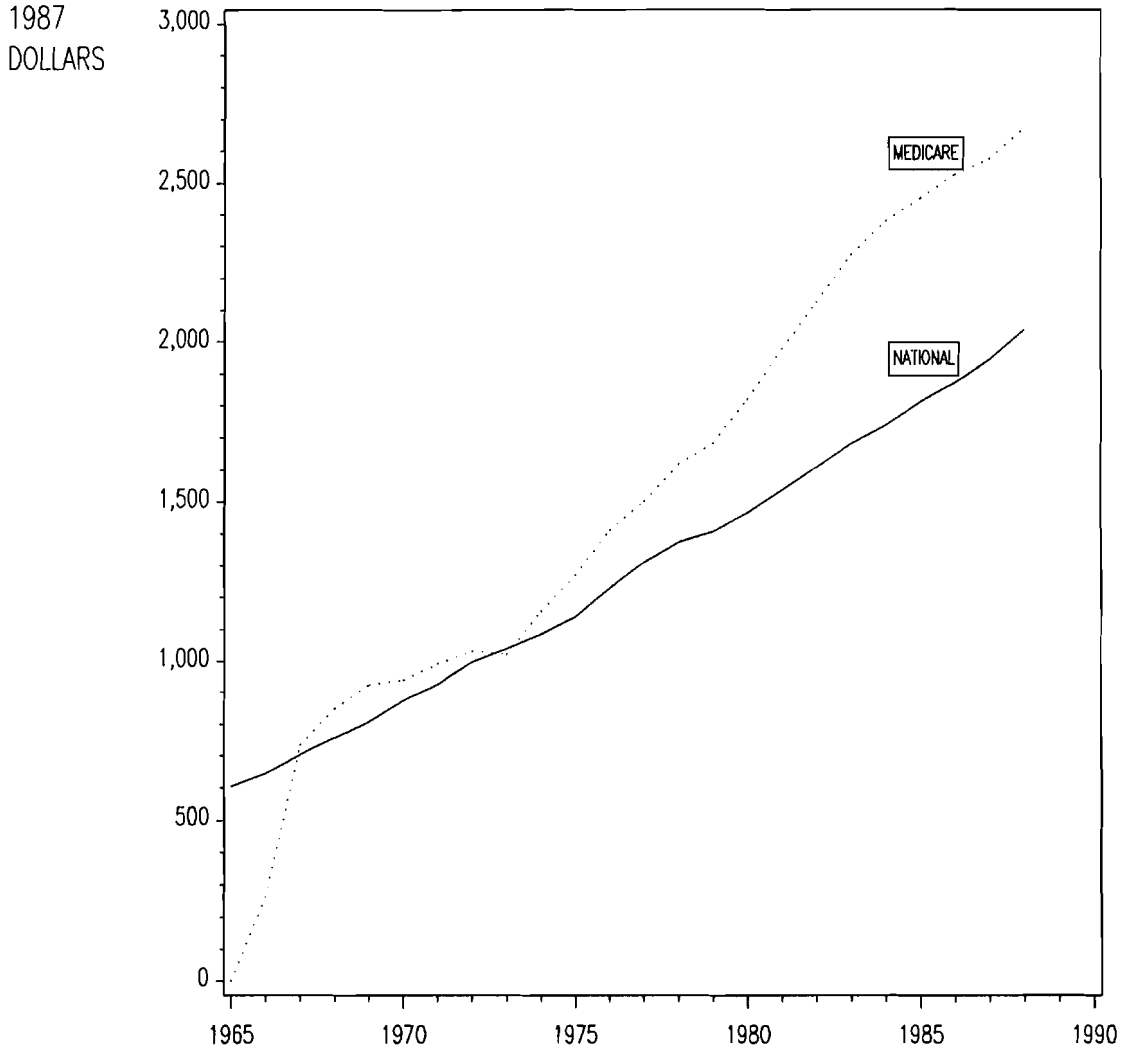
of eligibility such as inclusion of the disabled and people with end-stage renal disease. Even on a per enrollee basis, however, Medicare spending has grown more rapidly than per person spending for the nation since the early 1970s (see Figure 15), in part because the proportion of disabled enrollees, who incur higher costs than aged enrollees, has increased.

Between 1970 and 1980, Medicare spending rose at an average annual real rate of 10.4 percent, compared with 6.3 percent for national health spending (see Figure 16). On a per person basis, Medicare spending also increased at a more rapid rate than national health spending during this period (6.8 percent annually versus 5.3 percent).

Through the first half of the 1980s, Medicare continued to outpace national spending, on both a total and a per person basis. During the 1985-1988 period, however, real spending for Medicare and real national health spending both grew 5 percent annually, with Medicare spending per enrollee growing at 2.9 percent a year in real terms, compared with 4 percent for national per capita spending.

