

J U N E 2 0 1 8

A DATA BOOK

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Health Care Spending  
and the  
Medicare Program

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and the  
Medicare Program

**MEDPAC** Medicare  
Payment Advisory  
Commission



## **Introduction**

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The MedPAC Data Book provides information on national health care and Medicare spending as well as Medicare beneficiary demographics, dual-eligible beneficiaries, quality of care in the Medicare program, and Medicare beneficiary and other payer liability. It also examines provider settings—such as hospitals and post-acute care—and presents data on Medicare spending, beneficiaries’ access to care in the setting (measured by the number of beneficiaries using the service, number of providers, volume of services, length of stay, or through direct surveys), and the sector’s Medicare profit margins, if applicable. In addition, it covers the Medicare Advantage program and prescription drug coverage for Medicare beneficiaries, including Part D.

MedPAC began producing its annual Data Book at the suggestion of congressional staff. Some of the information it contains is derived from MedPAC’s March and June reports to the Congress; other information presented is unique to the Data Book. The information is presented in tables and figures with brief discussions.

We produce a limited number of printed copies of this report. It is, however, available through the MedPAC website: [www.medpac.gov](http://www.medpac.gov).

### **Notes on data**

Several charts in this Data Book use data from the Medicare Current Beneficiary Survey (MCBS). We use the MCBS to compare beneficiary groups with different characteristics. The MCBS is a survey, so expenditure amounts that we show may not match actual Medicare expenditure amounts from CMS’s program offices or the Office of the Actuary. At the time this Data Book was prepared, only part of the MCBS had been released for 2015. Since there are no MCBS data for 2014, charts that use data from the MCBS may reflect 2013 MCBS data and are flagged accordingly. The reader is advised to consult the 2015 MCBS directly, when the complete survey becomes available, for the most current data.

The 2018 report of the Boards of Trustees of the Medicare trust funds was released as we were finalizing production of this Data Book. All but one of the charts in this Data Book that use information from the Boards of Trustees reflect the 2017 report. Chart 1-12 is based on information from the 2018 report.

Changes in aggregate spending among the fee-for-service sectors presented in this Data Book reflect changes in Medicare enrollment between the traditional fee-for-service program and Medicare Advantage. Increased enrollment in Medicare Advantage may be a significant factor in instances in which Medicare spending in a given sector has leveled off or even declined. In these instances, fee-for-service spending per capita may present a more complete picture of spending changes. We present both measures (aggregate and per capita) where warranted.



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SECTION

1

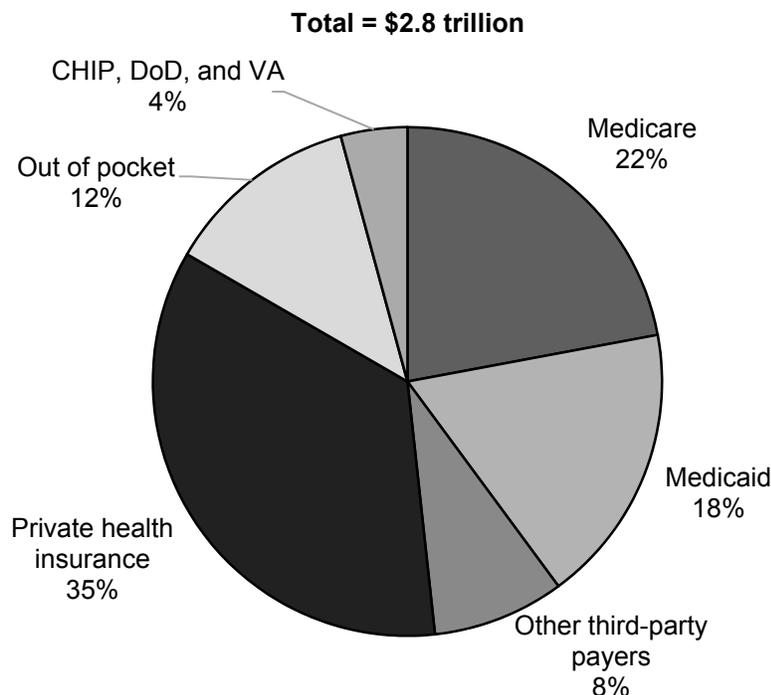
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**National health care and  
Medicare spending**

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## Chart 1-1. Medicare was the largest single purchaser of personal health care, 2016

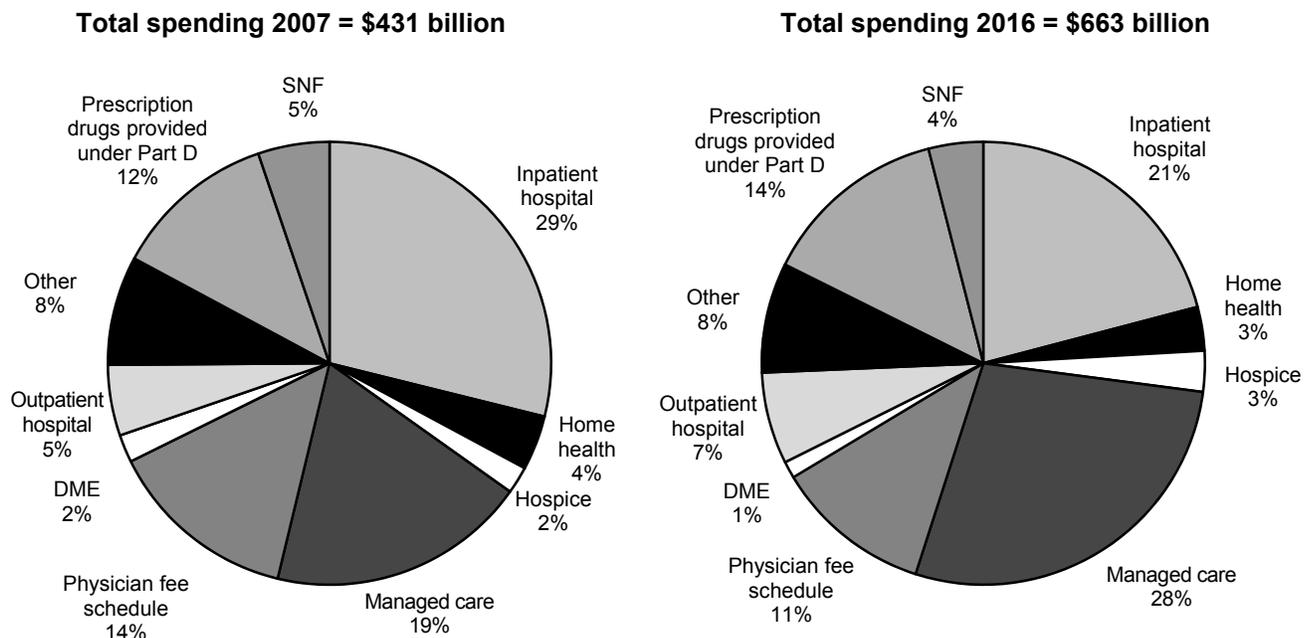


Note: CHIP (Children's Health Insurance Program), DoD (Department of Defense), VA (Department of Veterans Affairs). "Personal health care" is a subset of national health expenditures. It includes spending for all medical goods and services that are provided for the treatment of an individual and excludes other spending such as government administration, the net cost of health insurance, public health, and investment. "Out-of-pocket" spending includes cost sharing for both privately and publicly insured individuals. Premiums are included in the shares of each program (e.g., Medicare, private health insurance) rather than in the share of the out-of-pocket category. "Other third-party payers" includes worksite health care, other private revenues, Indian Health Service, workers' compensation, general assistance, maternal and child health, vocational rehabilitation, other federal programs, Substance Abuse and Mental Health Services Administration, other state and local programs, and school health. Slices do not total 100 percent because of rounding.

Source: CMS Office of the Actuary, National Health Expenditure Accounts, "Table 6: Personal Health Care Expenditures; Levels, Percent Change and Percent Distribution, by Source of Funds: Selected Calendar Years 1970–2016," released December 2017.

- Medicare is the largest single purchaser of health care in the United States. (The share of spending accounted for by private health insurance (35 percent in 2016) is greater than Medicare's share (22 percent in 2016). However, private health insurance is not a single purchaser of health care; rather, it includes many private plans, including traditional managed care, self-insured health plans, and indemnity plans.) Of the \$2.8 trillion spent on personal health care in 2016, Medicare accounted for 22 percent, or \$625 billion (as noted above, this amount includes spending on direct patient care and excludes certain administrative and business costs).
- Thirty-five percent of spending was financed through private health insurance payers, and 12 percent was consumer out-of-pocket spending.
- Medicare and private health insurance spending includes premium contributions from enrollees.

## Chart 1-2. Medicare spending is concentrated in certain services and has shifted over time

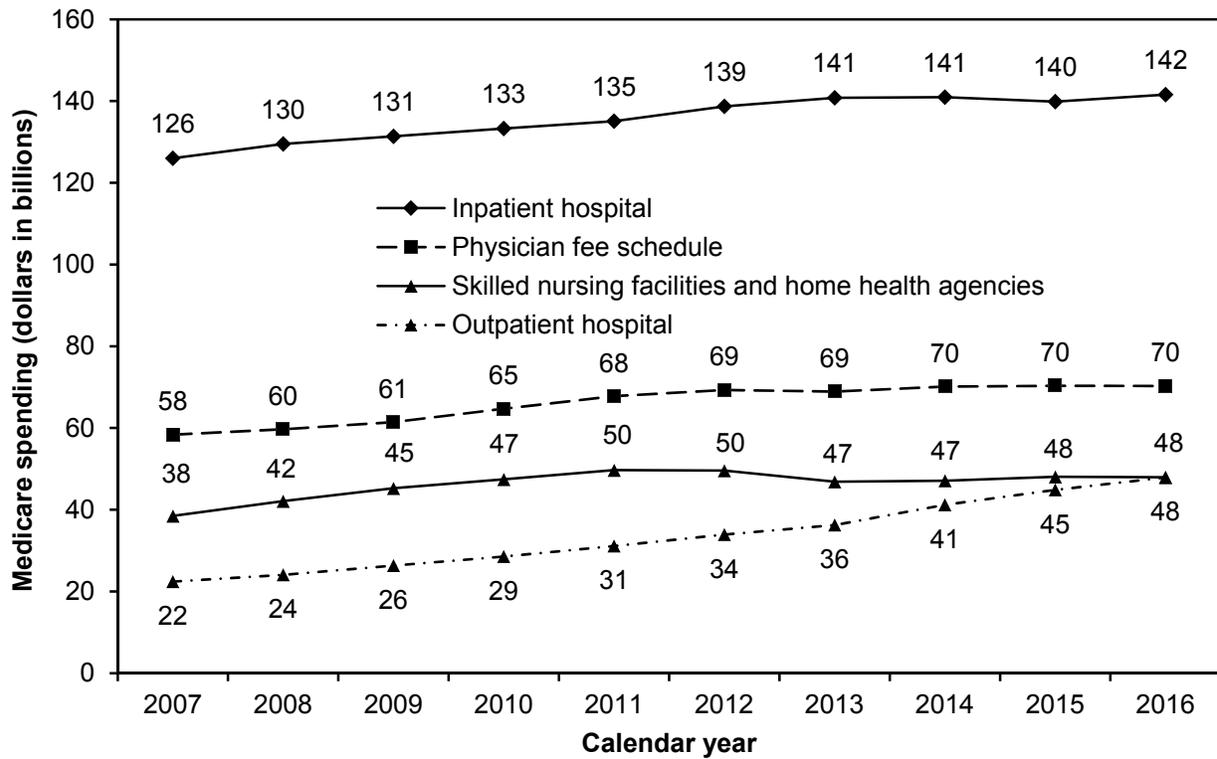


Note: SNF (skilled nursing facility), DME (durable medical equipment). All data are by calendar year. Dollar amounts are Medicare spending only and do not include beneficiary cost sharing. "Other" includes items such as laboratory services, physician-administered drugs, renal dialysis performed in freestanding dialysis facilities, services provided in freestanding ambulatory surgical center facilities, and ambulance.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017.

- The distribution of Medicare spending among services has changed over time.
- In 2016, Medicare spending totaled \$663 billion for benefit expenses. Managed care was the largest spending category (28 percent), followed by inpatient hospital services (21 percent), prescription drugs provided under Part D (14 percent), and services reimbursed under the physician fee schedule (11 percent).
- Spending for inpatient hospital services was a smaller share of total Medicare spending in 2016 than it was in 2007, falling from 29 percent to 21 percent. Spending on beneficiaries enrolled in managed care plans grew from 19 percent to 28 percent over the same period. Medicare managed care enrollment increased 112 percent over the same period (data not shown).

**Chart 1-3. Aggregate Medicare spending for FFS beneficiaries, by sector, 2007–2016**

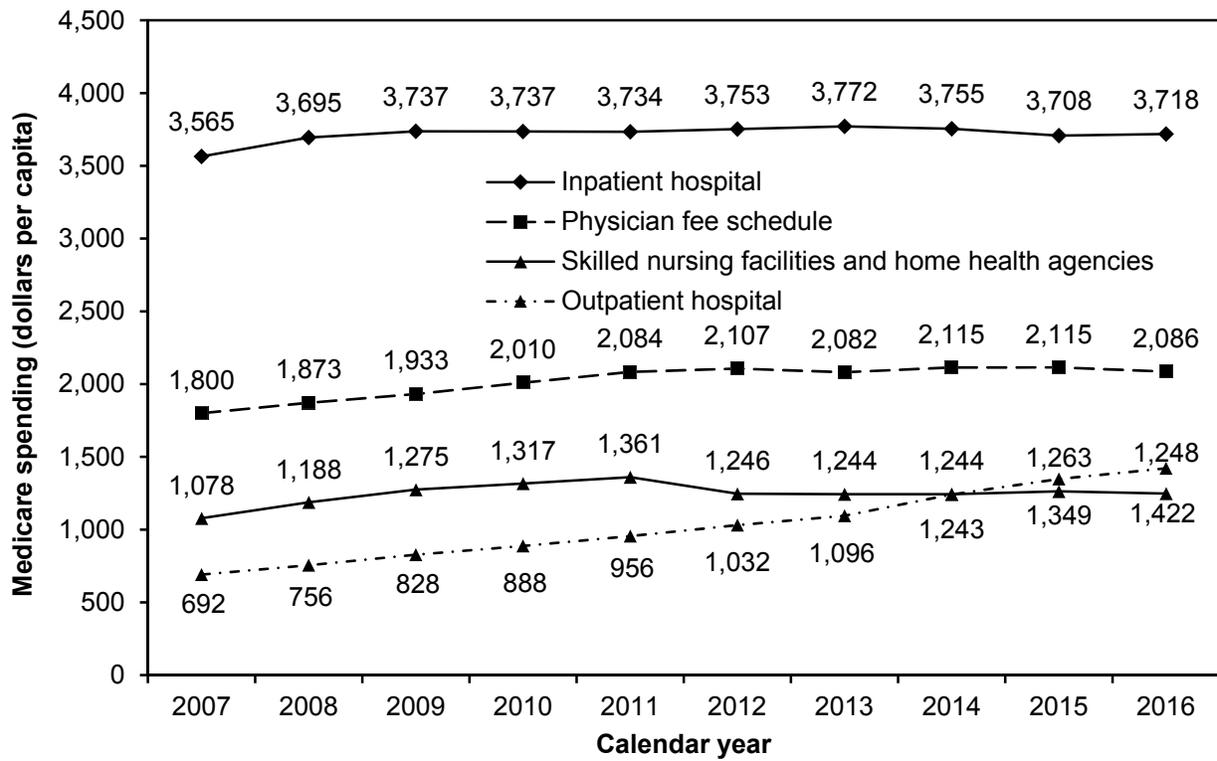


Note: FFS (fee-for-service). “Physician fee schedule” includes spending on services provided by physicians and other health professionals such as nurse practitioners, physician assistants, and physical therapists. Dollar amounts are Medicare spending only and do not include beneficiary cost sharing. Spending for Medicare Advantage enrollees is also not included.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017.

- Medicare spending for FFS beneficiaries has increased significantly since 2007 across all sectors, even though spending growth has slowed recently. The slowdown is partly attributable to a decline in the growth of FFS enrollment since the number of Medicare Advantage enrollees has increased.
- Spending growth for inpatient hospital services, the sector with the highest level of spending, averaged 1.6 percent per year from 2007 to 2014. Spending then declined by 0.8 percent between 2014 and 2015 (calculated on unrounded numbers). This decline is partly attributable to a shift in service volume from the inpatient setting to the outpatient setting and to the decline in the growth of FFS enrollment, but it may also reflect broader economic conditions. Spending then increased by 1.2 percent between 2015 and 2016 (calculated on unrounded numbers). Despite the slowdown, spending on inpatient hospital services increased, in aggregate, 12.4 percent from 2007 to 2016 (calculated on unrounded numbers).
- Spending growth for outpatient hospital services remained high throughout the period, averaging 8.8 percent per year from 2007 to 2016. Aggregate spending on outpatient hospital services increased 113.7 percent from 2007 to 2016 (calculated on unrounded numbers).

**Chart 1-4. Per capita Medicare spending for FFS beneficiaries, by sector, 2007–2016**

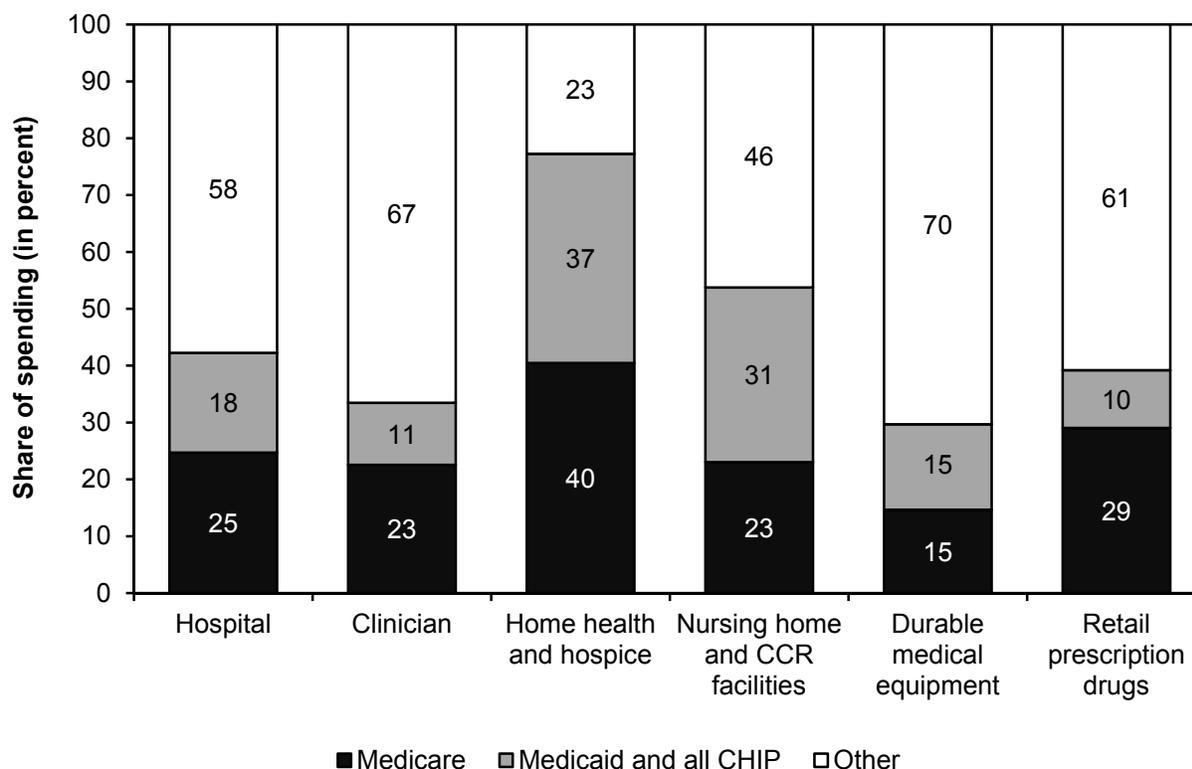


Note: FFS (fee-for-service). "Physician fee schedule" includes spending on services provided by physicians and other health professionals such as nurse practitioners, physician assistants, and physical therapists. Dollar amounts are Medicare spending only and do not include beneficiary cost sharing. Spending for Medicare Advantage enrollees is also not included. Spending per beneficiary for inpatient hospital services equals spending for the sector (see Chart 1-3) divided by FFS enrollment in Part A. Spending per beneficiary for physician fee schedule services and outpatient hospital services equals spending for the sector (see Chart 1-3) divided by FFS enrollment in Part B. Spending per beneficiary for skilled nursing facilities and home health agencies equals spending for those sectors (see Chart 1-3) divided by total FFS enrollment.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017.

- Medicare spending per beneficiary in FFS Medicare has increased substantially since 2007 across all sectors, despite slowing down or declining recently in some sectors.
- Growth in spending per beneficiary for inpatient hospital services, the sector with the highest level of spending, averaged 2.4 percent per year from 2007 to 2009 and then decreased by 0.1 percent from 2009 to 2016. Despite the decline in recent years, spending per beneficiary for inpatient hospital services increased, in aggregate, 4.3 percent from 2007 to 2016.
- Growth in spending per beneficiary for outpatient hospital services remained high throughout the period, averaging 8.3 percent per year from 2007 to 2016. Spending per beneficiary for outpatient hospital services increased, in aggregate, 105.6 percent from 2007 to 2016.

**Chart 1-5. Medicare’s share of spending on personal health care varied by type of service, 2016**

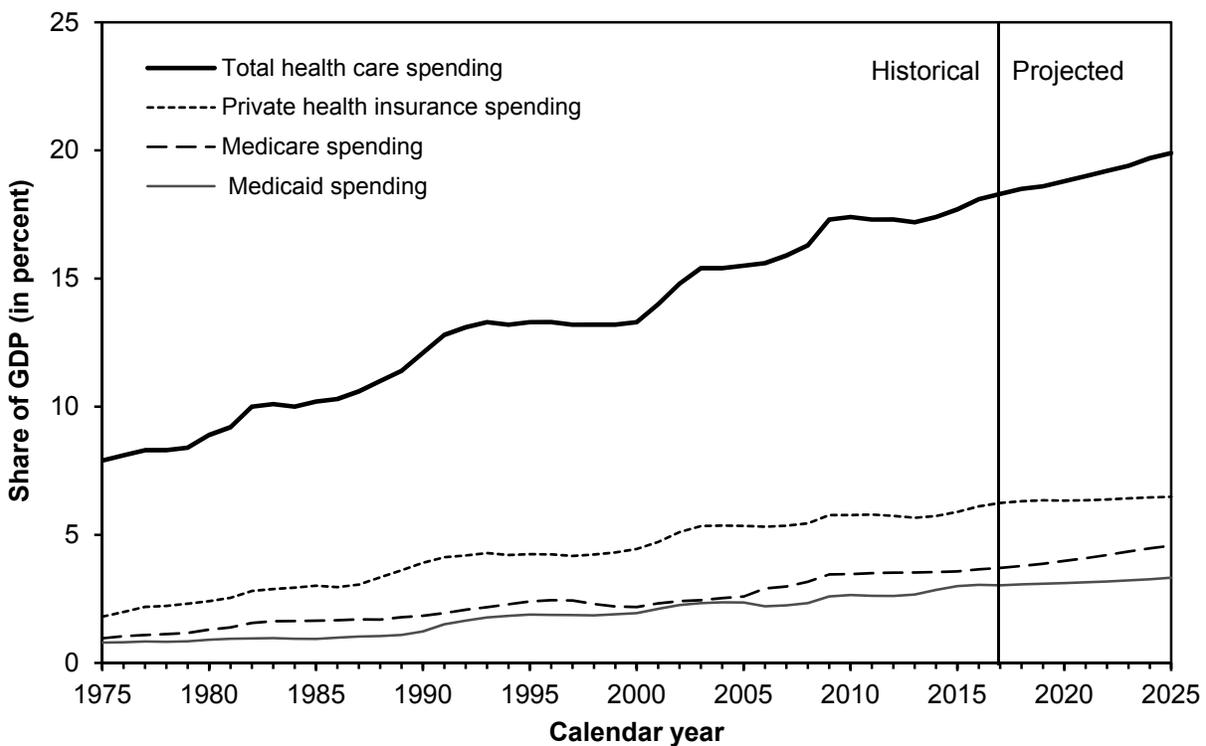


Note: CCR (continuing care retirement), CHIP (Children’s Health Insurance Program). “Personal health care” is a subset of national health expenditures. It includes spending for all medical goods and services that are provided for the treatment of an individual and excludes other spending such as government administration, the net cost of health insurance, public health, and investment. “Other” includes private health insurance, out-of-pocket spending, and other private and public spending. Medicare’s share of spending is lower for other service categories included in personal health care that are not shown here, namely, other professional services; dental services; other health, residential, and personal care; and other nondurable medical equipment. Bars may not total 100 percent because of rounding.

Source: CMS Office of the Actuary, National Health Expenditure Accounts, “Table 19: National Health Expenditures by Type of Expenditure and Program: Calendar Year 2016,” released December 2017.

- While Medicare’s share of total personal health care spending was 22 percent in 2016 (see Chart 1-1), its share of spending by type of service varied, with a slightly higher share of spending on hospital care (25 percent) and retail prescription drugs (29 percent) and a much higher share of spending on home health and hospice services (40 percent) relative to other types of care.
- Medicare’s share of spending on nursing homes and CCR facilities was smaller than Medicaid’s share because Medicare pays for nursing home services only for Medicare beneficiaries who require skilled nursing or rehabilitation services, whereas Medicaid pays for custodial care (assistance with activities of daily living) provided in nursing homes for people with limited income and assets.

**Chart 1-6. Health care spending growth rates have begun to gradually increase following recent slowdown**

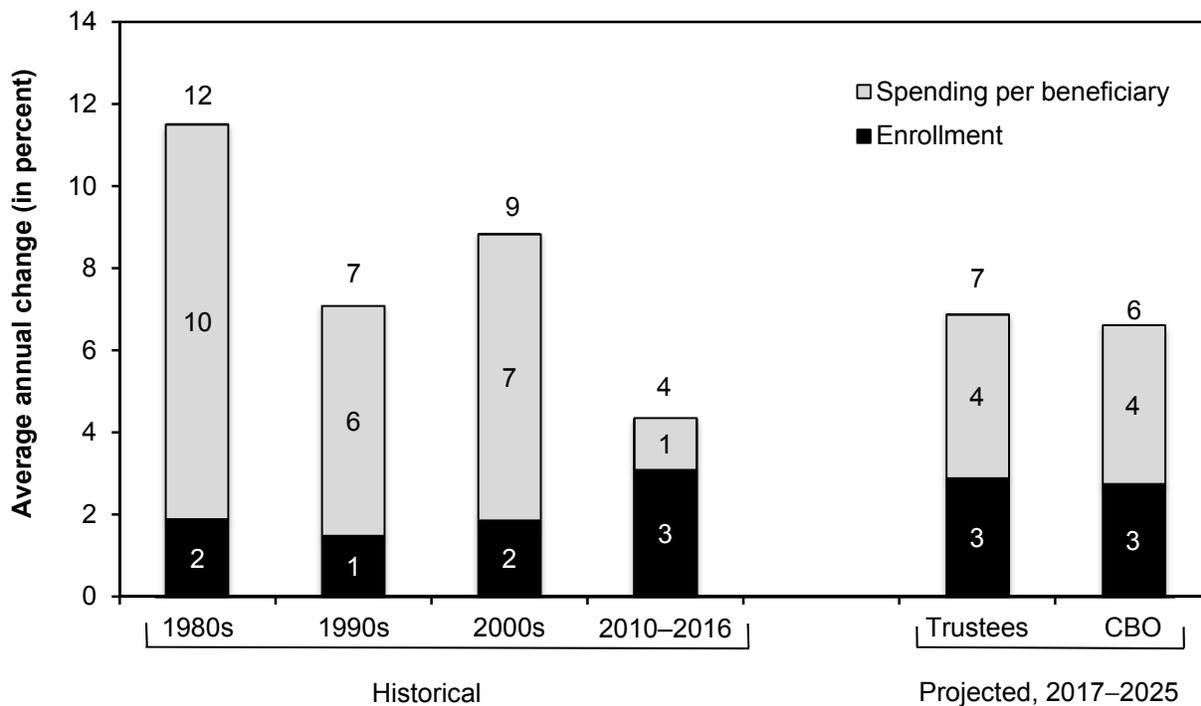


Note: GDP (gross domestic product).

Source: CMS Office of the Actuary, National Health Expenditure Accounts 2016.

- Historically, health care spending has risen as a share of GDP, but in recent years its growth rate slowed. That general trend was true for health care spending by private sector payers as well as by Medicare and Medicaid. As shown in the chart above, health care spending as a share of GDP remained relatively constant between 2009 and 2013. Since then, health care spending as a share of GDP has begun to rise again.
- As a share of GDP, total health care spending more than doubled from 1975 to 2015, increasing from 7.9 percent to 17.7 percent. Private health insurance spending, Medicare spending, and Medicaid all more than tripled over that same time period, increasing from 1.8 percent to 5.9 percent, from 1.0 percent to 3.6 percent, and from 0.8 percent to 3.0 percent, respectively, as a share of GDP.

**Chart 1-7. Despite recent slowdown in per beneficiary spending growth, total Medicare spending growth rate is projected to rise**

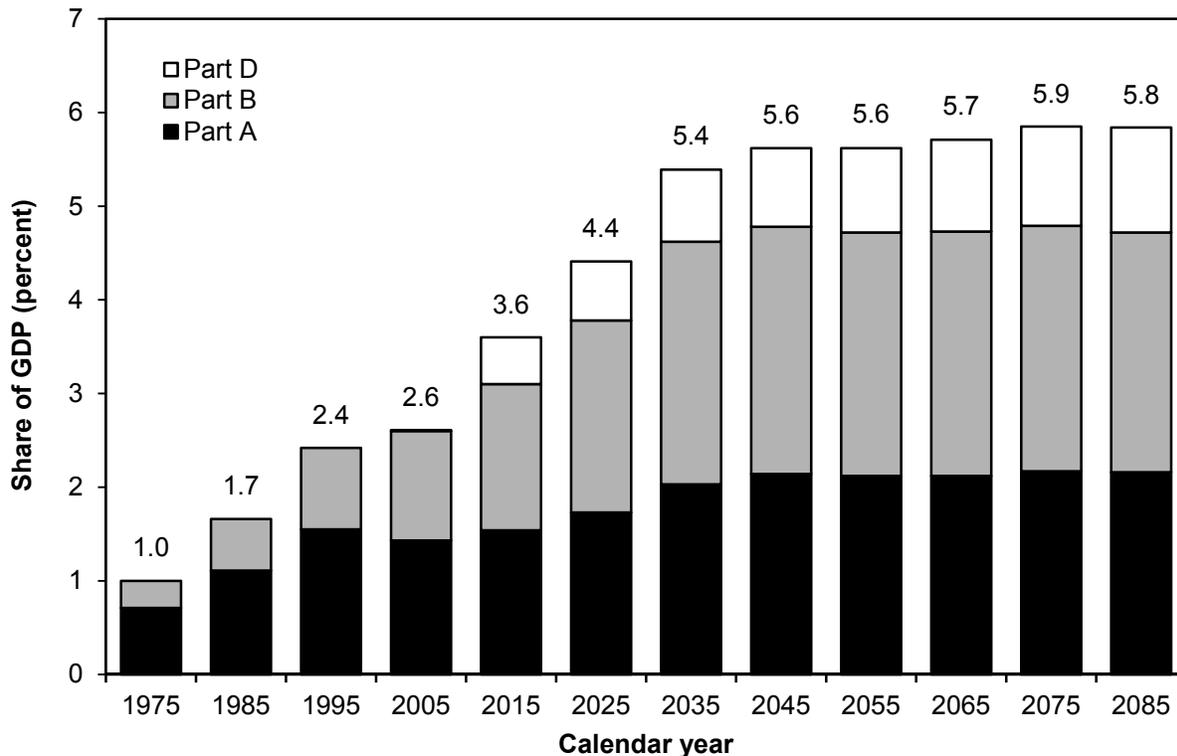


Note: CBO (Congressional Budget Office). Bar totals reflect average annual change in total Medicare spending and may differ from the sum of annual change in spending per beneficiary and Medicare enrollment due to rounding.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017 and the Congressional Budget Office's 2018 Baseline.

- The growth in Medicare's per beneficiary spending has fallen from average annual rates of 10 percent in the 1980s and 6 percent and 7 percent in the 1990s and 2000s, respectively, to 1 percent between 2010 and 2016.
- For 2017 to 2025, the Trustees and CBO project that growth in per beneficiary spending will be higher than the recent lows but lower than the historical highs, with an average annual growth rate of 4 percent.
- At the same time, the aging of the baby-boom generation is causing enrollment to increase. Over the last few years, the enrollment growth rate rose from about 1 percent to 2 percent per year historically to 3 percent and is projected to continue growing at a similar rate throughout the next decade.
- So, despite the slowdown in spending per beneficiary (relative to historical standards), growth in total spending over the next decade is projected by the Trustees to average 7 percent and by CBO to average 6 percent annually, which outpaces the projected average annual GDP growth of less than 5 percent.

**Chart 1-8. Trustees project Medicare spending to continue to increase as a share of GDP**

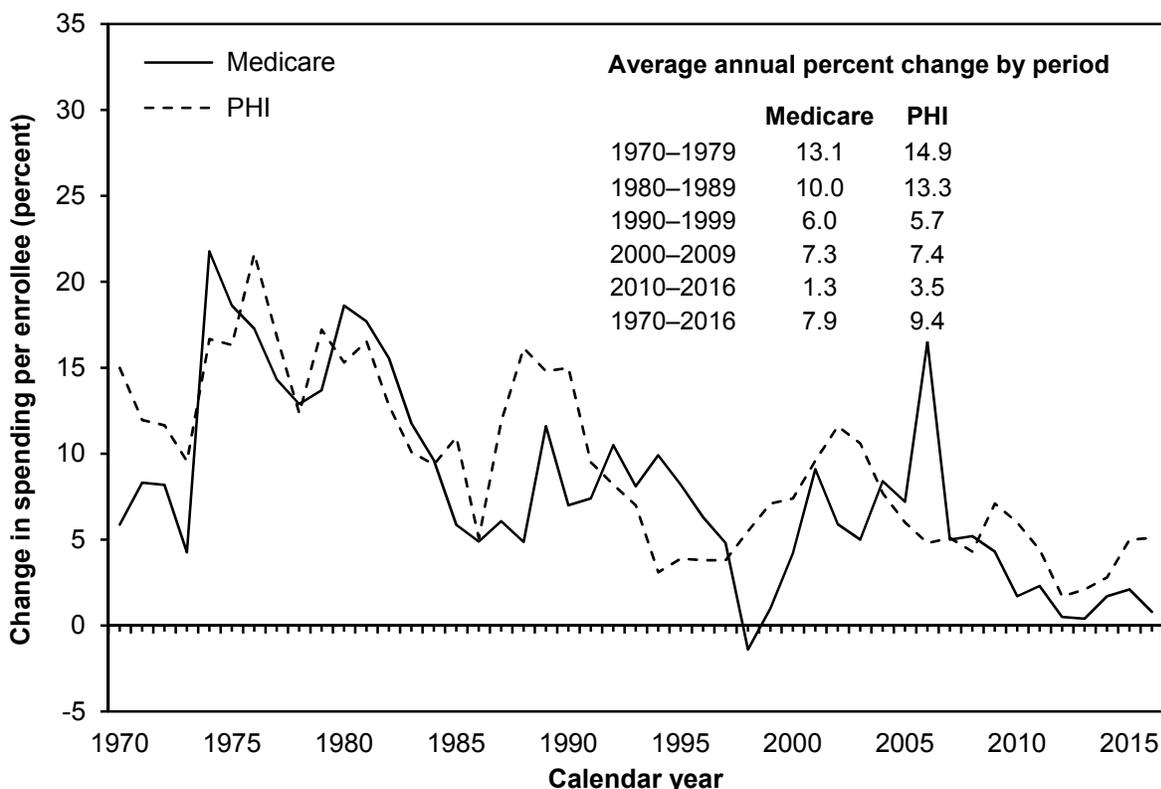


Note: GDP (gross domestic product). Shares for 2025 and later are projections based on the Trustees' intermediate set of assumptions. The Part D benefit began in 2006.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017.

- Over time, Medicare spending has accounted for an increasing share of GDP. From 1 percent in 1975, it is projected to reach nearly 6 percent of GDP in 2075.
- The Medicare Trustees project that spending will rise from 3.6 percent of GDP in 2015 to 5.4 percent of GDP by 2035, largely because of rapid growth in the number of beneficiaries, and then to 5.9 percent of GDP in 2075, with growth in spending per beneficiary becoming the greater factor in the later years of the forecast. The rapid growth in the number of beneficiaries began in 2011 and will continue through 2030 as members of the baby-boom generation reach age 65 and become eligible to receive benefits.
- Medicare spending is projected to continue rising as a share of GDP, but at a slower pace than in the past. Nominal Medicare spending grew on average 9.6 percent per year over the period from 1975 to 2015, considerably faster than nominal growth in the economy, which averaged 6.1 percent per year over the same time frame (data not shown). Between 2015 and 2045, Medicare spending is projected to continue growing faster than GDP, averaging 6.1 percent per year compared with an annual average growth rate of 4.5 percent for the economy as a whole. Then, between 2045 and 2085, Medicare spending is projected to grow at a rate similar to GDP, averaging 4.5 percent per year compared with an annual average growth rate of 4.4 percent for the economy as a whole (data not shown).

**Chart 1-9. Changes in spending per enrollee, Medicare and private health insurance, 1970–2016**

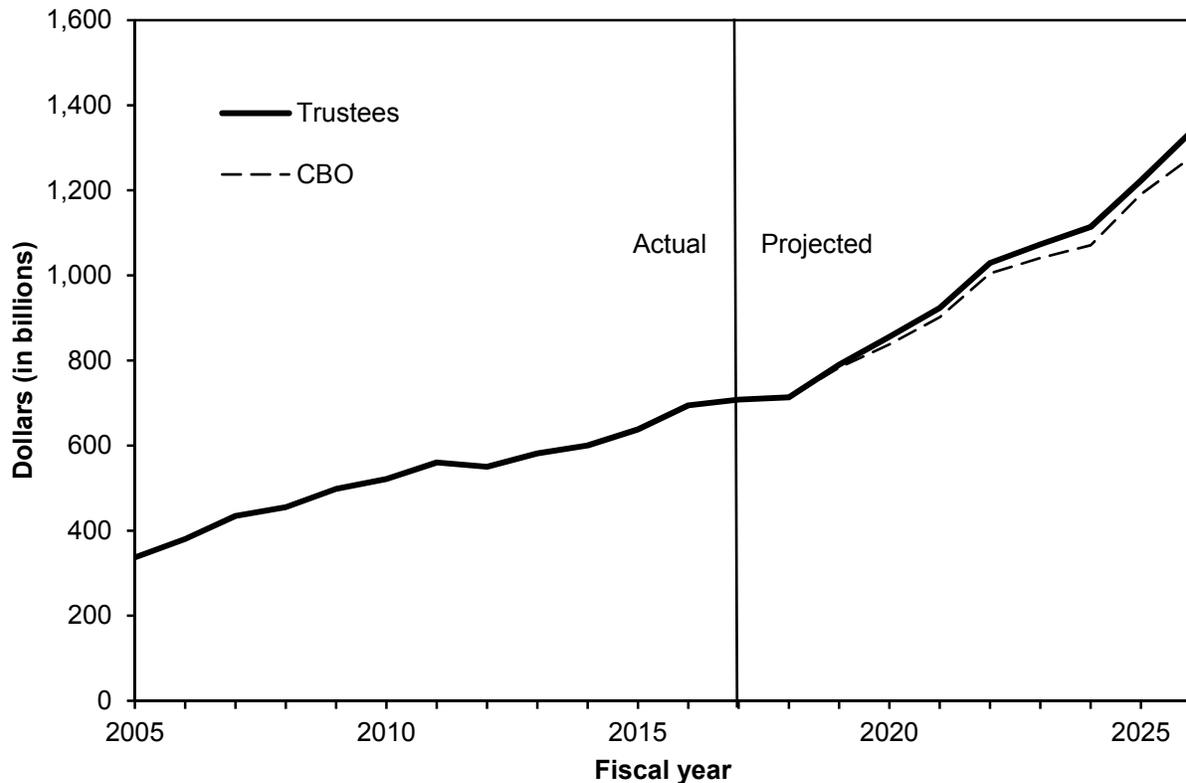


Note: PHI (private health insurance). Medicare expenditures reported in this chart include both fee-for-service and Medicare Advantage plans.

Source: CMS Office of the Actuary, National Health Expenditure Accounts 2013 and 2016.

- Rates of growth in per capita spending for Medicare and private health insurance have followed a similar pattern over the last four decades. For the past several years, rates of growth in per capita spending have been slower for both Medicare and private health insurance than in previous decades.
- Differences between the rates of growth do appear to be somewhat more pronounced since the mid-1980s. Some analysts believe that those differences are attributable to the introduction of the prospective payment system for hospital inpatient services that began in 1985. In their view, that payment system has allowed Medicare greater success than private payers in containing spending growth. Others maintain that the differences are due to the expansion of benefits offered by private insurers and to a decline in cost-sharing requirements. More recently, cost-sharing requirements have increased, coinciding with a decline in growth of per capita spending for private payers, followed by a period of growth.
- Comparisons are problematic because private insurers and Medicare do not buy the same mix of services and Medicare covers an older population, which tends to be more costly. In addition, spending trends are also affected by changes in the generosity of covered benefits (e.g., introduction of the Part D drug benefit in 2006) and changes in enrollees' out-of-pocket spending.

**Chart 1-10. Trustees and CBO project Medicare spending to exceed \$1 trillion by the early part of the next decade**

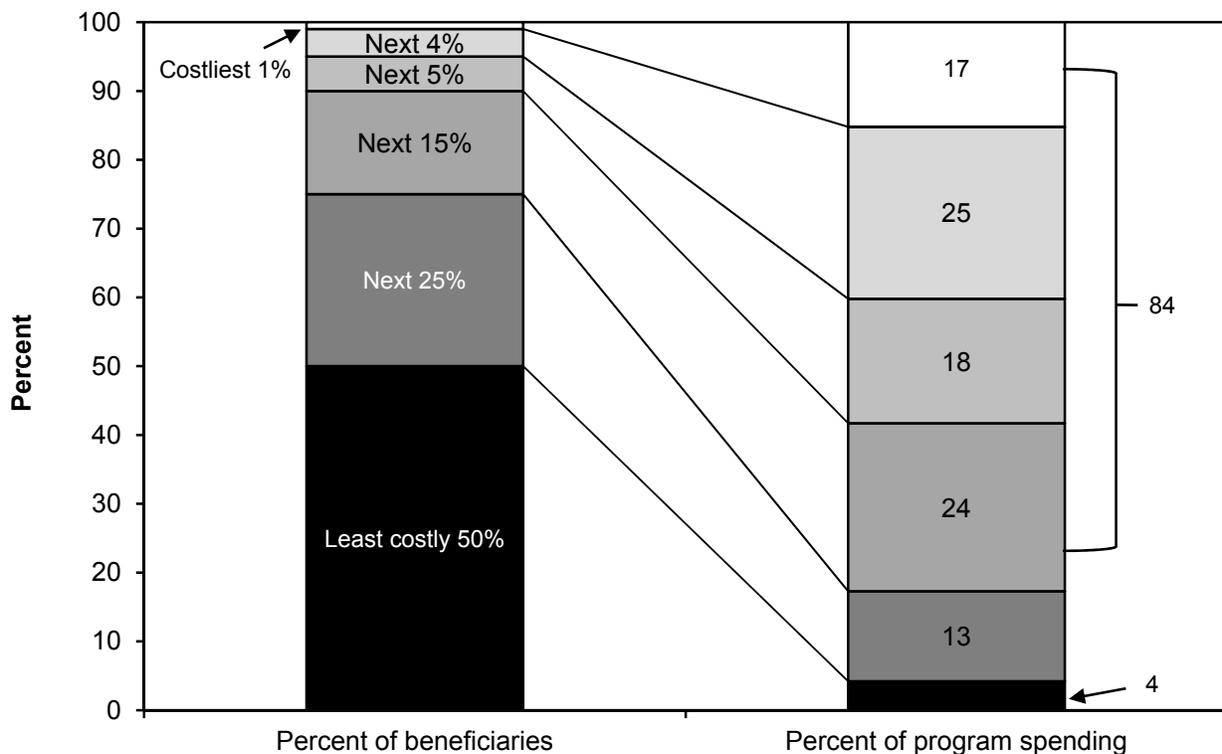


Note: CBO (Congressional Budget Office). All data are nominal, mandatory outlays (benefit payments plus mandatory administrative expenses) by fiscal year.

Source: Congressional Budget Office's April 2018 Baseline; the annual report of the Boards of Trustees of the Medicare trust funds 2017.

- Medicare spending has more than doubled since 2005, increasing from \$337 billion to \$695 billion by 2016 (these data are by fiscal year and include benefit payments and mandatory administrative expenses).
- The Medicare Trustees and CBO project that spending for Medicare between 2017 and 2025 will grow at an average annual rate of 7.3 percent or 6.8 percent, respectively. Medicare spending will reach \$1 trillion in 2022 under both the Trustees' projections and CBO's projections.
- Forecasts of future Medicare spending are inherently uncertain, and differences can stem from different assumptions about the economy (which affect annual updates to provider payments) and about growth in the volume and intensity of services delivered to Medicare beneficiaries, among other factors.

**Chart 1-11. FFS program spending was highly concentrated in a small group of beneficiaries, 2013**

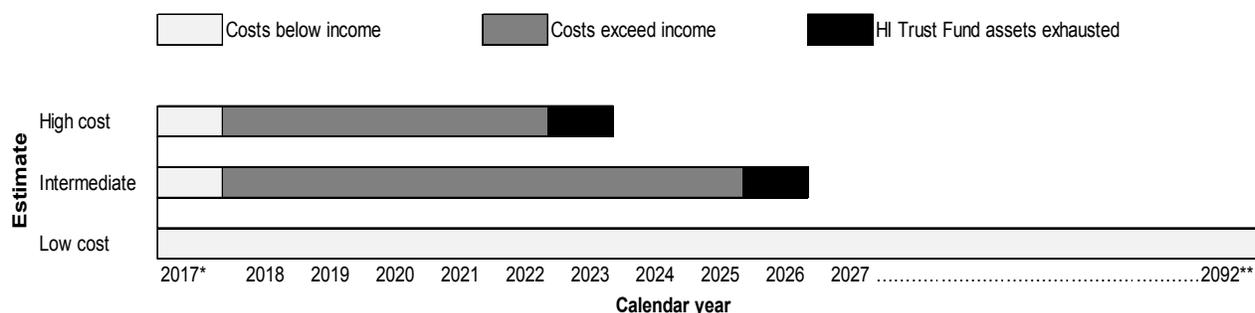


Note: FFS (fee-for-service). Analysis excludes beneficiaries with any group health enrollment during the year. Totals may not sum to 100 percent due to rounding.

Source: **AT THE TIME THIS DATA BOOK WAS PREPARED, ONLY PART OF THE MEDICARE CURRENT BENEFICIARY SURVEY (MCBS), WHICH IS THE CUSTOMARY SOURCE OF DATA FOR THIS CHART, HAD BEEN RELEASED FOR 2015. THIS CHART REFLECTS MEDPAC ANALYSIS OF THE 2013 MCBS COST AND USE FILES, WHICH ARE THE MOST RECENT AVAILABLE. (THERE ARE NO MCBS DATA FOR 2014.) THE READER IS ADVISED TO CONSULT THE 2015 MCBS DIRECTLY, WHEN THE COMPLETE SURVEY BECOMES AVAILABLE, FOR THE MOST CURRENT VERSION OF THESE DATA.**

- Medicare FFS spending is concentrated among a small number of beneficiaries. In 2013, the costliest 5 percent of beneficiaries accounted for 42 percent of annual Medicare FFS spending, and the costliest 25 percent accounted for 84 percent. By contrast, the least costly 50 percent of beneficiaries accounted for only 4 percent of FFS spending.
- Costly beneficiaries tend to include those who have multiple chronic conditions, are using inpatient hospital services, are dually eligible for Medicare and Medicaid, and are in the last year of life.

## Chart 1-12. Medicare HI Trust Fund is projected to be insolvent in 2026 under Trustees' intermediate assumptions



Note: HI (Hospital Insurance). All years represent calendar years. The primary source of income for HI is the payroll tax on covered earnings. Other HI income sources include (a) a portion of the federal income taxes that Social Security recipients with incomes above certain thresholds pay on their benefits and (b) interest paid on the U.S. Treasury securities held in the HI Trust Fund.

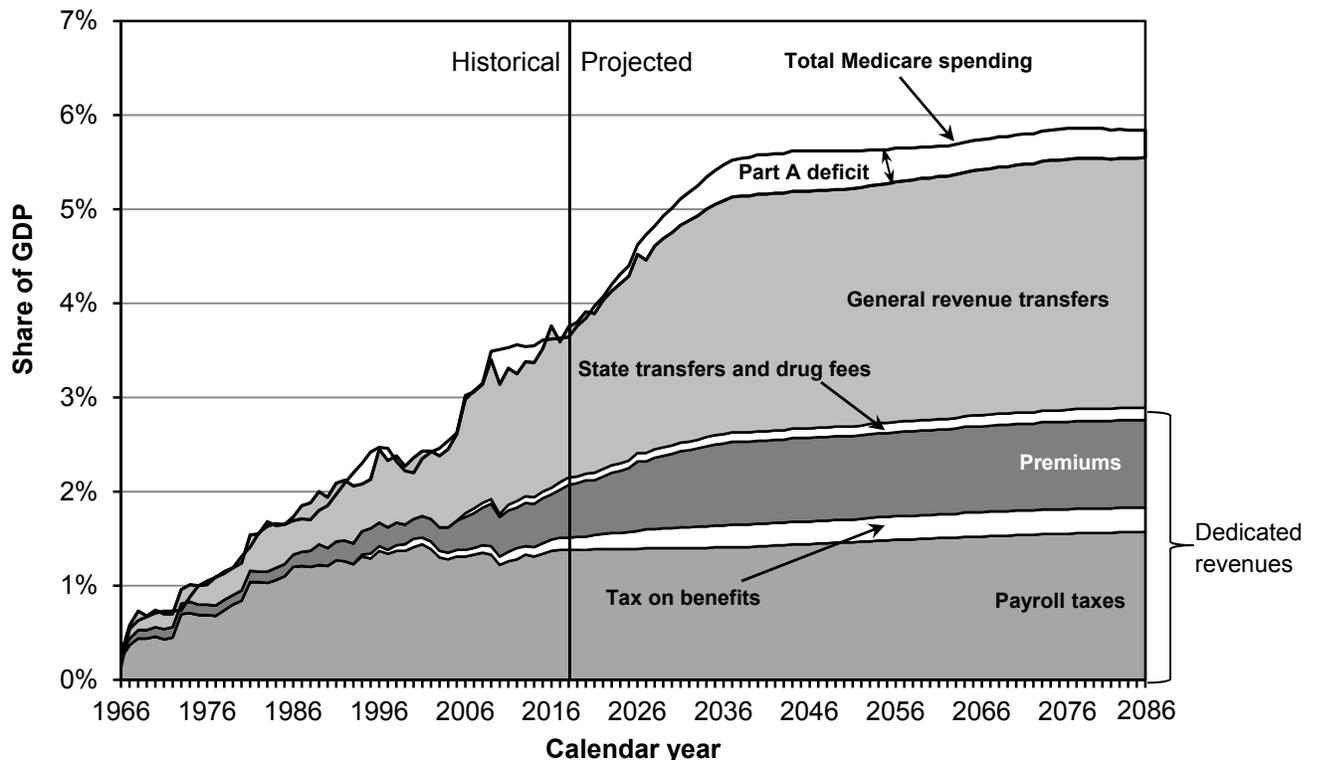
\*Costs and income for 2017 represent actual (not projected) experience.

\*\*Under the low-cost assumption, trust fund costs would be below income through the 75-year projection period ending in 2092.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2018. (The 2018 report of the Boards of Trustees of the Medicare trust funds was released as we were finalizing production of this Data Book. Other charts in this Data Book that use information from the Boards of Trustees reflect the 2017 report. This chart is based on information from the 2018 report.)

- The HI Trust Fund funds Part A, which helps pay for inpatient hospital stays and post-acute care such as skilled nursing facilities and hospice. Part A is funded through a dedicated payroll tax (i.e., a tax on wage earnings).
- From 2008 to 2015, the HI Trust Fund ran an annual deficit (i.e., paid more in benefits than it collected in payroll taxes). In 2016 and 2017, the HI Trust Fund ran a surplus. However, both intermediate and high-cost assumptions project that deficits will return beginning in 2018. HI Trust Fund assets are projected to be exhausted by 2026 under the Trustees' intermediate assumptions. Under high-cost assumptions, the HI Trust Fund could be exhausted as early as 2023. Under low-cost assumptions, it would remain able to pay full benefits indefinitely.
- The Trustees estimate that the payroll tax would need to be immediately increased from its current rate of 2.90 percent to 3.72 percent to balance the HI Trust Fund over the next 75 years. Alternatively, Part A spending would need to be immediately reduced by 17 percent.

**Chart 1-13. General revenue is paying for a growing share of Medicare spending**

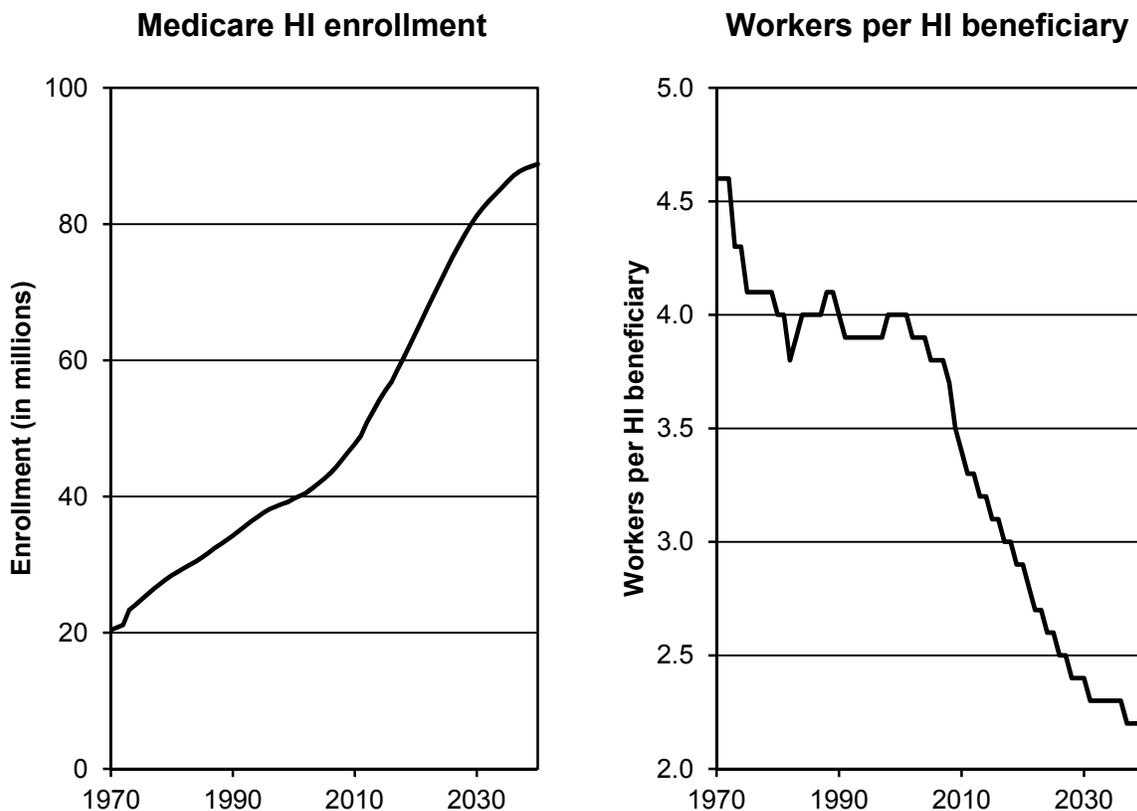


Note: GDP (gross domestic product). These projections are based on the Trustees' intermediate set of assumptions. "Tax on benefits" refers to the portion of income taxes that higher income individuals pay on Social Security benefits, which is designated for Medicare. "State transfers" (often called the Part D "clawback") refers to payments called for within the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 from the states to Medicare for assuming primary responsibility for prescription drug spending. The "drug fee" is the fee imposed in the Patient Protection and Affordable Care Act of 2010 on manufacturers and importers of brand-name prescription drugs. These fees are deposited in the Part B account of the Supplementary Medical Insurance Trust Fund.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017.

- The Medicare Trustees project that Medicare's share of GDP will rise to 5.5 percent by 2036 and to 5.9 percent by 2075.
- Beginning in 2009, general revenue transfers became the largest single source of Medicare income. They are expected to continue to be a substantial share of Medicare financing, growing to about 48 percent by 2030, and then remaining stable throughout the 75-year budget period.
- As Medicare becomes more dependent on general revenues, fewer resources will be available to invest in growing the economic output of the future or in supporting other national priorities.

**Chart 1-14. Medicare enrollment is rising while the number of workers per HI beneficiary is declining**



Note: HI (Hospital Insurance). Hospital Insurance is also known as Medicare Part A.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017.

- As the baby-boom generation ages, enrollment in the Medicare program will surge. By 2030, Medicare is projected to have over 80 million beneficiaries—up from 60 million beneficiaries today.
- While Medicare enrollment is rising, the number of workers per beneficiary is rapidly declining. Workers pay for Medicare spending through payroll taxes and income taxes. However, the number of workers per Medicare beneficiary declined from 4.6 during the early years of the program to 3.0 today and is projected by the Medicare Trustees to fall to 2.5 by 2026.
- These demographics threaten the financial stability of the Medicare program.

## Chart 1-15. Medicare HI and SMI benefits and cost sharing per FFS beneficiary, 2015

	Average benefit in 2015 (in dollars)	Average cost sharing in 2015 (in dollars)
HI	\$4,856	\$435
SMI	5,259	1,332

Note: HI (Hospital Insurance), SMI (Supplementary Medical Insurance), FFS (fee-for-service). Dollar amounts are nominal for FFS Medicare only and do not include Part D. "Average benefit" represents amounts paid for covered services per FFS beneficiary and excludes administrative expenses. "Average cost sharing" represents the sum of deductibles, coinsurance, and balance billing paid for covered services per FFS beneficiary and excludes all monthly premiums.

Source: CMS Program Statistics, CMS Office of Enterprise Data and Analytics, CMS Chronic Conditions Data Warehouse.

- In calendar year 2015, the Medicare program made \$4,856 in HI (Part A) benefit payments and \$5,259 in SMI (Part B) benefit payments on average per FFS beneficiary.
- Beneficiaries owed an average of \$435 in cost sharing for HI and \$1,332 in cost sharing for SMI in calendar year 2015. (Cost sharing excludes all monthly premiums.)
- To cover some of those cost-sharing requirements, about 90 percent of beneficiaries have coverage that supplements or replaces the Medicare benefit package, such as Medicare Advantage, Medicaid, supplemental coverage through former employers, and medigap coverage.



SECTION

2

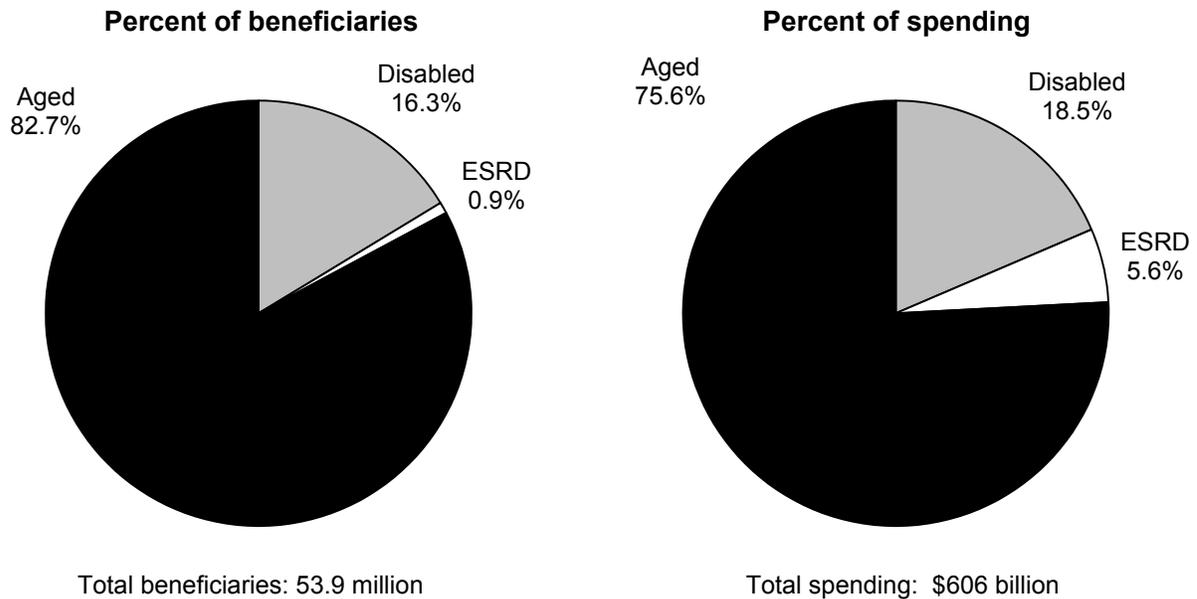
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**Medicare beneficiary  
demographics**

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## Chart 2-1. Aged beneficiaries accounted for the greatest share of the Medicare population and program spending, 2013

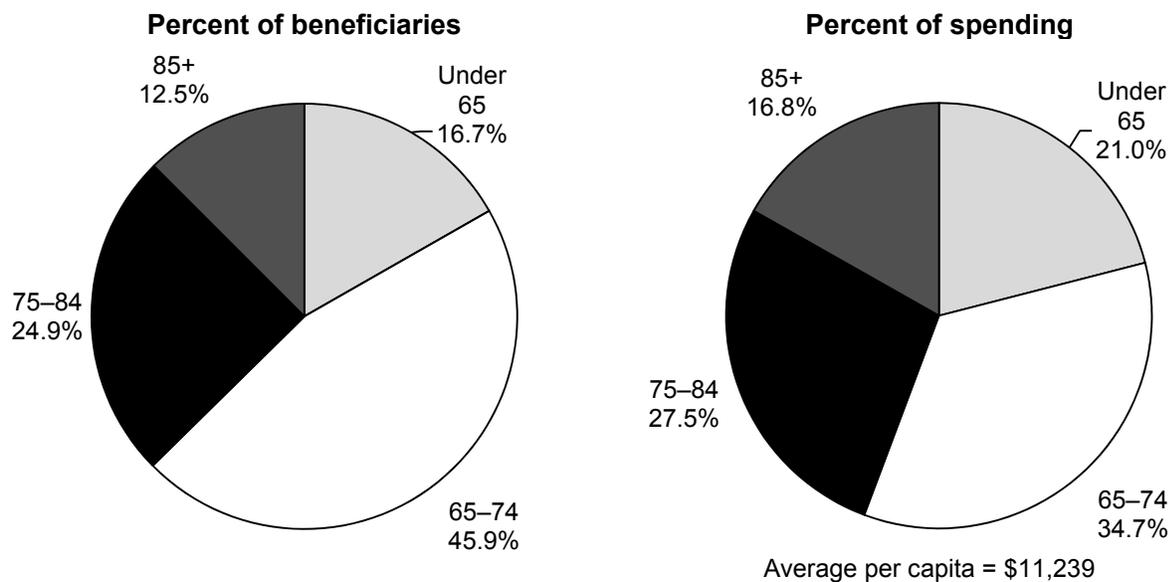


Note: ESRD (end-stage renal disease). The “aged” category includes beneficiaries ages 65 and older without ESRD. The “disabled” category includes beneficiaries under age 65 without ESRD. The “ESRD” category includes beneficiaries with ESRD, regardless of age. Results include fee-for-service, Medicare Advantage, community-dwelling, and institutionalized beneficiaries. Totals may not sum to 100 percent due to rounding.

Source: **AT THE TIME THIS DATA BOOK WAS PREPARED, ONLY PART OF THE MEDICARE CURRENT BENEFICIARY SURVEY (MCBS), WHICH IS THE CUSTOMARY SOURCE OF DATA FOR THIS CHART, HAD BEEN RELEASED FOR 2015. THIS CHART REFLECTS MEDPAC ANALYSIS OF THE 2013 MCBS COST AND USE FILES, WHICH ARE THE MOST RECENT AVAILABLE. (THERE ARE NO MCBS DATA FOR 2014.) THE READER IS ADVISED TO CONSULT THE 2015 MCBS DIRECTLY, WHEN THE COMPLETE SURVEY BECOMES AVAILABLE, FOR THE MOST CURRENT VERSION OF THESE DATA.**

- In 2013, beneficiaries ages 65 and older without ESRD composed 82.7 percent of the beneficiary population and accounted for 75.6 percent of Medicare spending. Beneficiaries under 65 with a disability and beneficiaries with ESRD accounted for the remaining population and spending.
- In 2013, average Medicare spending per beneficiary was \$11,239 (data not shown).
- A disproportionate share of Medicare expenditures is devoted to Medicare beneficiaries with ESRD. On average, these beneficiaries incur spending that is more than seven times greater than spending for aged beneficiaries (ages 65 years and older without ESRD) or for beneficiaries under age 65 with disability (non-ESRD). In 2013, \$72,725 was spent per ESRD beneficiary versus \$10,265 per aged beneficiary and \$12,776 per beneficiary under age 65 enrolled because of disability (data not shown).

## Chart 2-2. Medicare enrollment and spending by age group, 2013

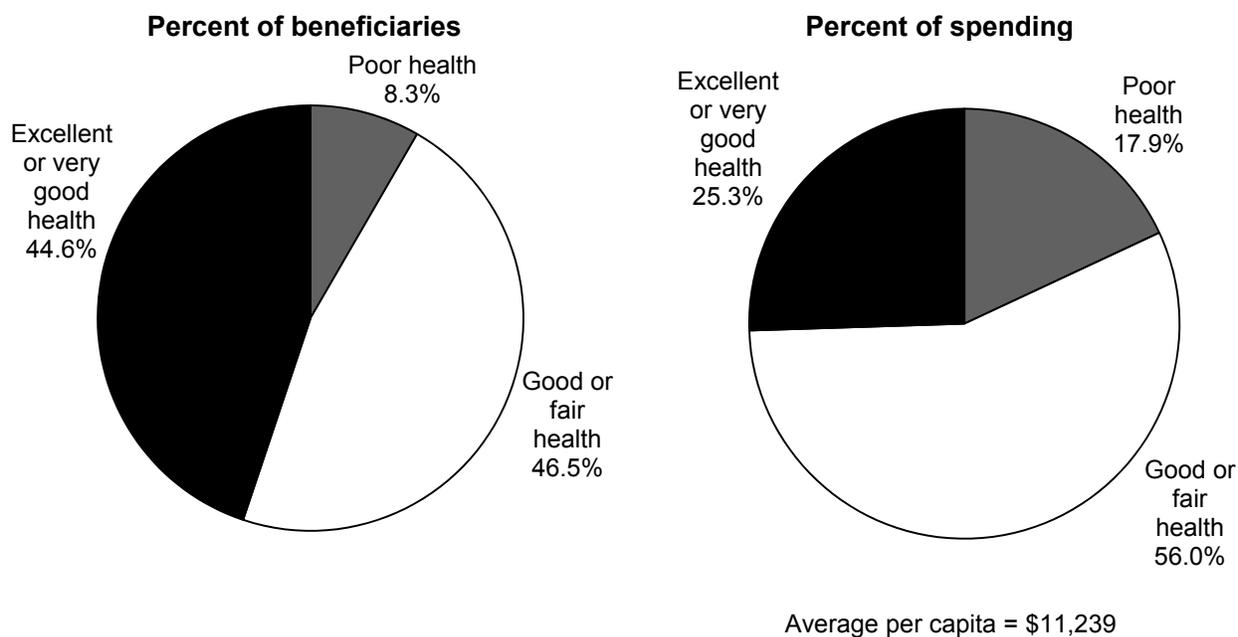


Note: Results include fee-for-service, Medicare Advantage, community-dwelling, and institutionalized beneficiaries.

Source: **AT THE TIME THIS DATA BOOK WAS PREPARED, ONLY PART OF THE MEDICARE CURRENT BENEFICIARY SURVEY (MCBS), WHICH IS THE CUSTOMARY SOURCE OF DATA FOR THIS CHART, HAD BEEN RELEASED FOR 2015. THIS CHART REFLECTS MEDPAC ANALYSIS OF THE 2013 MCBS COST AND USE FILES, WHICH ARE THE MOST RECENT AVAILABLE. (THERE ARE NO MCBS DATA FOR 2014.) THE READER IS ADVISED TO CONSULT THE 2015 MCBS DIRECTLY, WHEN THE COMPLETE SURVEY BECOMES AVAILABLE, FOR THE MOST CURRENT VERSION OF THESE DATA.**

- For the aged population (65 and older), per capita expenditures increase with age. In 2013, per capita expenditures were \$8,506 for beneficiaries 65 to 74 years old, \$12,416 for those 75 to 84 years old, and \$15,138 for those 85 or older (data not shown).
- In 2013, per capita expenditures for Medicare beneficiaries under age 65 who were enrolled because of end-stage renal disease or disability were \$14,063 (data not shown).

### Chart 2-3. Beneficiaries who reported being in poor health accounted for a disproportionate share of Medicare spending, 2013

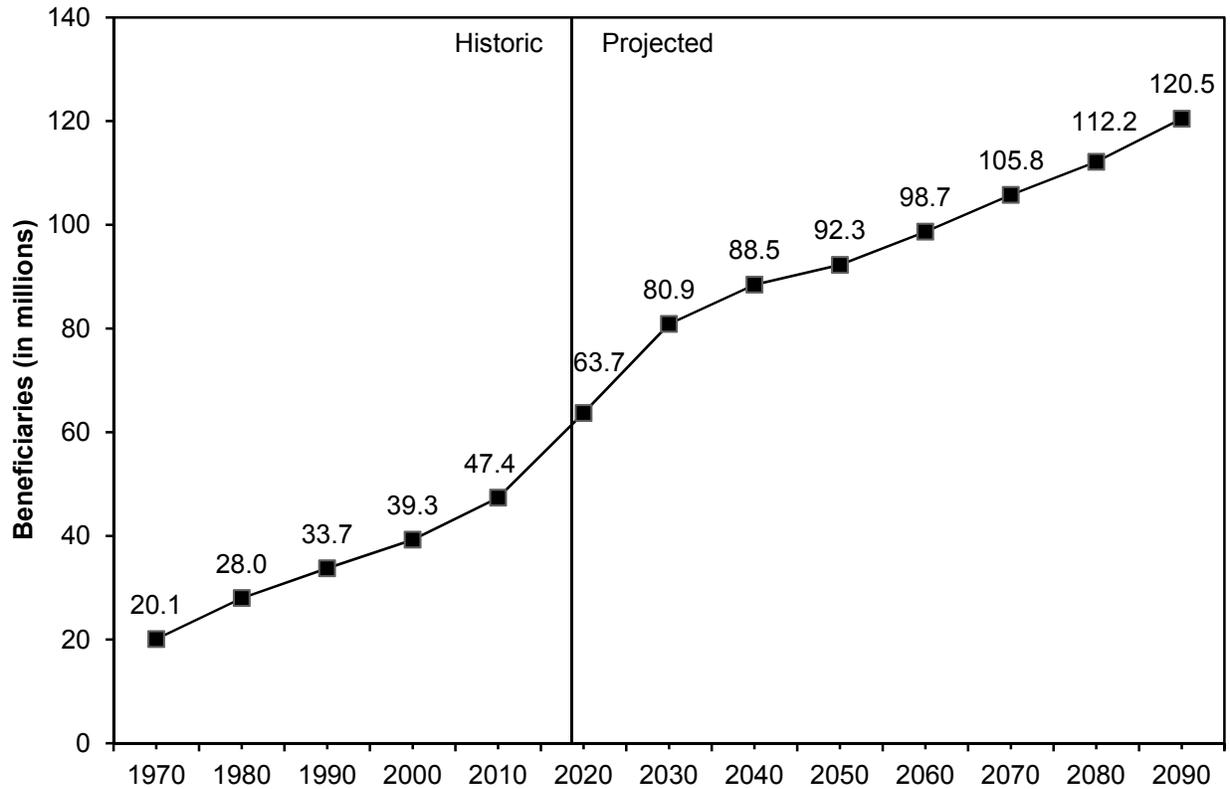


Note: Results include fee-for-service, Medicare Advantage, community-dwelling, and institutionalized beneficiaries. Totals may not sum to 100 percent due to rounding and exclusion of an “other” category.

Source: **AT THE TIME THIS DATA BOOK WAS PREPARED, ONLY PART OF THE MEDICARE CURRENT BENEFICIARY SURVEY (MCBS), WHICH IS THE CUSTOMARY SOURCE OF DATA FOR THIS CHART, HAD BEEN RELEASED FOR 2015. THIS CHART REFLECTS MEDPAC ANALYSIS OF THE 2013 MCBS COST AND USE FILES, WHICH ARE THE MOST RECENT AVAILABLE. (THERE ARE NO MCBS DATA FOR 2014.) THE READER IS ADVISED TO CONSULT THE 2015 MCBS DIRECTLY, WHEN THE COMPLETE SURVEY BECOMES AVAILABLE, FOR THE MOST CURRENT VERSION OF THESE DATA.**

- In 2013, most beneficiaries reported fair to excellent health. Fewer than 10 percent reported poor health.
- Medicare spending is strongly associated with self-reported health status. In 2013, per capita expenditures were \$6,382 for those who reported excellent or very good health, \$13,500 for those who reported good or fair health, and \$24,131 for those who reported poor health (data not shown).

**Chart 2-4. Enrollment in the Medicare program is projected to grow rapidly through 2030**



Note: Enrollment numbers are based on Part A enrollment only. Beneficiaries enrolled only in Part B are not included.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017.

- The total number of people enrolled in the Medicare program will increase from 56 million in 2016 to about 81 million in 2030.
- The rate of increase in Medicare enrollment will accelerate until 2030 as more members of the baby-boom generation become eligible, at which point it will continue to increase, but more slowly, after the entire baby-boom generation has become eligible.

## Chart 2-5. Characteristics of the Medicare population, 2015

Characteristic	Percent of the Medicare population	Characteristic	Percent of the Medicare population
<b>Total</b> (53.9 million)	100%	<b>Living arrangement</b>	
<b>Sex</b>		Institution	3%
Male	45	Alone	29
Female	55	With spouse	48
		Other	19
<b>Race/ethnicity</b>		<b>Education</b>	
White, non-Hispanic	74	No high school diploma	18
African American, non-Hispanic	10	High school diploma only	28
Hispanic	9	Some college or more	54
Other	7	<b>Income status</b>	
<b>Age</b>		Below poverty	15
<65	16	100–125% of poverty	9
65–74	46	125–200% of poverty	19
75–84	26	200–400% of poverty	27
85+	11	Over 400% of poverty	31
<b>Health status</b>		<b>Supplemental insurance status</b>	
Excellent or very good	44	Medicare only	14
Good or fair	48	Managed care	34
Poor	7	Employer-sponsored insurance	22
		Medigap	17
<b>Residence</b>		Medigap with employer-sponsored insurance	1
Urban	79	Medicaid	12
Rural	21	Other	1

Note: "Urban" indicates beneficiaries living in metropolitan statistical areas (MSAs). "Rural" indicates beneficiaries living outside MSAs. In 2015, poverty was defined as income of \$11,367 for people living alone and \$14,342 for married couples. Totals may not sum to 100 percent due to rounding and exclusion of an "other" category. Poverty thresholds are calculated by the U.S. Census Bureau (<https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>). Some beneficiaries may have more than one type of supplemental insurance.

Source: MedPAC analysis of the Medicare Current Beneficiary Survey, Cost and Use file 2015.

- Most Medicare beneficiaries are female and White.
- About one-fifth of beneficiaries live in rural areas.
- Twenty-nine percent of the Medicare population lives alone.
- Eighteen percent of beneficiaries do not have a high school diploma.
- Most Medicare beneficiaries have some source of supplemental insurance. Managed care plans are the most common source of supplemental coverage.



SECTION

3

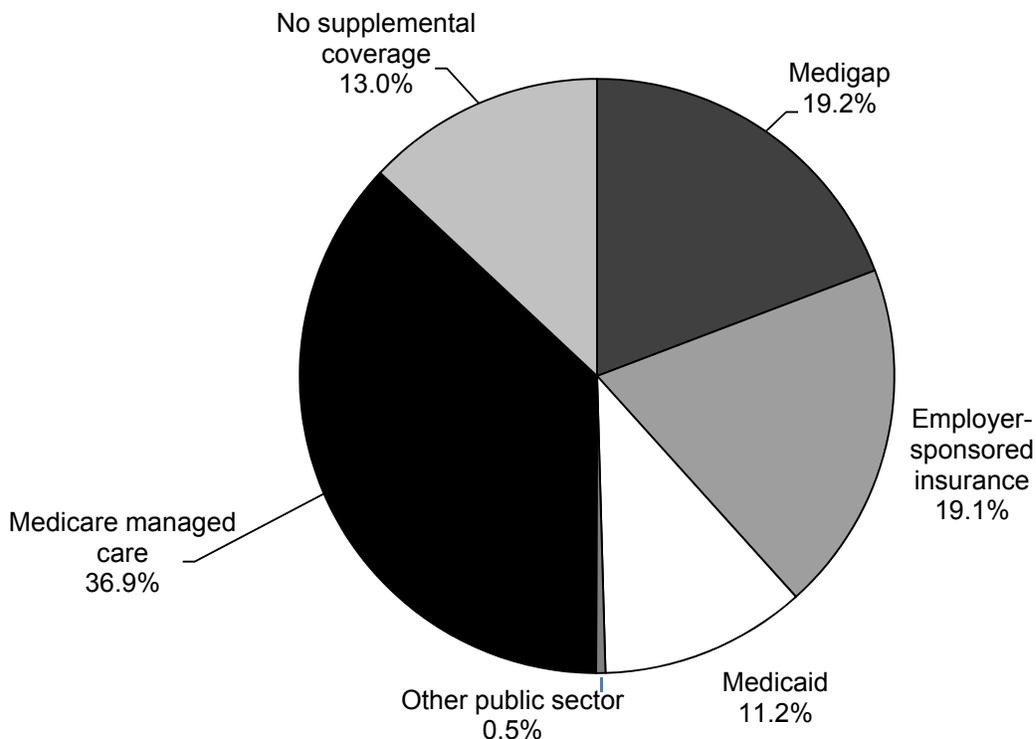
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**Medicare beneficiary and  
other payer financial liability**

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**Chart 3-1. Sources of supplemental coverage among noninstitutionalized Medicare beneficiaries, 2015**



Note: Beneficiaries are assigned to the supplemental coverage category they were in for the most time in 2015. They could have had coverage in other categories during 2015. "Other public sector" includes federal and state programs not included in other categories. Analysis includes only beneficiaries not living in institutions such as nursing homes. It excludes beneficiaries who were not in both Part A and Part B throughout their enrollment in 2015 or who had Medicare as a secondary payer. Percentages do not sum to 100 due to rounding.

Source: MedPAC analysis of Medicare Current Beneficiary Survey, Cost and Use file 2015.

- Most beneficiaries living in the community (noninstitutionalized) have coverage that supplements or replaces the Medicare benefit package. In 2015, 87 percent of beneficiaries had supplemental coverage or participated in Medicare managed care.
- About 38 percent of beneficiaries had private sector supplemental coverage such as medigap (about 19 percent) or employer-sponsored retiree coverage (about 19 percent).
- About 12 percent of beneficiaries had public sector supplemental coverage, primarily Medicaid.
- About 37 percent of beneficiaries participated in Medicare managed care. This care includes Medicare Advantage, health care prepayment, and cost plans. These types of arrangements generally replace Medicare's fee-for-service coverage and often add more coverage.
- The numbers in this chart differ from those in Chart 2-5, Chart 4-1, and Chart 4-4 because of differences in the populations represented in the charts. This chart excludes beneficiaries in long-term care institutions, while Chart 2-5 and Chart 4-4 include all Medicare beneficiaries, and Chart 4-1 excludes beneficiaries in Medicare Advantage.

**Chart 3-2. Sources of supplemental coverage among noninstitutionalized Medicare beneficiaries, by beneficiaries' characteristics, 2015**

	Number of beneficiaries (thousands)	Employer-sponsored insurance	Medigap insurance	Medicaid	Medicare managed care	Other public sector	Medicare only
<b>All beneficiaries</b>	<b>45,573</b>	<b>19%</b>	<b>19%</b>	<b>11%</b>	<b>37%</b>	<b>1%</b>	<b>13%</b>
<b>Age</b>							
<65	7,325	7	4	37	32	1	20
65–69	10,540	19	22	6	37	1	14
70–74	10,003	21	22	6	40	0	11
75–79	7,455	22	23	7	38	0	10
80–84	5,266	25	21	6	37	0	11
85+	4,984	23	23	6	36	0	11
<b>Income-to-poverty ratio</b>							
≤1.00	7,360	4	7	42	36	1	11
1.00 to 1.25	3,816	6	12	28	39	0	14
1.25 to 1.50	3,117	9	18	17	39	1	17
1.50 to 2.00	5,874	14	19	5	43	1	19
>2.00	25,357	28	24	1	35	0	12
<b>Eligibility status</b>							
Aged	38,096	21	22	6	38	0	12
Disabled	7,108	7	4	37	32	1	19
ESRD	369	14	15	27	14	5	24
<b>Residence</b>							
Urban	36,061	19	18	10	40	1	12
Rural	9,496	20	24	15	23	0	17
<b>Sex</b>							
Male	20,142	19	18	11	36	1	16
Female	25,431	19	20	12	38	1	11
<b>Health status</b>							
Excellent/very good	20,187	23	23	5	38	0	11
Good/fair	21,789	17	17	14	37	1	14
Poor	3,288	8	10	29	33	1	20

Note: ESRD (end-stage renal disease). Beneficiaries are assigned to the supplemental coverage category they were in for the most time in 2015. They could have had coverage in other categories during 2015. "Medicare managed care" includes Medicare Advantage, cost, and health care prepayment plans. "Other public sector" includes federal and state programs not included in other categories. "Urban" indicates beneficiaries living in metropolitan statistical areas (MSAs) as indicated by core-based statistical areas. "Rural" indicates beneficiaries living outside MSAs, which includes both micropolitan statistical areas and rural areas as indicated by core-based statistical areas. Analysis excludes beneficiaries living in institutions such as nursing homes. It excludes beneficiaries who were not in both Part A and Part B throughout their enrollment in 2015 or who had Medicare as a secondary payer. The number of beneficiaries differs among boldface categories because we excluded beneficiaries with missing values. Numbers in some rows do not sum to 100 percent because of rounding.

Source: MedPAC analysis of Medicare Current Beneficiary Survey, Cost and Use file 2015.

- Beneficiaries most likely to have employer-sponsored supplemental coverage are those who are age 65 or older, have income above twice the poverty level, are eligible because of age, and report better than poor health.
- Medigap is most common among those who are age 65 or older, have income higher than 1.25 times the poverty level, are eligible because of age, are rural dwelling, and report better than poor health.
- Medicaid coverage is most common among those who are under age 65, have income lower than 1.5 times the poverty level, are eligible because of disability or ESRD, are rural dwelling, and report poor health.
- Lack of supplemental coverage (Medicare coverage only) is most common among beneficiaries who are under age 65, are eligible because of disability or ESRD, are rural dwelling, are male, and report poor health.

**Chart 3-3. Covered benefits and enrollment in standardized medigap plans, 2016**

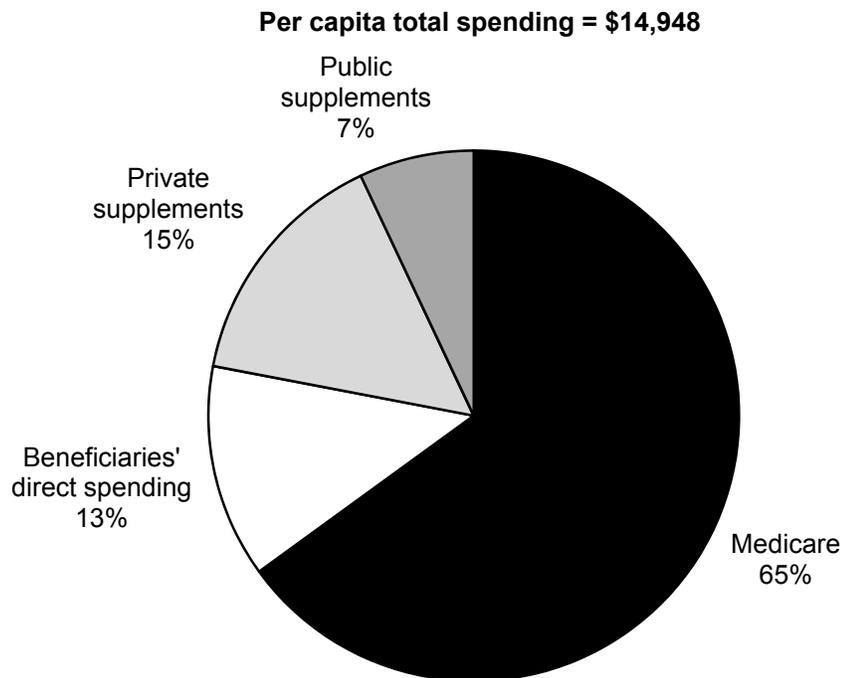
Benefit	Medigap standardized plan type										
	A	B	C	D	F	F	G	K	L	M	N
Part A hospital costs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Part B cost sharing	✓	✓	✓	✓	✓	✓	✓	50%	75%	✓	\$20/\$50
Blood (first 3 pints)	✓	✓	✓	✓	✓	✓	✓	50%	75%	✓	✓
Hospice cost sharing	✓	✓	✓	✓	✓	✓	✓	50%	75%	✓	✓
SNF coinsurance			✓	✓	✓	✓	✓	50%	75%	✓	✓
Part A deductible		✓	✓	✓	✓	✓	✓	50%	75%	50%	✓
Part B deductible			✓		✓	✓					
Part B excess charges					✓	✓	✓				
Foreign travel emergency			✓	✓	✓	✓	✓			✓	✓
Lives covered (in thousands)	150	275	900	175	6,700	250	1,300	75	50	5	1,100
Percent change 2015–2016	5%	–7%	–9%	–8%	7%	13%	42%	2%	–1%	325%	18%

Note: SNF (skilled nursing facility). Three states (Massachusetts, Minnesota, and Wisconsin) have different plan types and are not included in this chart. The ✓ indicates that the plan covers all cost sharing. Percentages indicate that the plan covers that share of the total cost sharing. The \$20/\$50 indicates that the plan covers all but \$20 for physician office visits and all but \$50 for emergency room visits.

Source: MedPAC analysis of National Association of Insurance Commissioners data, 2017.

- Medicare beneficiaries purchase medigap plans, also known as Medicare supplementary insurance plans, to cover fee-for-service Medicare cost sharing. Statute specifies 11 standardized plans. States enforce the standards based on model regulations developed by the National Association of Insurance Commissioners (NAIC). Three states (Massachusetts, Minnesota, and Wisconsin) have waivers from these standards and have different standard plan types not included in this chart.
- Plan F, which covers all Medicare cost sharing, is the most popular plan, with 6.7 million enrollees. However, because Congress was concerned about the overutilization of Medicare services, legislation will prohibit the sale of new Plan F policies beginning in 2020. As a result, insurers have begun to direct beneficiaries into other plan types, namely plans G, M, and N, which do not cover the Part B deductible.
- During 2016, more than 12 million beneficiaries enrolled in medigap plans. Of all Medicare beneficiaries, about one-fifth were enrolled in medigap plans. Charts 3-1 and 3-2 indicate that about 8.8 million beneficiaries (19.2 percent of 45.6 million beneficiaries) had medigap coverage in 2015. The discrepancy in medigap enrollment between this chart and Charts 3-1 and 3-2 occurs because this chart includes all Medicare beneficiaries while Charts 3-1 and 3-2 exclude beneficiaries living in long-term institutions, those who did not have both Part A and Part B coverage throughout their Medicare enrollment in 2015, and those who had Medicare as a secondary payer. In addition, this chart is based on data from 2016, while Charts 3-1 and 3-2 are based on data from 2015.

### Chart 3-4. Total spending on health care services for noninstitutionalized FFS Medicare beneficiaries, by source of payment, 2013

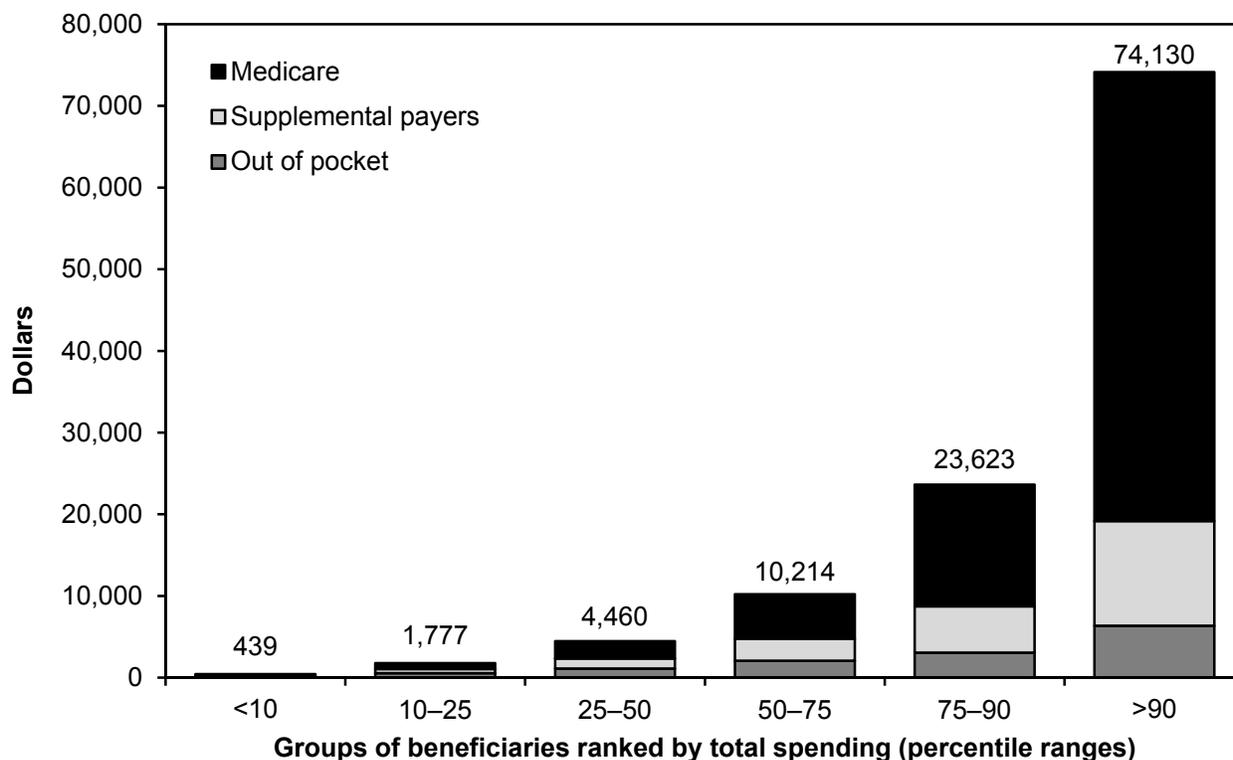


Note: FFS (fee-for-service). "Private supplements" includes employer-sponsored plans and individually purchased coverage. "Public supplements" includes Medicaid, Department of Veterans Affairs, and other public coverage. "Beneficiaries' direct spending" is on Medicare cost sharing and noncovered services, but not supplemental premiums. Analysis includes only FFS beneficiaries not living in institutions such as nursing homes. We excluded Medicare Advantage enrollees.