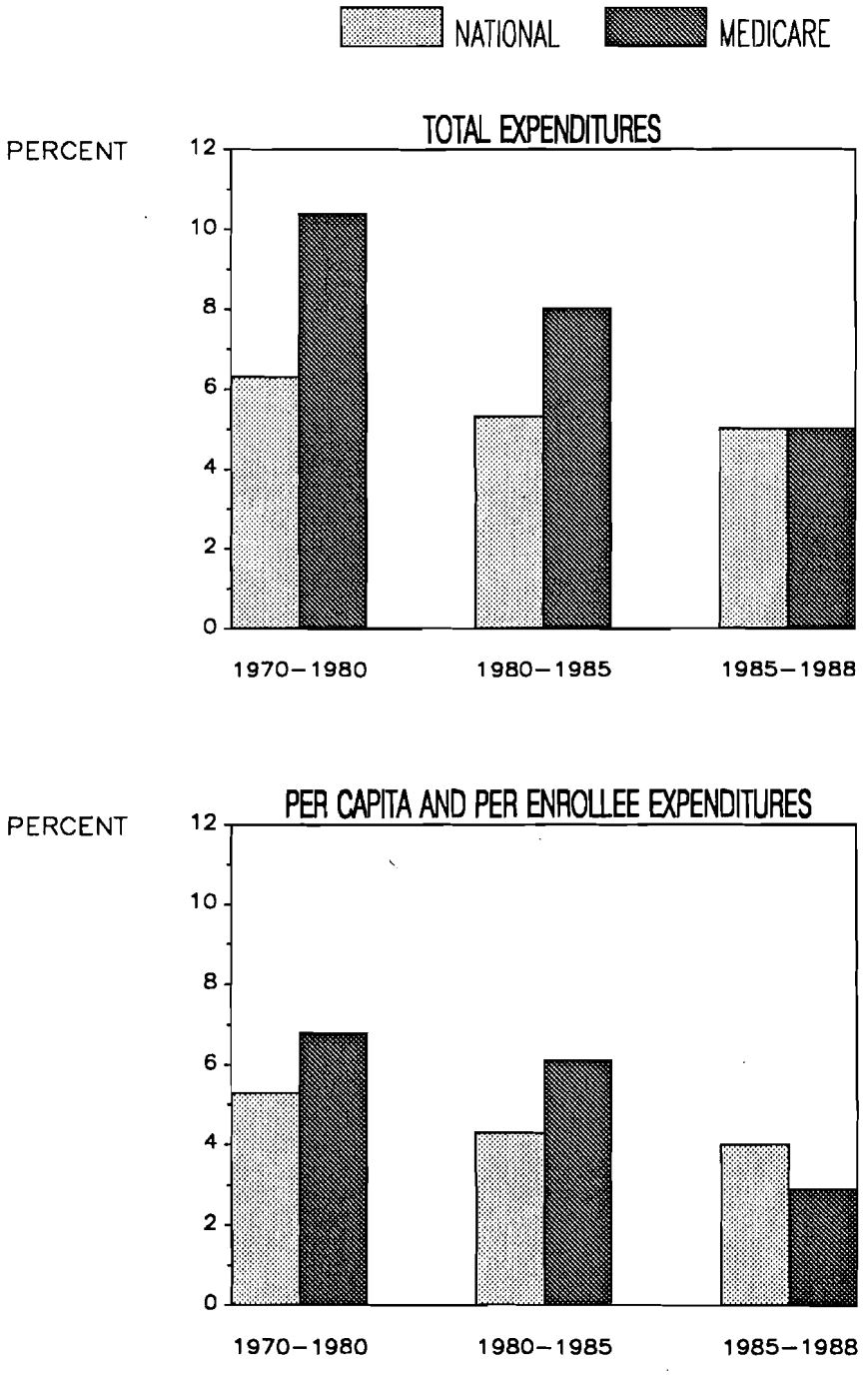
Similar patterns are observed in the annual rates of increase in real national and Medicare spending for hospital services. Medicare expenditures for hospital services increased more rapidly than national expenditures during the 1970-1980 period and during the 1980-1985 period, on both a total and a per capita basis (see Figure 17). During the 1985-1988 period, however, Medicare hospital spending per enrollee rose only 0.8 percent annually, while national spending per capita for

FIGURE 15. REAL PER CAPITA NATIONAL EXPENDITURES AND PER ENROLLEE MEDICARE EXPENDITURES FOR HEALTH, 1965–1988



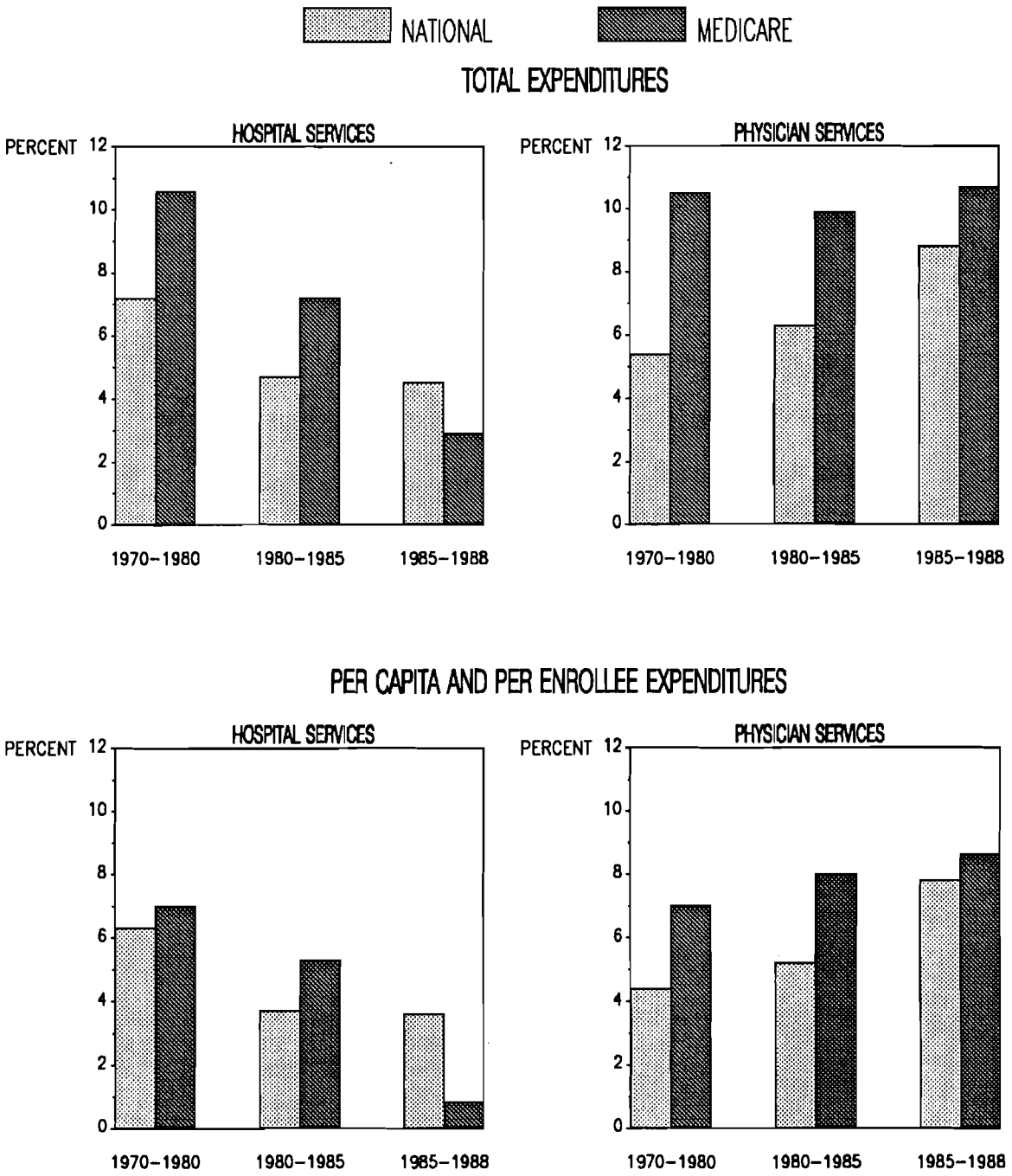
SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

FIGURE 16. AVERAGE ANNUAL GROWTH RATES OF REAL NATIONAL AND MEDICARE EXPENDITURES FOR HEALTH, TOTAL AND PER CAPITA, 1970–1988



SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

FIGURE 17. AVERAGE ANNUAL GROWTH RATES OF REAL NATIONAL AND MEDICARE EXPENDITURES FOR HOSPITAL AND PHYSICIAN SERVICES, TOTAL AND PER CAPITA, 1970–1988



SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

hospital services continued to grow at a 3.6 percent annual rate. This drop in the growth rate in Medicare spending for hospitals in the latter half of the 1980s occurred as Medicare's prospective payment system (PPS) was being phased in. The reduced rate of growth in hospital spending accounted for much of the lower growth in total and per enrollee expenditures for Medicare during the 1985-1988 period.