Source: **AT THE TIME THIS DATA BOOK WAS PREPARED, ONLY PART OF THE MEDICARE CURRENT BENEFICIARY SURVEY (MCBS), WHICH IS THE CUSTOMARY SOURCE OF DATA FOR THIS CHART, HAD BEEN RELEASED FOR 2015. THIS CHART REFLECTS MEDPAC ANALYSIS OF THE 2013 MCBS COST AND USE FILES, WHICH ARE THE MOST RECENT AVAILABLE. (THERE ARE NO MCBS DATA FOR 2014.) THE READER IS ADVISED TO CONSULT THE 2015 MCBS DIRECTLY, WHEN THE COMPLETE SURVEY BECOMES AVAILABLE, FOR THE MOST CURRENT VERSION OF THESE DATA.**

- Among FFS beneficiaries living in the community (noninstitutionalized), the total cost of health care services (beneficiaries' direct spending as well as expenditures by Medicare, other public sector sources, and all private sector sources on all health care goods and services) averaged about \$15,000 in 2013. Medicare was the largest source of payment: It paid about 65 percent of the health care costs for FFS beneficiaries living in the community, an average of \$9,748 per beneficiary. The level of Medicare spending in this chart differs from the level in Chart 2-1 because this chart excludes beneficiaries in Medicare Advantage and those living in institutions, while Chart 2-1 represents all Medicare beneficiaries.
- Private sources of supplemental coverage—primarily employer-sponsored retiree coverage and medigap—paid about 15 percent of beneficiaries' costs, an average of \$2,198 per beneficiary.
- Beneficiaries paid about 13 percent of their health care costs out of pocket, an average of \$1,993 per beneficiary.
- Public sources of supplemental coverage—primarily Medicaid—paid about 7 percent of beneficiaries' health care costs, an average of \$1,009 per beneficiary.

**Chart 3-5. Per capita total spending on health care services among noninstitutionalized FFS beneficiaries, by source of payment, 2013**

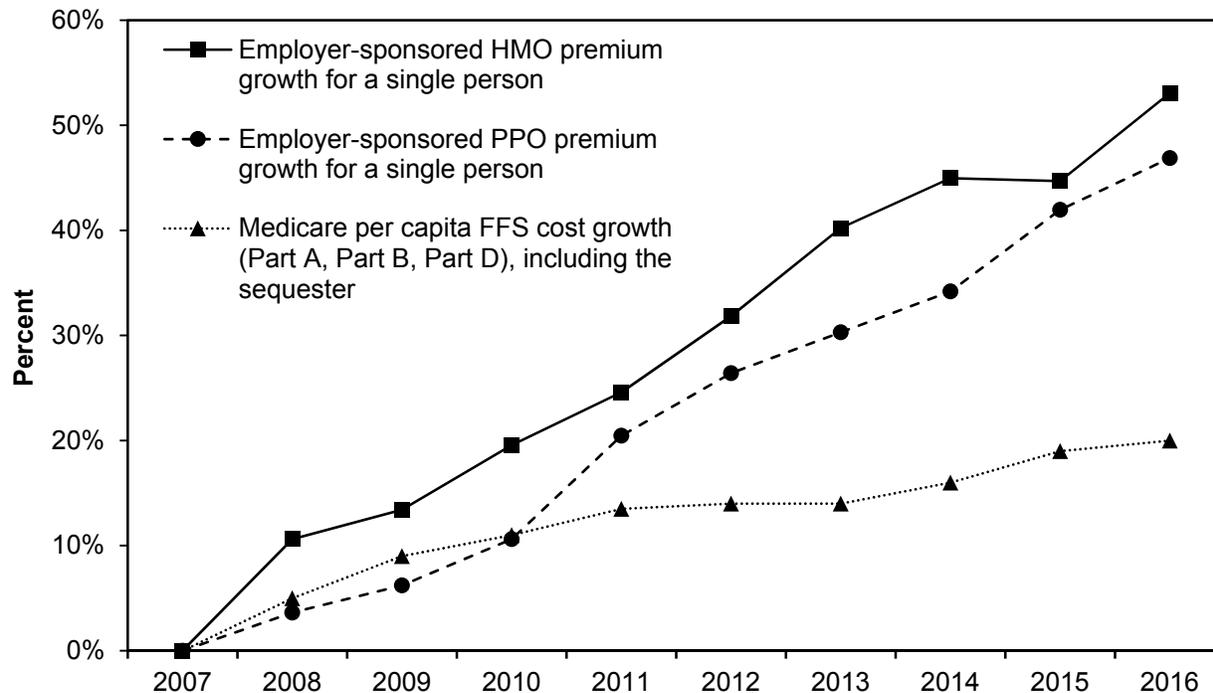


Note: FFS (fee-for-service). Analysis excludes those who are not in FFS Medicare and those living in institutions such as nursing homes. "Out-of-pocket" spending includes Medicare cost sharing and noncovered services.

Source: **AT THE TIME THIS DATA BOOK WAS PREPARED, ONLY PART OF THE MEDICARE CURRENT BENEFICIARY SURVEY (MCBS), WHICH IS THE CUSTOMARY SOURCE OF DATA FOR THIS CHART, HAD BEEN RELEASED FOR 2015. THIS CHART REFLECTS MEDPAC ANALYSIS OF THE 2013 MCBS COST AND USE FILES, WHICH ARE THE MOST RECENT AVAILABLE. (THERE ARE NO MCBS DATA FOR 2014.) THE READER IS ADVISED TO CONSULT THE 2015 MCBS DIRECTLY, WHEN THE COMPLETE SURVEY BECOMES AVAILABLE, FOR THE MOST CURRENT VERSION OF THESE DATA.**

- Total spending on health care services varied dramatically among FFS beneficiaries living in the community in 2013. Per capita spending for the 10 percent of beneficiaries with the highest total spending averaged \$74,130. Per capita spending for the 10 percent of beneficiaries with the lowest total spending averaged \$439.
- Among FFS beneficiaries living in the community, Medicare paid a larger share as total spending increased, and beneficiaries' out-of-pocket spending was a smaller share as total spending increased. For example, Medicare paid 65 percent of total spending for all beneficiaries, but paid 77 percent of total spending for the 10 percent of beneficiaries with the highest total spending. Beneficiaries' out-of-pocket spending covered 13 percent of total spending for all beneficiaries, but only 9 percent of total spending for the 10 percent of beneficiaries with the highest total spending (data not shown).

**Chart 3-6. Cost of employer-sponsored commercial insurance has grown more than twice as fast as Medicare costs**



Note: HMO (health maintenance organization), PPO (preferred provider organization), FFS (fee-for-service). Medicare spending is reported including the effects of the sequester that began in March 2013, which reduced program spending by 2 percent.

Source: Employer-sponsored premium data are from Kaiser Family Foundation surveys, 2007 through 2016. Medicare spending figures are from Part A and Part B program spending data from CMS actuaries; Part D spending per capita figures through 2015 are from MedPAC analysis of claims and reinsurance data for individuals with Part D coverage. Part D spending for 2016 is a projection.

- Medicare costs have risen more slowly than commercial insurance premiums in part due to slower price growth for Medicare services.
- Per capita costs in FFS Medicare grew by 20 percent from 2007 to 2016. This 20 percent growth rate is the cumulative growth in the CMS actuaries' estimated cost of Part A and Part B benefits and the Commission's estimates of the cost of Part D premiums and reinsurance from 2007 to 2016. The Medicare FFS growth rate also was not adjusted for enhancements of the Part D benefit that included a shrinking of the coverage gap.
- In the commercial sector, employer-sponsored HMO premiums grew by 53 percent and PPO premiums by 47 percent over the same period, despite the rapidly increasing deductibles reported in the Kaiser Family Foundation survey. While deductibles grew rapidly for both employer-sponsored HMOs and PPOs, they tended to grow fastest for PPOs, possibly explaining why PPO premiums grew at a slightly slower rate than HMO premiums.
- None of the growth rates that we discuss have been adjusted for changes in demographics. We note that the average age of Medicare FFS beneficiaries declined by 0.3 years over this period.

SECTION **4**

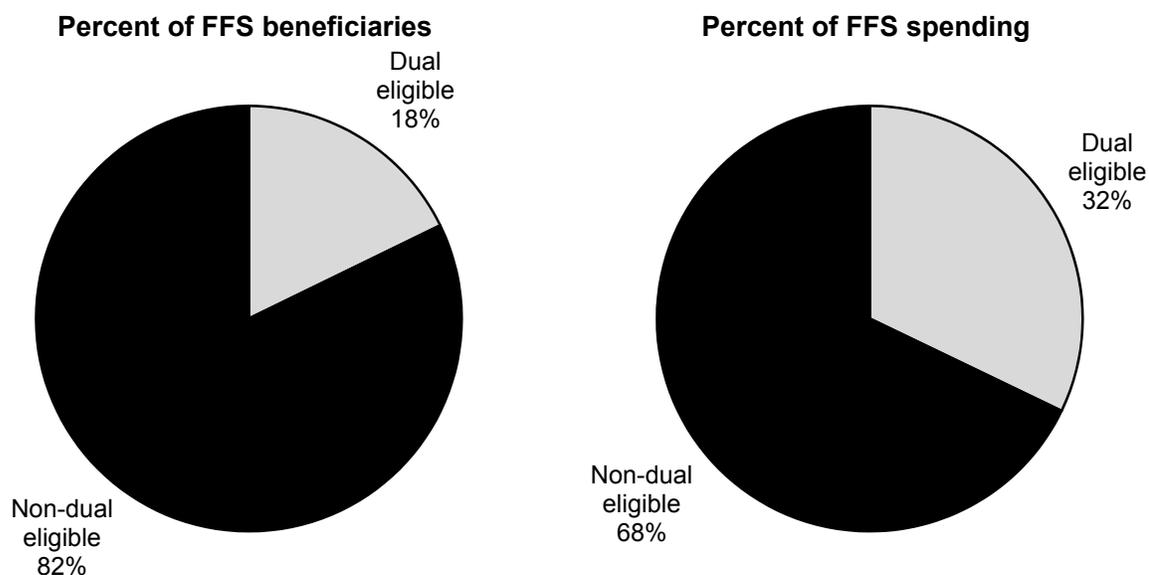
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**Dual-eligible  
beneficiaries**

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## Chart 4-1. Dual-eligible beneficiaries accounted for a disproportionate share of Medicare spending, 2013

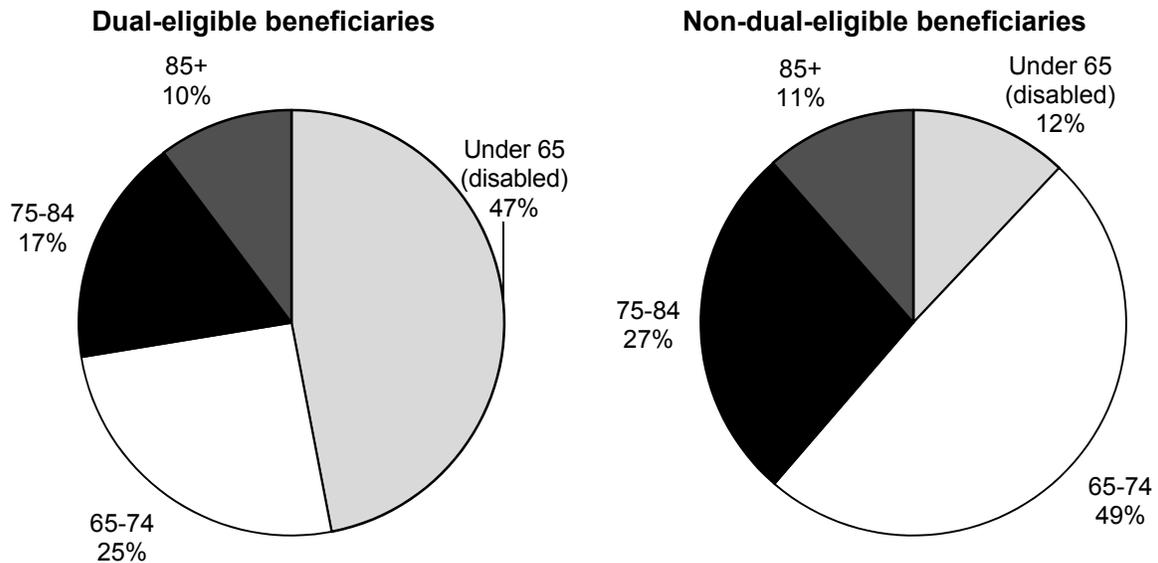


Note: FFS (fee-for-service). Dual-eligible beneficiaries are designated as such if the months they were enrolled in Medicaid exceeded the months they were enrolled in supplemental insurance.

Source: **AT THE TIME THIS DATA BOOK WAS PREPARED, ONLY PART OF THE MEDICARE CURRENT BENEFICIARY SURVEY (MCBS), WHICH IS THE CUSTOMARY SOURCE OF DATA FOR THIS CHART, HAD BEEN RELEASED FOR 2015. THIS CHART REFLECTS MEDPAC ANALYSIS OF THE 2013 MCBS COST AND USE FILES, WHICH ARE THE MOST RECENT AVAILABLE. (THERE ARE NO MCBS DATA FOR 2014.) THE READER IS ADVISED TO CONSULT THE 2015 MCBS DIRECTLY, WHEN THE COMPLETE SURVEY BECOMES AVAILABLE, FOR THE MOST CURRENT VERSION OF THESE DATA.**

- Dual-eligible beneficiaries are those who qualify for both Medicare and Medicaid. Medicaid is a joint federal and state program designed to help people with low incomes obtain needed health care.
- Dual-eligible beneficiaries account for a disproportionate share of Medicare FFS expenditures. Although they were 18 percent of the Medicare FFS population in 2013, they represented 32 percent of aggregate Medicare FFS spending.
- On average, Medicare FFS per capita spending is more than twice as high for dual-eligible beneficiaries compared with non-dual-eligible beneficiaries: In 2013, \$19,789 was spent per dual-eligible beneficiary, and \$9,035 was spent per non-dual-eligible beneficiary (data not shown).
- In 2013, average total spending—which includes Medicare, Medicaid, supplemental insurance, and out-of-pocket spending across all payers—for dual-eligible beneficiaries was \$31,894 per beneficiary, about twice the amount for other Medicare beneficiaries (data not shown).

**Chart 4-2. Dual-eligible beneficiaries were more likely than non-dual-eligible beneficiaries to be under age 65 and disabled, 2015**

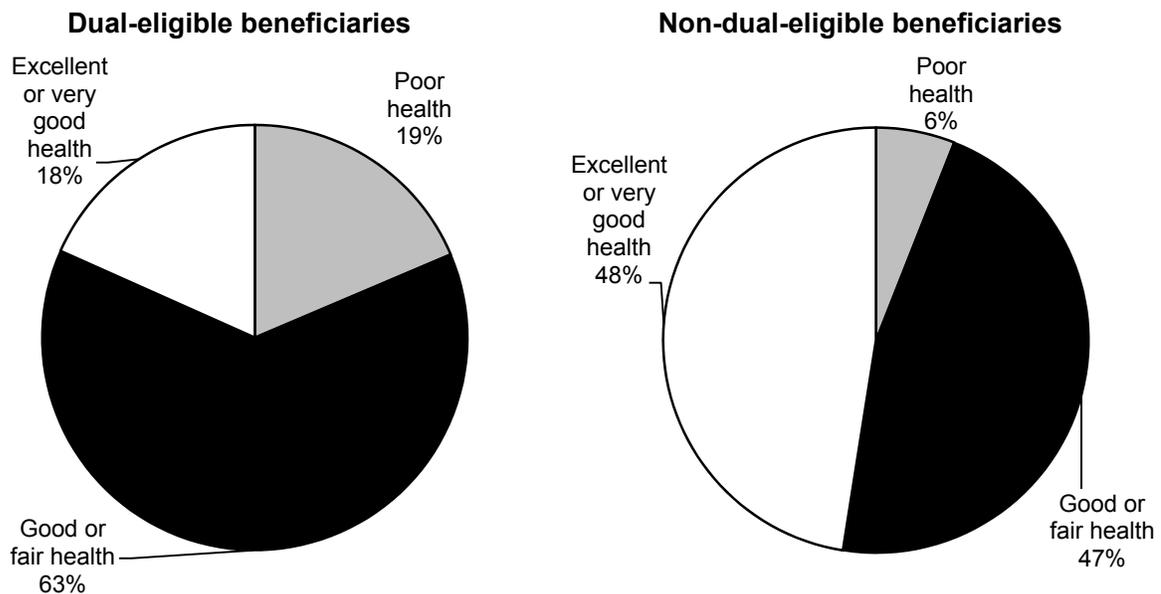


Note: Beneficiaries who are under age 65 qualify for Medicare because they are disabled. Once disabled beneficiaries reach age 65, they are counted as aged beneficiaries. Dual-eligible beneficiaries are designated as such if the months they were enrolled in Medicaid exceeded the months they were enrolled in supplemental insurance. Totals may not sum to 100 percent due to rounding.

Source: MedPAC analysis of Medicare Current Beneficiary Survey, Survey file 2015.

- Disability is a pathway for individuals to become eligible for both Medicare and Medicaid benefits.
- Dual-eligible beneficiaries are more likely than non-dual-eligible beneficiaries to be under age 65 and disabled. In 2015, 47 percent of dual-eligible beneficiaries were under age 65 and disabled compared with 12 percent of the non-dual-eligible population.

**Chart 4-3. Dual-eligible beneficiaries were more likely than non-dual-eligible beneficiaries to report poorer health status, 2015**



Note: Dual-eligible beneficiaries are designated as such if the months they were enrolled in Medicaid exceeded the months they were enrolled in supplemental insurance. Totals may not sum to 100 percent due to rounding.

Source: MedPAC analysis of the Medicare Current Beneficiary Survey, Survey file 2015.

- Dual-eligible beneficiaries are more likely than non-dual-eligible beneficiaries to report poorer health status. In 2015, 19 percent of dual-eligible beneficiaries reported being in poor health compared with 6 percent of non-dual-eligible beneficiaries.
- Almost half of non-dual-eligible beneficiaries (48 percent) reported being in excellent or very good health in 2015. In comparison, less than one-fifth (18 percent) of dual-eligible beneficiaries reported being in excellent or very good health.

**Chart 4-4. Demographic differences between dual-eligible beneficiaries and non-dual-eligible beneficiaries, 2015**

Characteristic	Percent of dual-eligible beneficiaries	Percent of non-dual-eligible beneficiaries
<b>Sex</b>		
Male	41%	45%
Female	59	55
<b>Race/ethnicity</b>		
White, non-Hispanic	54	77
African American, non-Hispanic	18	9
Hispanic	15	8
Other	13	6
<b>Limitations in ADLs</b>		
No limitations in ADLs	40	66
Limitations in 1–2 ADLs	30	23
Limitations in 3–6 ADLs	30	11
<b>Residence</b>		
Urban	73	80
Rural	27	20
<b>Living arrangement</b>		
Institution	13	2
Alone	34	28
With spouse	14	53
With children, nonrelatives, others	38	17
<b>Education</b>		
No high school diploma	41	15
High school diploma only	32	27
Some college or more	28	58
<b>Income status</b>		
Below poverty	54	9
100–125% of poverty	22	7
125–200% of poverty	19	19
200–400% of poverty	4	30
Over 400% of poverty	1	35
<b>Supplemental insurance status</b>		
Medicare or Medicare/Medicaid only	87	16
Medicare managed care	5	38
Employer-sponsored insurance	<1	25
Medigap	1	19
Medigap/employer	0	1
Other*	6	1

Note: ADL (activity of daily living). Dual-eligible beneficiaries are designated as such if the months they were enrolled in Medicaid exceeded the months they were enrolled in other supplemental insurance. "Urban" indicates beneficiaries living in metropolitan statistical areas (MSAs). "Rural" indicates beneficiaries living outside of MSAs. In 2015, poverty was defined as annual income of \$11,367 for people living alone and \$14,342 for married couples. Totals may not sum to 100 percent due to rounding and exclusion of an "other" category. Poverty thresholds are calculated by the U.S. Census Bureau (<https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>).

\*Includes public programs such as the Department of Veterans Affairs and state-sponsored drug plans.

Source: MedPAC analysis of Medicare Current Beneficiary Survey, Survey file 2015.

- Dual-eligible beneficiaries qualify for Medicaid due in part to low incomes. In 2015, 54 percent of dual-eligible beneficiaries lived below the federal poverty level, and 95 percent lived below 200 percent of the poverty level. Compared with non-dual-eligible beneficiaries, dual-eligible beneficiaries are more likely to be female, be African American or Hispanic, lack a high school diploma, have greater limitations in activities of daily living, reside in a rural area, and live in an institution. They are less likely to have sources of supplemental coverage other than Medicaid.

## Chart 4-5. Differences in Medicare spending and service use between dual-eligible beneficiaries and non-dual-eligible beneficiaries, 2013

Service	Dual-eligible beneficiaries	Non-dual-eligible beneficiaries
<b>Average FFS Medicare payment for all beneficiaries</b>		
Total Medicare FFS payments	\$19,789	\$9,035
Inpatient hospital	6,340	2,821
Physician <sup>a</sup>	3,445	2,377
Outpatient hospital	2,283	1,307
Home health	771	387
Skilled nursing facility <sup>b</sup>	1,608	573
Hospice	473	231
Prescribed medication <sup>c</sup>	4,740	1,322
<b>Share of FFS beneficiaries using service</b>		
Share using any type of service	97.9%	86.1%
Inpatient hospital	25.4	14.7
Physician <sup>a</sup>	93.6	81.6
Outpatient hospital	78.5	61.1
Home health	13.5	8.1
Skilled nursing facility <sup>b</sup>	9.3	4.1
Hospice	3.9	1.9
Prescribed medication <sup>c</sup>	80.5	53.6

Note: FFS (fee-for-service). Data in this analysis are restricted to beneficiaries in FFS Medicare. Dual-eligible beneficiaries are designated as such if the months they were enrolled in Medicaid exceeded the months they were enrolled in supplemental insurance. Spending totals derived from the Medicare Current Beneficiary Survey (MCBS) do not necessarily match official estimates from CMS Office of the Actuary. Total payments may not equal the sum of line items due to omitted "other" category.

<sup>a</sup> Includes a variety of medical services, equipment, and supplies.

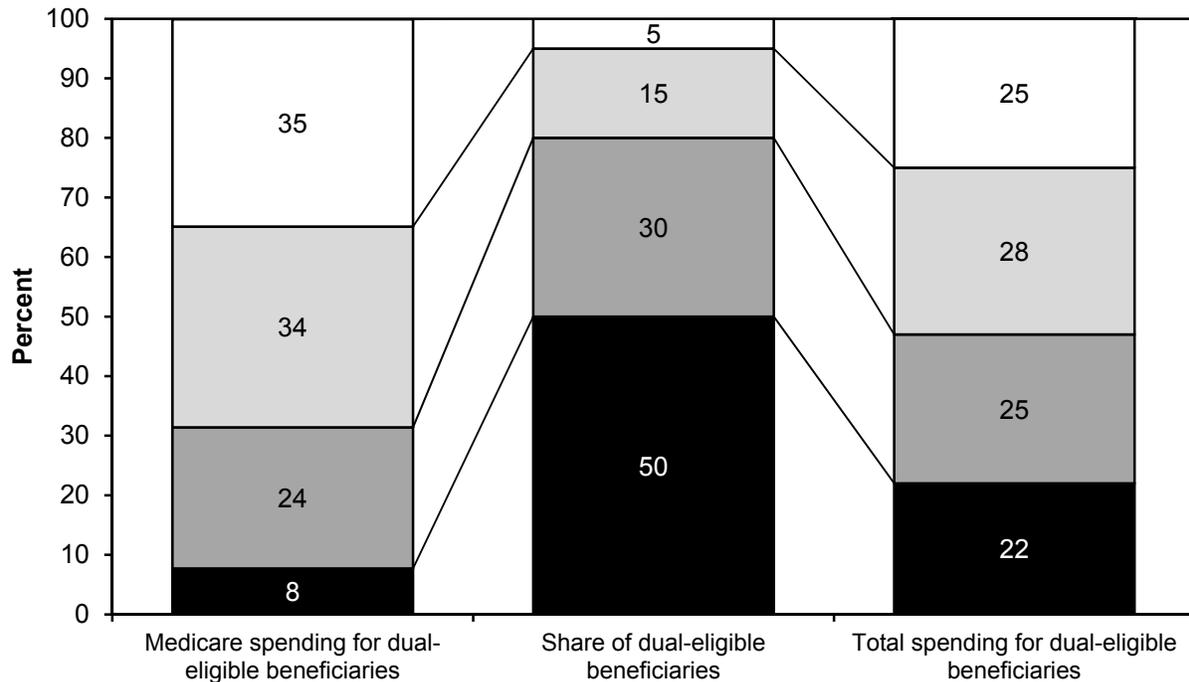
<sup>b</sup> Individual short-term facility (usually skilled nursing facility) stays for the MCBS population.

<sup>c</sup> Data from Medicare Advantage–Prescription Drug plans and stand-alone prescription drug plans.

Source: **AT THE TIME THIS DATA BOOK WAS PREPARED, ONLY PART OF THE MEDICARE CURRENT BENEFICIARY SURVEY (MCBS), WHICH IS THE CUSTOMARY SOURCE OF DATA FOR THIS CHART, HAD BEEN RELEASED FOR 2015. THIS CHART REFLECTS MEDPAC ANALYSIS OF THE 2013 MCBS COST AND USE FILES, WHICH ARE THE MOST RECENT AVAILABLE. (THERE ARE NO MCBS DATA FOR 2014.) THE READER IS ADVISED TO CONSULT THE 2015 MCBS DIRECTLY, WHEN THE COMPLETE SURVEY BECOMES AVAILABLE, FOR THE MOST CURRENT VERSION OF THESE DATA.**

- In 2013, average per capita Medicare FFS spending for dual-eligible beneficiaries was more than twice that for non-dual-eligible beneficiaries—\$19,789 compared with \$9,035.
- For each type of service, average Medicare FFS per capita spending was higher for dual-eligible beneficiaries than for non-dual-eligible beneficiaries.
- Higher average per capita FFS spending for dual-eligible beneficiaries is a function of a higher use of these services by dual-eligible beneficiaries compared with their non-dual-eligible counterparts. Dual-eligible beneficiaries are more likely than non-dual-eligible beneficiaries to use each type of Medicare-covered service.

**Chart 4-6. Both Medicare and total spending were concentrated among dual-eligible beneficiaries, 2013**



Note: "Total spending" includes Medicare, Medicaid, supplemental insurance, and out-of-pocket spending. Dual-eligible beneficiaries are designated as such if the months they were enrolled in Medicaid exceeded the months they were enrolled in supplemental insurance. Totals may not sum to 100 percent due to rounding.

Source: **AT THE TIME THIS DATA BOOK WAS PREPARED, ONLY PART OF THE MEDICARE CURRENT BENEFICIARY SURVEY (MCBS), WHICH IS THE CUSTOMARY SOURCE OF DATA FOR THIS CHART, HAD BEEN RELEASED FOR 2015. THIS CHART REFLECTS MEDPAC ANALYSIS OF THE 2013 MCBS COST AND USE FILES, WHICH ARE THE MOST RECENT AVAILABLE. (THERE ARE NO MCBS DATA FOR 2014.) THE READER IS ADVISED TO CONSULT THE 2015 MCBS DIRECTLY, WHEN THE COMPLETE SURVEY BECOMES AVAILABLE, FOR THE MOST CURRENT VERSION OF THESE DATA.**

- Annual Medicare fee-for-service spending on dual-eligible beneficiaries is concentrated among a small number. The costliest 5 percent of dual-eligible beneficiaries accounted for 35 percent of Medicare spending and 25 percent of total spending on dual-eligible beneficiaries in 2013. In contrast, the least costly 50 percent of dual-eligible beneficiaries accounted for only 8 percent of Medicare spending and 22 percent of total spending on dual-eligible beneficiaries.
- On average, total spending (including Medicaid, medigap, etc.) for dual-eligible beneficiaries in 2013 was about twice that for non-dual-eligible beneficiaries—\$19,789 compared with \$9,035, respectively (data not shown).

SECTION

5

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**Quality of care in the  
Medicare program**

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## Chart 5-1. SNFs improved on some measures but not others from 2011 to 2016

Measure	2011	2013	2015	2016
Discharged to the community	33.2%	37.5%	38.7%	39.5%
Potentially avoidable readmissions				
During SNF stay	12.4	11.1	10.4	10.8
During 30 days after discharge from SNF	5.9	5.5	5.0	5.8
Rate of improvement in one or more mobility ADLs	43.6	43.8	43.6	43.6
Rate of no decline in mobility	87.2	87.2	87.1	87.1

Note: SNF (skilled nursing facility), ADL (activity of daily living). High rates of discharge to the community indicate better quality. High readmission rates indicate worse quality. All rates were risk adjusted. The rate of improvement in mobility ADLs is the average of the rates of improvement in bed mobility, transfer, and ambulation, weighted by the number of stays included in each measure. Stays with improvement in one, two, or three mobility ADLs are counted in the improvement measures. "Rate of no decline in mobility" is the share of stays with no decline in any of the three ADLs. Rates are the average of facility rates and calculated for all facilities with 25 or more stays, except the rate of potentially avoidable readmission during the 30 days after discharge, which is reported for all facilities with 20 or more stays. Measures exclude hospital-based swing-bed units.

Source: MedPAC analysis of Medicare claims and Minimum Data Set data for 2011–2016.

- Rates of risk-adjusted community discharge and potentially avoidable readmission during the SNF stay improved between 2011 and 2016. A greater share of beneficiaries was discharged to the community (39.5 percent compared with 33.2 percent). A lesser share of beneficiaries was readmitted to an acute care hospital during the SNF stay (10.8 percent compared with 12.4 percent). The share of beneficiaries readmitted to an acute care hospital in the 30 days after discharge increased between 2015 and 2016, putting the rate only slightly below that in 2011.
- Both readmission rates include only patients readmitted to a hospital with the principal diagnosis of a potentially avoidable condition. The 13 potentially avoidable conditions are congestive heart failure, electrolyte imbalance/dehydration, respiratory infection, sepsis, urinary tract or kidney infection, hypoglycemia or diabetic complications, anticoagulant complications, fractures and musculoskeletal injuries, acute delirium, adverse drug reactions, cellulitis/wound infections, pressure ulcers, and abnormal blood pressure.
- The two risk-adjusted measures of change in functional status were essentially unchanged between 2011 and 2016. The mobility measures are composites of the patients' abilities in bed mobility, transfer, and ambulation, and they reflect the likelihood that a patient will change, given his or her functional ability at admission. A facility admitting patients with worse prognoses will have a lower expected rate of achieving these outcomes, and this difference will be reflected in the risk-adjusted rates. The rate of improvement in mobility shows the share of stays with improvement in one, two, or three ADLs. The rate of no decline in mobility is the share of stays with no decline in any of the three ADLs.

## Chart 5-2. Home health agencies' performance on quality measures from 2013 to 2016

Measure	2013	2014	2015	2016
Average share of an agency's beneficiaries who:				
Used emergency department care	11.7%	11.8%	12.2%	12.2%
Had to be admitted to the hospital	15.6	15.2	15.5	16.2
Average share of a home health agency's beneficiaries with improvements in:				
Walking	58	58	63	69
Transferring	53	53	59	65

Note: All data are fee-for-service beneficiaries only and are risk adjusted for differences in patient condition among home health patients.

Source: MedPAC analysis of Outcome and Assessment Information Set data compiled by the University of Colorado.

- The share of beneficiaries using emergency department care or being admitted to the hospital increased slightly from 2013 to 2016. The share of beneficiaries receiving emergency care did not change from 2015 to 2016. The average risk-adjusted rate of hospitalization for home health stays increased slightly from 15.5 percent in 2015 to 16.2 percent in 2016.
- Medicare publishes risk-adjusted home health quality measures that track changes in the functional abilities of patients who receive home health care. These measures do not include home health episodes that end with a hospitalization. The scores for these measures increased in 2016.
- Medicare implemented a value-based purchasing program for home health agencies in nine states in 2018. Agencies in these states will receive bonuses or penalties of up to 3 percent depending on their performance on 20 measures, including the functional and emergency department use measures listed above.

### Chart 5-3. IRFs improved on risk-adjusted rates of discharge to the community and potentially avoidable rehospitalizations from 2012 to 2016

Measure	2012	2013	2014	2015	2016
Potentially avoidable rehospitalizations during IRF stay	2.6%	2.5%	2.5%	2.4%	2.5%
Potentially avoidable rehospitalizations during 30 days after discharge from IRF	4.6	4.5	4.4	4.1	4.4
Discharged to the community	75.3	75.9	76.2	76.0	76.9
Discharged to a SNF	6.7	6.7	6.9	6.8	6.7

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility). High rates of rehospitalization and discharge to a SNF indicate worse quality. High rates of discharge to the community indicate better quality. Rates are the average of the facility rates and are calculated for all facilities with 25 or more stays.

Source: Analysis of Inpatient Rehabilitation Facility–Patient Assessment Instruments from CMS.

- Between 2012 and 2016, the national average rate of risk-adjusted potentially avoidable rehospitalizations during IRF stays declined from 2.6 percent to 2.5 percent. (Lower rates are better.) A similar pattern was observed in the rate of risk-adjusted potentially avoidable rehospitalizations within 30 days after discharge from an IRF: The national average declined between 2012 and 2016 from 4.6 percent to 4.4 percent.
- The rehospitalization rates count only stays readmitted to a hospital with the principal diagnosis of a potentially avoidable condition. The potentially avoidable rehospitalizations we measure are respiratory-related illness (pneumonia, influenza, bronchitis, chronic obstructive pulmonary disease, and asthma); sepsis; congestive heart failure; fractures or fall with a major injury; urinary tract or kidney infection; blood pressure management; electrolyte imbalance; anticoagulant therapy complications; diabetes-related complications; cellulitis or wound infection; pressure ulcer; medication error or adverse drug reaction; and delirium.
- Between 2012 and 2016, the national average for the risk-adjusted community discharge rate increased from 75.3 percent to 76.9 percent. (Higher rates are better). Our measure of community discharge does not give IRFs credit for discharging a Medicare beneficiary to the community if the beneficiary is subsequently readmitted to an acute care hospital within 30 days of the IRF discharge. The national risk-adjusted rate of discharge to a SNF was essentially unchanged.

**Chart 5-4. Dialysis quality of care: Some measures show progress, others need improvement, 2011–2015**

Outcome measure	2011	2013	2015
Share of in-center hemodialysis patients:			
Receiving adequate dialysis	96%	97%	97%
Managing anemia*			
Mean hemoglobin <10 g/dL	14	24	26
Mean hemoglobin 10 to <12 g/dL	69	70	69
Mean hemoglobin ≥12 g/dL	16	5	5
Dialyzed with an AV fistula	59	62	63
Share of peritoneal dialysis patients:			
Receiving adequate dialysis	88	91	92
Managing anemia*			
Mean hemoglobin <10 g/dL	20	32	35
Mean hemoglobin 10 to <12 g/dL	65	62	60
Mean hemoglobin ≥12 g/dL	15	6	5
Share of all dialysis patients wait-listed for a kidney	18	18	16
Renal transplant rate per 100 dialysis-patient years	3.8	3.5	3.4
Annual mortality rate per 100 patient years*	17.8	16.7	16.6
Total hospital admissions per patient year*	1.9	1.8	1.7
Hospital days per patient year	12.5	11.6	11.4

Note: g/dL (grams per deciliter [of blood]), AV (arteriovenous). The rate per patient year is calculated by dividing the total number of events by the fraction of the year that patients were followed. Data on dialysis adequacy, anemia management, and fistula utilization represent the share of patients meeting CMS's clinical performance measures. The United States Renal Data System adjusts data by age, gender, race, and primary diagnosis of end-stage renal disease.  
\*Lower values suggest higher quality.

Source: Compiled by MedPAC with data from Fistula First, the United States Renal Data System, and institutional outpatient files from CMS.

- Quality of dialysis care is mixed. Performance has improved on some measures, but performance on others remains unchanged or has declined.
- All hemodialysis patients require vascular access—the site on the patient's body where blood is removed and returned during dialysis. Between 2011 and 2015, use of arteriovenous fistulas, considered the best type of vascular access, increased from 59 percent to 63 percent of hemodialysis patients. Between 2011 and 2015, overall adjusted mortality rates decreased by 6.8 percent (from 17.8 percent to 16.6 percent).
- Between 2011 and 2015, the proportion of hemodialysis patients receiving adequate dialysis remained high. Between 2011 and 2015, overall rates of hospitalization declined.
- Other measures suggest that improvements in dialysis quality are still needed. We looked at access to kidney transplantation because it is widely believed to be the best treatment option for individuals with end-stage renal disease. Between 2011 and 2015, the proportion of dialysis patients accepted on the kidney transplant waiting list remained low, and the renal transplant rate per 100 dialysis-patient years declined.

**Chart 5-5. Medicare Advantage HMO quality measures for 2016 show variation by enrollee characteristics**

Measures and beneficiary categories	Plans reporting by	
	Universe	Sampling
<b>Colorectal cancer screening</b>	<b>87%</b>	<b>75%</b>
Aged, not LI	88	77
Aged, LI	82	73
Under 65, not LI	82	71
Under 65, LI	76	69
<b>Eye exams for diabetics</b>	<b>85</b>	<b>76</b>
Aged, not LI	86	78
Aged, LI	86	78
Under 65, not LI	78	66
Under 65, LI	80	68
<b>Diabetics with poor control of blood sugar*</b>	<b>11</b>	<b>18</b>
Aged, not LI	9	15
Aged, LI	13	20
Under 65, not LI	19	24
Under 65, LI	22	30
<b>Medication reconciliation postdischarge</b>	<b>84</b>	<b>58</b>
Aged, not LI	85	61
Aged, LI	83	57
Under 65, not LI	77	54
Under 65, LI	84	46
<b>Controlling blood pressure</b>	<b>N/A</b>	<b>78</b>
Aged, not LI	--	80
Aged, LI	--	74
Under 65, not LI	--	75
Under 65, LI	--	68
<b>Breast cancer screening</b>	<b>79</b>	<b>N/A</b>
Aged, not LI	81	--
Aged, LI	74	--
Under 65, not LI	76	--
Under 65, LI	73	--
<b>Osteoporosis management*</b>	<b>48</b>	<b>N/A</b>
Not LI	51	--
LI	42	--

Note: HMO (health maintenance organization) LI (low income), N/A (not applicable). Reported results are for the 2016 “measurement year,” or period of performance. See accompanying text for the difference between “universe” and “sampling” results. An enrollee is classified as low income if, for at least one month of the year, the person was receiving the Part D low-income subsidy or was dually eligible for Medicare and Medicaid. Beneficiaries under age 65 are entitled to Medicare on the basis of disability (including those entitled because they have end-stage renal disease). Data exclude cost-reimbursed plans, regional preferred provider organizations, private fee-for-service plans, Medicare–Medicaid demonstration plans, and plans in Puerto Rico (because of our inability to identify the low-income status of beneficiaries in the Commonwealth).

\*For the measure of diabetics with poor control of blood sugar, lower rates are better. Osteoporosis management measure applies to women ages 67 to 85 who suffered a fracture, so results are not presented for the under-65 population.

Source: MedPAC analysis of CMS Healthcare Effectiveness Data and Information Set® (HEDIS®) person-level data, denominator file, and common Medicare environment file.

*(Chart continued next pages)*

## **Chart 5-5. Medicare Advantage HMO quality measures for 2016 show variation by enrollee characteristics (continued)**

- The chart provides information on a set of HEDIS clinical quality measures that Medicare Advantage (MA) HMOs report to CMS. The seven measures listed are a subset of the measures CMS uses to calculate the plans' star ratings that determine MA quality bonus payments. The values reported in this chart are based on our analyses of enrollee-level HEDIS data rather than contract-level summary reporting used in past versions of this Data Book. As explained in the Commission's March 2018 report to the Congress, it is likely that contract-level values for some measures have become less representative of the actual performance across different geographic areas because of the extent of contract consolidations that result in contracts covering wide, noncontiguous geographic areas. Contract consolidations also prevent us from being able to report year-over-year changes for MA.
- HEDIS uses different reporting methods for certain measures, referred to in the chart as "universe" and "sampling." For the first four measures displayed in the chart, MA organizations can choose to report values for the universe of enrollees to whom a measure applies using administrative data (including information from electronic medical records) or they can opt to report values for a sampling of medical records (generally 411 records per MA contract). For the blood pressure control measure, all organizations must use medical record sampling. For the last two measures on the chart, all plans report on a universe basis.
- For plans reporting by universe, the chart shows the aggregate average share of enrollees across all such plans; the numerator for the measure is the total number, across all HMO plans, of enrollees receiving a screening (for example), divided by the total number of enrollees across all HMO plans who are eligible for the screening. For the sampling category, the chart shows the enrollment-weighted average of the rates for each contract for each of the population categories. Because samples are drawn at the contract level, we use the contract-level data for each population category as the weighting factor. Because of contract consolidations, and because values for the population groups shown in the chart are based on a subset of a sample in each contract, the results for sampling plans may not fully capture differences among plans in the quality of care for the subpopulations.
- When universe reporting is an option, our analysis found that only a small number of organizations report values for the universe of enrollees. For example, only 5 contracts report on a universe basis for the measure of diabetics with poor control of blood sugar, out of 302 HMO contracts reporting on the measure. However, universe-reporting plans tend to be large, so the five universe-reporting plans for this measure represented about 10 percent of MA HMO enrollment in 2016. Four of the five universe-reporting contracts have the maximum overall-quality star rating of five stars.

*(Chart continued next page)*

## **Chart 5-5. Medicare Advantage HMO quality measures for 2016 show variation by enrollee characteristics (continued)**

- Although the universe-reporting plans represent a smaller share of enrollees, we found that they tend to have better quality rates on all four of the measures where universe reporting is optional. For example, the average aggregate colorectal cancer screening rate for universe-reporting plans is 87 percent compared with 75 percent for sampling plans (a 12 percentage point difference). Medication reconciliation postdischarge is 84 percent for universe-reporting plans compared with 58 percent for sampling (a 26 percentage point difference).
- Our analysis found some large differences in results based on age. The under-65 population was less likely to receive colorectal cancer screening, eye exams for diabetic enrollees, postdischarge medication reconciliation, and breast cancer screening. Diabetic enrollees under 65 were much more likely to have poor control of blood sugar than aged diabetics. Poor rates of control were about 1.5 to about 2 times higher for the under-65 population regardless of income for both types of reporting plans.
- Large differences were observed in results by income status for some of the measures. For example, among low-income enrollees, the osteoporosis management rate was 42 percent compared with 51 percent for non-low-income enrollees (a difference of 9 percentage points). For the aged population, the rate for control of high blood pressure was 74 percent compared with 80 percent for non-low-income enrollees (a difference of 6 percentage points). For the controlling blood pressure measure, there was a difference of 7 percentage points in the under-65 population between low-income and non-low-income enrollees. For two measures, however—eye exams for diabetics and (for universe-reporting plans) medication reconciliation—results were better for those with low income among the under-65 enrollees.
- In determining star ratings, CMS makes an adjustment for measures for which there are systematic cross-contract and within-contract differences across population groups based on disability status and low-income status.