The Medicare experience with physician spending does not parallel the patterns observed for hospitals. The average annual real rate of increase in spending for physicians' services has historically been higher for Medicare than for the nation, with total Medicare expenditures growing at an annual real rate of about 10 percent between 1970 and 1985, compared with a 5.4 percent annual increase nationally for the 1970-1980 period and a 6.3 percent rate in the 1980-1985 period. In the latter half of the 1980s, however, overall spending for physicians' services was growing at 8.8 percent annually--a rate only 1.9 percentage points lower than for the Medicare program.

Similarly, Medicare spending per enrollee for physicians' services grew faster than per capita national spending throughout the 1970-1988 period. But national spending per capita for physicians' services accelerated so rapidly at the end of this period that the differential in the two growth rates declined to only 0.8 percentage points.

Although real per capita spending for health services has grown at a substantial rate since 1970, the per capita growth rate has been declining. This

decline has been greater for the Medicare program than for national spending. Within the Medicare program, the reduction in the rate of increase appears to result primarily from slower growth in hospital spending per enrollee. In contrast, spending for physicians' services has grown at a substantial, and increasing, rate both for Medicare and for the nation.

Trends in Consumer Spending

One consequence of the rapid rise in total expenditures per person under Medicare has been an increase in health spending by the elderly that exceeds the growth in their disposable income. While the health spending of all households (direct payments for services plus households' share of health insurance premiums and Medicare taxes) has been essentially constant as a percentage of after-tax income--4.9 percent in 1972-1973 and 5 percent in 1988--it has grown considerably for the elderly, from 7.8 percent in 1972-1973 to 12.5 percent in 1988 (see Table 4).

Throughout this period, Medicare has consistently paid for about 83 percent of Medicare-covered services. Total health care costs, which include spending for both Medicare-covered and other services, however, have grown more rapidly than Medicare enrollees' income. As a result, even with the same fraction of covered services being offset by Medicare, spending for health care has absorbed an increasing portion of Medicare enrollees' incomes.

TABLE 4. HOUSEHOLD SPENDING FOR HEALTH AS A PERCENTAGE OF AFTER-TAX INCOME

Year	All Households	Aged Households
1972-1973	4.9	7.8
1982-1983	4.1	9.6
1986	4.6	11.3
1988	5.0	12.5

SOURCE: Congressional Budget Office calculations using data from the Consumer Expenditure Survey of the Bureau of Labor Statistics.

NOTE: Data are tabulated by age of reference person. Aged households are those in which the reference person is age 65 or over. Such households may include some individuals under age 65.

Factors Affecting Growth in Spending

The growth in spending overall and for the Medicare program has been influenced by many factors, including population increases, the aging of the population, new technologies, and medical care price inflation above the economywide rate of inflation. The Medicare program, in addition, has been modified in ways that have affected total and per enrollee spending--often differently for hospital and physician services. Expansions of benefits and eligibility have increased spending, while reimbursement policies that limit or reduce per service costs and utilization review that is meant to reduce unnecessary use are intended to constrain total spending.

Hospital Services. Over the 1980s, hospital use declined both for the nation and for Medicare enrollees. Hospital admissions show a consistent pattern of decline for people under age 65 beginning in 1982 and continuing through 1989; admissions declined for the Medicare population (age 65 and over) beginning in 1984, after Medicare's PPS and peer review of admissions were implemented (see Table 5). The decline in admissions for this group continued only through 1987, however, with admissions rising from 1987 to 1989. These data may understate the decline in Medicare admissions relative to the decline in admissions for those under age 65, since the number of Medicare enrollees is increasing more rapidly. Between 1984 and 1988, Medicare enrollment grew nearly 9 percent compared with 3.3 percent growth in the population under age 65. The average annual decline in length of stay was greater for the population over age 65 than for the total population over the entire period.

TABLE 5. CHANGE IN HOSPITAL ADMISSIONS AND LENGTH OF STAY, 1978-1989 (In percent)

Year	Admissions			Length of Stay	
	All	Under Age 65	Age 65 and Over	All Adults	Adults Age 65 and Over
			Annual Change		
1979	2.0	1.2	4.3	-1.0	-1.6
1980	3.1	1.6	7.0	0.0	-0.4
1981	1.3	0.2	4.1	0.8	-0.1
1982	0.1	-1.1	3.0	-0.4	-1.6
1983	0.1	-2.4	6.1	-1.5	-3.9
1984	-3.3	-4.0	-1.6	-4.7	-7.2
1985	-5.1	-5.1	-5.1	-2.8	-3.8
1986	-2.5	-2.7	-2.0	0.3	0.1
1987	-0.9	-1.2	-0.1	1.0	1.4
1988	-0.1	-1.3	2.4	0.1	-0.7
1989	-1.4	-2.5	0.7	0.1	0.3
			Average Annual Change		
1978-1983	1.3	-0.1	4.9	-0.4	-1.5
1983-1989	-2.2	-2.8	-1.0	-1.0	-1.7

SOURCE: Congressional Budget Office calculations based on data from the American Hospital Association, National Panel Surveys, 1978-1989.

Despite these substantial reductions in admissions and in length of stay, spending for hospital services has continued to rise, both for Medicare and for the nation. Even in the 1985-1988 period, when real growth in spending per person was at its lowest point, the average annual rates of increase in spending per person for hospital services were 0.8 percent for Medicare and 3.6 percent for the nation.

A comparison of hospital margins under the PPS and overall margins provides additional insight into the role of Medicare in the market for hospital services. Total margins in the first year of the PPS reached 9.2 percent, assisted by PPS margins that averaged 14.4 percent (see Table 6). The exceptionally high PPS margins in the first year probably resulted from at least three factors. First, because the rate-setting process had to use data from several years earlier, the initial PPS rates exceeded the expected costs per case by approximately 4.3 percent. Second, faced with the incentives offered by the PPS, hospitals apparently made operational changes to increase efficiency and reduce costs per case below the previous values upon which the initial PPS rates were set. Finally, hospitals appear to have responded to incentives to refine the diagnosis codes used for payment purposes in order to maximize the payment received per admission.

The initial PPS rates that created the high margins on Medicare cases were partially corrected by Congressional actions that held increases in the PPS rates (or "updates") since the first year of the PPS below the increase in the cost of the market basket of inputs that hospitals purchase, as measured by the Market Basket

TABLE 6. TOTAL, MEDICARE PPS, AND NON-PPS MARGINS, BY TYPE OF HOSPITAL, FIRST AND FIFTH YEARS OF THE PPS (In percent)

Type of Hospital	First Year of PPS			Fifth Year of PPS		
	Total	PPS	Non-PPS	Total	PPS	Non-PPS
All	9.2	14.4	7.0	4.3	2.0	5.1
Urban	9.3	15.3	6.9	4.3	2.7	4.9
Rural	8.4	8.5	8.3	4.4	-2.4	6.8
Major Teaching	6.3	19.1	2.9	1.8	12.6	-0.8
Other Teaching	9.8	16.0	7.2	5.4	3.1	6.2
Nonteaching	9.6	12.0	8.5	4.5	-2.0	6.8
Voluntary	9.2	14.7	6.9	4.7	2.6	5.5
Urban Public	7.6	14.3	5.8	2.4	4.6	1.8
Rural Public	5.1	7.5	4.0	2.2	-4.2	4.4
Investor-Owned	11.3	14.2	10.1	4.5	-2.1	6.7
Disproportionate Share						
MSA > 1 million [a]	7.2	16.0	4.4	2.2	7.4	0.8
Other urban	9.2	14.7	7.3	5.2	5.5	5.1
Rural	9.0	10.9	8.2	3.5	0.2	4.7
Nondisproportionate Share	9.8	13.9	8.0	4.9	-0.8	7.0
Urban						
MSA > 1 million [a]	8.8	15.7	6.0	3.5	2.6	3.8
Other urban	9.9	14.8	7.9	5.4	2.8	6.3
Rural						
Rural referral center	9.7	9.5	9.8	7.2	1.2	9.4
Sole community	8.5	5.9	9.6	4.6	-4.7	7.4
Other rural	7.5	8.3	7.1	2.6	-4.4	5.1

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration.

NOTES: Data for each prospective payment system (PPS) year correspond to each hospital's cost reporting period beginning in that year. For instance, the first year of the PPS includes data from each hospital's cost report beginning during federal fiscal year 1984. The total margin is defined as the ratio of total revenues minus total costs to total revenues. The PPS margin is defined as the ratio of PPS payments minus the operating costs associated with providing inpatient services for Medicare beneficiaries to PPS payments. The non-PPS margin is defined as the ratio of total revenues minus PPS payments minus total costs less the operating costs associated with providing inpatient services to Medicare beneficiaries to total revenues less PPS payments.

a. MSA > 1 million refers to a metropolitan statistical area (MSA) containing more than 1 million people (970,000 people in New England).

Index. These constrained updates are reflected in the low rate of growth subsequent to 1984 in real hospital payments per Medicare enrollee.

Physician Services. The narrowing of the differential in growth rates of spending for physician services between the nation and the Medicare program over the latter part of the 1980s may stem, in part, from continuing legislative attempts to constrain price increases under Medicare. These legislative actions included a freeze on all physicians' fees from July 1, 1984, through April 30, 1986, which was extended for nonparticipating physicians through December 1986.[3] In addition, prices for selected procedures identified as "overpriced" have been kept constant or reduced each year starting in 1987.

Despite these constraints on the prices of individual procedures, Medicare spending on physician services has continued to rise faster than for the nation overall. Three factors contributed to the growth under the Medicare program in the 1976-1988 period--general inflation (45 percent), real increases in physicians' fees above the general inflation rate (6 percent), and growth in the volume of services provided per enrollee (48 percent). Except for the late 1970s, when general inflation was high, growth in the volume of services per enrollee has been the major contributing factor to increased spending for physician services under the Medicare program.

---

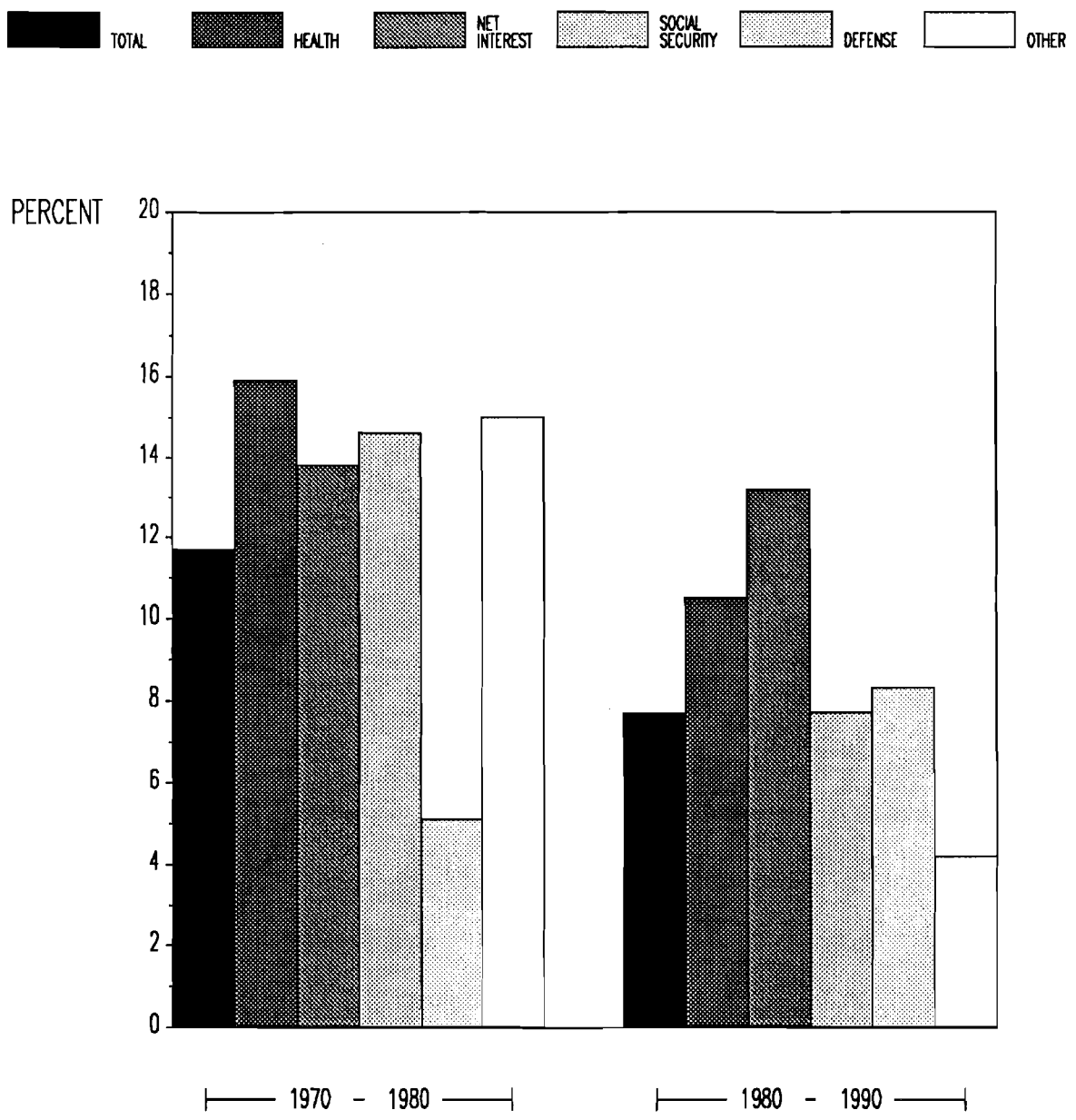
3. Under Medicare, physicians may choose to participate--that is, to accept the Medicare-allowed amount as payment in full in return for receiving payment directly from the Medicare program and a higher allowed fee. Nonparticipating physicians may bill Medicare beneficiaries for the full amount and are allowed to keep the difference between their actual charge and the Medicare-allowed amount.