**Chart 5-6. Between 34 and 72 low-value services provided per 100 FFS beneficiaries in 2014; Medicare spent between \$2.4 billion and \$6.5 billion on these services**

Measure	Broader version of measure			Narrower version of measure		
	Count per 100 beneficiaries	Share of beneficiaries affected	Spending (millions)	Count per 100 beneficiaries	Share of beneficiaries affected	Spending (millions)
Imaging for nonspecific low back pain	12.0	8.9%	\$232	3.4	3.1%	\$66
PSA screening at age ≥75 years	9.0	6.2	79	5.1	4.2	44
Colon cancer screening for older adults	8.0	7.5	405	0.3	0.3	3
Spinal injection for low back pain	6.6	3.3	1,261	3.4	2.0	643
Carotid artery disease screening in asymptomatic adults	5.1	4.6	268	4.2	3.8	221
Preoperative chest radiography	4.6	4.1	67	1.1	1.1	17
PTH testing in early CKD	4.5	2.6	83	3.9	2.3	71
Stress testing for stable coronary disease	4.3	4.1	1,198	0.5	0.5	137
T3 level testing for patients with hypothyroidism	3.8	2.2	23	3.8	2.2	23
Head imaging for headache	3.6	3.3	242	2.4	2.2	160
Cervical cancer screening at age >65 years	2.2	2.2	44	1.9	1.9	39
Homocysteine testing in cardiovascular disease	1.5	1.2	12	0.4	0.3	3
Head imaging for syncope	1.2	1.1	78	0.8	0.7	51
Preoperative echocardiography	0.8	0.8	62	0.2	0.2	19
Preoperative stress testing	0.6	0.6	177	0.2	0.2	60
Screening for carotid artery disease for syncope	0.6	0.6	33	0.4	0.4	23
CT for rhinosinusitis	0.6	0.5	39	0.2	0.2	17
Vitamin D testing in absence of hypercalcemia or decreased kidney function	0.5	0.4	8	0.5	0.4	8
Imaging for plantar fasciitis	0.5	0.4	9	0.4	0.3	6
BMD testing at frequent intervals	0.4	0.4	9	0.3	0.3	6
Cancer screening for patients with CKD on dialysis	0.4	0.3	9	0.1	0.1	1
PCI/stenting for stable coronary disease	0.3	0.3	1,284	0.1	0.1	216
Arthroscopic surgery for knee osteoarthritis	0.2	0.2	204	0.1	0.1	108
Vertebroplasty	0.2	0.2	338	0.2	0.2	327
Preoperative PFT	0.2	0.2	2	0.1	0.1	1
Hypercoagulability testing after DVT	0.2	0.1	5	0.1	0.1	2
IVC filter placement	0.1	0.1	33	0.1	0.1	33
Carotid endarterectomy for asymptomatic patients	0.1	0.1	165	0.03	0.03	66
EEG for headache	0.1	0.1	4	0.04	0.04	2
Renal artery stenting	0.1	0.1	152	0.02	0.02	51
Pulmonary artery catheterization in ICU	0.01	0.01	0.2	0.01	0.01	0.2
<b>Total</b>	<b>72.2</b>	<b>37.4</b>	<b>6,526</b>	<b>34.2</b>	<b>22.5</b>	<b>2,425</b>

(Chart continued next page)

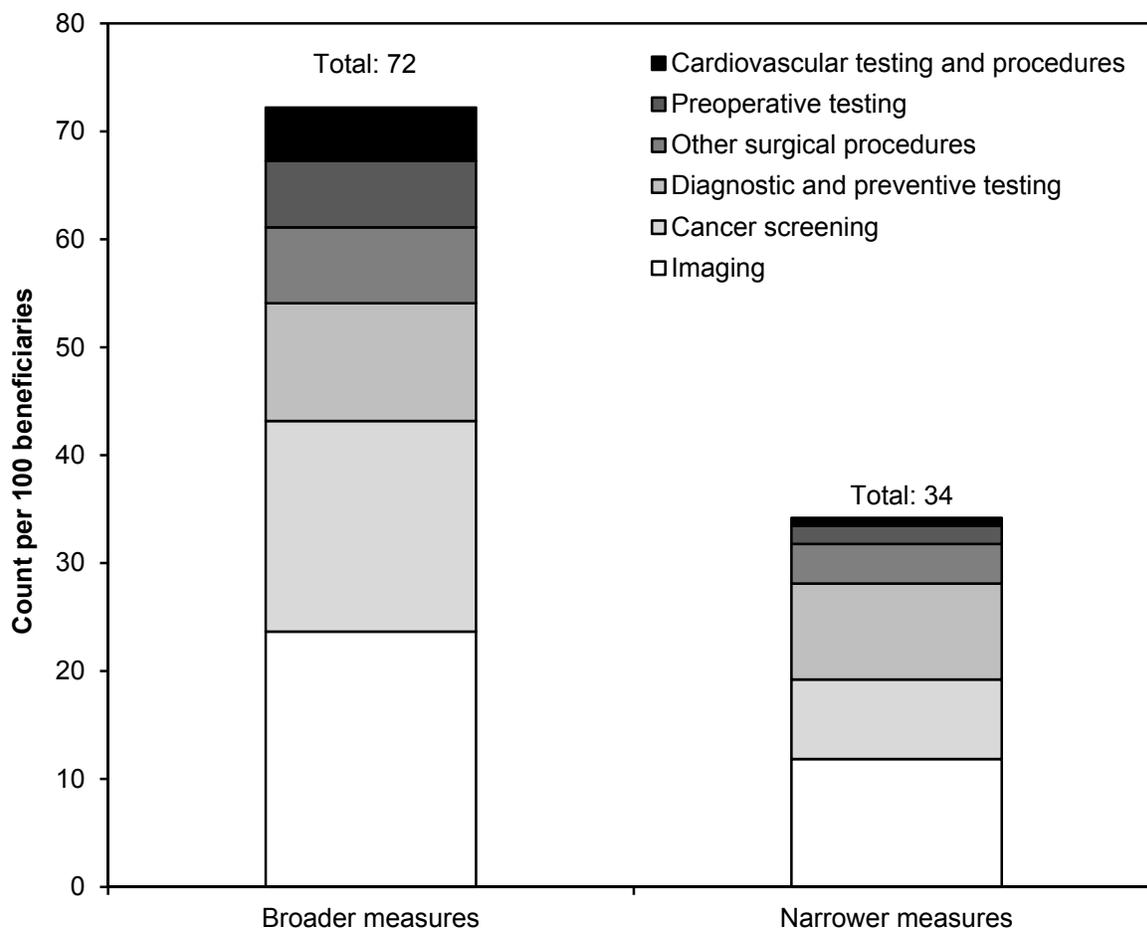
## Chart 5-6. Between 34 and 72 low-value services provided per 100 FFS beneficiaries in 2014; Medicare spent between \$2.4 billion and \$6.5 billion on these services (continued)

Note: FFS (fee-for-service), PSA (prostate-specific antigen), PTH (parathyroid hormone), CKD (chronic kidney disease), CT (computed tomography), BMD (bone mineral density), PCI (percutaneous coronary intervention), PFT (pulmonary function test), DVT (deep vein thrombosis), IVC (inferior vena cava), EEG (electroencephalography), ICU (intensive care unit). “Count” refers to the number of unique services. Numbers may not sum to totals due to rounding. The total for share of beneficiaries affected does not equal the column sum because some beneficiaries received services covered by multiple measures. “Spending” includes Medicare Part A and Part B program spending and beneficiary cost sharing for services detected by measures of low-value care. Spending is based on a standardized price for each service from 2009 that was updated to 2014.

Source: MedPAC analysis of 100 percent of Medicare claims using measures developed by Schwartz and colleagues (Schwartz, A. L., B. E. Landon, A. G. Elshaug, et al. 2014. Measuring low-value care in Medicare. *JAMA Internal Medicine* 174: 1067–1076; Schwartz, A. L., M. E. Chernew, B. E. Landon, et al. 2015. Changes in low-value services in year 1 of the Medicare Pioneer Accountable Care Organization Program. *JAMA Internal Medicine* 175: 1815–1825).

- Low-value care is the provision of a service that has little or no clinical benefit or care in which the risk of harm from the service outweighs its potential benefit.
- The 31 measures of low-value care in this chart were developed by a team of researchers. The measures are drawn from evidence-based lists—such as Choosing Wisely—and the medical literature. We applied these measures to 100 percent of Medicare claims data from 2014. These 31 measures do not represent *all* instances of low-value care; the actual number (and corresponding spending) may be much higher.
- The researchers developed two versions of each measure: a broader version (more sensitive, less specific) and a narrower version (less sensitive, more specific). Increasing the sensitivity of a measure captures more potentially inappropriate use but is also more likely to misclassify some appropriate use as inappropriate. Increasing a measure’s specificity leads to less misclassification of appropriate use as inappropriate, at the expense of potentially missing some instances of inappropriate use.
- Based on the broader versions of the measures, our analysis found about 72 instances of low-value care per 100 beneficiaries in 2014, and about 37 percent of beneficiaries received at least 1 low-value service. Medicare spending for these services was \$6.5 billion. Based on the narrower versions of the measures, our analysis showed about 34 instances of low-value care per 100 beneficiaries, and almost 23 percent of beneficiaries received at least 1 low-value service. Medicare spending for these services totaled about \$2.4 billion.

**Chart 5-7. Imaging and cancer screening accounted for most of the volume of low-value care in 2014**

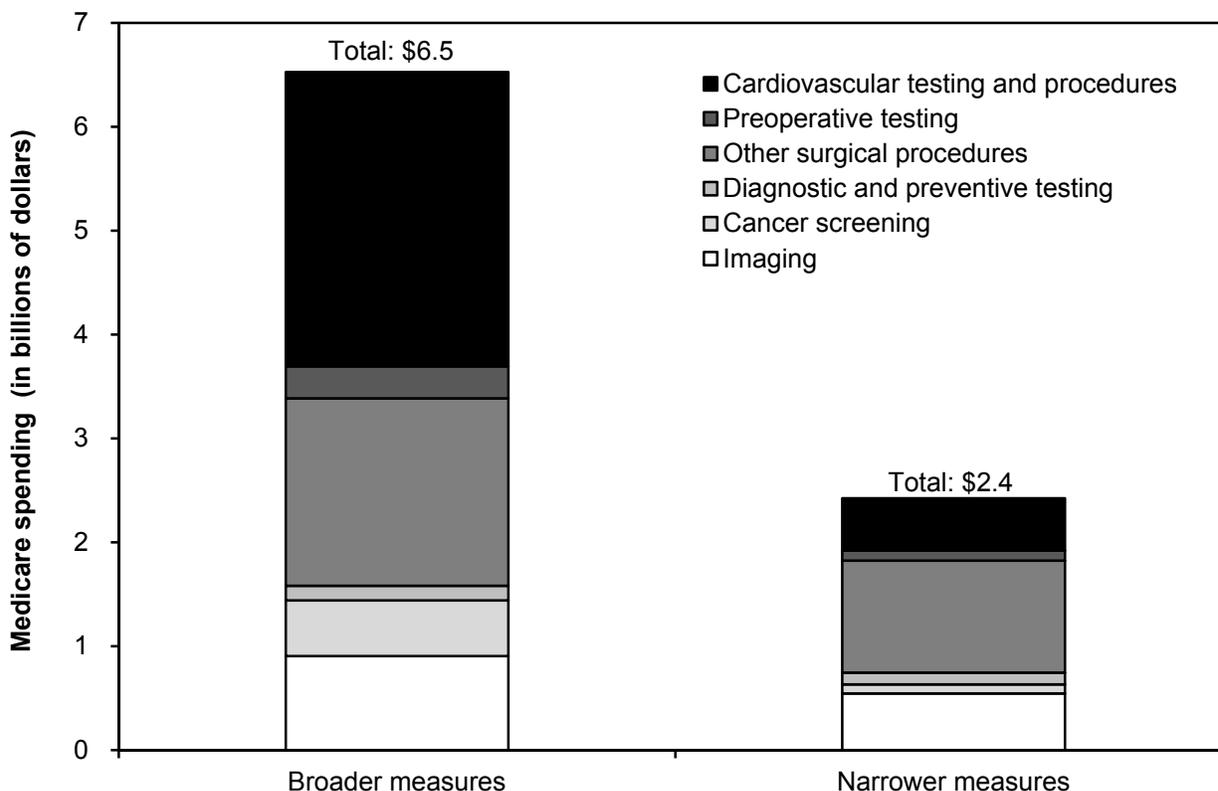


Note: FFS (fee-for-service). “Count” refers to the number of unique services provided to FFS Medicare beneficiaries.

Source: MedPAC analysis of 100 percent of Medicare claims using measures developed by Schwartz and colleagues (Schwartz, A. L., B. E. Landon, A. G. Elshaug, et al. 2014. Measuring low-value care in Medicare. *JAMA Internal Medicine* 174: 1067–1076; Schwartz, A. L., M. E. Chernew, B. E. Landon, et al. 2015. Changes in low-value services in year 1 of the Medicare Pioneer Accountable Care Organization Program. *JAMA Internal Medicine* 175: 1815–1825).

- We assigned each of the 31 measures of low-value care from Chart 5-6 to 1 of 6 clinical categories.
- Imaging and cancer screening accounted for 60 percent of the volume of low-value care per 100 beneficiaries among the broader versions of the measures. The “imaging” category includes back imaging for patients with nonspecific low back pain and screening for carotid artery disease in asymptomatic adults. The cancer screening category includes prostate-specific antigen testing for men ages 75 or older and colorectal cancer screening for older adults.
- Among the narrower versions of the measures, imaging and diagnostic and preventive testing accounted for 61 percent of the volume of low-value care per 100 beneficiaries.

**Chart 5-8. Cardiovascular testing and procedures, other surgical procedures, and imaging accounted for most of spending on low-value care in 2014**



Note: “Spending” includes Medicare Part A and Part B program spending and beneficiary cost sharing for services detected by measures of low-value care. To estimate spending, we used standardized prices to adjust for regional differences in payment rates. The standardized price is the median payment amount per service in 2009, adjusted for the increase in payment rates between 2009 and 2014. This method was developed by Schwartz et al. (2014).

Source: MedPAC analysis of 100 percent of Medicare claims using measures developed by Schwartz and colleagues (Schwartz, A. L., B. E. Landon, A. G. Elshaug, et al. 2014. Measuring low-value care in Medicare. *JAMA Internal Medicine* 174: 1067–1076; Schwartz, A. L., M. E. Chernew, B. E. Landon, et al. 2015. Changes in low-value services in year 1 of the Medicare Pioneer Accountable Care Organization Program. *JAMA Internal Medicine* 175: 1815–1825).

- Cardiovascular testing and procedures and other surgical procedures accounted for 71 percent of total spending on low-value care using the broader measures. Other surgical procedures and imaging made up two-thirds of spending on low-value care using the narrower measures.
- The “cardiovascular testing and procedures” category includes stress testing for stable coronary disease and percutaneous coronary intervention with balloon angioplasty or stent placement for stable coronary disease. The “other surgical procedures” category includes spinal injection for low back pain and arthroscopic surgery for knee osteoarthritis. The “imaging” category includes imaging for patients with nonspecific low back pain and carotid artery screening disease in asymptomatic adults.
- The spending estimates probably understate actual spending on low-value care because they do not include the cost of downstream services (e.g., follow-up tests and procedures) that may result from the initial low-value service. Also, we are not capturing *all* low-value care through these 31 measures.



SECTION

6

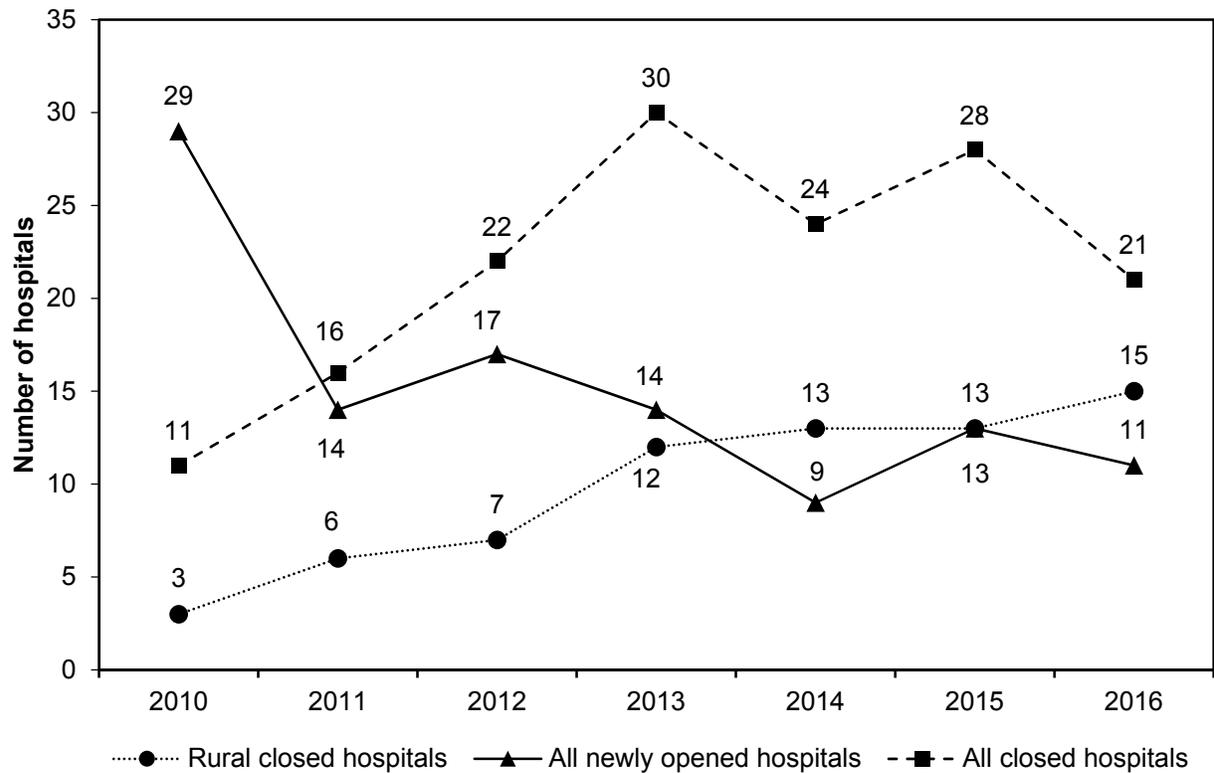
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**Acute inpatient services**  
**Short-term hospitals**  
**Inpatient psychiatric facilities**

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**Chart 6-1. Annual changes in number of acute care hospitals participating in the Medicare program, 2010–2016**

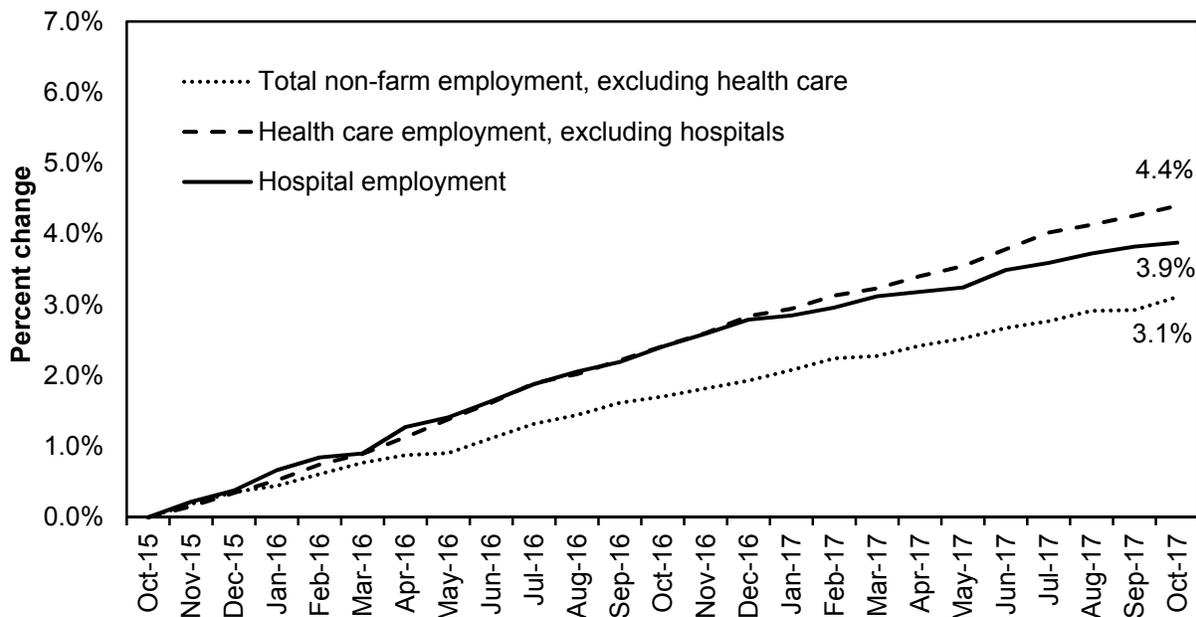


Note: "Hospitals" refers to general short-term acute care hospitals. The Commission's reported number of open and closed hospitals can change from year to year based on hospitals that enter Medicare as an acute care facility and later convert to a more specialized type of facility, such as a long-term care hospital or critical access hospital.

Source: MedPAC analysis of CMS's Provider of Service file, inpatient prospective payment system final rule impact file, and hospital cost reports.

- The number of hospital closures exceeded the number of openings in 2016, with 21 acute care hospitals closing (less than 1 percent of all acute care hospitals participating in the Medicare program) and 11 hospitals starting participation in the Medicare program.
- In 2016, rural hospital closures accounted for over half of all hospital closures. A dozen or more rural hospitals have closed in each of the four most recent years (2013 to 2016). Rural hospital closures could in part reflect declining inpatient volume at many rural hospitals.
- In 2016, 4,585 acute care hospitals submitted claims to Medicare for inpatient services (data not shown).

**Chart 6-2. Percent change in hospital employment, 2015–2017**

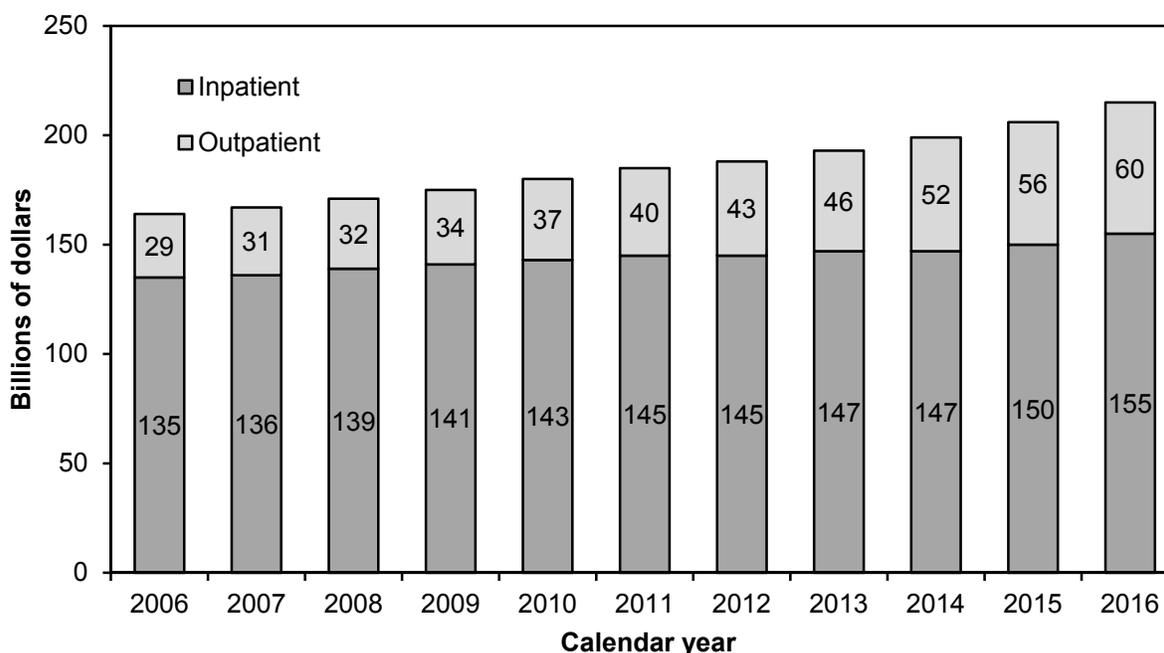


Note: "Total non-farm employment" is defined as all employment not of or relating to farms or farming.

Source: MedPAC analysis of Bureau of Labor Statistics, Current Employment Statistics data set as of December 2017.

- The Bureau of Labor Statistics survey of current employment data indicates that the number of individuals directly employed within the hospital industry increased 3.9 percent from October 2015 to October 2017. Employment in the rest of the health care sector increased 4.4 percent, and employment across the rest of the economy (non-farm minus health care) increased 3.1 percent.
- In the most recent year (from 2016 to 2017), hospital employment increased 1.4 percent, the rest of the health care sector increased 2.2 percent, and employment across the rest of the economy (non-farm minus health care) increased 1.3 percent.
- From 2015 to 2017, the number of hospital staff in health care clinical and technical occupations overall increased 6 percent (data not shown). Within this category, larger than average increases occurred for physician assistants (20 percent); pharmacists (9 percent); diagnostic-related technologists (7 percent); and registered nurses (6 percent). Licensed practical nurses/licensed vocational nurses were among the few occupations in this category with a decline in employment (–4 percent).
- From 2015 to 2017, the number of hospital staff in nonclinical occupations increased for just a few occupational categories: life and physical science research (18 percent); computer and math science (9 percent); and business and finance (7 percent) (data not shown). By contrast, growth in the number of employed individuals was lower than average in nonclinical occupational categories such as building and grounds (2 percent); management (1 percent); and food service (–1 percent). Some of these functions may have been outsourced in recent years.

**Chart 6-3. Growth in Medicare’s FFS payments for hospital inpatient and outpatient services, 2006–2016**



Note: FFS (fee-for-service). Analysis includes inpatient services covered by the acute inpatient prospective payment system (PPS); psychiatric, rehabilitation, long-term care, cancer, and children’s hospitals and units; outpatient services covered by the outpatient PPS; and other outpatient services. Payments include program outlays and beneficiary cost sharing, including hospital cost sharing for beneficiaries eligible for Medicare through end-stage renal disease.

Source: CMS, Office of the Actuary.

- Aggregate Medicare FFS inpatient spending was \$155 billion and outpatient spending was \$60 billion in 2016. From 2015 to 2016, inpatient spending increased 3.3 percent, while outpatient spending increased nearly 7.1 percent.
- Inpatient spending increased as much between 2015 and 2016 (\$5 billion) as it did between 2011 and 2015.
- Outpatient spending has increased as a share of total Medicare hospital spending in the past 10 years. In 2006, outpatient spending accounted for almost 18 percent of all Medicare spending for hospital services; in 2016, outpatient spending grew to almost 28 percent of total Medicare hospital spending.

**Chart 6-4. Share of Medicare acute care hospital inpatient discharges by hospital group, 2016**

Hospital group	Hospitals		Medicare discharges	
	Number	Share of total	Number (thousands)	Share of total
All PPS and CAHs	4,583	100%	9,488	100%
CAHs	1,345	29.4	309	3.3
PPS hospitals	3,238	70.7	9,179	96.7
Urban (PPS only)	2,431	53.0	8,225	86.7
Large urban	1,298	28.3	4,276	45.1
Other urban	1,115	24.3	3,922	41.3
Rural (PPS only)	807	17.6	954	10.1
Rural referral	92	2.0	226	2.4
Sole community	363	7.9	476	5.0
Medicare dependent	157	3.4	126	1.3
Other rural, <50 beds	112	2.4	44	0.5
Other rural, ≥50 beds	101	2.2	108	1.1
Tax status (PPS only)				
Voluntary	1,876	40.9	6,440	67.9
Proprietary	857	18.7	1,653	17.4
Government	505	11.0	1,084	11.4
Teaching status (PPS only)				
Major teaching	307	6.7	1,663	17.5
Other teaching	769	16.8	3,565	37.6
Nonteaching	2,162	47.2	3,950	41.6

Note: PPS (prospective payment system), CAH (critical access hospital). Maryland hospitals are excluded. Large urban areas are those with populations of more than 1 million. Major teaching hospitals are defined by a ratio of interns and residents to beds of at least 0.25. Other teaching hospitals have a ratio below 0.25. Data are limited to providers with complete 2016 cost reports. Hospitals in urban, rural, tax status, and teaching status categories are all PPS hospitals. Components may not sum to totals due to rounding. The “Medicare dependent” hospital category includes 18 urban facilities located within metropolitan statistical areas. These 18 facilities are included in the “Medicare dependent” category but excluded from the “Rural (PPS only)” category, resulting in the rural subcategories not summing to the rural totals.

Source: MedPAC analysis of PPS impact files and Medicare cost report data from CMS.

- In 2016, 3,238 hospitals provided almost 9.2 million discharges under Medicare’s acute inpatient PPS, and 1,345 CAHs provided 309,000 discharges. The number of discharges declined from 2015 to 2016 at both PPS hospitals and CAHs (data not shown).
- Approximately 19 percent of PPS hospitals were covered by three special payment provisions (rural referral centers (RRCs), sole community hospitals (SCHs), and Medicare-dependent hospitals (MDHs)) intended to help rural facilities that are not CAHs; these facilities accounted for 9 percent of all discharges.
- About 91 percent of rural hospitals were paid through the CAH, RRC, or SCH provisions or MDH Program in 2016. Collectively, these four types of hospitals accounted for 90 percent of all rural Medicare discharges.

**Chart 6-5. Change in share of discharges by major diagnostic category, 2006 to 2016**

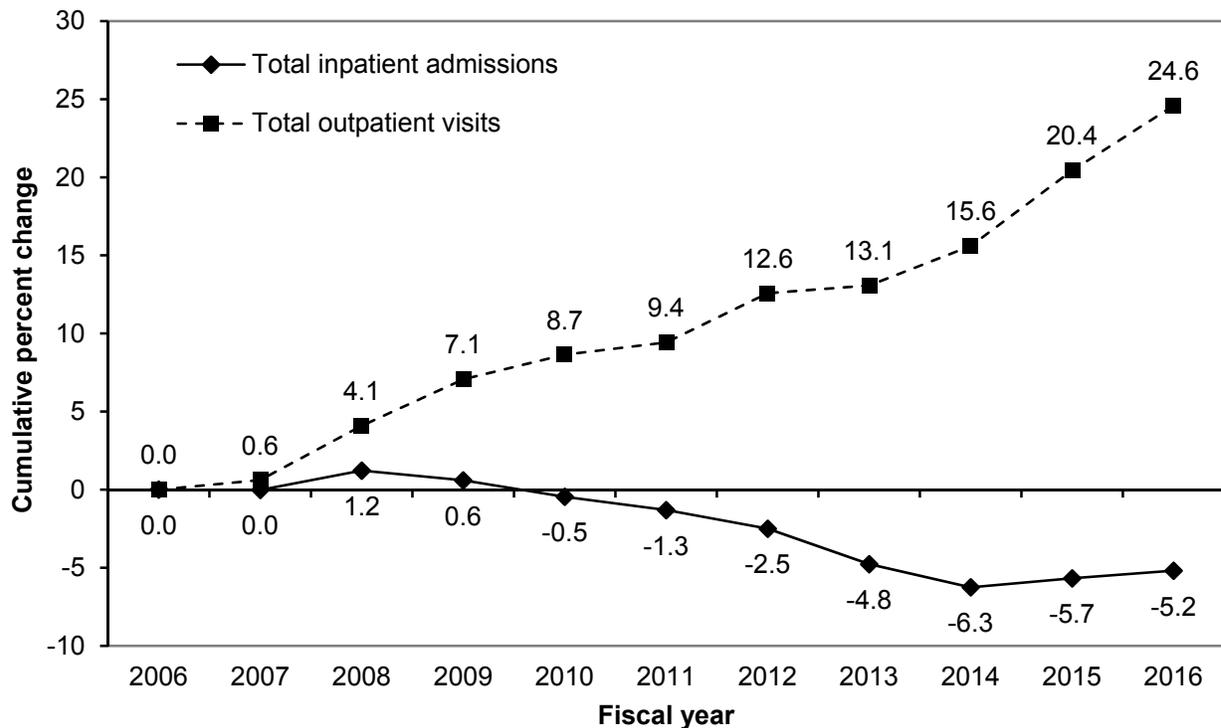
MDC number	MDC name	Share of all discharges 2006	Share of all discharges 2016	Percentage point change
5	Circulatory system	27%	20%	-7
8	Musculoskeletal system	12	14	2
4	Respiratory system	14	13	-1
6	Digestive system	11	10	-1
18	Infectious and parasitic diseases	4	9	5
1	Nervous system	8	8	0
11	Kidney and urinary tract	6	8	2
10	Endocrine, nutritional and metabolic	4	4	0
7	Hepatobiliary system and pancreas	3	3	0
9	Skin, subcutaneous tissue and breast	3	3	0
	Total	92	92	0

Note: MDC (major diagnostic category).

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- In 2016 (and 2006), 10 major diagnostic categories accounted for 92 percent of all discharges from hospitals paid under the inpatient prospective payment system.
- Circulatory system discharges accounted for one-fifth of all inpatient discharges in 2016, a decline of 7 percentage points from 2006.
- Musculoskeletal system discharges accounted for 14 percent of all inpatient discharges in 2016, up 2 percentage points from 2006. This increase is due to growth in the number of discharges for major joint replacement surgery.
- Infectious and parasitic disease discharges accounted for 9 percent of all inpatient discharges in 2016, up 5 percentage points from 2006.

**Chart 6-6. Cumulative change in all-payer hospital outpatient visits and inpatient admissions, 2006–2016**

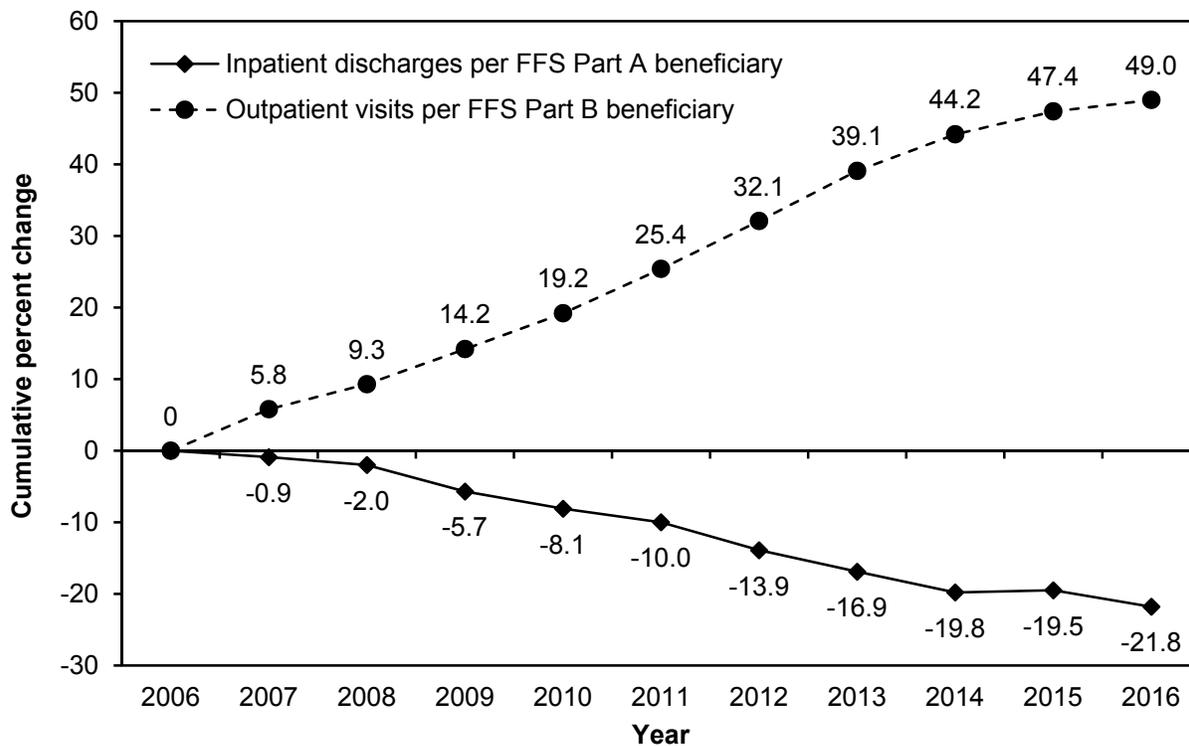


Note: Cumulative change is the total percentage change from 2006 through 2016. Data are admissions to and outpatient visits at about 5,000 community hospitals. Inpatient data exclude separate nursing home units.

Source: American Hospital Association, AHA Hospital Statistics.

- In 2016, community hospitals provided a total of nearly 747 million outpatient visits and 33 million inpatient admissions across all patients (data not shown).
- All-payer hospital outpatient service use grew rapidly between 2006 and 2016, while inpatient service use declined overall. From 2006 to 2016, the number of outpatient visits increased about 25 percent. By contrast, over the same period, the number of all-payer inpatient admissions declined more than 5 percent.
- All-payer outpatient and inpatient service use both increased from 2014 to 2016. Over this period, the number of outpatient visits increased by 9.0 percentage points, the most rapid growth observed in over a decade. Over the same period, the number of inpatient admissions increased 1.1 percentage points.

**Chart 6-7. Cumulative change in Medicare outpatient visits and inpatient discharges per FFS beneficiary, 2006–2016**

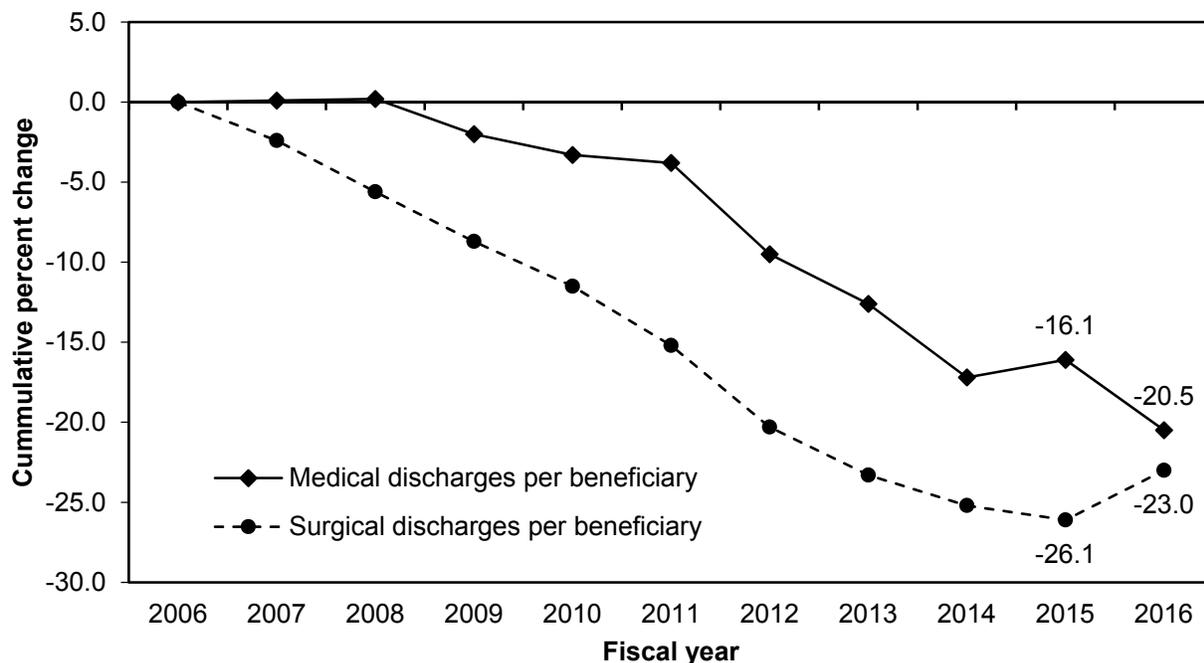


Note: FFS (fee-for-service). Data are for short-term general and surgical hospitals, including critical access and children's hospitals. Years for outpatient visits are calendar years, and years for inpatient discharges are fiscal years.

Source: MedPAC analysis of Medicare Provider Analysis and Review and hospital outpatient claims data from CMS.

- In 2016, Medicare accounted for approximately 53 million outpatient visits and 10 million inpatient admissions (data not shown).
- From 2006 to 2016, the number of Medicare outpatient visits per FFS beneficiary increased 49.0 percent. By contrast, over the same period, the number of Medicare inpatient admissions per FFS beneficiary declined nearly 22 percent.
- Together, these two trends suggest a shift in services from the inpatient to the outpatient setting. The growth in outpatient services also reflects a shift in some services from those provided in physician offices to those being billed as outpatient hospital services.
- From 2015 to 2016, the number of Medicare outpatient services per FFS beneficiary increased 1.6 percentage points, and Medicare inpatient discharges per FFS beneficiary declined 2.3 percentage points. Compared with growth in recent prior years, outpatient visits increased slightly more slowly and inpatient discharges continued to decline.

**Chart 6-8. Trends in medical and surgical inpatient discharges per beneficiary diverged, 2006–2016**

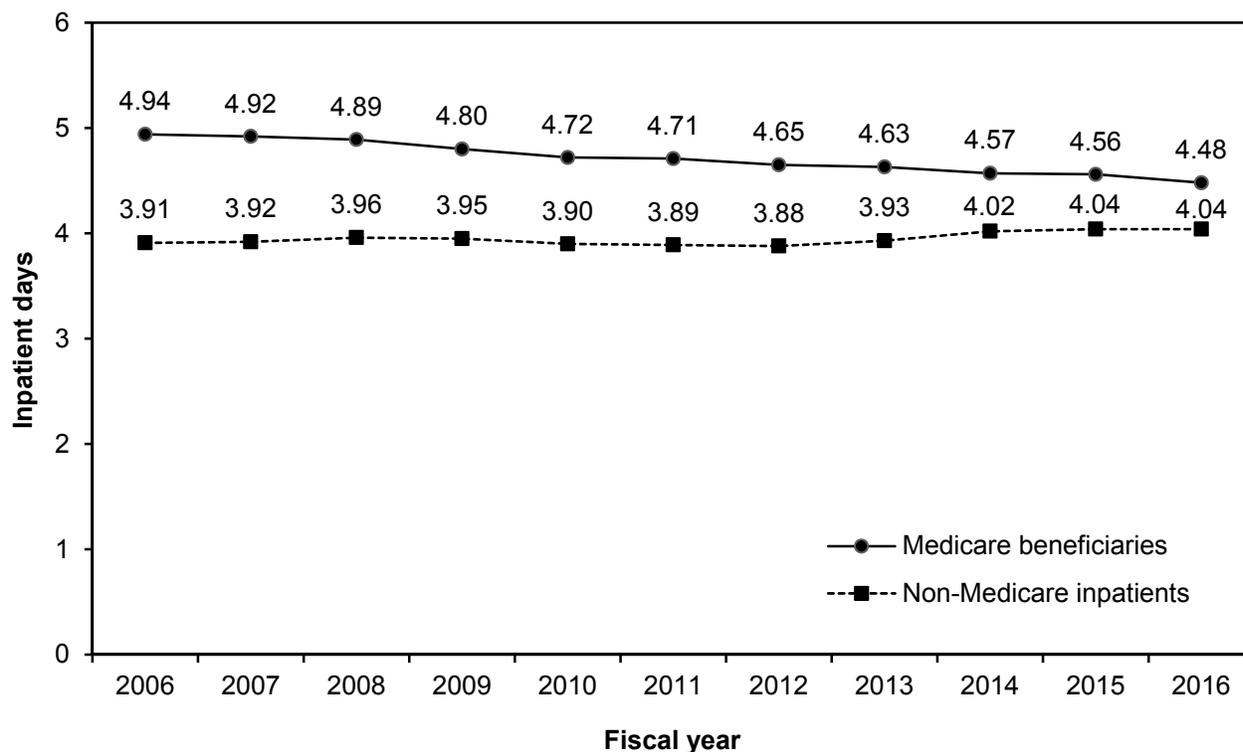


Note: Data are for short-term general and surgical hospitals, including critical access hospitals and children's hospitals.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- From 2006 to 2016, the volume of medical and surgical inpatient discharges per FFS beneficiary declined nearly 21 percent and 23 percent, respectively.
- From 2015 to 2016, the volume of surgical discharges increased 4.3 percent per beneficiary (data not shown) and 3.1 percentage points relative to cumulative change over the last decade. This increase is in part attributable to growth in the number of major joint replacement surgeries, infectious and disease surgeries, and stomach or esophageal surgeries.
- From 2015 to 2016, the volume of medical discharges declined 5.2 percent per beneficiary (data not shown) and 4.4 percentage points relative to cumulative change over the last decade. This decrease is in part attributable to a decline in the number of admissions for respiratory diagnoses such as pneumonia and chronic obstructive pulmonary disease and admissions for various types of circulatory system diagnoses.
- The increase in surgical discharges from 2015 to 2016 relative to medical discharges resulted in an increase in the overall average patient case mix for Medicare inpatient discharges of 3.4 percent, the largest increase in case mix observed in the last decade (data not shown).