MEDICARE SPENDING AND THE FEDERAL BUDGET

The rapid growth of national spending for health care, overall and per capita, and the comparable patterns of growth observed for the Medicare program, have significant implications for the federal budget. In 1970, spending on health constituted 7.6 percent of the federal budget. By 1990, that share had grown to 14.4 percent. The average annual rate of increase of federal health spending between 1980 and 1990 was 10.5 percent, compared with 7.7 percent for total outlays, 13.2 percent for net interest, 8.3 percent for defense, and 7.7 percent for the Social Security program (see Figure 18).

The Medicare program is accounting for a growing share of these federal health dollars. In 1970, Medicare spending was 49 percent of total federal spending on health care, increasing to 54 percent in 1980 (see Table 7). By 1990, Medicare spending is estimated by CBO to account for 61 percent of federal spending for health care. Other components of federal outlays for health have grown at a more moderate rate or have declined as a share of federal health spending. The Medicaid program accounted for 18 percent of federal health spending in 1970 and 23 percent in 1990, while combined spending for veterans' health care and for other health services and research declined from 33 percent of federal health spending to 17 percent between 1970 and 1990.

FIGURE 18. AVERAGE ANNUAL RATES OF GROWTH OF FEDERAL OUTLAYS, SELECTED COMPONENTS, 1970-1990



SOURCE: Congressional Budget Office calculations, February 1990, based on actual outlays in 1970 and 1980 and CBO projections of federal outlays for 1990.

NOTE: Rates of growth in nominal spending, unadjusted for the underlying rates of inflation in each period.

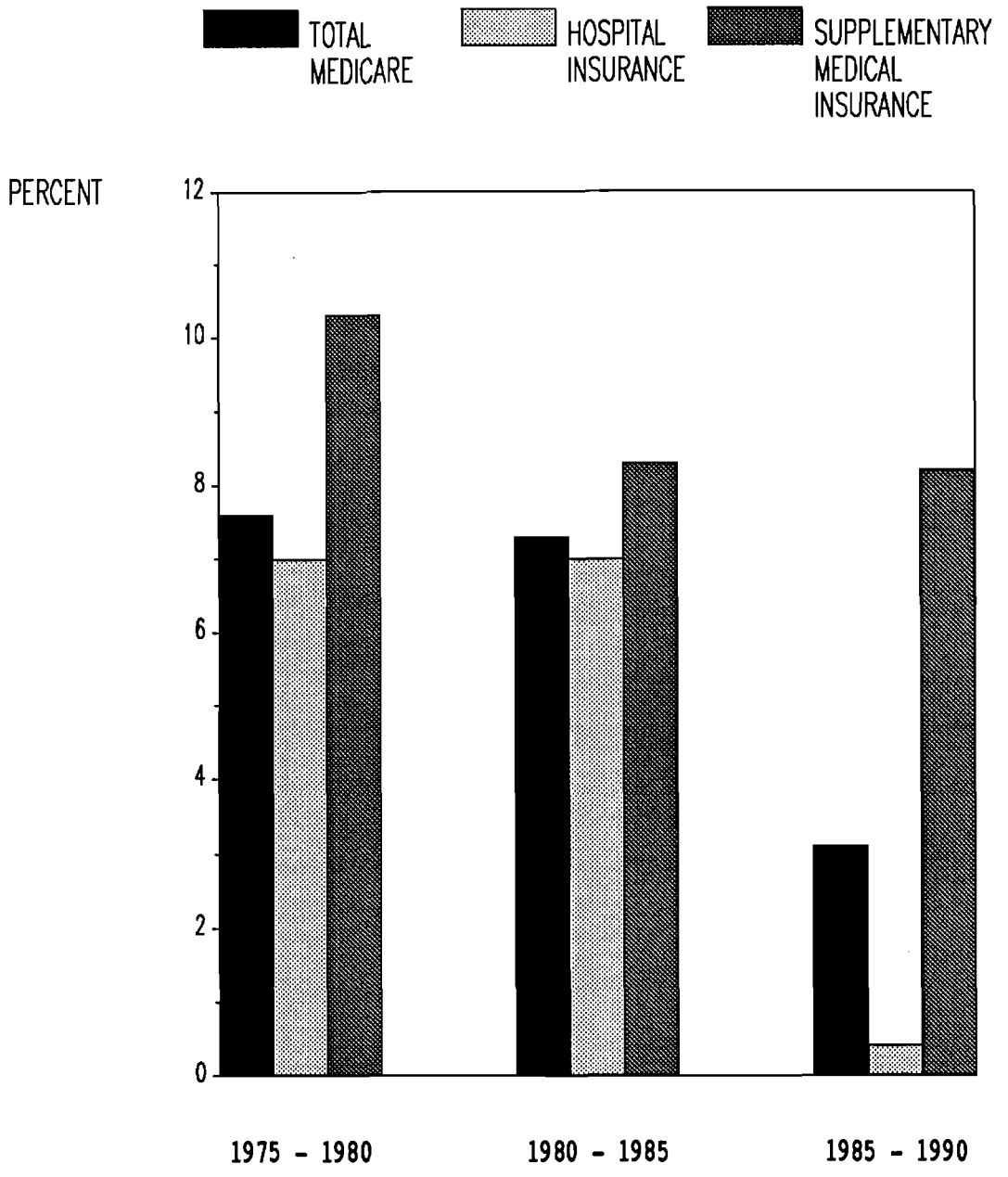
TABLE 7. DISTRIBUTION OF FEDERAL OUTLAYS FOR HEALTH, BY COMPONENT, 1970-1990 (In percent)

Type of Health Outlay	1970	1980	1990
Medicare	49	54	61
Medicaid	18	22	23
Other Health Services and Research	21	15	10
Veterans' Health Care	12	10	7

SOURCE: Congressional Budget Office calculations, February 1990, based on actual outlays in 1970 and 1980 and CBO projections of federal outlays for 1990.

Growth in Medicare spending has persisted despite consistent legislative efforts to constrain it. CBO has estimated that legislation enacted by Congress between 1981 and 1988 was expected to reduce Medicare spending by an average of nearly 2 percent a year from previously projected levels. In fact, the rate of increase in real Medicare spending per enrollee from 1980 to 1985 was the same as in the 1975-1980 period, but it did drop sharply in the 1985-1990 period. The patterns of growth for Medicare's Hospital Insurance (HI) program and the Supplementary Medical Insurance (SMI) program (which reimburses physicians and other health care providers) are quite different, however (see Figure 19). After averaging 7 percent a year from 1975 to 1985, the HI real annual growth rate per enrollee dropped to 0.4 percent between 1985 and 1990. In contrast, real spending per enrollee for SMI grew about 10 percent annually, on average, through the 1975-1980 period, before dropping to about 8 percent a year between 1980 and 1990.

FIGURE 19. AVERAGE ANNUAL GROWTH RATES OF REAL MEDICARE SPENDING PER ENROLLEE, BY COMPONENT, 1975–1990



SOURCE: Congressional Budget Office calculations, February 1990, based on actual outlays in 1970 and 1980 and CBO projections of federal outlays for 1990.

NOTE: Rates of growth in nominal spending, unadjusted for the underlying rates of inflation in each period.

APPENDIX

DATA SHOWN IN FIGURES IN THE TEXT

This appendix presents the data that were used to construct the figures presented in the text.

TABLE A-1. REAL NATIONAL HEALTH EXPENDITURES, 1965-1988, AND PROJECTED TO 2000 (Data for Figure 1)

Year	Real National Health Expenditures (Billions of 1987 dollars)
1965	124
1966	133
1967	146
1968	159
1969	172
1970	188
1971	201
1972	219
1973	230
1974	242
1975	256
1976	279
1977	300
1978	317
1979	327
1980	345
1981	365
1982	386
1983	407
1984	426
1985	447
1986	467
1987	489
1988	518
1990	568
2000	840

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, and Committee on Ways and Means, staff projections for 1990 and 2000. The latter are based on assumed rates of increase in health expenditures from the National Institute of Aging, Macroeconomic-Demographic Model.

NOTE: The projections assume an average annual real rate of growth of 5.1 percent between 1988 and 1990 and of 4.0 percent between 1990 and 2000.

n.a. = not available.

TABLE A-2. REAL PER CAPITA HEALTH EXPENDITURES, 1965-1988, AND PROJECTED TO 2000 (Data for Figure 2)

Year	Real Per Capita Health Expenditures (1987 dollars)
1965	606
1966	645
1967	702
1968	757
1969	807
1970	874
1971	925
1972	997
1973	1,040
1974	1,085
1975	1,140
1976	1,229
1977	1,310
1978	1,373
1979	1,405
1980	1,465
1981	1,537
1982	1,607
1983	1,681
1984	1,739
1985	1,810
1986	1,872
1987	1,941
1988	2,038
1990	2,183
2000	3,021

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, and Committee on Ways and Means, staff projections for 1990 and 2000. The latter are based on assumed rates of increase in health expenditures from the National Institute of Aging, Macroeconomic-Demographic Model.

NOTE: The projections assume an average annual real rate of growth of 4.0 percent between 1988 and 1990 and of 3.3 percent between 1990 and 2000.

n.a. = not available.

TABLE A-3. NATIONAL HEALTH EXPENDITURES AS A PERCENTAGE OF GROSS NATIONAL PRODUCT, 1965-1988 (Data for Figure 3)

Year	National Health Expenditures as Percentage of Gross National Product
1965	5.9
1966	5.9
1967	6.3
1968	6.6
1969	6.8
1970	7.3
1971	7.5
1972	7.6
1973	7.5
1974	7.9
1975	8.3
1976	8.5
1977	8.6
1978	8.6
1979	8.6
1980	9.1
1981	9.5
1982	10.2
1983	10.5
1984	10.3
1985	10.5
1986	10.6
1987	10.8
1988	11.1

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of National Cost Estimates.

TABLE A-4. DISTRIBUTION OF HEALTH SPENDING BY PAYER, 1965-1987 (Data for Figure 4)

Year	Distribution of Health Spending by Payer (Percent)			
	Federal	State	Business	Household
1965	11	11	18	59
1970	15	12	22	50
1975	18	14	25	43
1980	18	14	29	38
1985	17	14	28	40
1987	16	14	28	42

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, *Health Care Financing Review* (Spring 1989) 10:1-11.

NOTE: Households' spending includes direct payments by individuals, their share of health insurance premiums, and Medicare taxes.

TABLE A-5. REAL PER CAPITA HEALTH EXPENDITURES, UNITED STATES AND SELECTED COUNTRIES, 1965-1987
(Data for Figure 5)

Year	Real Per Capita Health Expenditures (1987 U.S. dollars)				
	United States	Canada	West Germany	Japan	United Kingdom
1965	742	557	402	209	335
1966	778	585	440	234	348
1967	828	622	451	264	369
1968	883	672	487	295	385
1969	940	711	516	340	383
1970	1,007	761	513	370	402
1971	1,054	828	561	388	415
1972	1,121	849	605	399	437
1973	1,146	864	669	413	468
1974	1,170	874	730	442	519
1975	1,205	942	791	496	536
1976	1,276	979	825	514	553
1977	1,333	1,000	843	549	551
1978	1,373	1,038	873	591	568
1979	1,411	1,051	905	630	578
1980	1,476	1,097	946	700	618
1981	1,543	1,148	980	731	639
1982	1,619	1,222	958	770	636
1983	1,711	1,285	964	799	684
1984	1,780	1,337	1,011	809	690
1985	1,851	1,395	1,042	837	699
1986	1,943	1,480	1,060	865	723
1987	2,051	1,515	1,073	917	751

SOURCE: Congressional Budget Office calculations based on data from the Organization for Economic Cooperation and Development, Health Data File, 1989, as reported in *Health Care Financing Review, 1989 Annual Supplement.*

NOTES: Expenditures in different countries were expressed in a common currency (U.S. dollars) using OECD estimates of a "purchasing power parity" (PPP) rate of exchange between national currencies. PPP is an estimate of the exchange rate at which a dollar can buy the same basket of goods in each country.

Nominal currency values have been converted to 1987 dollars using the GDP deflator, because GNP-fixed weighted deflators are not available for other countries. The use of different deflators accounts for the differences in real per capita health spending between this figure and Figure 2.