**Chart 6-9. Trends in Medicare FFS and non-Medicare inpatient length of stay, 2006–2016**

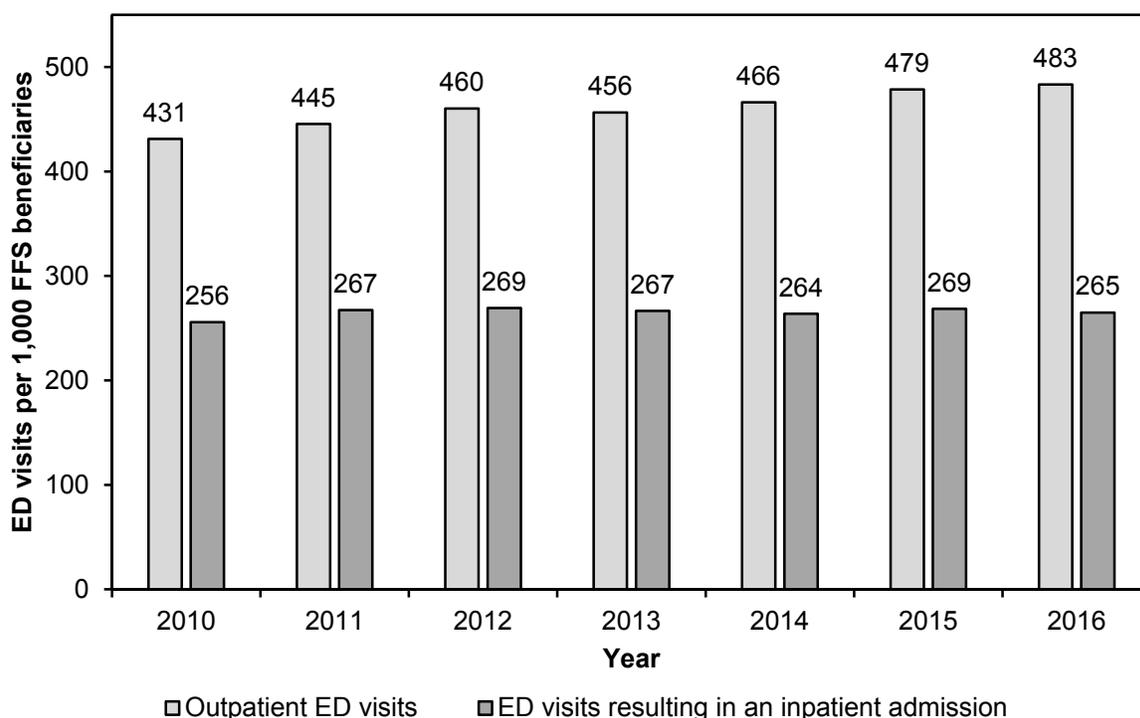


Note: FFS (fee-for-service). Length of stay is calculated from discharges and patient days for more than 3,000 hospitals covered by the acute inpatient prospective payment system. The chart excludes critical access hospitals.

Source: MedPAC analysis of Medicare cost report data from CMS.

- In 2016, the average length of inpatient stays for Medicare beneficiaries was approximately one-half a day longer than for non-Medicare inpatients. In 2006, the difference was more than a full day.
- The average length of inpatient stays for Medicare beneficiaries declined slightly between 2015 and 2016.
- While Medicare length of stay fell between 2006 and 2016, the average length of stay for non-Medicare inpatients increased. Between 2006 and 2016, Medicare inpatient length of stay fell 9.3 percent, and the inpatient length of stay for all non-Medicare inpatients increased 3.3 percent.

**Chart 6-10. Hospital emergency department use per Medicare FFS beneficiary increased, 2010–2016**

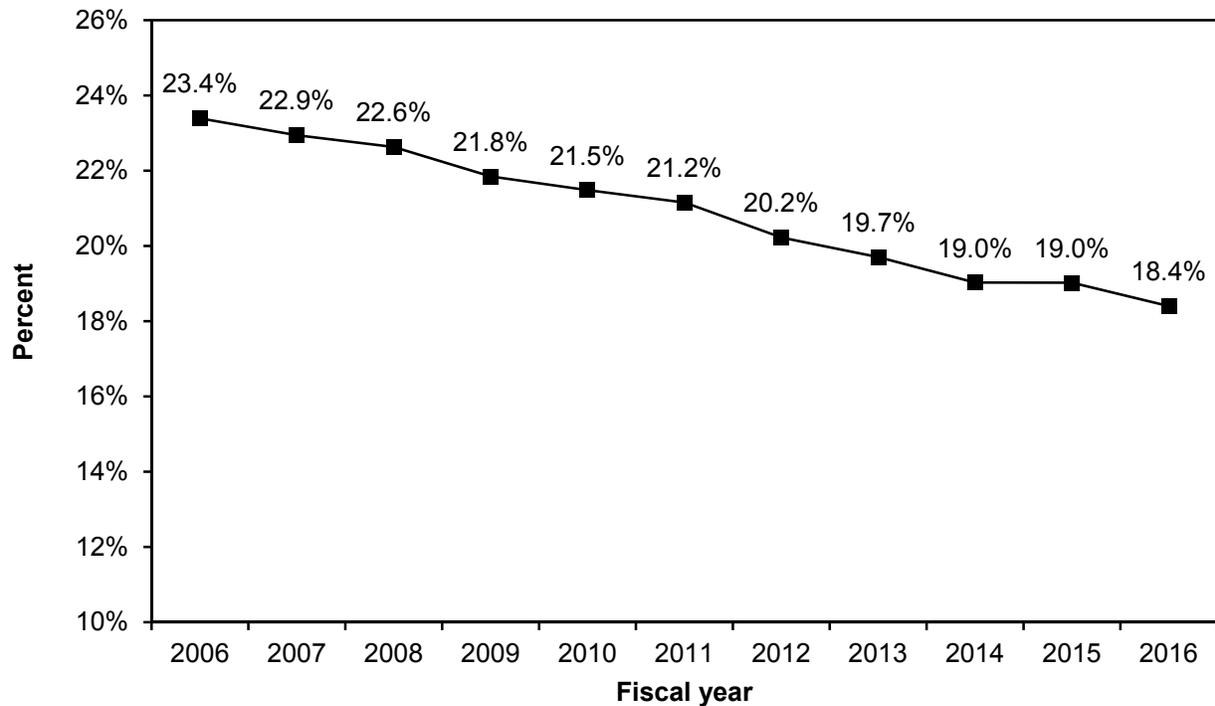


Note: FFS (fee-for-service), ED (emergency department). Years for outpatient ED visits are calendar years, and years for inpatient ED visits are fiscal years. Analysis excludes Medicare Advantage claims and claims for non-inpatient prospective payment system hospitals such as critical access hospitals and hospitals located in Maryland.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- In 2016, Medicare FFS beneficiaries accounted for 28 million visits to hospital emergency departments (EDs). Among these ED visits, 19 million were outpatient ED visits—those that did not result in an inpatient admission—and 10 million were inpatient ED visits—those that resulted in an inpatient admission (data not shown).
- From 2010 to 2016 the number of outpatient ED visits per 1,000 FFS beneficiaries increased from 431 to 483, or 12 percent.
- From 2010 to 2016, the number of ED visits resulting in inpatient admissions per 1,000 FFS beneficiaries increased from 256 to 265, or less than 4 percent.
- From 2010 to 2016, the number of outpatient ED visits billed at the highest of the five ED payment levels (Level 5) increased as a share of all ED visits, climbing from 19 percent to 27 percent of all Medicare ED visits. By contrast, during the same period, ED visits coded in the three lowest ED payment levels declined as a share of all Medicare ED visits. For example, the share of Level 3 ED visits declined as a share of all ED visits from 33 percent to 28 percent (data not shown).

**Chart 6-11. Share of Medicare Part A fee-for-service beneficiaries with at least one hospitalization, 2006–2016**

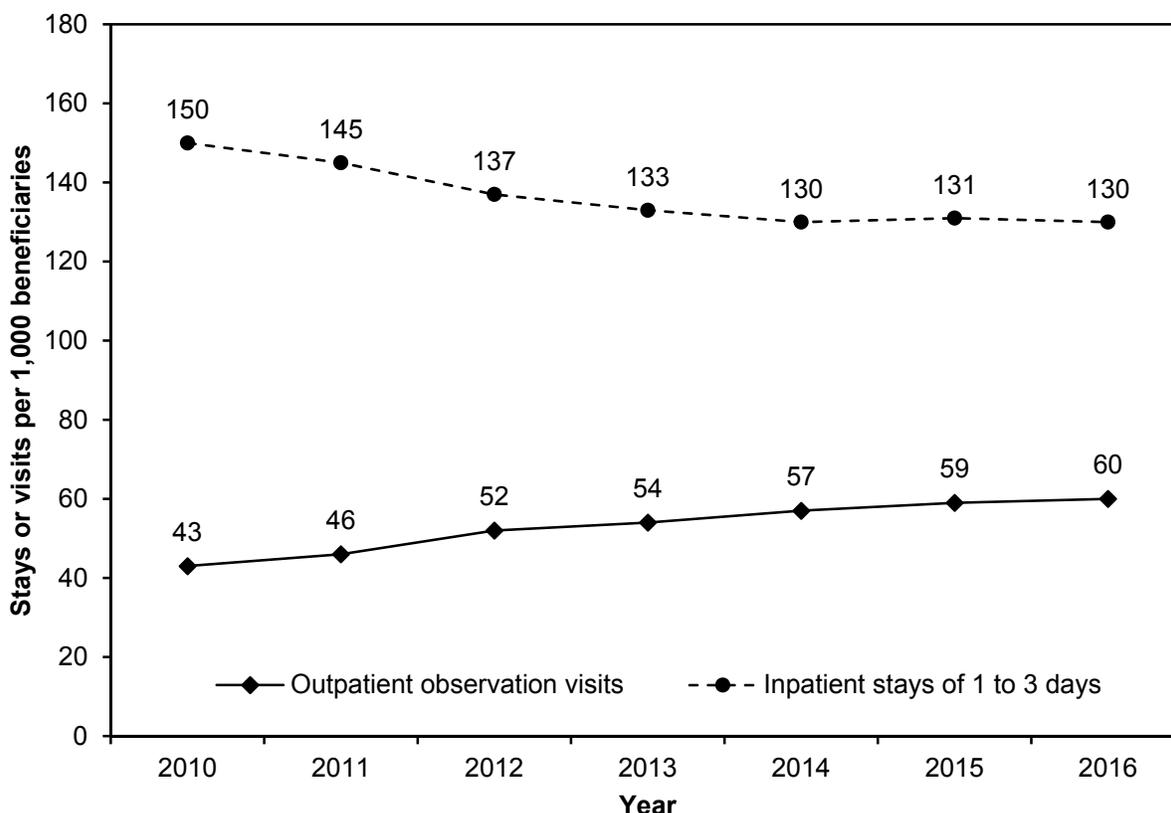


Note: Analysis excludes Medicare Advantage claims and claims for non-inpatient prospective payment system hospitals such as critical access hospitals and hospitals located in Maryland.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- From 2006 to 2016, the share of Medicare fee-for-service beneficiaries with Part A coverage who had at least one inpatient hospitalization declined 5 percentage points, from more than 23.4 percent of beneficiaries to 18.4 percent of beneficiaries.
- From 2015 to 2016, the share of Medicare fee-for-service beneficiaries with Part A coverage who had at least one inpatient hospitalization slightly decreased.
- Medicare fee-for-service beneficiaries with Part A coverage who used inpatient hospital services in 2016 had an average of 1.68 inpatient claims over the course of the year, slightly decreasing from the previous year (data not shown).
- A portion of the long-term decline in beneficiaries' utilization of inpatient services could reflect the increase in the number of cases in which beneficiaries are served in outpatient observation status (see Chart 6-12).

**Chart 6-12. Number of Medicare FFS outpatient observation visits per 1,000 beneficiaries relative to short inpatient stays, 2010 to 2016**



Note: FFS (fee-for-service). Years for outpatient visits are calendar years, and years for inpatient stays are fiscal years.

Source: Medicare hospital cost reports and Medicare outpatient claims data.

- In 2016, Medicare beneficiaries had approximately 2 million outpatient observation visits (data not shown).
- From 2010 to 2016, the number of outpatient observation visits per 1,000 beneficiaries increased by 17 visits, similar to the combined decline in inpatient discharges lasting between 1 and 3 days (20 fewer discharges per 1,000 beneficiaries between 2010 and 2016). This finding suggests that outpatient observation visits may account for a portion of the decline in short inpatient discharges.
- In 2016, the average length of an outpatient observation visit was 28 hours (data not shown).
- In 2016, nearly 250,000 outpatient observation visits were 48 hours or longer, representing approximately 12 percent of all observation stays (data not shown).

**Chart 6-13. Hospital patient experience measures, 2012–2016**

H-CAHPS® measure	2012	2013	2014	2015	2016	Percentage point change, 2012–2016
Hospital rating	70%	71%	71%	72%	73%	3
Communication with nurses	78	79	79	80	80	2
Communication with doctors	81	82	82	82	82	1
Responsiveness of hospital staff	67	68	68	68	69	2
Communication about medicines	64	64	65	65	65	1
Cleanliness of hospital environment	73	74	74	74	75	2
Quietness of hospital environment	60	61	62	62	63	3
Discharge information	85	86	86	87	87	2
Recommend the hospital	71	71	71	72	72	1
Care transition*	—	51	52	52	52	—

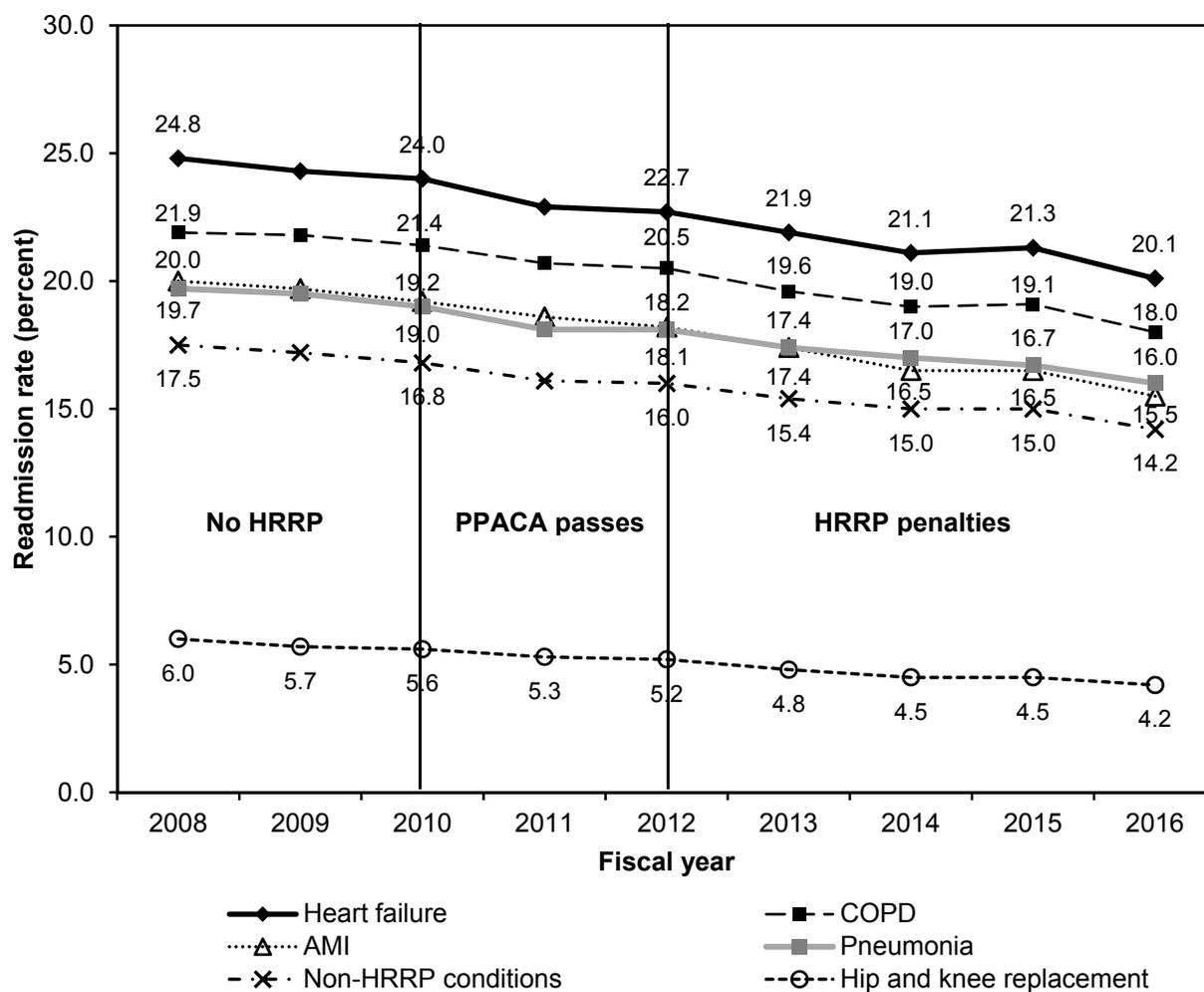
Note: H-CAHPS® (Hospital Consumer Assessment of Healthcare Providers and Systems®). H-CAHPS is a standardized 32-item survey of patients' evaluations of hospital care. The survey items are combined to calculate measures of patient experience for each hospital. The H-CAHPS measures included in the table are "top-box," or the most positive, response to H-CAHPS survey items. The top-box response is "Always" for four H-CAHPS composite measures (communication with nurses, communication with doctors, responsiveness of hospital staff, and communication about medicines) and two individual items (cleanliness of hospital environment and quietness of hospital environment), "Yes" for the discharge information composite, "9" or "10" (high) for the hospital rating item, "Definitely yes" for the recommend the hospital item, and "Strongly agree" for the care transition composite. Each year's results are based on a sample of hospital surveys of their patients from January to December. About 4,239 hospitals are included, and, on average, these hospitals had patient-level survey response rates of 28 percent.

\*The care transition measure was added to the H-CAHPS survey in 2013, and CMS began publicly reporting it in 2014.

Source: CMS summary of H-CAHPS public report of survey results tables.

- In 2008, CMS began publicly reporting H-CAHPS results on the Hospital Compare website. In 2013, Medicare began the value-based purchasing program, which makes incentive payments to hospitals based on the outcomes of certain quality measures. This program incorporates results from H-CAHPS.
- The share of patients who rated their hospital a 9 or 10 on a 10-point scale increased from 70 percent in 2012 to 73 percent in 2016.
- All nine hospital patient experience measures improved from 2012 to 2016. Two of the measures (hospital rating, quietness of hospital environment) improved by 3 percentage points.

**Chart 6-14. Risk-adjusted readmission rates fell after passage of the Hospital Readmissions Reduction Program**

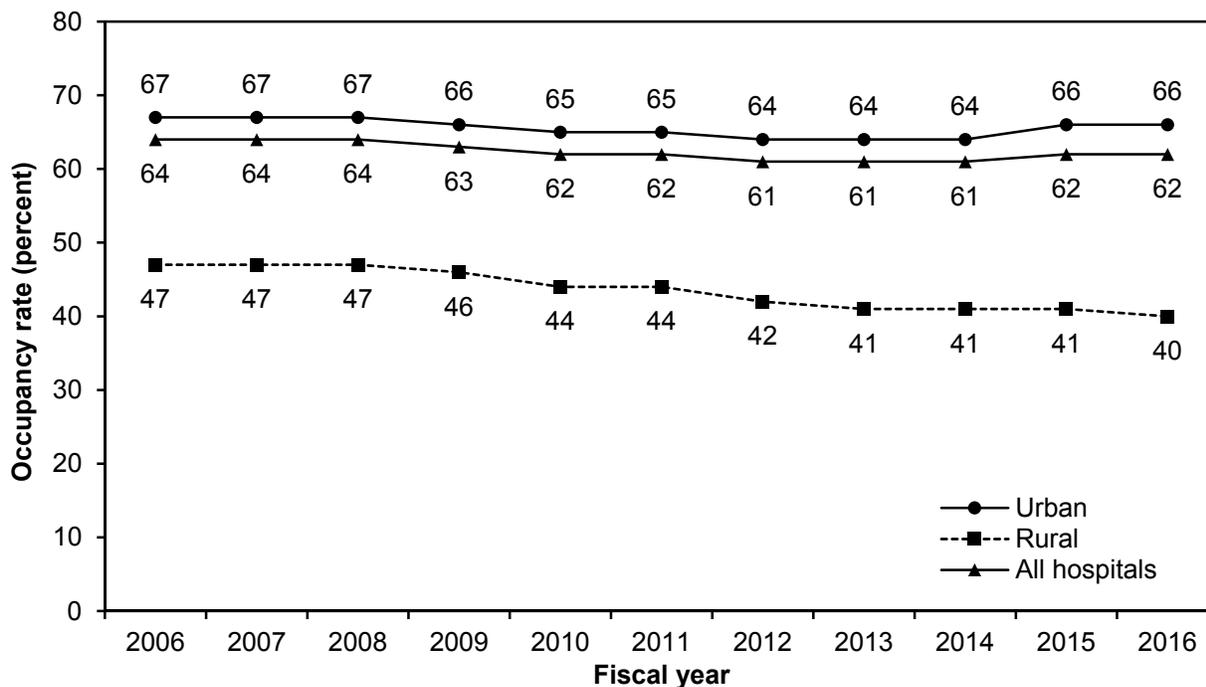


Note: HRRP (Hospital Readmissions Reduction Program), PPACA (Patient Protection and Affordable Care Act of 2010), AMI (acute myocardial infarction), COPD (chronic obstructive pulmonary disease). The pneumonia measure reflects the expanded definition used starting in fiscal year 2016, which includes simple pneumonia, aspiration pneumonia, and sepsis with pneumonia as a secondary diagnosis.

Source: MedPAC analysis of 2008 through 2016 Medicare claims files for Medicare FFS beneficiaries age 65 or older.

- The Congress enacted the HRRP in 2010, with penalties for hospitals that have above-average readmission rates for select conditions starting in 2013.
- Rates of unplanned readmissions declined across all conditions between 2010 and 2016. Rates declined faster for conditions covered by the HRRP program than other conditions.
- The Commission’s June 2018 report to the Congress presents data showing that the HRRP contributed to a significant decline in readmission rates without causing a material increase in emergency department visits, a material increase in observation stays, or a net adverse effect on mortality rates.

**Chart 6-15. Hospital occupancy rates, 2006–2016**



Note: "Hospital occupancy rates" were defined as total bed days (including swing bed days) and observation bed days used, minus nursery bed days used, divided by total bed days available. A consistent cohort of approximately 3,300 prospective payment system and critical access hospitals was used in this analysis.

Source: MedPAC analysis of Medicare's Hospital Cost Reports.

- In the aggregate, hospital occupancy rates have been relatively stable over the past decade. From 2006 to 2014, occupancy rates declined slowly, by 3 percentage points, but between 2015 and 2016, occupancy rates remained stable at 62 percent.
- Occupancy rates are generally higher for urban than rural hospitals. In 2016, the aggregate occupancy rate for urban hospitals was 66 percent, and the aggregate occupancy rate for rural hospitals was 40 percent.
- The decline in occupancy rates from 2006 to 2016 has been greater for rural hospitals than for urban hospitals. During this period, rural occupancy rates declined about 7 percentage points, whereas urban occupancy rates declined 1 percentage point.

**Chart 6-16. Medicare inpatient payments, by source and PPS hospital group, 2016**

Hospital group	Share of total payments						Total payments (millions)
	Base	IME	DSH	UC	Outlier	Additional rural hospital*	
All PPS hospitals	80.9%	5.5%	2.6%	5.5%	3.9%	1.5%	\$116,322
Urban IPPS	80.8	5.9	2.8	5.7	4.21	0.7	107,299
Rural IPPS	81.7	0.9	1.0	3.3	1.2	11.8	9,023
Large urban	79.4	7.0	2.9	6.1	4.6	0.0	58,828
Other urban	82.6	4.6	2.6	5.1	3.6	1.4	48,438
Rural referral	88.8	0.9	2.1	5.3	2.1	0.7	2,218
SCH (federal rate)	82.3	4.3	1.4	6.9	2.6	2.6	1,113
SCH (HSP rate)	74.8	0.0	0.0	0.0	0.0	25.2	3,910
Medicare dependent	77.9	0.0	1.5	4.3	1.0	15.2	645
Other rural, <50 beds	82.6	0.1	1.5	5.0	2.0	8.8	339
Other rural, ≥50 beds	85.3	1.7	2.0	6.8	1.4	2.9	831
Voluntary	81.5	5.9	2.5	4.9	3.9	1.4	82,683
Proprietary	84.7	2.2	2.9	6.2	3.1	1.1	18,653
Government	72.8	8.0	3.2	7.8	5.3	3.0	14,986
Major teaching	67.8	16.1	3.2	6.9	5.9	0.2	30,125
Other teaching	83.6	3.7	2.7	5.5	3.4	1.1	43,934
Nonteaching	87.3	0.0	2.1	4.5	3.0	3.0	42,264

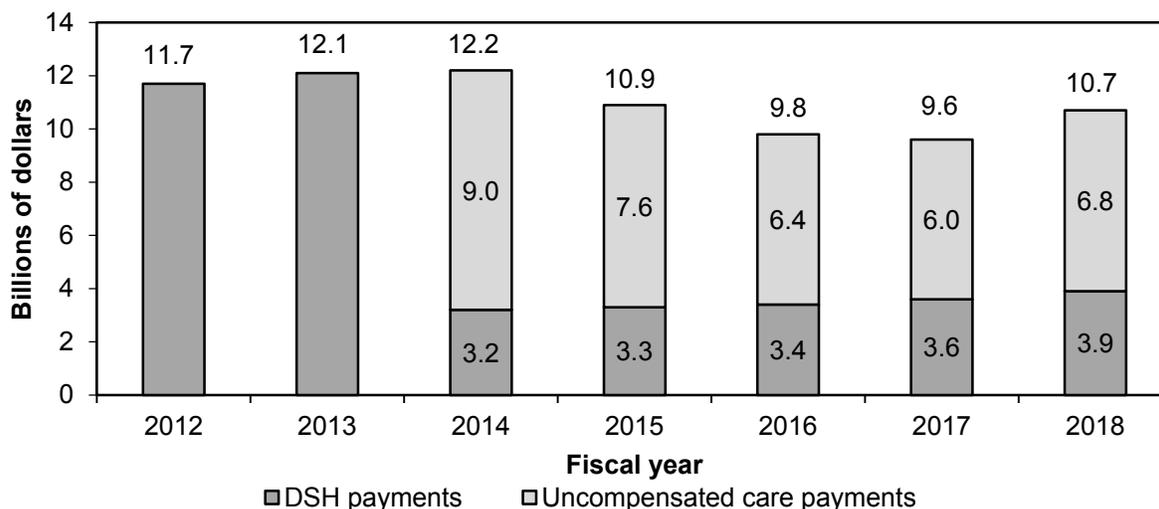
Note: PPS (prospective payment system), IME (indirect medical education), DSH (disproportionate share), UC (uncompensated care), IPPS (inpatient prospective payment system), SCH (sole community hospital), HSP (hospital-specific payment). The chart includes hospitals covered by the IPPS and excludes critical access hospitals. "Medicare-dependent" category includes facilities paid at either the HSP or the federal rate. Component percentages may not sum to 100 due to rounding. Simulated payments reflect 2016 payment rules applied to actual number of cases in 2016. Direct graduate medical education payments are excluded.

\*"Additional rural hospital" payments are the total payments made to hospitals beyond the federal base rate, including SCH add-on payments, Medicare-dependent hospital add-on payments, and low-volume add-on payments. For SCHs paid the HSP, this category also includes the payments they received indirectly—attributable to the costs associated with residency programs, low-income patients, and outlier cases.

Source: MedPAC analysis of claims and impact file data from CMS.

- In 2016, Medicare inpatient payments to hospitals covered by the acute IPPS exceeded \$116 billion. About \$107 billion (92 percent) went to urban hospitals, and approximately \$9 billion (8 percent) went to rural hospitals, which does not include \$2.7 billion in payments to critical access hospitals (CAHs) for inpatient care. Cost-based reimbursement for CAHs results in payments significantly above what CAHs would be paid under the IPPS.
- In 2016, base Medicare severity–diagnosis related group payments accounted for about 81 percent of all inpatient payments. Special payments—including IME, DSH, UC, and outlier payments, as well as additional payments to rural hospitals through the SCH provision and Medicare-Dependent Hospital Program—accounted for 19 percent of all inpatient payments.
- In 2016, uncompensated care payments for each eligible hospital were based on each hospital's number of Medicaid days and days for Medicare beneficiaries receiving supplemental Social Security Disability Insurance.
- Outlier payments accounted for 3.9 percent of total inpatient payments in 2016, or about \$4.5 billion.

**Chart 6-17. Medicare inpatient disproportionate share payments and uncompensated care payments, 2012–2018**



Note: DSH (disproportionate share). The chart includes hospitals covered by the inpatient prospective payment system. The chart excludes hospitals not eligible for DSH payments: critical access hospitals, hospitals in Maryland, and sole community hospitals paid hospital-specific rates. Data represent DSH and uncompensated care payment levels finalized by CMS.

Source: CMS hospital inpatient prospective payment systems (IPPS) for acute care hospitals and long-term care hospital prospective payment system final rules from fiscal years 2012 to 2018.

- In 2012, hospitals received almost \$12 billion in aggregate Medicare DSH payments. The traditional DSH payment formula was based on hospitals' share of Medicaid patients and Medicare patients with Social Security Disability Insurance.
- Beginning in 2014, DSH payments were calculated as 25 percent of the operating DSH payment the hospital would have received under the traditional DSH formula (noted above). Aggregate DSH payments have been approximately \$3 billion to \$4 billion per year since the policy change. For fiscal year (FY) 2019, CMS has proposed \$4.1 billion in DSH payments (data not shown). The increase in DSH payments between 2018 and 2019 is due to CMS-estimated growth in inpatient discharges for FY 2019 and the annual update to IPPS payment rates.
- Beginning in 2014, DSH-eligible hospitals are also eligible to receive uncompensated care payments. These payments are calculated as a fixed pool of dollars equal to 75 percent of the DSH payment received under the traditional DSH formula, minus an amount that increases in proportion to the decline in the share of the uninsured population. These payments are distributed based on the share of uncompensated care each hospital provides. The amount of uncompensated care payments declined \$3 billion between 2014 and 2017 because of declines in the uninsured population. Uncompensated care payments increase in 2018 due to a mandated change to the method used to calculate the uninsured population. For fiscal year 2019, CMS has proposed \$8 billion in uncompensated care payments because it estimates the uninsured population will increase.
- From FY 2013 to 2014, inpatient DSH payments declined approximately \$9 billion, falling from \$12.1 billion to \$3.2 billion, but hospitals were eligible to receive \$9 billion in uncompensated care payments that were paid separately from the inpatient payment system.
- On net, the sum of DSH and uncompensated care payments declined \$1 billion between 2012 and 2018 because the decline in the uninsured population more than offset the growth in DSH (due to Medicaid expansion) and the growth in Medicare discharges.

**Chart 6-18. Discharge destination of Medicare fee-for-service beneficiaries served in acute care hospitals, 2006–2016**

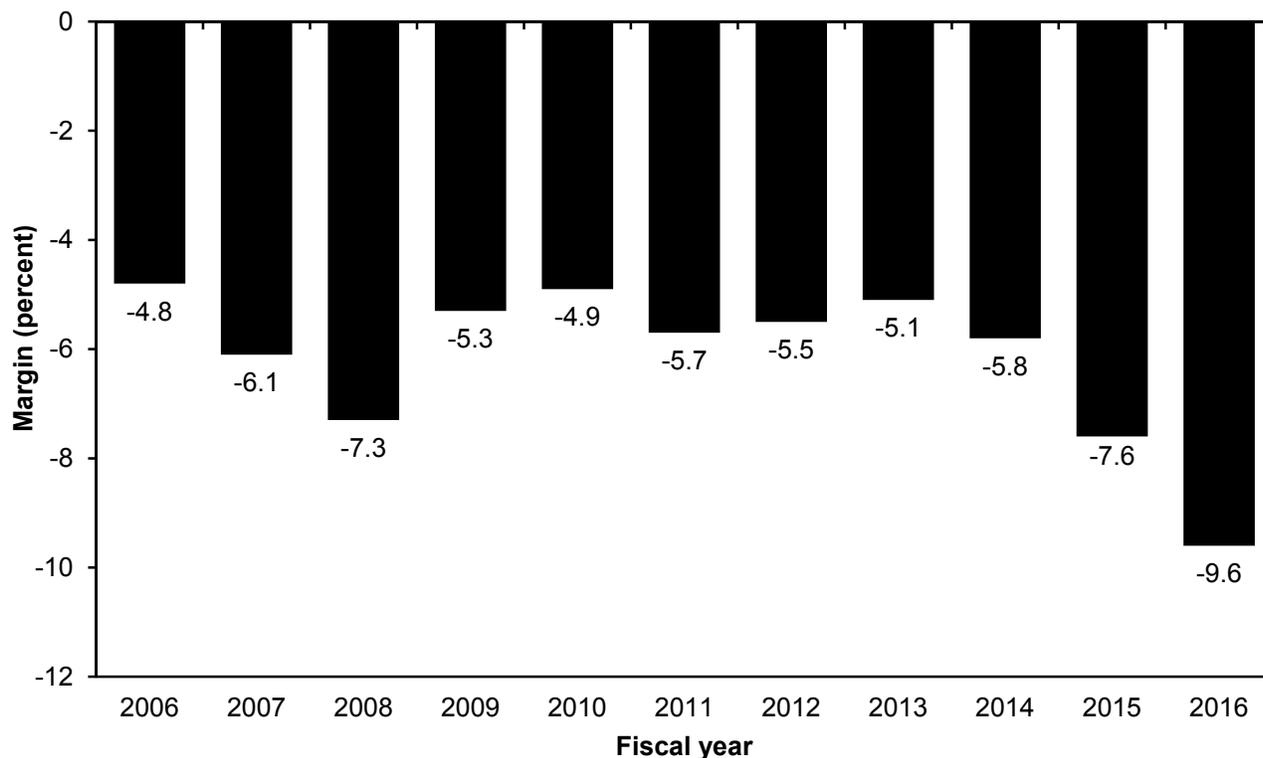
Destination	2006	2015	2016	Percentage point change 2006–2016
Home self-care	52.3%	45.5%	45.6	–6.7
Skilled nursing or swing bed	18.8	21.2	20.2	1.4
Home with organized home health care	13.8	16.9	17.5	3.7
Inpatient rehabilitation facility	3.4	3.9	4.0	0.6
Died in hospital	3.8	3.3	3.3	–0.5
Hospice	1.6	3.0	3.0	1.4
Transferred to other acute care hospital	2.5	2.1	1.9	–0.6
Other setting (e.g., ICF, nursing facility)	2.0	1.6	2.0	0.0
Long-term care hospital	0.9	1.2	1.2	0.3
Left against medical advice	0.6	0.8	0.9	0.3
Inpatient psychiatric facility	0.4	0.4	0.4	0.0

Note: ICF (intermediate care facility). Numbers may not sum due to rounding. These data include hospitals reimbursed by the Medicare inpatient prospective payment system and critical access hospitals.

Source: Medicare inpatient claims data.

- In 2016, about 46 percent of all Medicare fee-for-service patients were discharged from an acute care hospital to home under self-care, without any organized post-acute care. The share of beneficiaries discharged home under self-care has decreased since 2006 with greater use of post-acute care providers, particularly home health care, skilled nursing care, and hospice.
- In 2016, about 43 percent of all Medicare fee-for-service patients discharged from an acute care hospital were discharged to post-acute care services (skilled nursing facility (SNF), home health care agency, inpatient rehabilitation facility, or long-term care hospital). The share of beneficiaries discharged to post-acute care services increased about 8 percentage points between 2006 and 2016.
- About one in five beneficiaries is discharged to skilled nursing care, either in a SNF or hospital swing bed. The share of beneficiaries discharged to SNF-level care increased 1.4 percentage points between 2006 and 2016.
- An increasing share of beneficiaries are being discharged home with organized home health care, increasing from 13.8 percent of discharges in 2006 to 17.5 percent in 2016.
- From 2006 to 2016, discharges to hospice care increased from 1.6 percent of discharges to 3.0 percent of discharges. A little more than half of these hospice discharges are to medical facility-level care rather than home care.
- The share of patients dying in the hospital or being transferred to another acute care hospital declined between 2006 and 2016.

**Chart 6-19. Overall Medicare margin, 2006–2016**

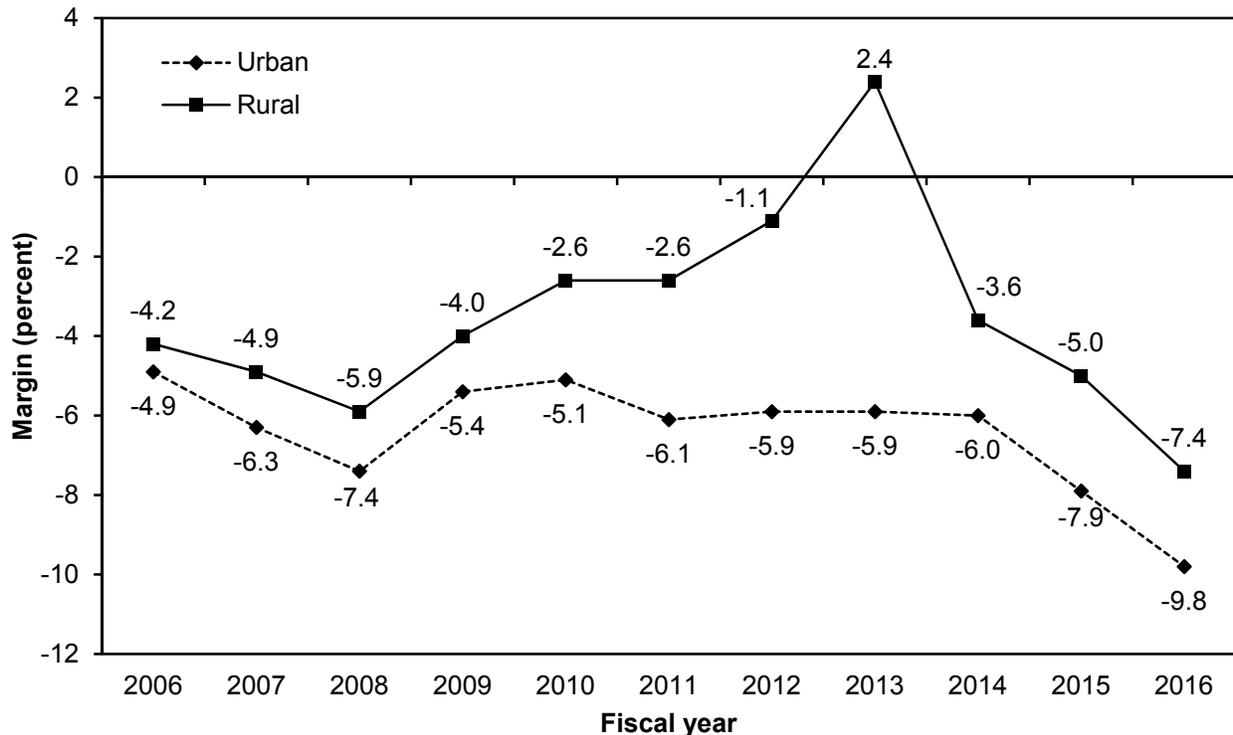


Note: A margin is calculated as revenue minus costs, divided by revenue. Data are based on Medicare-allowable costs and exclude critical access hospitals. Overall Medicare margins cover the costs and payments of acute inpatient, outpatient, inpatient psychiatric and rehabilitation unit, skilled nursing facility, and home health services, as well as graduate medical education, bad debts, Medicare payments for health information technology, and uncompensated care payments. Maryland hospitals are excluded from this analysis.

Source: MedPAC analysis of Medicare cost report data from CMS.

- The overall Medicare margin incorporates payments and costs for acute inpatient, outpatient, skilled nursing, home health care, and inpatient psychiatric and rehabilitative services, as well as direct graduate medical education, bad debts, Medicare payments for health information technology, and—starting in 2014—uncompensated care payments.
- The overall Medicare margin in 2006 was –4.8 percent. In fiscal year 2016, it was –9.6 percent.
- In 2016, 25 percent of hospitals had overall Medicare margins of 1.6 percent or higher, and another 25 percent had margins of –20.7 percent or lower (data not shown). About 30 percent of hospitals had positive overall Medicare margins in 2016.

**Chart 6-20. Overall Medicare margin, by urban and rural location, 2006–2016**

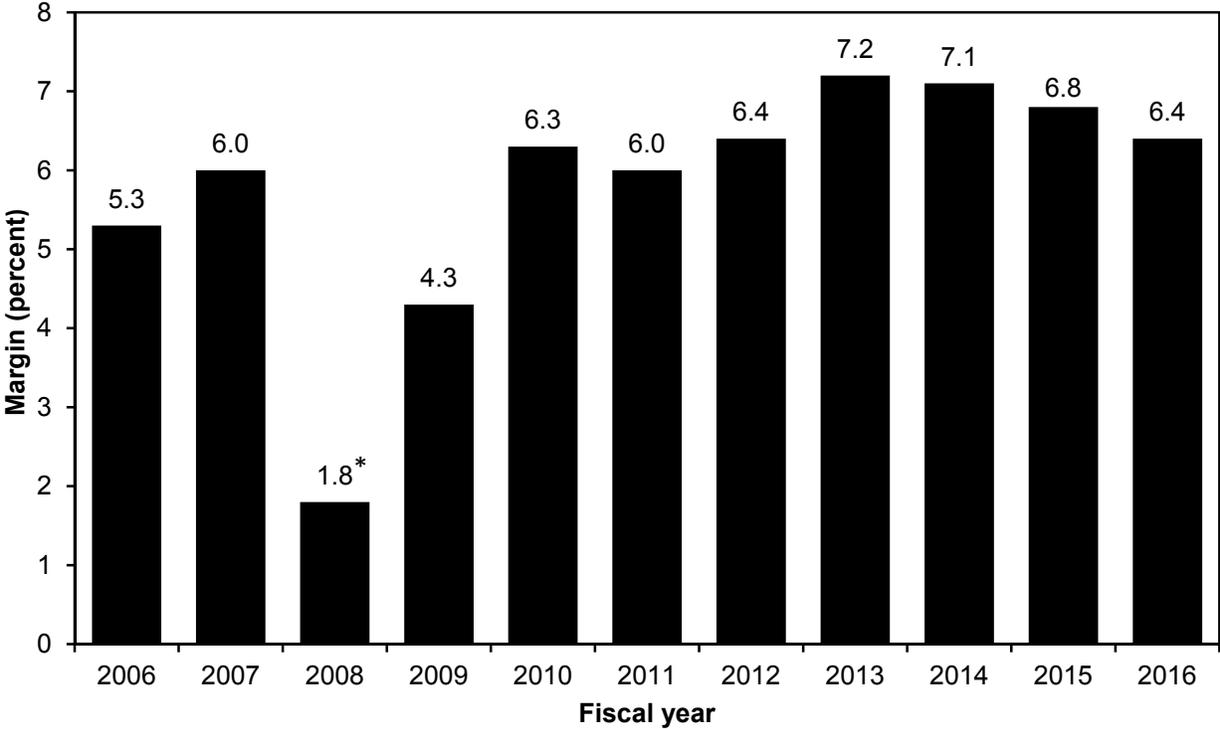


Note: A margin is calculated as revenue minus costs, divided by revenue. Data are based on Medicare-allowable costs and exclude critical access hospitals. Overall Medicare margins cover the costs and payments of acute inpatient, outpatient, inpatient psychiatric and rehabilitation unit, skilled nursing facility, and home health services, as well as graduate medical education, bad debts, Medicare payments for health information technology, and uncompensated care payments. Maryland hospitals are excluded from this analysis.

Source: MedPAC analysis of Medicare cost report data from CMS.

- Overall Medicare margins historically were higher for urban hospitals than for rural hospitals; however, over the last decade, overall Medicare margins for rural hospitals have exceeded those for urban hospitals. In 2016, the difference between urban and rural hospital margins was about 2.4 percentage points.
- The difference in overall Medicare margins between urban and rural widened after 2009 as a result of legislation to assist rural hospitals implemented after 2008. Most recently, in 2016, the overall Medicare margin for urban hospitals was –9.8 percent, compared with –7.4 percent for rural hospitals.
- The overall Medicare margin includes inpatient and outpatient services, but not laboratory services. The rural margin rose to 2.4 percent by 2013 in part because of low-volume add-on payments and health information technology payments. However, in 2014, the rural margin fell to –3.6 percent because some unprofitable services that had been paid as laboratory services shifted into the outpatient payment system. These outpatient tests were a disproportionately large share of rural hospital payments, causing rural margins to fall faster than urban margins. Because of special rural add-on payments, rural margins continue to be higher than urban hospitals' margins.

**Chart 6-21. Hospital total all-payer margin, 2006–2016**

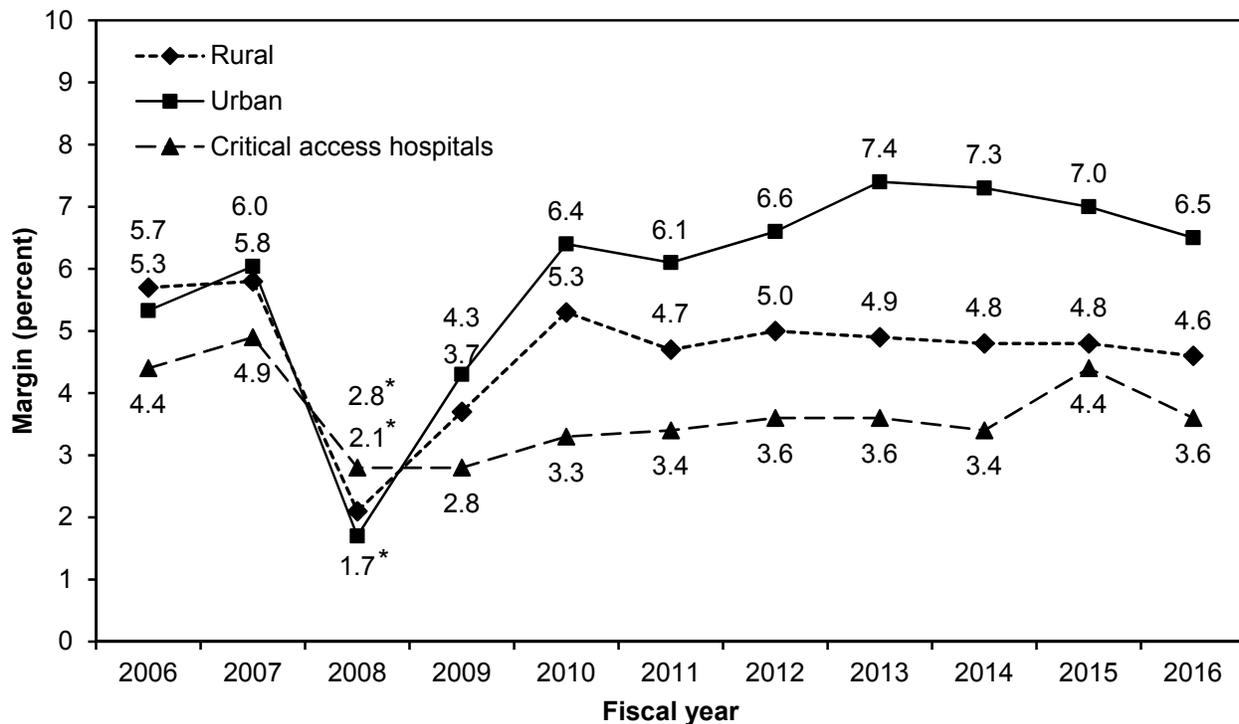


Note: A margin is calculated as revenue minus costs, divided by revenue. Total margin includes all patient care services funded by all payers, plus nonpatient revenue. Analysis excludes critical access hospitals and Maryland hospitals.  
 \*The significant drop in total margin includes investment losses stemming from the decline of the U.S. stock market in 2008.

Source: MedPAC analysis of Medicare cost report data from CMS.

- The total hospital margin for all payers—Medicare, Medicaid, other government, and private payers—reflects the relationship of all hospital revenues to all hospital costs, including inpatient, outpatient, post-acute, and nonpatient services. The total margin also includes nonpatient revenue such as investment income. Other types of margins we track—Medicare inpatient margin and overall Medicare margin—are operating margins that do not include investment income.
- The 2008 decline in the U.S. stock market resulted in significant investment losses for hospitals, which resulted in a corresponding decline in total margin. From 2013 to 2015, all-payer margins were close to 7 percent, a level higher than the prior two decades. The all-payer margin decreased slightly to 6.4 percent in 2016.

**Chart 6-22. Hospital total all-payer margin, by urban and rural location and critical access hospitals, 2006–2016**

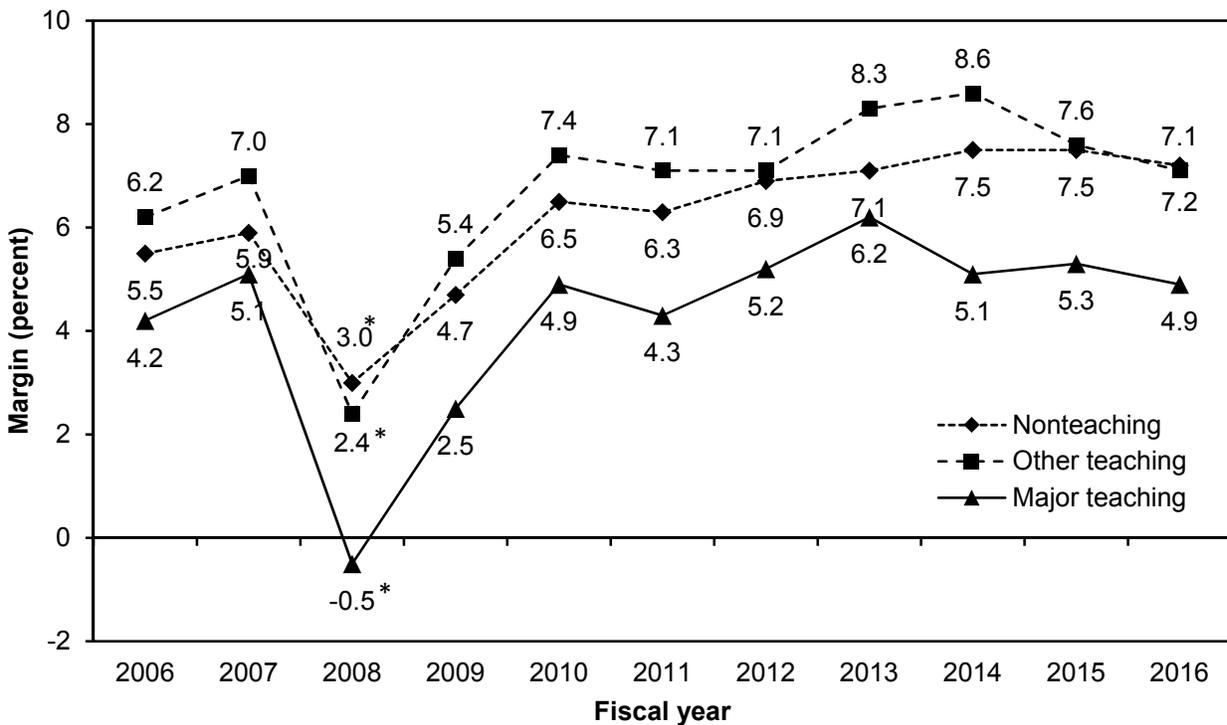


Note: A margin is calculated as revenue minus costs, divided by revenue. Total margin includes all patient care services funded by all payers, plus nonpatient revenue such as investment revenues. Analysis excludes Maryland hospitals.  
\*Significant drop in total margin includes investment losses resulting from the U.S. stock market decline of 2008.

Source: MedPAC analysis of Medicare cost report data from CMS.

- Since 2009, urban hospitals have had higher total (all-payer) margins than rural hospitals. In 2016, total margins were 6.5 percent for urban hospitals and 4.6 percent for rural hospitals. From 2009 to 2013, the growth in urban and rural total all-payer margins reflected low cost growth and increasing private-payer reimbursement rates.
- In general, all-payer margins for critical access hospitals have historically been lower than for other urban or rural hospitals.

**Chart 6-23. Hospital total all-payer margin, by teaching status, 2006–2016**



Note: "Major teaching" hospitals are defined by a ratio of interns and residents to beds of 0.25 or greater, while "other teaching" hospitals have a ratio of greater than 0 and less than 0.25. A margin is calculated as revenue minus costs, divided by revenue. Total margin includes all patient care services funded by all payers, plus nonpatient revenue. Analysis excludes critical access hospitals and Maryland hospitals.

\*Significant drop in total margin includes investment losses resulting from the U.S. stock market decline of 2008.

Source: MedPAC analysis of Medicare cost report data from CMS.

- The total all-payer margins for major teaching hospitals have consistently been lower than those for other teaching and nonteaching hospitals. In 2016, the total margin for major teaching hospitals was 4.9 percent, comparatively lower than the total margins for other teaching hospitals (7.1 percent) and nonteaching hospitals (7.2 percent).
- Following several years of increasing margins, in 2008, total (all-payer) margins declined significantly because of losses in investment revenues. As a result, total margins for major teaching hospitals were negative in 2008. Since 2008, total margins for major teaching hospitals have recovered and remain above their historic average.

**Chart 6-24. Medicare margins by teaching and disproportionate share status, 2016**

Hospital group	Share of hospitals	Overall Medicare margin
All hospitals	100%	-9.6%
Major teaching	11	-8.6
Other teaching	24	-8.5
Nonteaching	65	-11.3
Both IME and DSH	32	-8.2
IME only	3	-16.0
DSH only	53	-10.7
Neither IME nor DSH	12	-15.3

Note: IME (indirect medical education), DSH (disproportionate share). Components may not sum to 100 percent due to rounding. Maryland hospitals are excluded from this analysis.

Source: MedPAC analysis of 2015 Medicare cost report data from CMS.

- By contrast with all-payer total margins, teaching hospitals (both major teaching and other teaching) had higher overall Medicare margins in 2016 compared with nonteaching hospitals. Their better financial performance was largely due to the additional payments they received from the IME and DSH adjustments to their inpatient payments.
- Hospitals that do not receive DSH payments had the lowest Medicare margins. In 2016, the overall Medicare margins of these hospitals were -16.0 percent (IME only) and -15.3 percent (neither IME and DSH), well below the margins of hospitals that receive both IME and DSH (-8.2 percent).
- Major teaching hospitals have higher Medicare margins than nonteaching hospitals, but they have lower total (all-payer) margins than both other teaching and nonteaching hospitals (see Chart 6-23).

## Chart 6-25. Financial pressure leads to lower costs

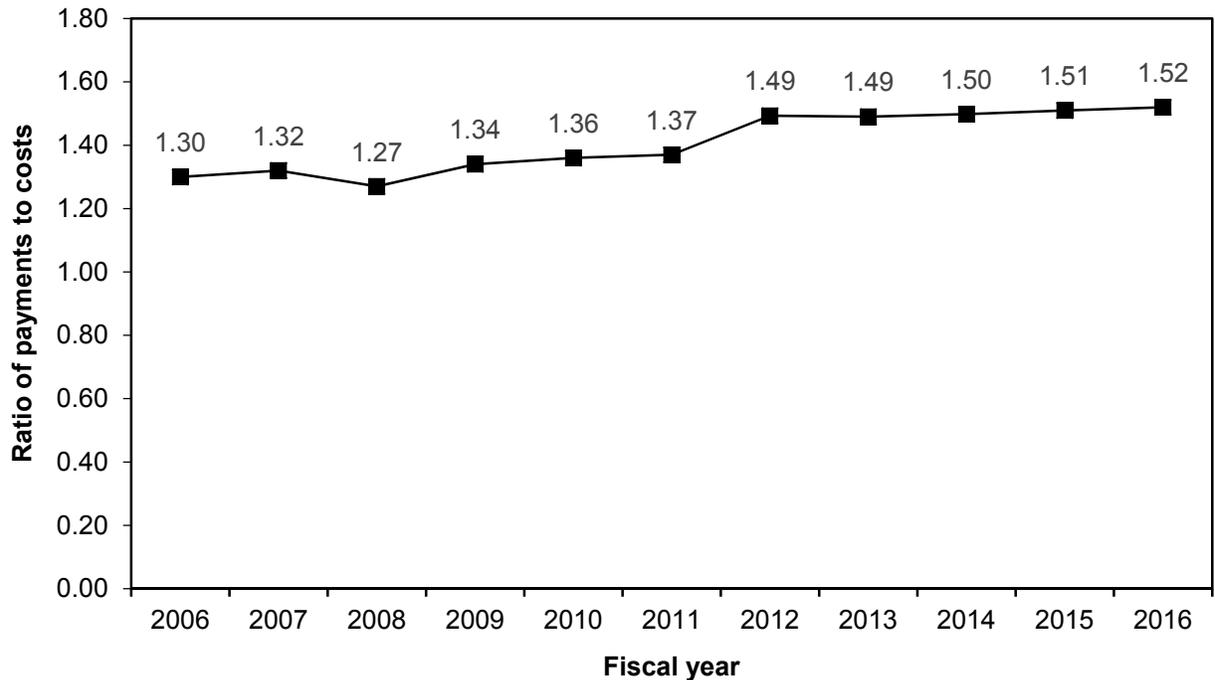
	Level of financial pressure, 2013–2015		
	High pressure (non-Medicare margin ≤ 1%)	Medium pressure	Low pressure (non-Medicare margin > 5%)
Number of hospitals	714	379	1,699
<b>Financial characteristics, 2016 (medians)</b>			
Non-Medicare margin (private, Medicaid, uninsured)	-2.7%	3.4%	14.0%
Standardized cost per discharge (as a share of the national median)			
For-profit and nonprofit hospitals	93	99	102
Nonprofit hospitals	93	99	103
For-profit hospitals	90	95	100
Annual growth in cost per discharge, 2013–2016	2.4%	2.6%	2.1%
Overall 2016 Medicare margin (medians)	0.1%	-4.6%	-11.4%
<b>Patient characteristics (medians)</b>			
Total hospital discharges in 2016	3,597	5,710	7,842
Medicare share of inpatient days	39%	37%	37%
Medicaid share of inpatient days	8%	8%	6%
Medicare case-mix index	1.42	1.53	1.64

Note: Standardized costs are adjusted for hospital case mix, wage index, outliers, transfer cases, interest expense, and the effect of teaching and low-income Medicare patients on hospital costs. The sample includes all hospitals that had complete cost reports on file with CMS by October 2017. “High-pressure hospitals” are defined as those with a median non-Medicare profit margin of 1 percent or less from 2013 to 2015 and a net worth that grew by less than 1 percent per year over that period if the hospital’s Medicare profits had been zero. “Low-pressure hospitals” are defined as those with a median non-Medicare profit margin greater than 5 percent from 2013 to 2015 and a net worth that grew by more than 1 percent per year over that period if the hospital’s Medicare profits had been zero. “Medium-pressure hospitals” are those that fit into neither the high- nor the low-pressure categories.

Source: MedPAC analysis of Medicare cost report and claims files from CMS.

- Higher financial pressure hospitals had 9 percent lower standardized costs per discharge than hospitals under a low level of financial pressure.
- Cost growth was similar for all categories of hospitals (between 2.1 percent and 2.6 percent), suggesting that hospitals’ cost differentials remain fairly stable across time.
- Hospitals with lower volume, lower case mix, and higher Medicare shares of discharges are more likely to be under financial pressure.

**Chart 6-26. Change in the private-payer ratio of payments to costs for hospital services, 2006–2016**

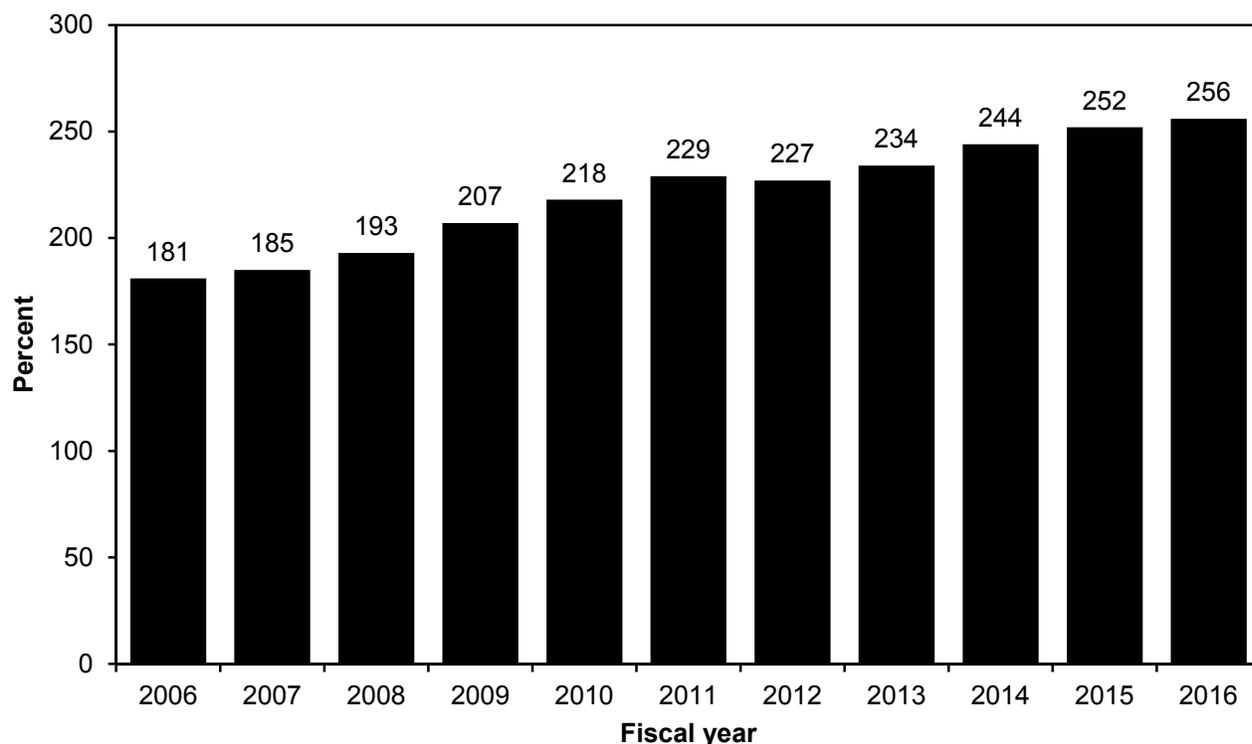


Note: Data are for community hospitals (including critical access hospitals and Maryland hospitals) and cover all hospital services. The private-payer ratio of payments to costs includes self-pay patients. Data for 2006 to 2010 exclude Medicare and Medicaid managed care patients from the private-payer ratio of payments to costs. In 2012, hospitals began excluding data related to bad debt and charity care from their reported charges and payments.

Source: MedPAC analysis of data from the American Hospital Association Annual Survey of Hospitals.

- The private-payer ratio of payments to costs reflects hospitals' weighted average profit margin on all service lines of business, such as inpatient, outpatient, and hospital-owned physician practices. In 2016, the private-payer ratio of payments to costs was 1.52. This ratio includes payments and costs attributed to uninsured patients who pay for their own services (self-pay).
- The private-payer payment-to-cost ratio for hospital services has fluctuated over time, in part because of shifts in the relative bargaining power of hospitals and insurers. For example, in 1992, hospitals' private-payer payment-to-cost ratio was 1.32, but it declined to 1.15 in 1999 with the expansion of health management organizations and movements to narrow insurance networks (data not shown). Over the last decade, the private-payer payment-to-cost ratio has increased to its historically highest level.
- From 2012 to 2016, the private-payer ratio of payments to costs was relatively flat at around 1.50. During this period, total hospital profit margins remained near 7 percent (see Chart 6-21), in part because of a decline in uncompensated care as more patients gained insurance.

**Chart 6-27. Markup of hospital charges above costs for Medicare services, 2006–2016**

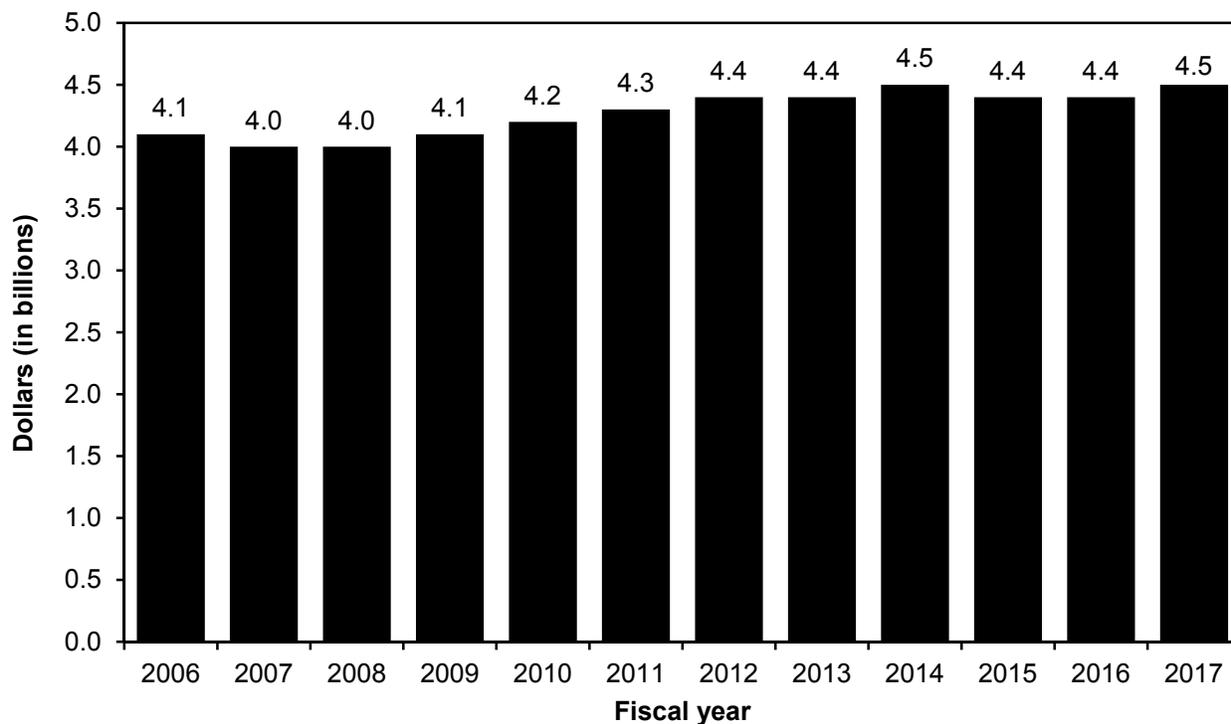


Note: Analysis includes all community hospitals (including critical access hospitals and hospitals in Maryland). Markups are calculated as the amount of charges over the amount of costs, minus the amount that charges equal costs (charges/costs – 1). Medicare managed care charges are not included.

Source: American Hospital Association Annual Survey of Hospitals.

- The average markup of hospitals' charges above costs rose from 181 percent in 2006 to 256 percent in 2016. Hospital charges (\$729 billion) were over three times costs (\$205 billion) in 2016 (data not shown).
- Rapid growth in charges may have little impact on hospital financial performance because few patients pay full charges. However, charge growth may significantly affect uninsured patients, who may pay full charges. More rapid growth in charges (relative to growth in costs) may reflect hospitals' attempts to maximize revenue from private payers (who often structure their payments as a discount off charges).
- The markup of charges over costs in 2016 is generally higher for urban hospitals (266 percent) than for rural hospitals (182 percent) (data not shown).
- Among urban hospitals in 2016, the markup of charges over costs was higher for for-profit hospitals (521 percent) than for nonprofit hospitals (264 percent). Rural for-profit hospitals have a higher markup of charges over costs (415 percent) than rural nonprofit hospitals (204 percent) (data not shown).

**Chart 6-28. Medicare payments to inpatient psychiatric facilities remained steady in 2017**



Note: Spending for inpatient psychiatric care furnished in scatter beds in acute care hospitals (and paid for under the acute care inpatient prospective payment system) is not included in this chart.

Source: CMS Office of the Actuary.

- The inpatient psychiatric facility prospective payment system started January 1, 2005. It was phased in over a three-year period.
- Medicare program spending for beneficiaries' care in inpatient psychiatric facilities grew an average of 1 percent per year between 2006 and 2017.

## Chart 6-29. Inpatient psychiatric facilities, 2006–2016

Type of IPF	2006	2010	2015	2016	Average annual change	
					2006–2015	2015–2016
All	1,647	1,596	1,571	1,587	–0.5%	1.0%
Urban	1,308	1,260	1,239	1,252	–0.6	1.0
Rural	339	336	330	332	–0.3	0.6
Freestanding	396	447	481	497	2.2	3.3
Hospital-based units	1,251	1,149	1,090	1,090	–1.5	0.0
Nonprofit	902	807	723	726	–2.4	0.4
For profit	348	386	504	512	4.2	1.6
Government	397	403	344	349	–1.6	1.5

Note: IPF (inpatient psychiatric facility). Data are from facilities that submitted valid Medicare cost reports in the given fiscal year. Components may not sum to totals due to missing data.

Source: MedPAC analysis of Medicare cost report files from CMS.

- Between 2006 and 2015, the number of IPFs that filed Medicare cost reports fell, on average, 0.5 percent per year. Between 2015 and 2016, the number of IPFs grew 1 percent.
- A growing share of Medicare IPF users receive care in for-profit facilities. Between 2006 and 2015, the number of for-profit IPFs grew more than 4 percent per year, on average. Over the same period, the number of nonprofit IPFs fell more than 2 percent per year, on average. The number of for-profit IPFs continued to grow in 2016.

**Chart 6-30. One diagnosis accounted for almost three-quarters of Medicare IPF cases in 2016**

MS-DRG	Diagnosis	Share
885	Psychosis	70.9%
884	Organic disturbances and mental retardation	6.6
057	Degenerative nervous system disorders without MCC	6.5
897	Alcohol/drug abuse or dependency, no rehabilitation, without MCC	4.7
881	Depressive neurosis	4.4
895	Alcohol/drug abuse or dependency with rehabilitation, without MCC	1.6
882	Neurosis except depressive	1.3
880	Acute adjustment reaction and psychosocial dysfunction	0.9
883	Disorders of personality and impulse control	0.6
056	Degenerative nervous system disorders with MCC	0.6
894	Alcohol/drug use—left AMA	0.3
886	Behavioral and developmental disorders	0.3
896	Alcohol/drug abuse or dependency without rehabilitation, with MCC	0.2
876	OR procedure with principal diagnosis of mental illness	0.1
887	Other mental disorders	0.1
081	Nontraumatic stupor and coma without MCC	<0.1
080	Nontraumatic stupor and coma with MCC	<0.1
	Nonpsychiatric MS-DRGs	0.9
	Total	100.0

Note: IPF (inpatient psychiatric facility), MS-DRG (Medicare severity–diagnosis related group), MCC (major comorbidity or complication), AMA (against medical advice), OR (operating room). Totals may not sum to 100 percent due to rounding.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- Medicare patients in IPFs are generally assigned 1 of 17 psychiatric MS-DRGs.
- The most frequently occurring IPF diagnosis—accounting for about 71 percent of IPF discharges in 2016—was psychosis. This broad category includes patients with principal diagnoses of schizophrenia, bipolar disorder, and major depression.
- In 2016, the next most common discharge diagnosis, accounting for almost 7 percent of IPF cases, was organic disturbances and mental retardation.

## Chart 6-31. Characteristics of Medicare IPF users, 2016

Characteristic	Share of all IPF users	Share of users with more than one IPF stay
Current eligibility status*		
Aged	41.7%	29.0%
Disabled	58.2	70.9
ESRD only	0.1	0.1
Age (years)		
<45	23.1	30.7
45–64	34.6	39.6
65–79	27.1	21.5
80+	15.3	8.2
All	100.0	27.9

Note: IPF (inpatient psychiatric facility), ESRD (end-stage renal disease). Components may not sum to totals due to rounding.  
\*Some aged beneficiaries are also disabled.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- Of Medicare beneficiaries who had at least one IPF stay in 2016, 58.2 percent qualified for Medicare because of a disability. These beneficiaries tend to be younger and poorer than the typical fee-for-service beneficiary.
- Approximately 28 percent of Medicare beneficiaries who used an IPF in 2016 had more than one IPF stay during the year. These beneficiaries were far more likely than all IPF users to be disabled, often because of a psychiatric diagnosis.



SECTION

7

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## **Ambulatory care**

**Physicians and other  
health professionals**

**Hospital outpatient services**

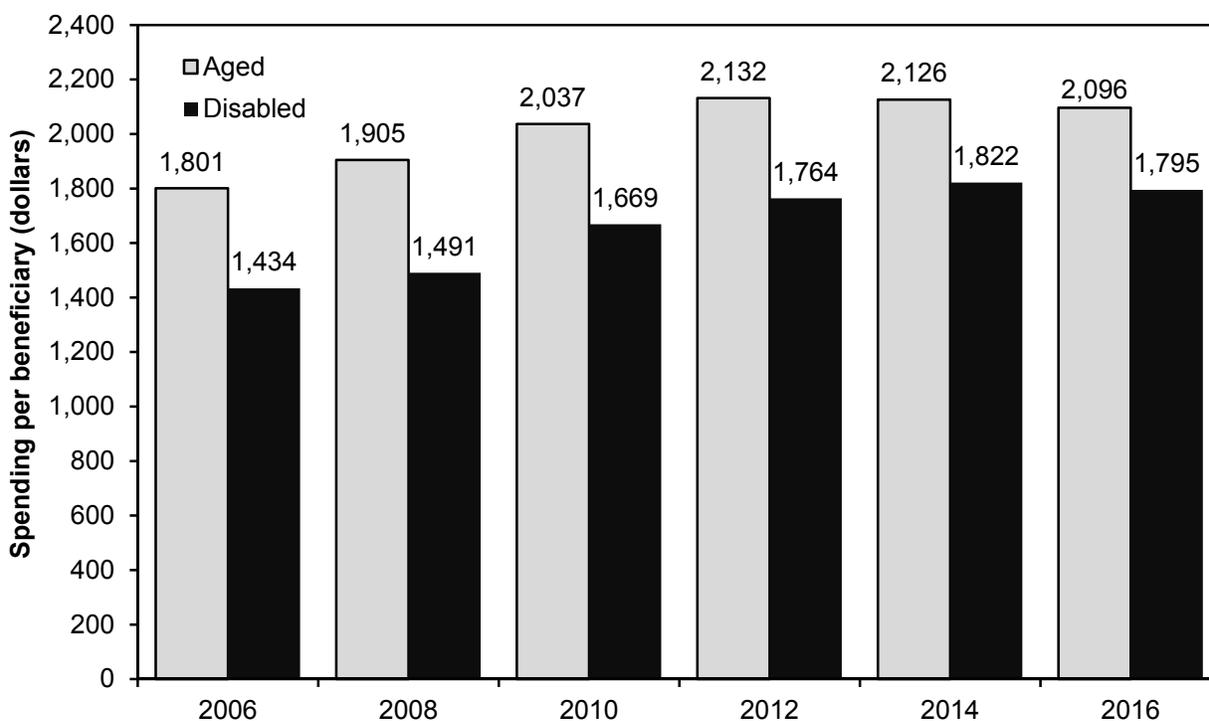
**Ambulatory surgical centers**

**Imaging services**

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**Chart 7-1. Medicare spending per fee-for-service beneficiary on services in the fee schedule for physicians and other health professionals, 2006–2016**

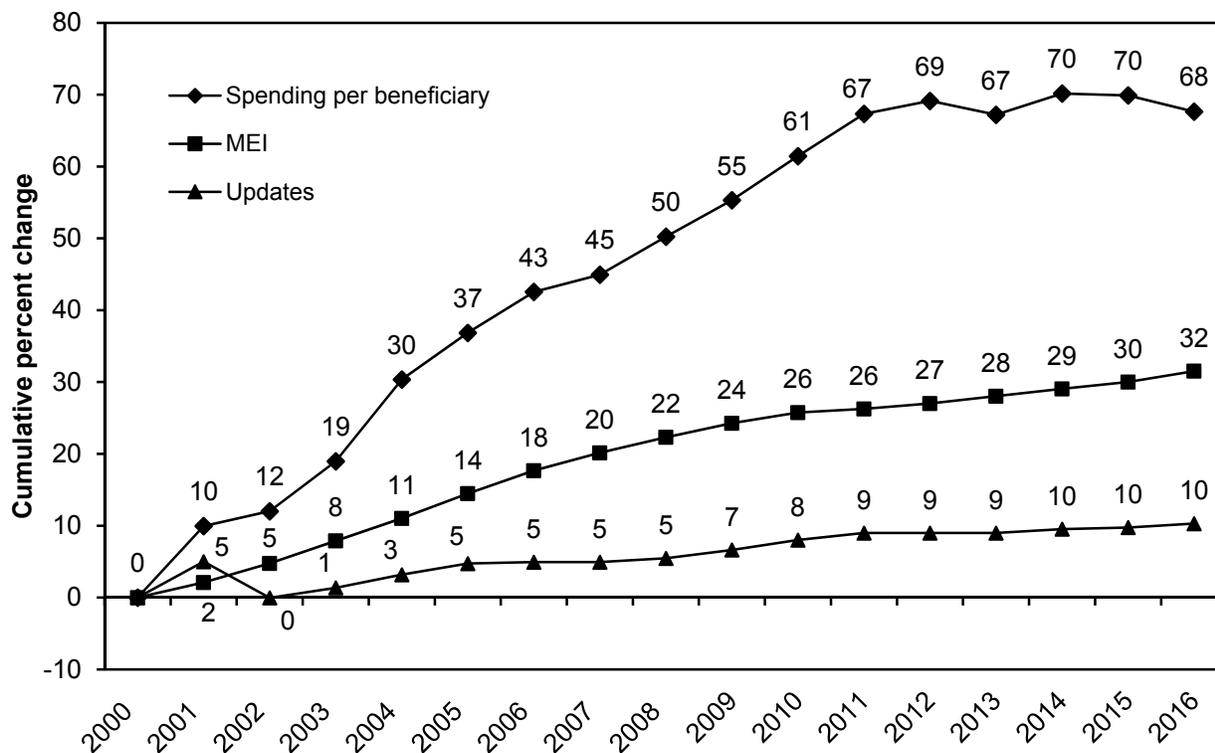


Note: Dollar amounts are Medicare spending only and do not include beneficiary cost sharing. The category “disabled” excludes beneficiaries who qualify for Medicare because they have end-stage renal disease. All beneficiaries ages 65 and over are included in the “aged” category.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017.

- The fee schedule for physicians and other health professionals includes a broad range of services such as office visits, surgical procedures, and diagnostic and therapeutic services. “Other health professionals” refers to nurse practitioners, physician assistants, physical therapists, and other clinicians. Total fee schedule spending was \$69.9 billion in 2016.
- Spending per fee-for-service beneficiary for fee schedule services for aged beneficiaries (ages 65 and over) increased between 2006 and 2012. Spending for disabled beneficiaries (under age 65) increased between 2006 and 2014. From 2006 to 2016, spending per beneficiary for all beneficiaries grew at a cumulative rate of 18 percent.
- The small decline in spending per beneficiary in 2016 was caused by several factors, including the net effects of the small increase in volume (1.6 percent), a larger penalty for clinicians who did not submit data under the Physician Quality Reporting System, and a larger penalty for clinicians who did not meet the electronic health record meaningful use requirement.
- Per capita spending for disabled beneficiaries is lower than per capita spending for aged beneficiaries. In 2016, for example, per capita spending for disabled beneficiaries was \$1,795 compared with \$2,096 for aged beneficiaries. However, spending per capita grew faster for disabled beneficiaries than aged beneficiaries between 2006 and 2016.

**Chart 7-2. Growth in the volume of clinician services caused fee schedule spending to increase faster than input prices and payment updates, 2000–2016**

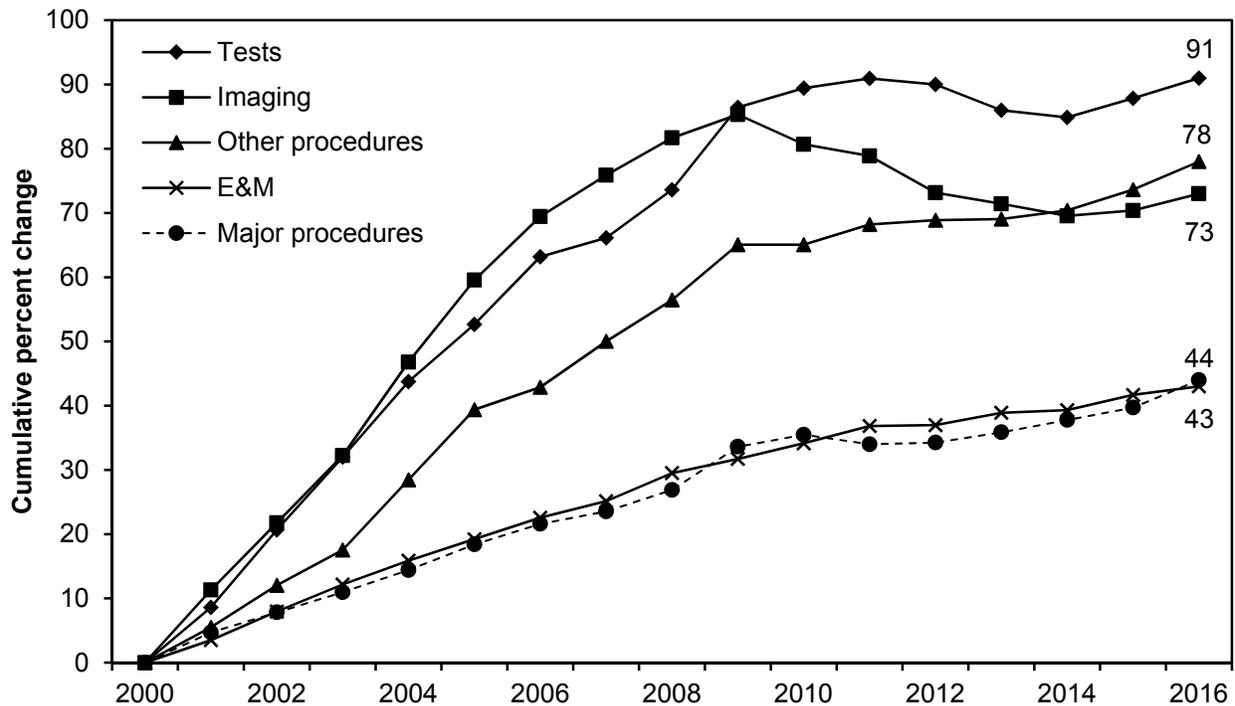


Note: MEI (Medicare Economic Index). The MEI measures the change in clinician input prices. “Spending per beneficiary” includes only services paid under the fee schedule for physicians and other health professionals and excludes services paid under the clinical laboratory fee schedule.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017. Clemens, K., Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2014. Estimated sustainable growth rate and conversion factor, for Medicare payments to physicians in 2015. Fact sheet. <https://www.cms.gov/medicare/medicare-fee-for-service-payment/sustainablegratesconfact/downloads/sgr2015p.pdf>. Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2017. Market basket data. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/MedicareProgramRatesStats/MarketBasketData.html>.

- From 2000 to 2016, Medicare spending per fee-for-service beneficiary for services paid under the fee schedule for physicians and other health professionals increased by a cumulative 68 percent.
- Spending per beneficiary grew much more rapidly over the period than both the fee schedule payment rate updates and the MEI, which measures changes in input prices. Payment updates grew cumulatively by 10 percent, and the MEI increased 32 percent.
- Growth in the volume of services contributed much more to the increase in Medicare spending than payment rate updates. Both factors—volume growth and updates—combined to increase Medicare revenue for physicians and other health professionals.

**Chart 7-3. Growth in the volume of clinician services per fee-for-service beneficiary, 2000–2016**



Note: E&M (evaluation and management). “Volume” refers to the units of service multiplied by relative value units from the fee schedule for physicians and other health professionals. Volume for all years is measured on a common scale, using relative value units for 2016. Volume growth for E&M from 2009 to 2010 is not directly observable because of a change in payment policy for consultations. To compute cumulative volume growth for E&M through 2016, we used a growth rate for 2009 to 2010 of 1.85 percent, which is the average of the 2008 to 2009 growth rate of 1.7 percent and the 2010 to 2011 growth rate of 2.0 percent.

Source: MedPAC analysis of claims data for 100 percent of Medicare beneficiaries.

- From 2000 to 2016, the volume of some services furnished by physicians and other health professionals grew much faster than others.
- The volume of tests grew by 91 percent, the volume of “other procedures” (i.e., other than major procedures) grew by 78 percent, and the volume of imaging grew by 73 percent. The comparable growth rates for major procedures and evaluation and management services were only 44 percent and 43 percent, respectively.
- Volume growth increases Medicare spending, limiting funds available for other priorities in the federal budget and requiring taxpayers and beneficiaries to contribute more to the Medicare program. Rapid volume growth may be a sign that some services in the fee schedule for physicians and other health professionals are mispriced.

## Chart 7-4. Medicare beneficiaries' ability to get timely appointments with physicians was comparable with privately insured individuals, 2014–2017

Survey question	Medicare (ages 65 and older)				Private insurance (ages 50–64)			
	2014	2015	2016	2017	2014	2015	2016	2017
<b>Unwanted delay in getting an appointment:</b> Among those who needed an appointment, “How often did you have to wait longer than you wanted to get a doctor’s appointment?”								
<b>For routine care</b>								
Never	72% <sup>a</sup>	72% <sup>a</sup>	68% <sup>b</sup>	73% <sup>a</sup>	69% <sup>a</sup>	69% <sup>a</sup>	67%	69% <sup>a</sup>
Sometimes	20 <sup>ab</sup>	19 <sup>a</sup>	22 <sup>b</sup>	20	23 <sup>a</sup>	23 <sup>a</sup>	23	22
Usually	3	4	4	3	4	4	5	4
Always	3	3	3	3	3	3	4	3
<b>For illness or injury</b>								
Never	83 <sup>ab</sup>	82 <sup>a</sup>	79 <sup>a</sup>	80 <sup>a</sup>	79 <sup>a</sup>	77 <sup>a</sup>	75 <sup>a</sup>	76 <sup>a</sup>
Sometimes	12 <sup>ab</sup>	13 <sup>ab</sup>	16 <sup>a</sup>	15	16 <sup>a</sup>	17 <sup>a</sup>	19 <sup>a</sup>	18
Usually	2	3 <sup>b</sup>	2 <sup>a</sup>	2	2	3	3 <sup>a</sup>	2
Always	1 <sup>a</sup>	2	2 <sup>a</sup>	1	2 <sup>a</sup>	2	3 <sup>a</sup>	2

Note: Numbers may not sum to 100 percent due to rounding. Missing responses (“Don’t Know” or “Refused”) are not presented. Overall sample sizes for each group (Medicare and privately insured) were 4,000 in all years. Sample sizes for individual questions varied.

<sup>a</sup> Statistically significant difference (at a 95 percent confidence level) between the Medicare and privately insured samples in the given year.

<sup>b</sup> Statistically significant difference (at a 95 percent confidence level) from 2017 within the same insurance coverage category.

Source: MedPAC-sponsored annual telephone surveys conducted 2014–2017.

- Most Medicare beneficiaries have one or more doctor appointments in a given year. Their ability to schedule timely appointments is one indicator of access that we examine.
- Medicare beneficiaries (ages 65 and older) report similar (or better) access to physicians for appointments as compared with privately insured individuals ages 50 to 64. For example, in 2017, 73 percent of Medicare beneficiaries compared with 69 percent of privately insured individuals reported “never” having to wait longer than they wanted to get an appointment for routine care.
- Medicare beneficiaries reported slightly more timely appointments for injury and illness as compared with their privately insured counterparts.
- Appointment scheduling for illness and injury is better than for routine care appointments for both Medicare beneficiaries and privately insured individuals.

**Chart 7-5. Medicare and privately insured patients who were looking for a new physician reported more difficulty finding one in primary care, 2014–2017**

Survey question	Medicare (ages 65 and older)				Private insurance (ages 50–64)			
	2014	2015	2016	2017	2014	2015	2016	2017
<b>Looking for a new physician:</b> “In the past 12 months, have you tried to get a new ...?” (Percent answering “Yes”)								
Primary care physician	8%	7% <sup>a</sup>	8% <sup>a</sup>	9% <sup>a</sup>	8%	9% <sup>ab</sup>	10% <sup>a</sup>	11% <sup>a</sup>
Specialist	17	16	18	17% <sup>a</sup>	17 <sup>b</sup>	18 <sup>b</sup>	18	20 <sup>a</sup>
<b>Getting a new physician:</b> Among those who tried to get an appointment with a new physician, “How much of a problem was it finding a primary care doctor/specialist who would treat you? Was it ...”								
<b>Primary care physician</b>								
No problem	67	67	64	69 <sup>a</sup>	63	63	63	59 <sup>a</sup>
Small problem	16	18	15	13	16	18	16	18
Big problem	15	14	20	14 <sup>a</sup>	19	17	20	22 <sup>a</sup>
<b>Specialist</b>								
No problem	85	87 <sup>a</sup>	82	83	85 <sup>b</sup>	82 <sup>a</sup>	79	81
Small problem	7 <sup>b</sup>	7 <sup>b</sup>	10	11	9	8	9	11
Big problem	7	6	8 <sup>a</sup>	5 <sup>a</sup>	6	9	11 <sup>a</sup>	8 <sup>a</sup>

Note: Numbers may not sum to 100 percent due to rounding. Missing responses (“Don’t Know” or “Refused”) are not presented. Overall sample sizes for each group (Medicare and privately insured) were 4,000 in all years. Sample sizes for individual questions varied.  
<sup>a</sup> Statistically significant difference (at a 95 percent confidence level) between the Medicare and privately insured samples in the given year.  
<sup>b</sup> Statistically significant difference (at a 95 percent confidence level) from 2017 within the same insurance coverage category.

Source: MedPAC-sponsored annual telephone surveys, conducted 2014–2017.

- In 2017, only 9 percent of Medicare beneficiaries and 11 percent of privately insured individuals reported looking for a new primary care physician. This finding suggests that most people were either satisfied with their current physician or did not need to look for one.
- Of the 9 percent of Medicare beneficiaries who looked for a new primary care physician in 2017, 27 percent reported problems finding one: 14 percent reported their problem as “big,” and 13 percent reported their problem as “small.” Although this finding means that only 2 percent of the total Medicare population reported problems finding a primary care physician, the Commission is concerned about the continuing pattern of greater problems accessing primary care than specialty care.
- Of the 11 percent of privately insured individuals who looked for a new primary care physician in 2017, 40 percent reported problems finding one: 22 percent reported their problem as “big,” and 18 percent reported their problem as “small.”
- In 2017, Medicare beneficiaries and privately insured individuals were more likely to report problems accessing a new primary care physician than a new specialist.