TABLE A-6. HEALTH EXPENDITURES AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT, UNITED STATES AND SELECTED COUNTRIES, 1965-1987 (Data for Figure 6)

Year	Health Expenditures as a Percentage of Gross Domestic Product				
	United States	Canada	West Germany	Japan	United Kingdom
1965	5.98	6.10	5.12	4.34	4.15
1966	6.02	6.13	5.50	4.38	4.26
1967	6.33	6.43	5.67	4.50	4.43
1968	6.56	6.70	5.81	4.52	4.44
1969	6.85	6.84	5.79	4.45	4.39
1970	7.43	7.24	5.52	4.43	4.53
1971	7.62	7.47	5.93	4.55	4.57
1972	7.81	7.27	6.17	4.58	4.72
1973	7.69	7.00	6.55	4.49	4.68
1974	7.97	6.88	7.14	4.95	5.25
1975	8.38	7.38	7.83	5.50	5.46
1976	8.54	7.22	7.71	5.49	5.42
1977	8.63	7.25	7.64	5.65	5.35
1978	8.55	7.28	7.67	5.87	5.32
1979	8.71	7.18	7.65	6.01	5.30
1980	9.23	7.36	7.92	6.42	5.78
1981	9.54	7.53	8.20	6.57	6.05
1982	10.37	8.37	8.06	6.78	5.96
1983	10.65	8.62	7.96	6.85	6.20
1984	10.44	8.44	8.09	6.63	6.17
1985	10.58	8.49	8.16	6.61	5.99
1986	10.87	8.82	8.11	6.73	6.02
1987	11.18	8.77	8.05	6.84	6.05

SOURCE: Congressional Budget Office using data from the Organization for Economic Cooperation and Development, Health Data File, 1989, as reported in *Health Care Financing Review, 1989 Annual Supplement.*

TABLE A-7. TOTAL REAL SPENDING FOR HOSPITAL SERVICES, 1965-1988 (Data for Figure 7)

Year	Total Real Spending for Hospital Services (Millions of 1987 dollars)
1965	41,699
1966	45,826
1967	52,182
1968	57,963
1969	62,977
1970	70,389
1971	75,350
1972	82,400
1973	87,199
1974	94,372
1975	101,117
1976	110,861
1977	119,280
1978	126,283
1979	132,664
1980	141,311
1981	151,845
1982	161,681
1983	167,789
1984	172,935
1985	178,017
1986	186,460
1987	193,729
1988	203,295

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

TABLE A-8. DISTRIBUTION OF SPENDING FOR HOSPITAL SERVICES BY SOURCE OF PAYMENT, 1965-1988 (Data for Figure 8)

Year	Spending for Hospital Services by Payer (Percent)				
	Private Insurance	Out-of Pocket	Federal	State and Local	Philanthropy
1965	40.9	19.6	15.4	22.2	1.9
1970	34.4	9.0	35.1	18.3	3.2
1975	34.4	8.4	37.9	16.6	2.8
1980	36.6	5.2	40.4	12.9	4.9
1985	35.4	5.2	42.5	11.9	4.9
1988	35.4	5.3	40.9	13.4	4.9

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

TABLE A-9. HOSPITAL MARGINS BASED ON TOTAL REVENUES, 1965-1989 (Data for Figure 9)

Year	Hospital Margins on Total Revenues (Percent)
1965	2.3
1970	2.1
1975	2.3
1980	4.5
1985	5.9
1989	5.0

SOURCE: Congressional Budget Office calculations based on data from the American Hospital Association, National Hospital Panel Surveys, 1965-1989.

NOTE: The total margin is defined as the ratio of total revenues minus total costs to total revenues.

TABLE A-10. REAL UNCOMPENSATED AND UNSPONSORED CARE PROVIDED BY HOSPITALS, 1980-1988 (Data for Figure 10)

Year	Real Uncompensated and Unsponsored Care (Billions of 1987 dollars)	
	Uncompensated	Unsponsored
1980	6	4
1981	6	5
1982	7	5
1983	7	6
1984	8	6
1985	8	7
1986	10	7
1987	10	7
1988	10	8

SOURCE: Congressional Budget Office calculations based on tabulations from the American Hospital Association, June 1990.

NOTES: Uncompensated care is the estimated cost of bad debt and charity care to the hospital. It is calculated for each hospital by multiplying the portion of the difference between total charges (gross patient revenue) and payments (net payment revenue) attributable to bad debt and charity care, by the hospital's ratio of total expenses to total charges.

Unsponsored care is equal to uncompensated care minus hospitals' revenues from state and local governmental tax appropriations.

TABLE A-11. TOTAL REAL SPENDING FOR PHYSICIANS' SERVICES, 1965-1988 (Data for Figure 11)

Year	Total Real Spending for Physicians' Services (Millions of 1987 dollars)
1965	24,327
1966	25,540
1967	27,924
1968	29,358
1969	31,474
1970	34,222
1971	36,681
1972	38,972
1973	40,544
1974	42,688
1975	44,911
1976	47,873
1977	51,008
1978	53,110
1979	54,250
1980	57,776
1981	61,925
1982	63,972
1983	69,141
1984	73,856
1985	78,392
1986	85,332
1987	92,986
1988	100,925

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

TABLE A-12. DISTRIBUTION OF SPENDING FOR PHYSICIANS' SERVICES BY SOURCE OF PAYMENT, 1965-1988 (Data for Figure 12)

Year	Spending for Physicians' Services by Payer (Percent)				
	Private Insurance	Out-of Pocket	Federal	State and Local	Philanthropy
1965	32.5	60.6	1.4	5.4	0.1
1970	35.2	42.8	15.8	6.1	0.0
1975	39.3	32.8	20.0	7.8	0.0
1980	42.9	26.9	23.1	7.1	0.0
1985	45.6	21.8	25.9	6.6	0.0
1988	47.6	18.9	27.3	6.1	0.0

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

TABLE A-13. AVERAGE REAL PHYSICIAN INCOME, UNITED STATES AND SELECTED COUNTRIES, 1965-1987 (Data for Figure 13)

Year	Average Real Physician Income (1987 U.S. dollars)				
	United States	Canada	West Germany	Japan	United Kingdom
1965	--	70,814	62,983	13,035	--
1966	--	71,132	--	14,246	--
1967	--	76,573	--	15,575	--
1968	--	81,113	79,280	17,933	--
1969	104,744	83,810	--	20,560	--
1970	113,192	89,155	--	23,172	--
1971	--	98,433	90,186	24,746	--
1972	118,469	95,051	--	25,378	--
1973	111,782	90,099	--	24,682	--
1974	109,649	80,770	92,662	25,683	--
1975	108,439	78,875	91,424	27,747	39,817
1976	--	76,160	90,126	29,604	36,601
1977	104,390	75,261	90,057	31,576	32,981
1978	104,082	74,983	90,236	31,991	32,490
1979	114,495	72,287	89,917	33,445	35,441
1980	--	71,184	89,990	35,235	39,197
1981	111,246	70,376	90,663	36,607	37,808
1982	113,634	71,257	85,769	37,851	37,650
1983	117,059	71,546	79,714	38,409	38,717
1984	--	79,012	84,844	39,754	39,531
1985	118,589	79,031	83,382	--	39,824
1986	123,135	82,672	81,759	44,571	41,402
1987	132,300	82,764	--	--	42,641

SOURCE: Congressional Budget Office calculations based on data from The Organization for Economic Cooperation and Development, Health Data File, 1989, as reported in *Health Care Financing Review, 1989 Annual Supplement.*

NOTES: Data for the following were missing and values were imputed by Congressional Budget Office: 1971, 1976, 1980, and 1984 for the United States; 1966, 1967, 1969, 1970, 1972, and 1973, for West Germany; and 1985 for Japan. Data missing at the beginning and end of the time period were not imputed. Missing and not-imputed data are indicated by dashes.

Incomes in different countries were expressed in a common currency (U.S. dollars) using OECD estimates of a "purchasing power parity" (PPP) rate of exchange between national currencies. PPP is an estimate of the exchange rate at which a dollar can buy the same basket of goods in each country.

TABLE A-14. RATIO OF AVERAGE INCOME OF PHYSICIANS TO AVERAGE COMPENSATION OF ALL EMPLOYEES, UNITED STATES AND SELECTED COUNTRIES, 1965-1987 (Data for Figure 14)

Year	Ratio of Average Physician Income to Average Compensation of All Employees				
	United States	Canada	West Germany	Japan	United Kingdom
1965	–	4.63	5.84	1.89	–
1966	–	4.56	6.10	1.97	–
1967	–	4.76	6.37	2.03	–
1968	–	4.92	6.63	2.13	–
1969	5.00	4.91	6.57	2.14	–
1970	5.31	4.98	6.51	2.23	–
1971	5.32	5.30	6.44	2.20	–
1972	5.32	4.99	6.22	2.20	–
1973	4.99	4.73	6.00	2.00	–
1974	4.94	4.24	5.77	2.00	–
1975	4.96	3.97	5.63	2.00	2.57
1976	4.80	3.67	5.33	2.07	2.37
1977	4.65	3.53	5.19	2.12	2.20
1978	4.61	3.53	5.13	2.10	2.13
1979	5.08	3.47	5.02	2.13	2.32
1980	4.99	3.47	4.93	2.24	2.55
1981	4.91	3.38	4.91	2.26	2.42
1982	4.98	3.36	4.65	2.28	2.37
1983	5.05	3.39	4.30	2.27	2.35
1984	5.03	3.67	4.51	2.28	2.39
1985	5.00	3.60	4.40	2.37	2.37
1986	5.12	3.74	4.29	2.46	2.40
1987	5.44	3.74	–	–	2.42

SOURCE: Congressional Budget Office calculations based on data from the Organization for Economic Cooperation and Development, Health Data File, 1989, as reported in Health Care Financing Review, 1989 Annual Supplement.

NOTES: Data for the following were missing and values were imputed by the Congressional Budget Office: 1971, 1976, 1980, and 1984 for the United States; 1966, 1967, 1969, 1970, 1972, and 1973 for West Germany, and 1985 for Japan. Data missing at the beginning and end of the time period were not imputed. Missing and not-imputed data are indicated by dashes.

The concepts and estimating methodologies used to compile average compensation per employee are not the same across countries, nor necessarily within each country over time. Among the issues that cannot be taken fully into account are the regional or national basis of the estimates, whether or not both salaried and self-employed professionals are included in the figures, the exact nature of the professional groups covered, the treatment of part-time and female workers, and whether or not the income definitions used reflect income-tax, census, or national-accounts concepts.

TABLE A-15. REAL PER CAPITA NATIONAL EXPENDITURES AND PER ENROLLEE MEDICARE EXPENDITURES FOR HEALTH CARE, 1965-1988 (Data for Figure 15)

Year	Real Spending Per Capita (1987 dollars)	
	National	Medicare
1965	606	0
1966	645	262
1967	702	733
1968	757	849
1969	807	924
1970	874	939
1971	925	991
1972	997	1,033
1973	1,040	1,022
1974	1,085	1,157
1975	1,140	1,268
1976	1,229	1,411
1977	1,310	1,502
1978	1,373	1,617
1979	1,405	1,685
1980	1,465	1,819
1981	1,537	1,977
1982	1,607	2,124
1983	1,681	2,273
1984	1,739	2,378
1985	1,810	2,451
1986	1,872	2,526
1987	1,941	2,575
1988	2,038	2,671

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

TABLE A-16. AVERAGE ANNUAL GROWTH RATES OF REAL NATIONAL AND MEDICARE EXPENDITURES FOR HEALTH, TOTAL AND PER CAPITA, 1970-1988 (Data for Figure 16)

Period	Total Expenditures		Per Person Expenditures	
	National	Medicare	National	Medicare
1970-1980	6.3	10.4	5.3	6.8
1980-1985	5.3	8.0	4.3	6.1
1985-1988	5.0	5.0	4.0	2.9

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

TABLE A-17. AVERAGE ANNUAL GROWTH RATES OF REAL NATIONAL AND MEDICARE EXPENDITURES FOR HOSPITAL AND PHYSICIAN SERVICES, TOTAL AND PER CAPITA, 1970-1988 (Data for Figure 17)

Period	Hospital Services		Physician Services	
	National	Medicare	National	Medicare
	Total Expenditures			
1970-1980	7.2	10.6	5.4	10.5
1980-1985	4.7	7.2	6.3	9.9
1985-1988	4.5	2.9	8.8	10.7
	Per Person Expenditures			
1970-1980	6.3	7.0	4.4	7.0
1980-1985	3.7	5.3	5.2	8.0
1985-1988	3.6	0.8	7.8	8.6

SOURCE: Congressional Budget Office calculations based on data from the Health Care Financing Administration, Office of the Actuary, 1990.

TABLE A-18. AVERAGE ANNUAL RATES OF GROWTH OF FEDERAL OUTLAYS, SELECTED COMPONENTS, 1970-1990 (Data for Figure 18)

Period	Total	Health	Net Interest	Social Security	Defense	Other
1970-1980	11.7	15.9	13.8	14.6	5.1	15.0
1980-1990	7.7	10.5	13.2	7.7	8.3	4.2

SOURCE: Congressional Budget Office, February 1990, based on actual outlays in 1970 and 1980 and CBO projections of federal outlays for 1990.

NOTE: Rates of growth in nominal spending, unadjusted for the underlying rates of inflation in each period.

TABLE A-19. AVERAGE ANNUAL GROWTH RATES OF REAL MEDICARE SPENDING PER ENROLLEE, BY COMPONENT, 1975-1990 (Data for Figure 19)

Period	Total Medicare	Hospital Insurance	Supplementary Medical Insurance
1975-1980	7.6	7.0	10.3
1980-1985	7.3	7.0	8.3
1985-1990	3.1	0.4	8.2

SOURCE: Congressional Budget Office, February 1990, based on actual outlays in 1970 and 1980 and CBO projections of federal outlays for 1990.