## Chart 7-6. Medicare beneficiaries' access to physician care was comparable with privately insured individuals, and minorities in both groups reported unwanted delays more frequently, 2017

Survey question	Medicare (ages 65 and older)			Private insurance (ages 50–64)		
	All	White	Minority	All	White	Minority
<b>Unwanted delay in getting an appointment:</b> Among those who needed an appointment, “How often did you have to wait longer than you wanted to get a doctor’s appointment?”						
<b>For routine care</b>						
Never	73% <sup>a</sup>	74% <sup>ab</sup>	69% <sup>b</sup>	69% <sup>a</sup>	70% <sup>a</sup>	66%
Sometimes	20 <sup>a</sup>	20	19	22 <sup>a</sup>	23	23
Usually	3	3 <sup>b</sup>	5 <sup>b</sup>	4	4	5
Always	3	2 <sup>ab</sup>	6 <sup>b</sup>	3	3 <sup>ab</sup>	4 <sup>b</sup>
<b>For illness or injury</b>						
Never	80 <sup>a</sup>	81	78 <sup>a</sup>	76 <sup>a</sup>	77 <sup>b</sup>	72 <sup>ab</sup>
Sometimes	15 <sup>a</sup>	15 <sup>a</sup>	15 <sup>a</sup>	18 <sup>a</sup>	18 <sup>ab</sup>	22 <sup>ab</sup>
Usually	2	2	3	2	2	3
Always	1 <sup>a</sup>	1 <sup>a</sup>	2	2 <sup>a</sup>	2 <sup>a</sup>	2

Note: Numbers may not sum to 100 percent due to rounding. Missing responses (“Don’t Know” or “Refused”) are not presented. Overall sample size for each group (Medicare and privately insured) was 4,000 in 2017. Sample size for individual questions varied.

<sup>a</sup> Statistically significant difference (at a 95 percent confidence level) between the Medicare and privately insured populations in the given category.

<sup>b</sup> Statistically significant difference (at a 95 percent confidence level) by race within the same insurance category.

Source: MedPAC-sponsored telephone surveys conducted in 2017.

- In 2017, Medicare beneficiaries (ages 65 and older) reported better access to physicians for appointments in comparison with privately insured individuals ages 50 to 64.
- Access varied by race, with minorities more likely than Whites to report access problems in both insurance categories. For example, in 2017, 81 percent of White Medicare beneficiaries reported “never” having to wait longer than they wanted to get an appointment for an illness or injury compared with 78 percent of minority beneficiaries.

## Chart 7-7. Minorities in Medicare were more likely to report problems finding a new specialist than White beneficiaries, 2017

Survey question	Medicare (ages 65 and older)			Private insurance (ages 50–64)		
	All	White	Minority	All	White	Minority
<b>Looking for a new physician: “In the past 12 months, have you tried to get a new ...?”</b>						
Primary care physician	9% <sup>a</sup>	8%	9%	11% <sup>a</sup>	11%	10%
Specialist	17	18 <sup>a</sup>	15	20	21 <sup>ab</sup>	17 <sup>b</sup>
<b>Getting a new physician: Among those who tried to get an appointment with a new physician, “How much of a problem was it finding a primary care doctor/specialist who would treat you? Was it ...”</b>						
<b>Primary care physician</b>						
No problem	69 <sup>a</sup>	67	80 <sup>a</sup>	59 <sup>a</sup>	58	61 <sup>a</sup>
Small problem	13	14	11	18	20	14
Big problem	14 <sup>a</sup>	16	8 <sup>a</sup>	22 <sup>a</sup>	22	21 <sup>a</sup>
<b>Specialist</b>						
No problem	83	85 <sup>b</sup>	75 <sup>b</sup>	81	82 <sup>b</sup>	74 <sup>b</sup>
Small problem	11	11	13	11	11	13
Big problem	5 <sup>a</sup>	3 <sup>ab</sup>	11 <sup>b</sup>	8 <sup>a</sup>	7 <sup>ab</sup>	13 <sup>b</sup>

Note: Numbers may not sum to 100 percent due to rounding. Missing responses (“Don’t Know” or “Refused”) are not presented. Overall sample size for each group (Medicare and privately insured) was 4,000 in 2017. Sample size for individual questions varied.

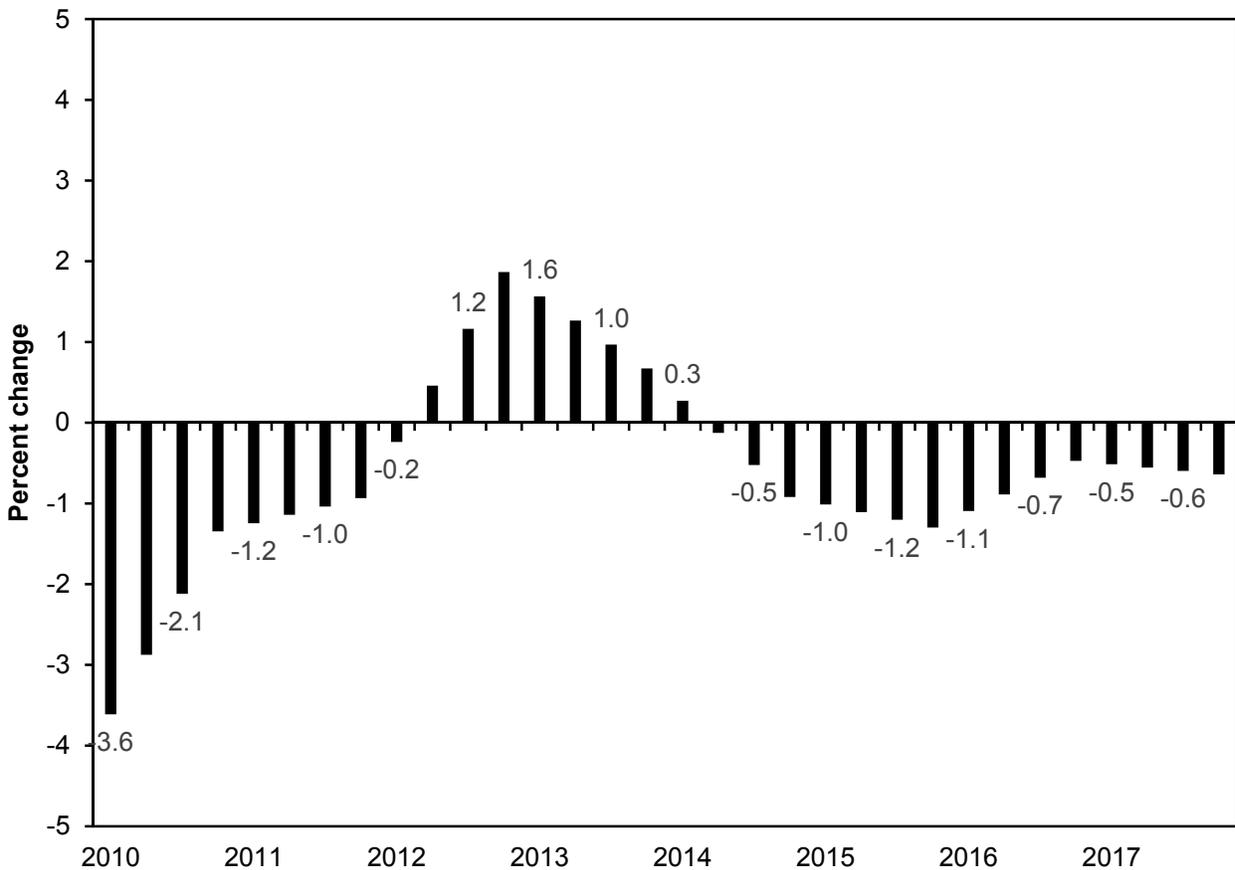
<sup>a</sup> Statistically significant difference (at a 95 percent confidence level) between the Medicare and privately insured populations in the given category.

<sup>b</sup> Statistically significant difference (at a 95 percent confidence level) by race within the same insurance category.

Source: MedPAC-sponsored telephone surveys conducted in 2017.

- Among the small share of Medicare beneficiaries looking for a specialist, minorities were more likely than Whites to report problems finding one.

**Chart 7-8. Changes in physicians' professional liability insurance premiums, 2010–2017**



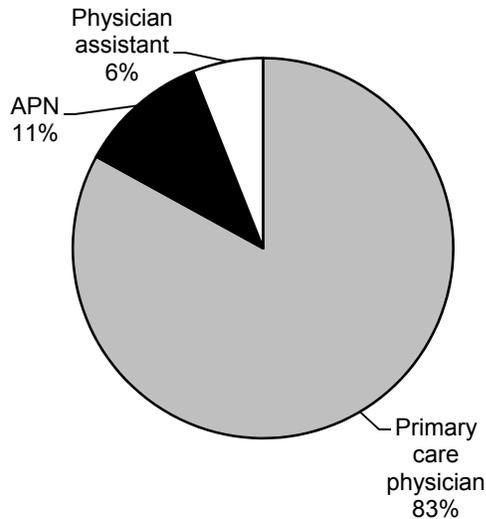
Note: Bars represent a four-quarter moving average percentage change.

Source: CMS, Office of the Actuary. Data are from CMS's Professional Liability Physician Premium Survey.

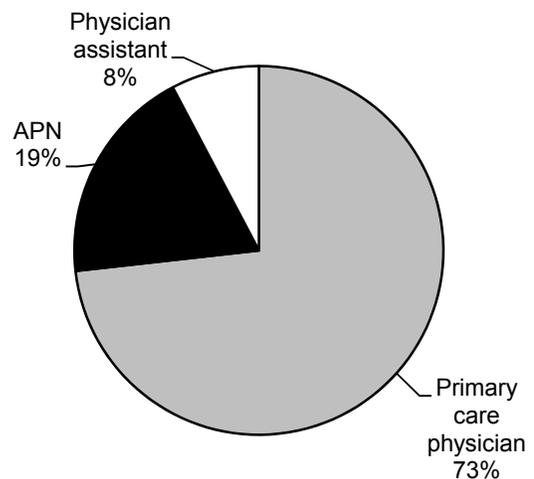
- Professional liability insurance (PLI) accounts for 4.3 percent of total payments under the fee schedule for physicians and other health professionals.
- Changes in PLI premiums reflect a cyclical pattern, alternating between periods of low premiums (characterized by high investment returns for insurers and vigorous competition) and high premiums (characterized by declining investment returns and market exit).
- Premiums increased from 2002 through 2006 (data not shown) and then declined from the second quarter of 2007 through the first quarter of 2012. Premiums grew slowly from the second quarter of 2012 through the first quarter of 2014, after which point they have declined each subsequent quarter.

## Chart 7-9. The shares of primary care services billed by APNs and physician assistants grew, 2012 and 2016

Total units of service 2012 = 135.6 million



Total units of service 2016 = 148.8 million

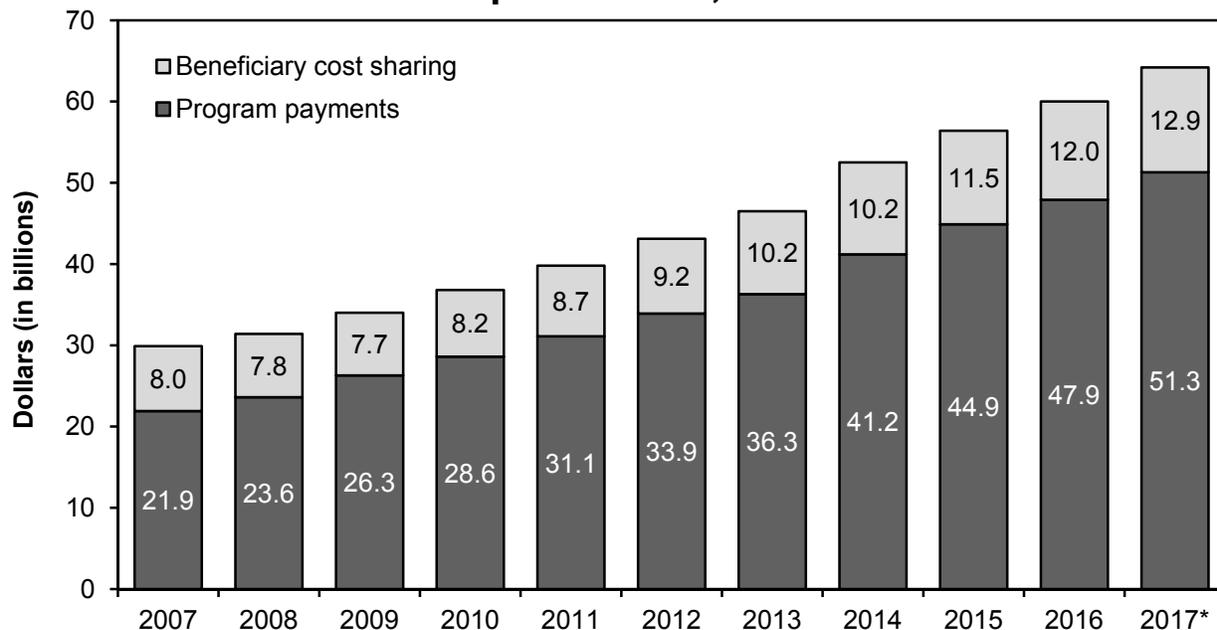


Note: APN (advanced practice nurse). Units of service are specified primary care services—office visits, home visits, visits to patients in extended care facilities, transitional care management, chronic care management, annual wellness visits, and “welcome to Medicare” visits—billed by APNs, physician assistants, or physicians with a specialty designation of family medicine, internal medicine, geriatric medicine, or pediatric medicine. APNs are nurse practitioners and clinical nurse specialists.

Source: MedPAC analysis of claims data for 100 percent of beneficiaries.

- The distribution of primary care services among the clinicians who bill Medicare for these services—primary care physicians (PCPs), APNs, and physician assistants—has changed over time.
- In 2012, clinicians provided 135.6 million primary care services to beneficiaries. PCPs billed for most of the services (112.8 million, or 83 percent), followed by APNs (15.3 million, or 11 percent), and physician assistants (7.5 million, or 6 percent).
- By 2016, total primary care services had grown to 148.8 million units of service, an increase of about 10 percent compared with 2012. PCPs continued to account for most of these services, but their billed services decreased to 108.1 million, or 73 percent of the total. Primary care services billed by APNs grew to 28.2 million, or 19 percent. Primary care services billed by physician assistants increased to 12.5 million, or 8 percent.
- Units of service billed by primary care physicians include some services provided by APNs and physician assistants but billed as “incident to” or under the direct supervision of physicians. Medicare pays for such services as if physicians had personally furnished them. Claims data do not specify whether a service billed by a physician was provided by an APN or physician assistant.

**Chart 7-10. Spending on hospital outpatient services covered under the outpatient PPS, 2007–2017**



Note: PPS (prospective payment system). Spending amounts are for services covered by the Medicare outpatient PPS. They do not include services paid on separate fee schedules (e.g., ambulance services and durable medical equipment) or those paid on a cost basis (e.g., corneal tissue acquisition and flu vaccines) or payments for clinical laboratory services.  
\*Estimate.

Source: CMS, Office of the Actuary.

- Overall spending by Medicare and beneficiaries on hospital outpatient services covered under the outpatient PPS from calendar years 2007 to 2017 increased by 115 percent, reaching an estimated \$64.2 billion. The Office of the Actuary projects continued growth in total spending, averaging 9.5 percent per year from 2017 to 2019.
- In 2001, the first full year of the outpatient PPS, spending under the PPS was \$20.1 billion, including \$12.1 billion by the program and \$8.0 billion in beneficiary cost sharing (data not shown). The Office of the Actuary estimates that spending under the outpatient PPS was \$64.2 billion in 2017 (\$51.3 billion in program spending, \$12.9 billion in beneficiary copayments). We estimate that the outpatient PPS accounted for about 7 percent of total Medicare program spending in 2017.
- Beneficiary cost sharing under the outpatient PPS includes the Part B deductible and coinsurance for each service. Under the outpatient PPS, beneficiary cost sharing was about 20 percent in 2016.

## Chart 7-11. Most hospitals provide outpatient services

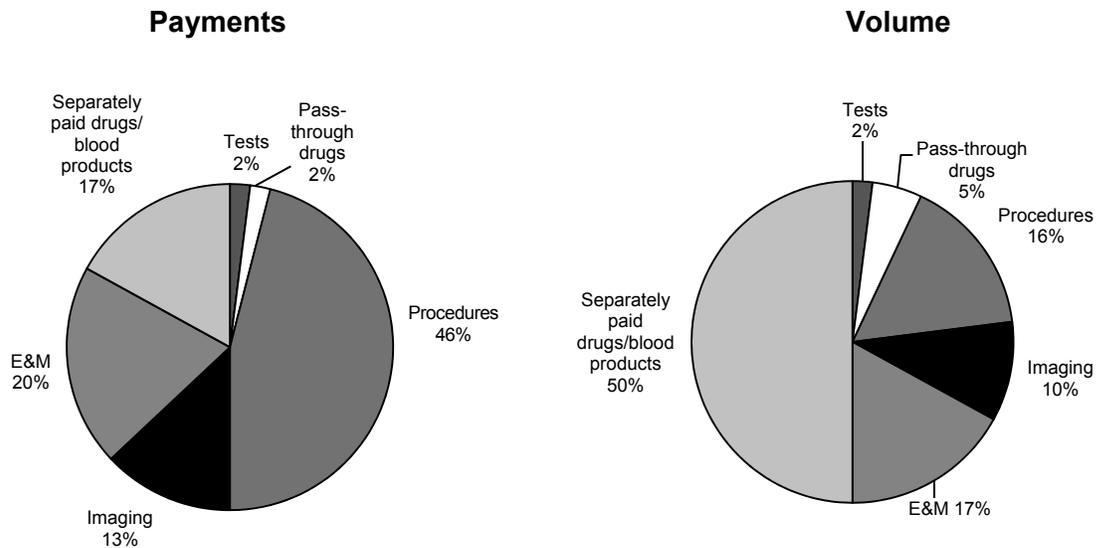
Year	Acute care hospitals	Percent offering		
		Outpatient services	Outpatient surgery	Emergency services
2006	3,651	94%	86%	N/A
2008	3,607	94	87	N/A
2010	3,518	95	90	N/A
2012	3,483	95	91	93%
2014	3,429	96	92	93
2016	3,370	96	93	93
2017	3,346	96	93	92

Note: N/A (not applicable). We list emergency services from 2006 through 2010 as “N/A” because the data source we used in this chart changed the variable for identifying hospitals’ provision of emergency services. We believe this change in variable definition makes it appear that the share of hospitals providing emergency services increased sharply from 2010 to 2012, but we question whether such a large increase actually occurred. This chart includes services provided or arranged by acute care short-term hospitals and excludes long-term, Christian Science, psychiatric, rehabilitation, children’s, critical access, and alcohol/drug hospitals.

Source: Medicare Provider of Services files from CMS.

- The number of hospitals that furnish services under Medicare’s outpatient prospective payment system has declined slowly since 2006, from 3,651 in 2006 to 3,346 in 2017.
- The share of hospitals providing outpatient services remained stable, and the share offering outpatient surgery steadily increased from 2006 through 2014 and has remained stable since then. The share offering emergency services has remained stable over the period we are able to measure accurately.

**Chart 7-12. Payments and volume of services under the Medicare hospital outpatient PPS, by type of service, 2016**



Note: PPS (prospective payment system), E&M (evaluation and management). "Payments" include both program spending and beneficiary cost sharing but do not include hold-harmless payments. Services are grouped into the following categories, according to the Berenson-Eggers Type of Service codes developed by CMS: evaluation and management, procedures, imaging, and tests. "Pass-through drugs" and "separately paid drugs and blood products" are classified by their payment status indicator.

Source: MedPAC analysis of standard analytic file of outpatient claims for 2016.

- Hospitals provide many types of services in their outpatient departments, including emergency and clinic visits, imaging and other diagnostic services, laboratory tests, and ambulatory surgery.
- The payments for services are distributed differently from volume. For example, in 2016, procedures accounted for 46 percent of payments but only 16 percent of volume.
- Procedures (e.g., endoscopies, surgeries, and skin and musculoskeletal procedures) accounted for the greatest share of payments for services (46 percent) in 2016, followed by evaluation and management services (20 percent), separately paid drugs and blood products (17 percent), and imaging services (13 percent).

**Chart 7-13. Hospital outpatient services with the highest Medicare expenditures, 2016**

APC title	Share of payments	Volume (thousands)	Payment rate
Total	51%		
All emergency visits	7	13,674	\$300
Clinic visits	6	30,842	102
Comprehensive observation services	6	1,474	2,174
Level 2 endovascular procedures	3	203	9,542
Level 2 ICD and similar procedures	3	47	30,490
Diagnostic cardiac catheterization	2	407	2,549
Level 2 lower GI procedures	2	1,400	753
Level 1 intraocular procedures	2	518	1,746
Level 3 electrophysiologic procedures	2	57	15,561
Level 3 radiation therapy	2	1,668	506
Level 3 nuclear medicine and related services	1	731	1,108
Level 3 pacemaker and similar procedures	1	87	9,273
Level 3 musculoskeletal procedures	1	184	4,962
Level 3 ultrasound and related services	1	1,721	417
Level 1 laparoscopy	1	191	4,001
Level 3 endovascular procedures	1	50	14,612
Level 2 ultrasound and related services	1	4,018	154
Level 5 drug administration	1	2,008	280
Level 1 X-ray and related services	1	9,134	61
Level 5 urology and related services	1	159	3,394
Level 1 upper gastrointestinal procedures	1	868	745
Level 2 vascular procedures	1	251	2,247
Level 4 nuclear medicine and related services	1	383	1,284
Level 1 endovascular procedures	1	147	4,592
Level 2 drug administration	1	11,616	42
Level 2 computed tomography with contrast and computed tomography angiography	1	1,346	348
Level 4 drug administration	1	2,614	173
Average APC		535	173

Note: APC (ambulatory payment classification), ICD (implantable cardioverter-defibrillator), GI (gastrointestinal). The payment rate for “all emergency visits” is a weighted average of payment rates from 10 APCs. The shares of payments for the 27 APC categories do not add to the total share of payments (51 percent) because of rounding. The average APC figures in the last line represent averages for all APCs.

Source: MedPAC analysis of 100 percent analytic files of outpatient claims for calendar year 2016.

- Although the outpatient prospective payment system covers thousands of services, expenditures are concentrated in a few categories that have high volume, high payment rates, or both.

**Chart 7-14. Effects of SCH transfer payments on hospitals' outpatient revenue, 2014–2016**

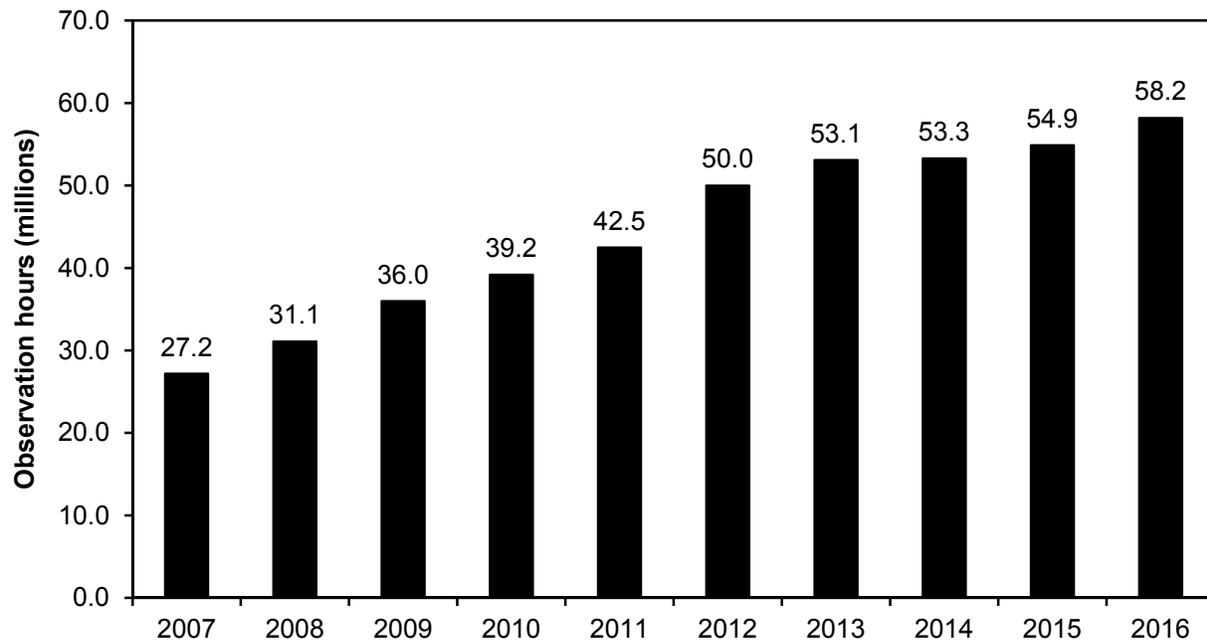
Hospital group	2014		2015		2016	
	Number of hospitals	Share of payments from SCH transfer	Number of hospitals	Share of payments from SCH transfer	Number of hospitals	Share of payments from SCH transfer
All hospitals	2,953	0.0%	2,915	0.0%	2,870	0.0%
Urban	2,114	-0.4	2,163	-0.4	2,137	-0.4
Rural SCHs	373	5.6	354	5.6	350	5.6
Rural ≤100 beds	347	-0.4	300	-0.4	289	-0.4
Other rural	119	-0.4	98	-0.4	93	-0.4
Major teaching	273	-0.3	286	-0.3	288	-0.3
Other teaching	700	-0.2	695	-0.2	699	-0.2
Nonteaching	1,980	0.3	1,934	0.3	1,882	0.3

Note: SCH (sole community hospital).

Source: MedPAC analysis of Medicare Cost Report files from CMS.

- In 2006, CMS implemented a policy (the “SCH transfer”) that increased outpatient prospective payment system (PPS) rates to rural SCHs by 7.1 percent above the standard PPS rates. This policy is made budget neutral by reducing payments to all other hospitals.
- This table reflects the effects of the SCH transfer policy for hospital categories in 2014, 2015, and 2016. We obtained the data for this table from the hospitals' 2014, 2015, and 2016 cost reports.
- The SCH transfer is budget neutral and does not affect total outpatient PPS payments. However, the percentage of total outpatient payments from this policy was 5.6 percent of outpatient revenue for rural SCHs in 2014 through 2016. Also, the SCH transfer policy reduced outpatient payments to small rural hospitals by 0.4 percent each year between 2014 and 2016.

**Chart 7-15. Number of hospital outpatient observation hours increased, 2007–2016**



Source: MedPAC analysis of Limited Data Set claims for the outpatient prospective payment system 2007–2016.

- Hospitals use observation care to determine whether a patient should be hospitalized for inpatient care, transferred to an alternative treatment setting, or sent home.
- Medicare began providing separate payments to hospitals for some observation services on April 1, 2002. Previously, the observation services were packaged into the payments for the emergency department or clinic visits that occurred with observation care.
- The number of hospital outpatient observation hours (both packaged and separately paid) has increased substantially, from about 27 million in 2007 to more than 58 million in 2016. Before 2007, it was difficult to count the total number of observation hours because hospitals were not required to report packaged observation hours on Medicare claims.

## Chart 7-16. Number of Medicare-certified ASCs increased by 8 percent, 2010–2016

	2010	2011	2012	2013	2014	2015	2016
Medicare payments (billions of dollars)	\$3.3	\$3.4	\$3.6	\$3.7	\$3.8	\$4.1	\$4.3
New centers (during year)	192	197	174	173	186	158	142
Closed or merged centers (during year)	111	122	112	110	105	91	63
Net total number of centers (end of year)	5,105	5,180	5,242	5,305	5,386	5,453	5,532
Net percent growth in number of centers from previous year	1.5%	1.5%	1.2%	1.2%	1.5%	1.2%	1.4%
Share of all centers that are:							
For profit	95	95	95	95	95	94	94
Nonprofit	3	3	3	3	3	3	3
Government	1	1	1	2	2	3	3
Urban	92	92	93	93	93	93	94
Rural	8	8	7	7	7	7	6

Note: ASC (ambulatory surgical center). Medicare payments include program spending and beneficiary cost sharing for ASC facility services. Totals may not sum to 100 percent due to rounding.

Source: MedPAC analysis of Provider of Services file from CMS 2017. Payment data are from CMS, Office of the Actuary.

- ASCs are distinct entities that furnish ambulatory surgical services not requiring an overnight stay. The most common ASC procedures are cataract removal with lens insertion, upper gastrointestinal endoscopy, colonoscopy, and nerve procedures.
- Total Medicare payments per Medicare beneficiary for ASC services increased by approximately 4 percent per year, on average, from 2010 through 2016 (data not shown). Payments per ASC fee-for-service beneficiary grew by 3.3 percent per year during this period. Between 2015 and 2016, total payments rose by 4.9 percent, and payments per beneficiary grew by 3.5 percent (per beneficiary data not shown).
- The number of Medicare-certified ASCs grew at an average annual rate of greater than 1 percent from 2010 through 2016. Each year from 2010 through 2016, an average of 175 new facilities entered the market, while an average of 102 closed or merged with other facilities.
- Compared with earlier years (not shown), the number of ASCs grew slowly from 2010 through 2016. The slower growth may reflect the substantially higher rates that Medicare pays for ambulatory surgical services provided in hospital outpatient departments than in ASCs, the very slow growth of national health care spending and Medicare spending, and the significant increase in hospital employment of physicians.

SECTION

8

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**Post-acute care**  
**Skilled nursing facilities**  
**Home health services**  
**Inpatient rehabilitation facilities**  
**Long-term care hospitals**

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**Chart 8-1. Number of post-acute care providers remained stable in 2017**

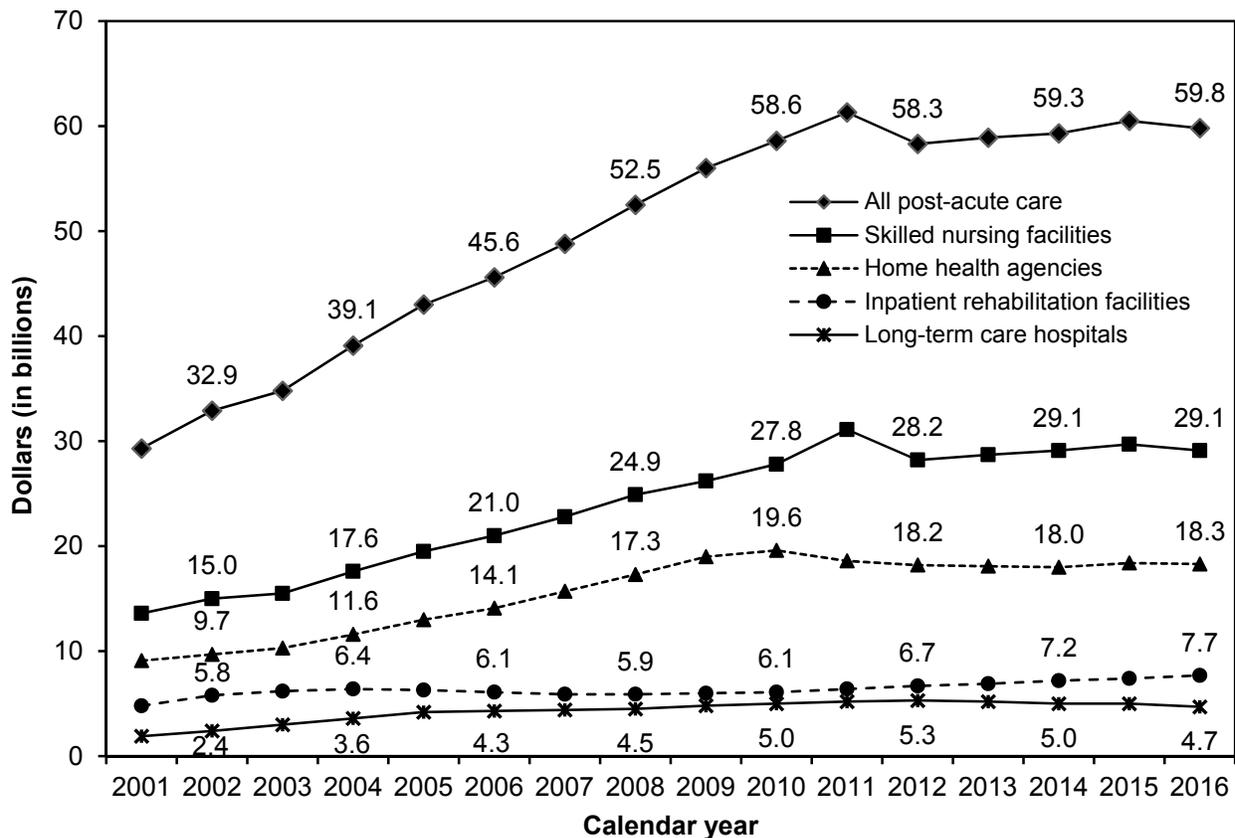
	2013	2014	2015	2016	2017	Average annual percent change 2013–2017	Percent change 2016–2017
Home health agencies	12,613	12,461	12,346	12,204	11,844	–1.6%	–3.0%
Inpatient rehabilitation facilities	1,161	1,177	1,182	1,188	1,178	0.4	–0.8
Long-term care hospitals	432	422	426	423	411	–1.2	–2.8
Skilled nursing facilities	15,163	15,173	15,223	15,263	15,277	0.2	0.1

Note: The skilled nursing facility count does not include swing beds.

Source: MedPAC analysis of data from the Provider of Services files from CMS.

- The number of home health agencies has been declining since 2013 after several years of substantial growth. The decline in agencies was concentrated in Texas and Florida, two states that saw considerable growth following the implementation of the prospective payment system in October 2000.
- The supply of inpatient rehabilitation facilities (IRFs) has been relatively stable since 2013. Most IRFs are distinct units in acute care hospitals; only about one-fifth are freestanding facilities. However, because hospital-based units tend to have fewer beds, they account for only about half of Medicare discharges from IRFs.
- Although the moratorium on new long-term care hospitals (LTCHs) led to a decrease in the number of LTCHs beginning in 2012 (data not shown), the number of LTCHs further declined to 411 in 2017 primarily due to the implementation of a payment policy that reduces payment for discharges not meeting certain criteria.
- The total number of skilled nursing facilities (SNFs) has increased slightly since 2009, and the mix of facilities shifted from hospital-based to freestanding facilities (data not shown). In 2017, hospital-based facilities made up 5 percent of all SNF facilities (data not shown).

**Chart 8-2. Growth in Medicare’s fee-for-service post-acute care expenditures has slowed since 2011**



Note: These calendar year-incurred data represent only program spending; they do not include beneficiary copayments.

Source: CMS Office of the Actuary 2018.

- Increases in aggregate fee-for-service (FFS) spending on post-acute care have slowed in part because of expanded enrollment in managed care under Medicare Advantage (Medicare Advantage spending is not included in this chart). Since 2012, growth in FFS post-acute care spending has remained flat.
- FFS spending on inpatient rehabilitation facilities declined between 2004 and 2008, reflecting policies intended to ensure that patients who do not need this intensity of services are treated in less-intensive settings. However, spending on inpatient rehabilitation facilities has increased since 2008.
- FFS spending on skilled nursing facilities increased sharply in 2011, reflecting CMS’s adjustment for the implementation of the new case-mix groups (resource utilization groups, version IV) beginning October 2010. Once CMS established that the adjustment it made was too large, it lowered the adjustment, and spending dropped in 2012.

**Chart 8-3. Freestanding SNFs and for-profit SNFs accounted for the majority of facilities, Medicare stays, and Medicare spending**

Type of SNF	Facilities		Medicare-covered stays		Medicare payments (billions)	
	2011	2016	2011	2016	2011	2016
Totals	14,935	15,080	2,455,730	2,310,753	\$28.8	\$26.4
Freestanding	95%	96%	93%	95%	97%	97%
Hospital based	5	4	7	5	3	3
Urban	71	72	81	83	84	85
Rural	29	28	19	17	16	15
For profit	70	70	72	71	76	74
Nonprofit	25	23	25	24	21	21
Government	5	6	3	4	3	4

Note: SNF (skilled nursing facility). Totals may not sum to 100 percent due to rounding and missing values.

Source: MedPAC analysis of the Provider of Services and Medicare Provider Analysis and Review files, 2011 and 2016.

- In 2016, freestanding facilities accounted for 95 percent of stays and 97 percent of Medicare's payments.
- Urban facilities accounted for 72 percent of facilities, 83 percent of stays, and 85 percent of Medicare payments in 2016.
- In 2016, for-profit facilities accounted for 70 percent of facilities and higher shares of stays and Medicare payments (71 percent and 74 percent, respectively).

## Chart 8-4. SNF admissions and stays declined in 2016

Volume measure	2012	2014	2015	2016	Percent change 2015–2016
Covered admissions per 1,000 FFS beneficiaries	69.0	68.6	68.9	66.4	–3.6%
Covered days per 1,000 FFS beneficiaries	1,893	1,849	1,824	1,706	–6.5
Covered days per admission	27.4	27.0	26.5	25.7	–3.0

Note: SNF (skilled nursing facility), FFS (fee-for-service). Data include 50 states and the District of Columbia. Yearly figures presented in the table are rounded, but the percent-change column was calculated using unrounded data.

Source: Calendar year data from CMS, Office of Information Products and Data Analytics 2017.

- In 2016, 4.2 percent of beneficiaries used SNF services, down slightly from 2011 (data not shown).
- Between 2015 and 2016, SNF admissions per 1,000 FFS beneficiaries decreased 3.6 percent, consistent with the decrease in inpatient hospital use. An acute care hospital stay of three or more days is a prerequisite for Medicare coverage of SNF care.
- During the same period, covered days declined at a faster rate (–6.5 percent), so there were fewer covered days per admission (25.7 days).

## Chart 8-5. Freestanding SNF Medicare margins remained high in 2016

	2004	2006	2008	2010	2012	2014	2016
All	13.8%	12.8%	16.7%	19.4%	14.1%	12.8%	11.4%
Rural	16.4	13.6	18.1	19.5	13.3	10.9	9.8
Urban	13.3	12.7	16.4	19.4	14.2	13.1	11.7
Nonprofit	4.3	4.0	8.1	11.4	6.4	4.6	2.3
For profit	15.9	14.9	18.7	21.3	16.0	15.1	14.0

Note: SNF (skilled nursing facility).

Source: MedPAC analysis of freestanding SNF cost reports 2004–2016.

- Though lower than in recent years, the Medicare margin for freestanding SNFs in 2016 exceeded 10 percent for the 17th consecutive year (not all years are shown). After reaching over 21 percent in 2011 (not shown), the margins have declined for two reasons: Current law requires market basket increases to be offset by a productivity adjustment, and sequestration began lowering payments in April 2013 by 2 percent on an annualized basis.
- In 2016, on average, urban facilities had higher Medicare margins than rural facilities. For-profit SNFs had considerably higher Medicare margins than nonprofit SNFs, reflecting their larger size, their lower cost growth, and their higher share of the more profitable therapy case-mix groups (the ultra-high and very high groups).
- In 2016, total margins (the margin across all payers and all lines of business) for freestanding facilities remained positive (0.7 percent, data not shown).

**Chart 8-6. Cost and payment differences explain variation in Medicare margins for freestanding SNFs in 2016**

Characteristic	Highest margin quartile (n = 3,263)	Lowest margin quartile (n = 3,262)	Ratio of highest quartile to lowest quartile
<b>Cost measures</b>			
Standardized cost per day	\$266	\$387	0.7
Standardized cost per discharge	\$11,190	\$14,246	0.8
Average daily census (patients)	88	66	1.3
Average length of stay (days)	42	36	1.2
<b>Revenue measures</b>			
Medicare payment per day	\$510	\$441	1.2
Medicare payment per discharge	\$22,472	\$15,940	1.4
Share of days in intensive therapy	87%	79%	1.1
Share of medically complex days	3	4	0.8
Medicare share of facility revenue	24	14	1.7
<b>Patient characteristics</b>			
Case-mix index	1.41	1.32	1.1
Share of dual-eligible beneficiaries	39%	27%	1.4
Share of minority beneficiaries	14	5	2.8
Share of very old beneficiaries	28	33	0.9
Medicaid share of days	65	56	1.2
<b>Facility mix</b>			
Share for profit	88%	57%	N/A
Share urban	80	69	N/A

Note: SNF (skilled nursing facility), N/A (not applicable). Values shown are medians for the quartile. Highest margin quartile SNFs were in the top 25 percent of the distribution of Medicare margins. Lowest margin quartile SNFs were in the bottom 25 percent of the distribution of Medicare margins. "Standardized cost per day" includes Medicare costs adjusted for differences in area wages and the case mix (using the nursing component's relative weights) of Medicare beneficiaries. "Days in intensive therapy" are days classified into ultra-high and very high rehabilitation case-mix groups. "Very old beneficiaries" are 85 years or older. "Medically complex days" are those assigned to clinically complex or special-care case-mix groups. Quartile figures presented in the table are rounded, but the ratio column was calculated using unrounded data.

Source: MedPAC analysis of freestanding SNF cost reports 2016.

- Medicare margins varied widely across freestanding SNFs. One-quarter of SNFs had Medicare margins at or below 0.7 percent, and one-quarter of facilities had Medicare margins at or above 20.2 percent (data not shown).
- High-margin SNFs had lower costs per day (31 percent lower costs than low-margin SNFs), after adjusting for wage and case-mix differences, and higher revenues per day (1.2 times the revenues per day of low-margin SNFs).
- Facilities with the highest Medicare margins had higher case-mix indexes, higher shares of beneficiaries who were dually eligible for Medicare and Medicaid, and higher shares of minority beneficiaries.

**Chart 8-7. Financial performance of relatively efficient SNFs in 2016 reflects a combination of lower cost per day and higher payment per day**

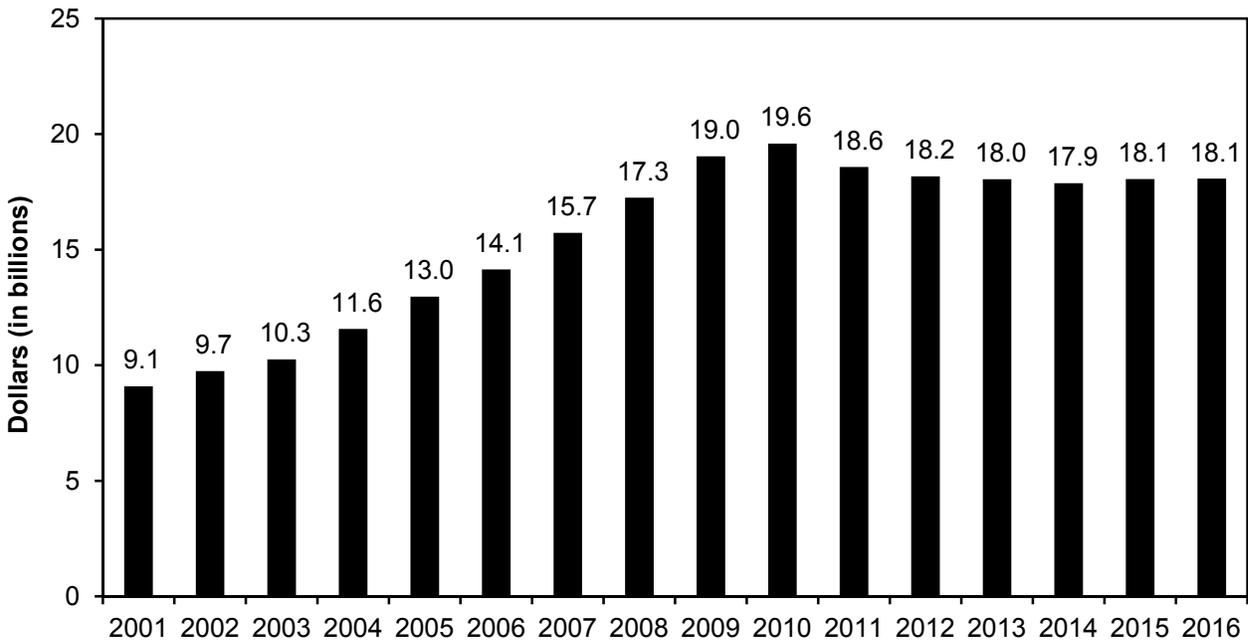
	Relatively efficient SNFs	Other SNFs
<b>Performance in 2016</b>		
Community discharge rate	49.1%	39.1%
Readmission rate	8.9%	10.7%
Standardized cost per day	\$291	\$315
Medicare revenue per day	\$512	\$466
Medicare margin	18.2%	10.6%
Total margin	2.5%	1.1%
Facility case-mix index	1.43	1.36
Medicare average length of stay	32 days	39 days
Occupancy rate	87%	85%
Average daily census	99	80
Share of ultra-high therapy days	65%	54%
Share of medically complex days	4%	4%
Medicaid share of facility days	56%	61%
Share urban	83%	68%
Share for profit	79%	69%

Note: SNF (skilled nursing facility). The analysis includes 11,545 freestanding facilities. SNFs were defined as “relatively efficient” by their cost per day measure (2013–2015) and two quality measures (community discharge and readmission rates) for the same period (2013–2015). Relatively efficient SNFs were those in the best third of the distribution of any one measure and not in the bottom third on any measure in each of three years. Eight percent of SNFs qualified as relatively efficient. Costs per day were standardized for differences in case mix (using the nursing component relative weights) and wages. Rates of risk-adjusted community discharge and readmission for patients with potentially avoidable conditions during the SNF stay are quality measures and were calculated for all facilities with at least 25 stays. “Ultra-high therapy days” include days with at least 720 minutes per week of therapy. “Medically complex days” are those assigned to clinically complex or special-care case-mix groups.

Source: MedPAC analysis of quality measures and Medicare cost report data for 2013–2016.

- “Relatively efficient SNFs” are defined as consistently providing relatively low-cost and high-quality care compared with other SNFs.
- Compared with other SNFs in 2016, relatively efficient SNFs furnished considerably higher quality (higher discharge to community rates and lower readmission rates) and had costs per day that were almost 8 percent lower.
- Compared with other SNFs in 2016, relatively efficient SNFs treated a similar share of medically complex patients, had a higher share of ultra-high therapy days, were larger, had shorter stays, slightly higher occupancy rates, and had higher average daily censuses.

**Chart 8-8. Spending on home health care, 2001–2016**



Source: CMS Office of the Actuary 2017.

- In October 2000, the prospective payment system (PPS) replaced the previous Medicare payment system for home health care, which was a cost-based system that tied payment to the number of visits provided and per beneficiary spending limitations.
- Home health care spending initially rose rapidly under the PPS, by about 10 percent per year between 2001 and 2009. Spending peaked in 2010 and has not changed significantly since 2012.

## Chart 8-9. Trends in the provision of home health care

	2002	2015	2016	<u>Percent change</u> 2015–2016	<u>Cumulative</u> <u>percent change</u> 2002–2016
Number of users (in millions)	2.5	3.5	3.5	0.1%	37.5%
Share of FFS beneficiaries who used home health care	7.2%	9.1%	9.0%	–0.8	25.1
Episodes (in millions)	4.1	6.6	6.5	–0.7	59.3
Episodes per home health patient	1.6	1.9	1.9	–0.9	16.0
Visits per home health episode	18.9	17.5	17.5	0.2	–7.4
Visits per home health patient	30.8	33.3	33.1	–0.6	7.4
Average payment per episode	\$2,645	\$2,965	\$2,988	0.8	13.0

Note: FFS (fee-for-service). Yearly figures presented in the table are rounded, but the percent-change columns were calculated using unrounded data. Average payment per episode excludes low-use episodes with fewer than 5 visits.

Source: MedPAC analysis of the home health standard analytic file.

- The number of home health episodes has increased since 2002. The number of beneficiaries using home health care has also increased since 2002, albeit at a lower rate. In 2016, 3.5 million beneficiaries used the home health benefit.
- The number of visits per episode has decreased since 2002. However, this decline was offset by an increase in the average number of episodes per patient, which increased from 1.6 in 2002 to 1.9 in 2016. Beneficiaries received fewer visits in an episode but had more 60-day episodes of care. As a result, the average number of visits increased from about 31 visits per home health user in 2002 to about 33 visits per home health user in 2016.

## Chart 8-10. Most home health episodes are not preceded by hospitalization or PAC stay

	Number of episodes (in millions)			Percent change	
	2001	2011	2016	2001–2011	2011–2016
Episodes preceded by a hospitalization or PAC stay	1.9	2.2	2.2	14.8%	2.4%
Episodes not preceded by a hospitalization or PAC stay	2.1	4.7	4.4	127.4	–7.7
Total	3.9	6.9	6.5	74.0	–4.6

Note: PAC (post-acute care). “Episodes preceded by a hospitalization or PAC stay” refers to episodes that occurred less than 15 days after a stay in a hospital (including a long-term care hospital), skilled nursing facility, or inpatient rehabilitation facility. “Episodes not preceded by a hospitalization or PAC stay” refers to episodes for which there was no hospitalization or PAC stay in the previous 15 days. Numbers may not sum due to rounding.

Source: 2016 home health standard analytic file, 2016 Medicare Provider and Analysis Review file, and 2016 skilled nursing facility standard analytic file.

- The rise in the average number of episodes per beneficiary since 2001 coincides with a relative shift away from using home health care as a PAC service.
- Between 2001 and 2011, the number of episodes not preceded by a hospitalization or PAC stay increased by about 127 percent compared with an almost 15 percent increase in episodes that were preceded by a hospitalization or PAC stay. During that same period, the share of all episodes not preceded by a hospitalization or PAC stay rose from about 53 percent to 67 percent (data not shown).
- Beneficiaries for whom the majority of home health episodes were preceded by a hospitalization or PAC stay had different characteristics from community-admitted beneficiaries (those who had no prior hospitalization or PAC). Community-admitted home health users were more likely to be dually eligible for Medicare and Medicaid, to have more home health episodes, and to have more episodes with a high share of home health aide services compared with those home health users coming from a hospitalization or other PAC stay (data not shown). Community-admitted users generally had fewer chronic conditions, tended to be older, and were more likely to have dementia or Alzheimer’s disease (data not shown).

## Chart 8-11. Medicare margins for freestanding home health agencies

	2015	2016	Share of agencies 2016
All	15.6%	15.5%	100%
Geography			
Mostly urban	16.0	15.8	84
Mostly rural	13.2	13.4	17
Type of control			
For profit	16.7	16.6	88
Nonprofit	12.1	12.0	12
Volume quintile (lowest to highest)			
First	7.4	7.9	20
Second	9.6	10.1	20
Third	12.4	11.3	20
Fourth	13.8	14.1	20
Fifth	17.6	17.4	20

Note: Agencies are characterized as urban or rural based on the residence of the majority of their patients. Components may not sum to totals due to rounding.

Source: MedPAC analysis of 2015–2016 Medicare Cost Report files from CMS.

- In 2016, freestanding home health agencies (HHAs) (85 percent of all HHAs) had an aggregate margin of 15.5 percent. HHAs that served mostly urban patients in 2016 had an aggregate margin of 15.8 percent; HHAs that served mostly rural patients had an aggregate margin of 13.4 percent. The 2016 margin is consistent with the historically high margins the home health industry has experienced since the prospective payment system (PPS) was implemented in 2000. The margin from 2001 to 2015 averaged 16.5 percent (data not shown), indicating that most agencies have been paid well in excess of their costs under the PPS.
- For-profit agencies in 2016 had an average margin of 16.6 percent, and nonprofit agencies had an average margin of 12.0 percent.
- Agencies that serve more patients have higher margins. The agencies in the lowest volume quintile in 2015 had an aggregate margin of 7.9 percent, while those in the highest quintile had an aggregate margin of 17.4 percent.

## Chart 8-12. Number of FFS IRF cases increased in 2016

	2008	2013	2015	2016	Average annual percent change 2008–2015	Percent change 2015–2016
Number of IRF cases	356,000	373,000	381,000	391,000	1.0%	2.4%
Cases per 10,000 FFS beneficiaries	100.4	99.1	101.0	101.7	0.0	1.4
Payment per case	\$16,646	\$18,258	\$19,116	\$19,714	2.0	3.1
Average length of stay (in days)	13.3	12.9	12.7	12.7	–0.6	0.0

Note: FFS (fee-for-service), IRF (inpatient rehabilitation facility). Numbers of cases reflect Medicare FFS utilization only. Yearly figures presented in the table are rounded, but the percent-change columns were calculated using unrounded data.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- The number of Medicare FFS IRF cases grew rapidly throughout the 1990s and the early years of the IRF prospective payment system, reaching a peak of about 495,000 in 2004 (data not shown).
- In 2004, CMS renewed its enforcement of the compliance threshold, which requires that 60 percent or more of an IRFs' cases have at least one of 13 specified conditions, and IRF volume began to fall. Between 2004 and 2008, the number of IRF cases fell almost 8 percent per year (data not shown). After 2008, volume began to increase slowly, rising 1 percent per year, on average, from 2008 to 2015. Between 2015 and 2016, volume growth picked up, rising 2.4 percent.
- In 2016, the number of IRF cases per 10,000 FFS beneficiaries was 101.7, up 1.4 percent from the previous year. Relatively few Medicare beneficiaries use IRF services because, to qualify for Medicare coverage, IRF patients must be able to both tolerate and benefit from intensive rehabilitation therapy, which typically consists of at least three hours of therapy a day for at least five days a week. Despite the growth in the number of IRF cases per FFS beneficiary, the aggregate Medicare FFS discharge share in IRFs was stable at about 60 percent of total discharges (data not shown).
- Medicare payments per IRF case rose, on average, 2.0 percent per year between 2008 and 2015. Payments per case grew 3.1 percent between 2015 and 2016.

## Chart 8-13. Most common types of FFS inpatient rehabilitation facility cases, 2016

Type of case	Share of cases
Stroke	20.1%
Other neurological conditions	13.7
Fracture of the lower extremity	10.8
Debility	10.7
Brain injury	9.9
Other orthopedic conditions	8.2
Cardiac conditions	6.1
Major joint replacement of lower extremity	5.5
Spinal cord injury	4.9
All other	10.1

Note: FFS (fee-for-service). "Other neurological conditions" includes multiple sclerosis, Parkinson's disease, polyneuropathy, and neuromuscular disorders. "Fracture of the lower extremity" includes hip, pelvis, and femur fractures. Patients with debility have generalized deconditioning not attributable to other conditions. "Other orthopedic conditions" excludes fractures of the hip, pelvis, and femur and hip and knee replacements. "All other" includes conditions such as amputations, arthritis, and pain syndrome. All Medicare FFS inpatient rehabilitation facility (IRF) cases with valid patient assessment information were included in this analysis. Numbers may not sum to 100 percent due to rounding.

Source: MedPAC analysis of Inpatient Rehabilitation Facility–Patient Assessment Instrument data from CMS.

- In 2016, the most frequently occurring case type among FFS beneficiaries admitted to IRFs was stroke, which accounted for 20.1 percent of Medicare FFS cases.
- The number and share of Medicare FFS cases with other neurological conditions has grown significantly. Between 2008 and 2015, the number of IRF discharges with other neurological conditions climbed 76 percent while the total number of Medicare IRF discharges increased 9 percent (data not shown).
- The distribution of case types differs by type of IRF. For example, in 2016, 15 percent of FFS cases in freestanding for-profit IRFs were admitted for rehabilitation following a stroke, compared with 25 percent of cases in hospital-based nonprofit IRFs (data not shown). Likewise, 19 percent of FFS cases in freestanding for-profit IRFs were admitted with other neurological conditions, roughly double the share admitted to hospital-based IRFs (regardless of ownership) (data not shown).

**Chart 8-14. Inpatient rehabilitation facilities' Medicare margins by type of facility, 2006–2016**

	2006	2008	2010	2012	2014	2015	2016
All IRFs	12.5%	9.4%	8.6%	11.2%	12.4%	13.8%	13.0%
Hospital based	9.9	3.9	−0.5	0.7	0.9	1.9	1.2
Freestanding	17.5	18.2	21.4	23.9	25.3	26.7	25.5
Urban	12.8	9.6	9.0	11.6	12.8	14.2	13.2
Rural	10.0	6.9	4.7	6.5	6.2	8.3	9.5
Nonprofit	11.0	5.3	2.1	2.1	2.0	3.5	2.0
For profit	16.3	16.9	19.6	22.9	23.8	24.8	23.9

Note: IRF (inpatient rehabilitation facility).

Source: MedPAC analysis of cost report data from CMS.

- Following a period of steady growth, the aggregate IRF Medicare margin declined in 2016 but remained high at 13.0 percent.
- Margins varied by ownership, with for-profit IRFs having substantially higher margins. At the same time, Medicare margins in freestanding IRFs far exceeded those of hospital-based facilities. Nevertheless, a quarter of hospital-based IRFs had Medicare margins greater than 11 percent (data not shown), indicating that many hospitals can manage their IRF units profitably. Further, despite the comparatively low average margin in hospital-based IRFs, evidence suggests that these units make a positive financial contribution to their parent hospitals. Commission analysis found that, in 2013, the aggregate Medicare margin for acute care hospitals with IRF units was a percentage point higher than the margin of hospitals without IRF units (data not shown).
- Higher unit costs are a major driver of low margins in both hospital-based and nonprofit IRFs. However, the Commission has found that the mix of case types in IRFs is also correlated with profitability. IRFs with the highest margins have a higher share of neurological cases and a lower share of stroke cases. Further, we have observed differences in the types of stroke and neurological cases admitted to high- and low-margin IRFs. Stroke cases in the highest margin IRFs are much less likely to have paralysis than are stroke cases in the lowest margin IRFs. Neurological cases in the highest margin IRFs are much more likely to be neuromuscular disorders (such as amyotrophic lateral sclerosis) than are neurological cases in the lowest margin IRFs (data not shown).
- The Commission has found that high-margin IRFs have patients who are, on average, less severely ill in the acute care hospital than patients admitted to low-margin IRFs. Once admitted to and assessed by the IRF, however, the average patient profile changes, with patients treated in high-margin IRFs appearing to be more disabled than those in low-margin IRFs. This finding suggests the possibility that assessment and coding practices may contribute to greater revenues in some IRFs (data not shown).

## Chart 8-15. Low standardized costs led to high margins for both hospital-based and freestanding IRFs, 2016

Characteristic	Lowest cost quartile	Highest cost quartile
Median cost per discharge		
All	\$11,490	\$19,873
Hospital based	12,158	19,860
Freestanding	10,854	20,417
Median Medicare margin		
All	28.4%	-22.1%
Hospital based	23.4	-22.1
Freestanding	31.0	-23.1
Median		
Number of beds	48	18
Occupancy rate	72%	53%
Share of facilities in the quartile that are:		
Hospital based	38%	94%
Freestanding	62	6
Nonprofit	31	62
For profit	66	20
Government	3	17
Urban	94	80
Rural	6	20

Note: IRF (inpatient rehabilitation facility). Cost per discharge is standardized for differences in wages across geographic areas, differences in case mix across providers, and differences across providers in the prevalence of high-cost outliers, short-stay outliers, and transfer cases.

Source: MedPAC analysis of Medicare cost report and Medicare Provider Analysis and Review data from CMS.

- IRFs with the lowest standardized costs (those in the lowest cost quartile) had a median standardized cost per discharge that was 42 percent less than that of the IRFs with the highest standardized costs (those in the highest cost quartile).
- IRFs with the lowest costs tended to be larger: The median number of beds was 48 compared with 18 in the highest cost quartile. In addition, IRFs with the lowest costs had a higher median occupancy rate (72 percent vs. 53 percent, respectively). These results suggest that low-cost IRFs benefit from economies of scale.
- Low-cost IRFs were disproportionately freestanding and for profit. Still, 38 percent of IRFs in the lowest cost quartile were hospital based and 31 percent were nonprofit. By contrast, in the highest cost quartile, 94 percent were hospital based and 62 percent were nonprofit.

**Chart 8-16. The top 25 MS–LTC–DRGs made up two-thirds of LTCH discharges in 2016**

MS–LTC –DRG	Description	Discharges	Share of cases
189	Pulmonary edema and respiratory failure	17,539	14.0%
207	Respiratory system diagnosis with ventilator support 96+ hours	14,445	11.5
871	Septicemia without ventilator support 96+ hours with MCC	7,938	6.3
539	Osteomyelitis with MCC	3,418	2.7
592	Skin ulcers with MCC	3,351	2.7
177	Respiratory infections and inflammations with MCC	3,092	2.5
949	Aftercare with CC/MCC	2,960	2.4
208	Respiratory system diagnosis with ventilator support <96 hours	2,790	2.2
682	Renal failure with MCC	2,516	2.0
981	Extensive OR procedure unrelated to principal diagnosis with MCC	2,451	2.0
166	Other respiratory system OR procedures with MCC	1,959	1.6
559	Aftercare, musculoskeletal system and connective tissue with MCC	1,939	1.5
570	Skin debridement with MCC	1,746	1.4
853	Infectious and parasitic diseases with OR procedure with MCC	1,731	1.4
314	Other circulatory system diagnoses with MCC	1,679	1.3
919	Complications of treatment with MCC	1,640	1.3
862	Postoperative and post-traumatic infections with MCC	1,624	1.3
463	Wound debridement and skin graft except hand, for musculo- connective tissue disorders with MCC	1,551	1.2
291	Heart failure and shock with MCC	1,535	1.2
4	Tracheostomy with ventilator support 96+ hours or primary diagnosis except face, mouth, and neck without major OR	1,534	1.2
870	Septicemia with ventilator support 96+ hours	1,503	1.2
193	Simple pneumonia and pleurisy with MCC	1,437	1.1
190	Chronic obstructive pulmonary disease with MCC	1,353	1.1
603	Cellulitis without MCC	1,322	1.1
560	Aftercare, musculoskeletal system and connective tissue with CC	1,316	1.0
	Top 20 MS–LTC–DRGs	84,369	67.2
	Total	125,586	100.0

Note: MS–LTC–DRG (Medicare severity long-term care diagnosis related group), LTCH (long-term care hospital), MCC (major complication or comorbidity), CC (complication or comorbidity), OR (operating room). MS–LTC–DRGs are the case-mix system for LTCHs.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- Cases in LTCHs are concentrated in a relatively small number of MS–LTC–DRGs. In 2016, the top 25 MS–LTC–DRGs accounted for two-thirds of LTCH cases.
- As in 2015, the two most frequent diagnoses in LTCHs in 2016 were pulmonary edema and respiratory failure and a respiratory system diagnosis with ventilator support of more than 96 hours.
- Over 35 percent of all LTCH cases were respiratory conditions—a statistic that has been relatively stable since the 2008 implementation of the MS-LTC-DRGs. Nonprofit LTCHs care for a higher share of beneficiaries with a respiratory-related illness compared with for-profit LTCHs (data not shown).

**Chart 8-17. The number of Medicare LTCH cases and users has decreased each year since peaking in 2012**

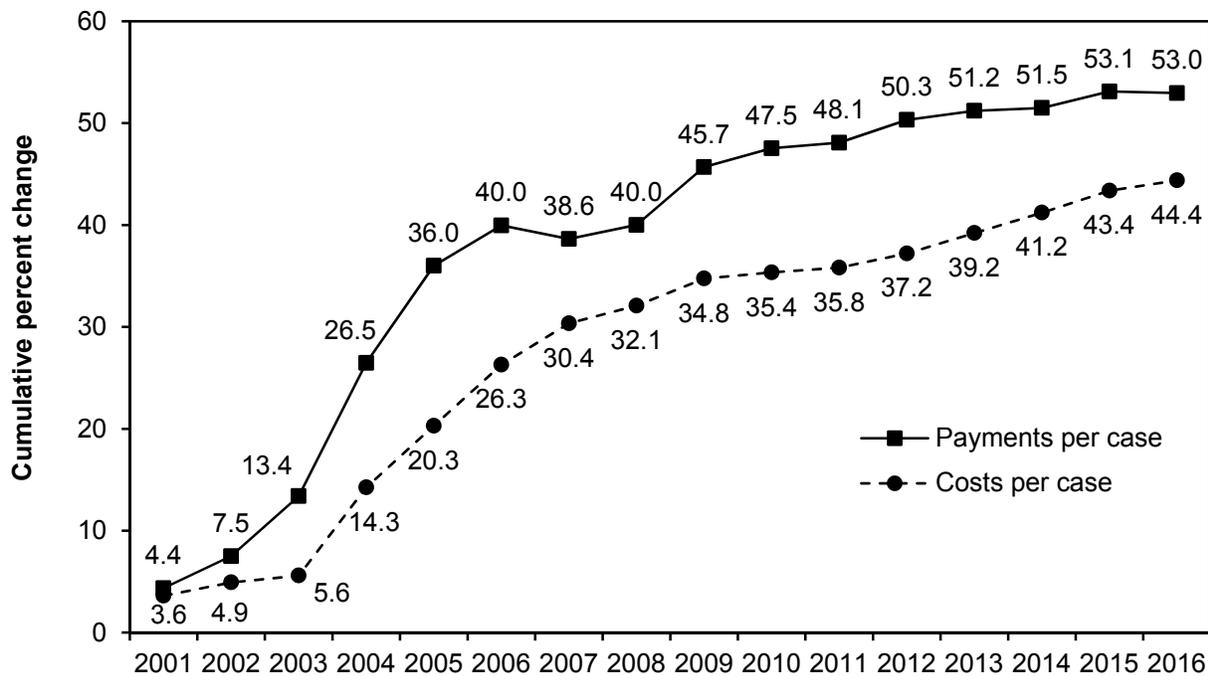
	2012	2013	2014	2015	2016	Average annual change		
						2012– 2014	2014– 2015	2015– 2016
Cases	140,463	137,827	133,984	131,129	125,586	–2.3%	–2.1%	–4.2%
Cases per 10,000 FFS beneficiaries	37.7	36.6	35.4	34.5	32.7	–3.1	–2.6	–5.1
Spending per FFS beneficiary	\$148.8	\$146.6	\$141.7	\$140.3	\$132.9	–2.5	–0.9	–5.3
Payment per case	\$39,493	\$40,070	\$40,015	\$40,719	\$40,656	0.7	1.8	–0.2
Length of stay (in days)	26.2	26.5	26.3	26.6	26.8	0.2	1.0	1.1
Users	123,652	121,532	118,288	116,088	111,171	–2.2	–1.9	–4.2

Note: LTCH (long-term care hospitals), FFS (fee-for-service). Yearly figures presented in the table are rounded, but the average annual changes were calculated using unrounded data.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- Controlling for the number of FFS beneficiaries, the number of LTCH cases declined by about 2 percent annually between 2012 and 2015. The number of cases declined more (–4.2 percent) between 2015 and 2016.
- The average length of stay has increased from 26.2 days in 2012 to 26.8 in 2016, reflecting an average annual growth of 0.6 percent.
- Reflecting the decline in the number of Medicare cases, the number of beneficiaries who had LTCH stays (“users”) also decreased by 4.2 percent from 2015 to 2016.

**Chart 8-18. LTCH cost growth in 2016 was the slowest since 2011**



Note: LTCH (long-term care hospital). Percentage changes are calculated based on consistent two-year cohorts of LTCHs.

Source: MedPAC analysis of Medicare cost report data from CMS.

- After implementation of the prospective payment system on October 1, 2002, costs per case increased rapidly, following a surge in payments per case. Between 2005 and 2007, growth in cost per case began to slow down as regulatory changes to Medicare’s payment policies for LTCHs slowed growth in payment per case to an average of 1.3 percent per year.
- For most of the past decade, LTCHs held cost growth below the rate of market basket increases, likely because of ongoing concerns about possible changes to Medicare’s payment policies for LTCH services. The slowest growth in average cost per case occurred from 2009 through 2011, when the average cost per case increased less than 1 percent per year.
- From 2012 to 2015, the average cost per case increased by about 2 percent per year. From 2015 to 2016, cost growth slowed to 1 percent, reflecting the lowest growth since 2011.

## Chart 8-19. The aggregate average LTCH Medicare margin fell each year since 2013

Type of LTCH	Share of discharges in 2016	Medicare margin					
		2011	2012	2013	2014	2015	2016
All	100%	6.9%	7.6%	6.8%	5.2%	4.6%	4.1%
Urban	96	7.1	7.7	7.0	5.2	4.7*	4.3
Rural	4	2.7	3.1	2.5	4.1	2.9*	-0.5
Nonprofit	12	0.3	-0.3	-1.1	-2.2	-6.0	-4.7
For profit	87	8.4	9.3	8.7	7.1	6.5	5.7
Government	2	N/A	N/A	N/A	N/A	N/A	N/A

Note: LTCH (long-term care hospital), N/A (not applicable). Margins for government-owned providers are not shown. They operate in a different context from other providers, so their margins are not necessarily comparable. Totals may not sum to 100 percent due to rounding.

\*CMS adopted new core-based statistical area codes for LTCHs beginning in fiscal year 2015; this change reclassified several facilities as urban that had previously been classified as rural, and therefore the margin across categories of urban and rural facilities between 2014 and 2015 should not be compared.

Source: MedPAC analysis of cost report data from CMS.

- After implementation of the prospective payment system on October 1, 2002, LTCHs' Medicare margins increased rapidly for all LTCH provider types, climbing to 11.9 percent in 2005 (data not shown). Margins then fell as growth in payments per case leveled off.
- From 2009 (data not shown) through 2012, LTCH margins climbed as providers consistently held cost growth below that of payment growth.
- In 2013, the aggregate LTCH margin fell to 6.8 percent, primarily due to policy changes that reduced payments, including the start of a three-year phase-in of a downward adjustment for budget neutrality and the effect of sequestration beginning on April 1, 2013. The aggregate LTCH margin has continued to decline since 2012, falling to 4.1 percent in 2016.
- Financial performance in 2016 varied across LTCHs. The aggregate Medicare margin for for-profit LTCHs (which accounted for 87 percent of all Medicare discharges from LTCHs) decreased from 6.5 percent in 2015 to 5.7 percent in 2016. The aggregate margin for nonprofit LTCHs increased from -6.0 percent in 2014 to -4.7 percent in 2016.



SECTION

9

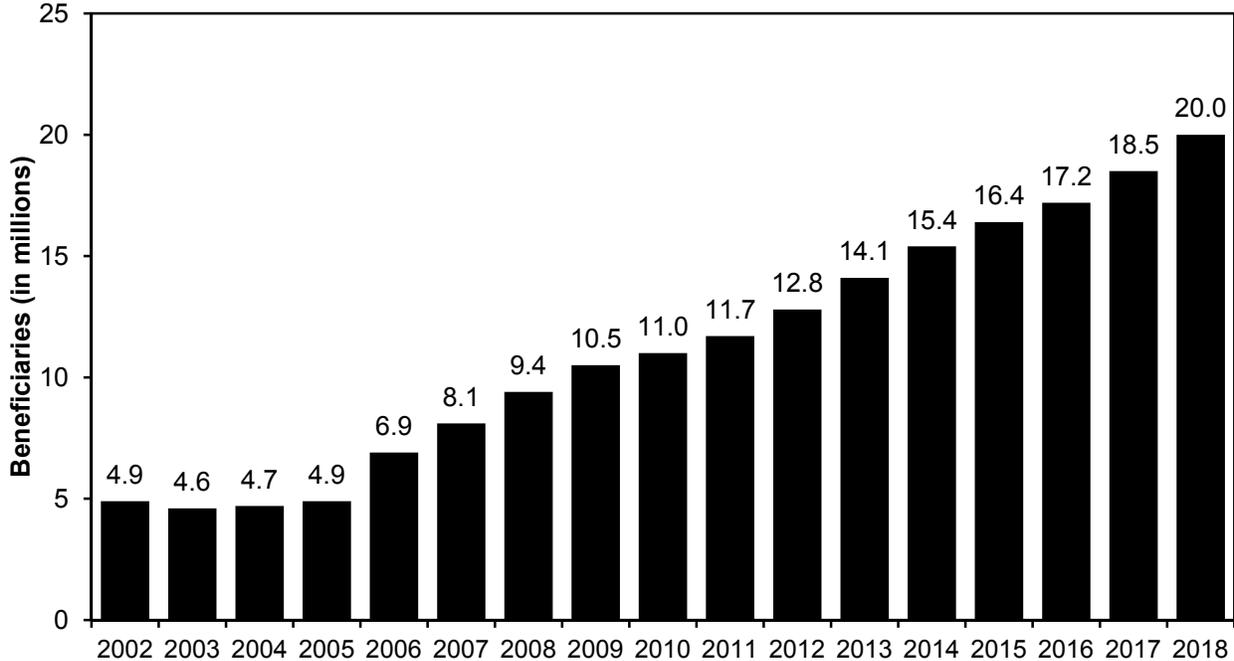
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**Medicare Advantage**

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**Chart 9-1. Enrollment in MA plans, 2002–2018**



Note: MA (Medicare Advantage).

Source: Medicare managed care contract reports and monthly summary reports, CMS.

- Medicare enrollment in MA plans that are paid on an at-risk capitated basis reached 20.0 million enrollees (33 percent of all Medicare beneficiaries) in 2018. MA enrollment has grown steadily since 2003, increasing more than fourfold. The Medicare program paid MA plans about \$210 billion in 2017 to cover Part A and Part B services for MA enrollees (data not shown).

## Chart 9-2. MA plans available to almost all Medicare beneficiaries

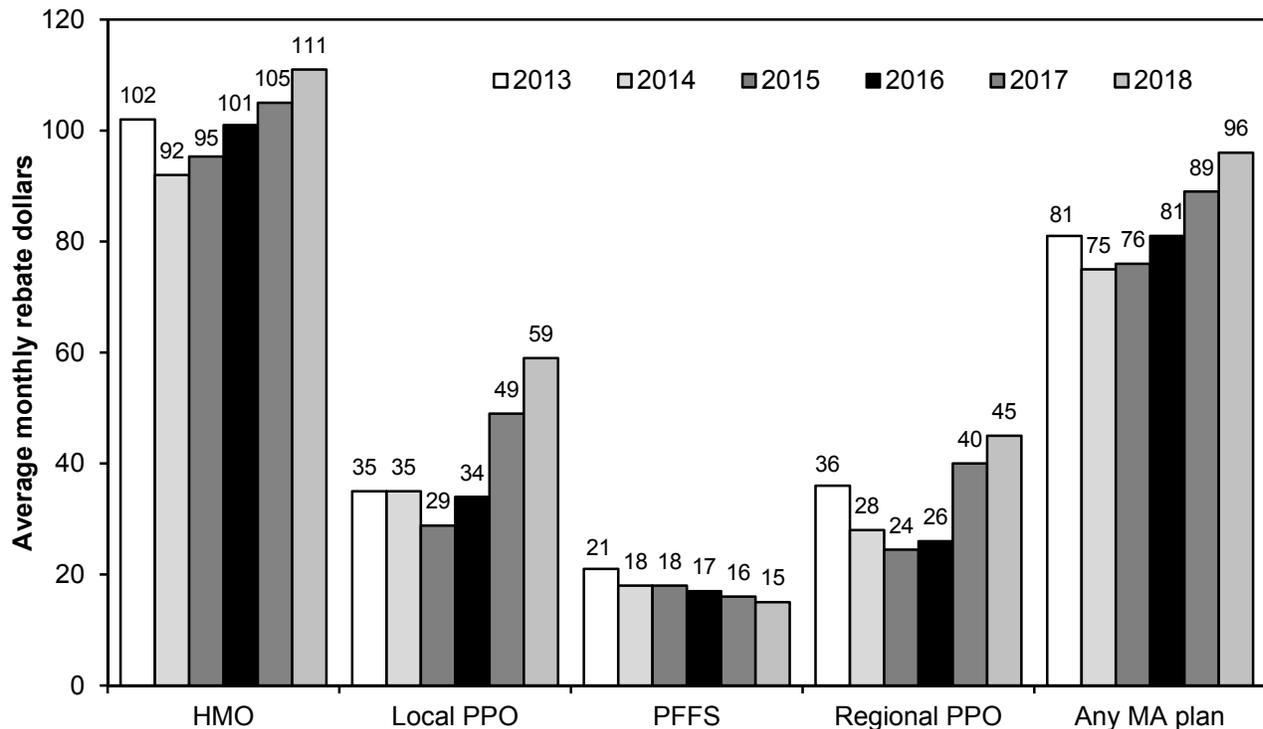
Share of Medicare beneficiaries living in counties with plans available						
	CCPs			PFFS	Any MA plan	Average plan offerings per beneficiary
	HMO or local PPO (local CCP)	Regional PPO	Any CCP			
2012	93%	76%	99%	60%	100%	19
2013	95	71	99	59	100	19
2014	95	71	99	53	100	18
2015	95	70	98	47	99	17
2016	96	73	99	47	99	18
2017	95	74	98	45	99	18
2018	96	74	98	41	99	20

Note: MA (Medicare Advantage), CCP (coordinated care plan), HMO (health maintenance organization), PPO (preferred provider organization), PFFS (private fee-for-service). These data do not include plans that have restricted enrollment or are not paid based on the MA plan bidding process (special needs plans, cost plans, employer-only plans, and certain demonstration plans).

Source: MedPAC analysis of plan bid data from CMS.

- There are four types of MA plans, three of which are CCPs. Local CCPs include HMOs and local PPOs, which have comprehensive provider networks and limit or discourage use of out-of-network providers. Local CCPs may choose which individual counties to serve. Regional PPOs cover entire state-based regions and have networks that may be looser than those required of local PPOs. Since 2011, PFFS plans (but not CCPs) are required to have networks in areas with two or more CCPs. In other areas, PFFS plans are not required to have networks, and enrollees are free to use any Medicare provider.
- Local CCPs are available to 96 percent of Medicare beneficiaries in 2018, and regional PPOs are available to 74 percent of beneficiaries; the availability of both plan types is as high as or higher than in any year since 2013. Since 2006, almost all Medicare beneficiaries have had MA plans available; 99 percent have an MA plan available in 2018.
- The number of plans from which beneficiaries may choose in 2018 is higher than any time since 2012. In 2018, beneficiaries can choose from an average of 20 plans operating in their counties.

**Chart 9-3. Average monthly rebate dollars, by plan type, 2013–2018**



Note: HMO (health maintenance organization), PPO (preferred provider organization), PFFS (private fee-for-service), MA (Medicare Advantage). Employer group waiver and special needs plans are excluded.

Source: MedPAC analysis of bid and plan finder data from CMS.

- Perhaps the best summary measure of plan benefit value is the average rebate, which plans receive to provide additional benefits. Plans are awarded rebates for bidding under their benchmarks. The rebates must be returned to the plan members in the form of extra benefits. The extra benefits may be supplemental benefits, lower cost sharing, or lower premiums. The average rebate for all non-employer, non-SNP plans rose to a high of \$96 per month for 2018.
- HMOs have had, by far, the highest rebates because they tend to bid lower than other types of plans. Average rebates for HMOs have risen sharply over the past three years and are at a high of \$111 per month for 2018.
- For both local and regional PPOs, the rebates declined through 2015 and then rose to levels higher than 2013 in 2018.
- Rebates for PFFS plans have declined steadily since 2011 (2011 and 2012 not shown in chart).

## Chart 9-4. Changes in enrollment vary among major plan types

Plan type	Total enrollees (in thousands)					Percent change 2017–2018
	February 2014	February 2015	February 2016	February 2017	February 2018	
Local CCPs	13,809	14,824	15,588	16,920	18,463	9%
Regional PPOs	1,221	1,237	1,315	1,353	1,327	–2
PFFS	309	260	238	190	154	–19

Note: CCP (coordinated care plan), PPO (preferred provider organization), PFFS (private fee-for-service). Local CCPs include HMOs and local PPOs.

Source: CMS health plan monthly summary reports.

- Enrollment in local CCPs grew by 9 percent over the past year. Enrollment in regional PPOs declined by 2 percent, while enrollment in PFFS plans continued to decline. Combined enrollment in the three types of plans grew by 8 percent from February 2017 to February 2018 (data not shown).

**Chart 9-5. MA and cost plan enrollment by state and type of plan, 2018**

State or territory	Medicare eligibles (in thousands)	Distribution (in percent) of enrollees by plan type					Total
		HMO	Local PPO	Regional PPO	PFFS	Cost	
<b>U.S. total</b>	<b>60,463</b>	<b>21%</b>	<b>9%</b>	<b>2%</b>	<b>0%</b>	<b>1%</b>	<b>34%</b>
Alabama	1,043	17	20	1	0	0	38
Alaska	94	0	1	0	0	0	1
Arizona	1,274	35	3	1	0	0	39
Arkansas	644	10	4	7	2	0	23
California	6,202	38	2	0	0	0	40
Colorado	907	30	4	0	0	2	36
Connecticut	677	23	11	1	0	0	35
Delaware	201	7	6	0	0	0	13
Florida	4,495	29	7	7	0	0	43
Georgia	1,714	11	17	8	0	0	36
Hawaii	268	17	27	2	0	0	45
Idaho	322	18	13	0	0	0	31
Illinois	2,233	10	11	0	0	0	23
Indiana	1,251	9	16	3	0	0	29
Iowa	622	6	11	0	0	2	19
Kansas	532	7	8	0	1	0	16
Kentucky	929	7	16	5	0	1	30
Louisiana	865	29	3	2	0	0	34
Maine	335	17	11	0	1	0	30
Maryland	1,030	3	4	0	0	4	12
Massachusetts	1,322	16	5	1	0	0	21
Michigan	2,059	14	22	1	0	0	37
Minnesota	1,014	12	5	0	0	40	57
Mississippi	605	10	3	5	0	0	18
Missouri	1,235	20	8	4	1	0	33
Montana	226	6	11	0	1	0	18
Nebraska	343	9	3	0	2	1	14
Nevada	517	30	5	0	0	0	35
New Hampshire	295	7	4	1	0	0	12
New Jersey	1,618	12	10	0	0	0	22
New Mexico	416	21	12	0	0	0	34
New York	3,600	28	8	3	0	0	39
North Carolina	1,959	14	17	2	0	0	33
North Dakota	129	0	3	0	0	15	18
Ohio	2,325	20	15	2	0	0	38
Oklahoma	741	11	6	1	0	0	19
Oregon	852	29	15	0	0	0	44
Pennsylvania	2,718	26	15	0	0	0	41
Puerto Rico	791	69	3	0	0	0	72
Rhode Island	219	34	2	1	0	0	37
South Carolina	1,048	7	5	13	0	0	26
South Dakota	173	0	6	0	0	14	20
Tennessee	1,347	24	12	1	0	0	37
Texas	4,074	19	12	4	0	1	36
Utah	388	29	6	0	0	0	36
Vermont	145	2	3	4	1	0	10
Virgin Islands	21	0	1	0	0	0	1
Virginia	1,506	8	5	2	1	2	19
Washington	1,340	27	4	0	0	0	31
Washington, DC	95	2	8	0	0	6	16
West Virginia	443	3	22	1	1	4	31
Wisconsin	1,157	21	12	1	1	4	40
Wyoming	107	0	1	0	1	1	4

Note: MA (Medicare Advantage), HMO (health maintenance organization), PPO (preferred provider organization), PFFS (private fee-for-service). Cost plans are not MA plans; they submit cost reports rather than bids to CMS. Component percentages may not sum to totals due to rounding.

Source: CMS enrollment and population data February 2018.

## Chart 9-6. MA plan benchmarks, bids, and Medicare program payments relative to FFS spending, 2018

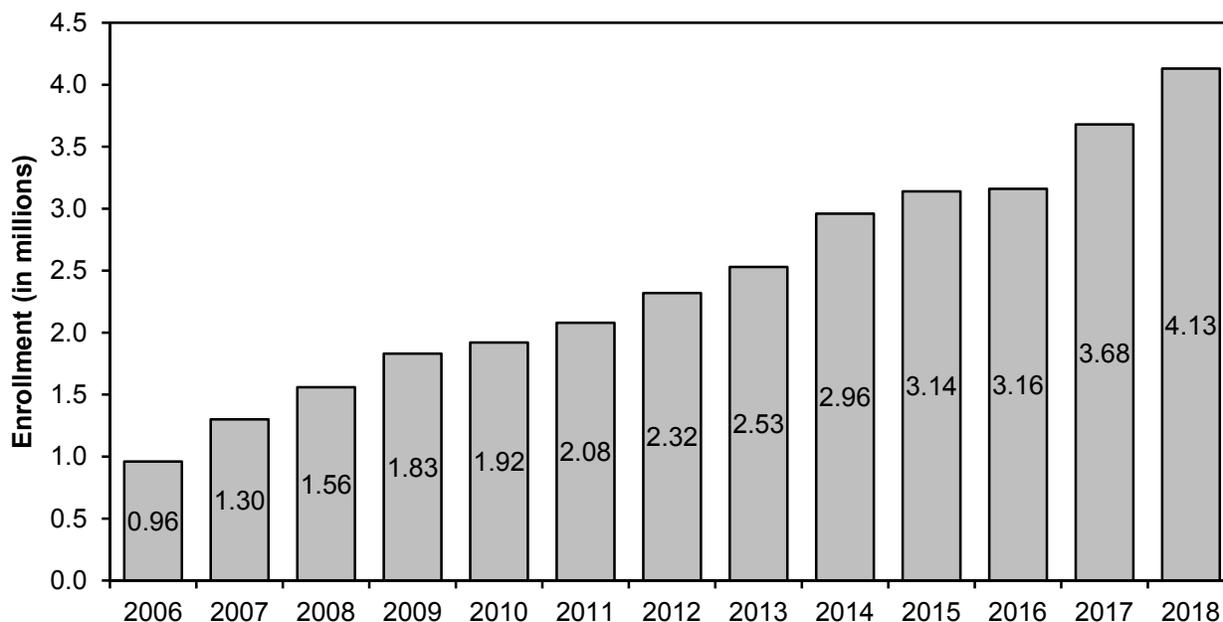
	All plans	HMOs	Local PPOs	Regional PPOs	PFFS
Benchmarks/FFS	107%	106%	110%	102%	107%
Bids/FFS	90	88	99	94	105
Payments/FFS	101	100	106	98	106

Note: MA (Medicare Advantage), FFS (fee-for-service), HMO (health maintenance organization), PPO (preferred provider organization), PFFS (private fee-for-service).

Source: MedPAC analysis of plan bid data from CMS October 2017.

- Since 2006, plan bids have partly determined the Medicare payments they receive. Plans bid to offer Part A and Part B coverage to Medicare beneficiaries (Part D coverage is bid separately). The bid includes plan administrative cost and profit. CMS bases the Medicare payment for a private plan on the relationship between its bid and its applicable benchmark.
- The benchmark is an administratively determined bidding target. Benchmarks for each county are set by means of a statutory formula based on percentages (ranging from 95 percent to 115 percent) of each county's per capita Medicare spending. Plans with quality ratings of 4 or more stars may have their benchmarks raised by up to 10 percent of FFS spending in some counties.
- If a plan's bid is above the benchmark, then the plan receives the benchmark as payment from Medicare, and enrollees have to pay an additional premium that equals the difference. If a plan's bid is below the benchmark, the plan receives its bid plus a "rebate," defined by law as a percentage of the difference between the plan's bid and its benchmark. The percentage is based on the plan's quality rating, and it ranges from 50 percent to 70 percent. The plan must then return the rebate to its enrollees in the form of supplemental benefits, lower cost sharing, or lower premiums.
- We estimate that MA benchmarks average 107 percent of FFS spending when weighted by MA enrollment. The ratio varies by plan type because different types of plans tend to draw enrollment from different types of geographical areas.
- Plans' enrollment-weighted bids (excluding employer plans, which no longer submit bids) average 90 percent of FFS spending in 2018. We estimate that HMOs bid an average of 88 percent of FFS spending, while bids from other plan types average at least 94 percent of FFS spending. These numbers suggest that HMOs can provide the same services for less than FFS in the areas where they bid.
- We project that 2018 MA payments will be 101 percent of FFS spending. This figure does not include employer plans and does not account for risk-coding differences between FFS and MA plans that have not been resolved through the coding intensity factor.
- The ratio of payments relative to FFS spending varies by the type of MA plan. HMO and regional PPO payments are estimated to be 100 and 98 percent of FFS, respectively, while payments to PFFS and local PPOs average 106 percent of FFS.

**Chart 9-7. Enrollment in employer group MA plans, 2006–2018**

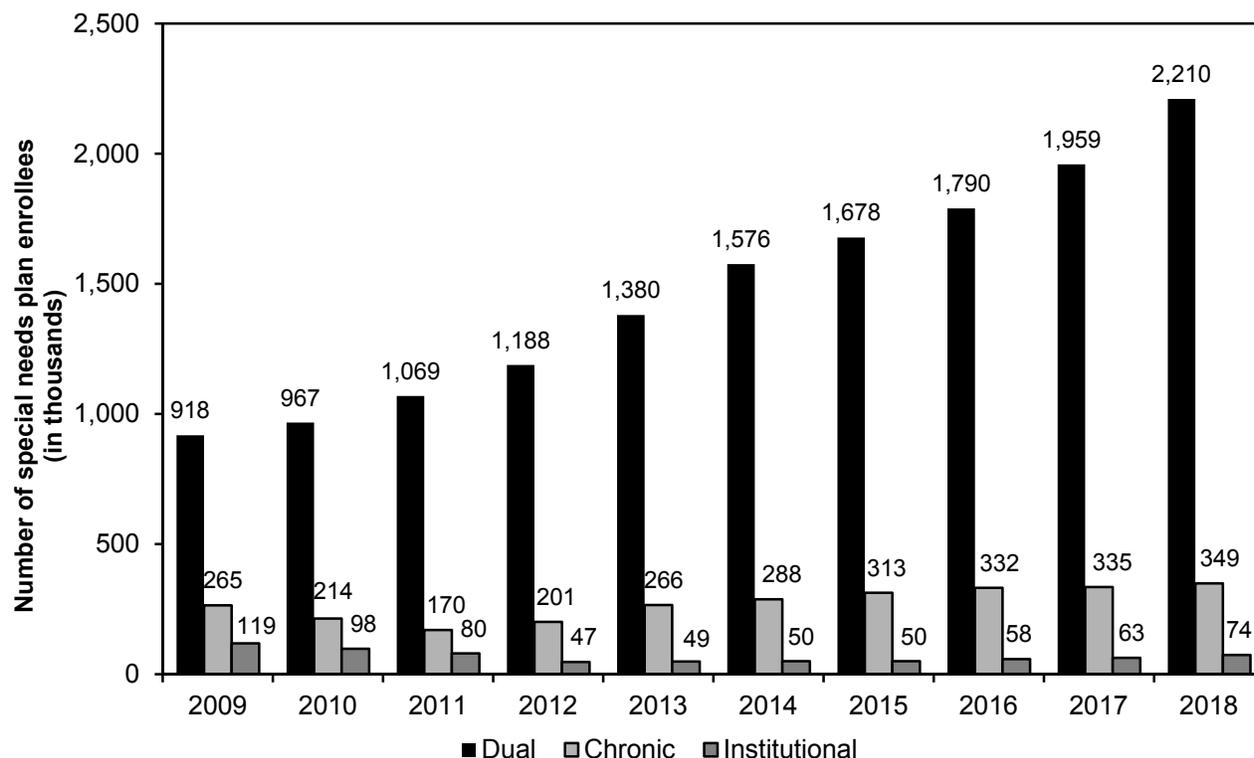


Note: MA (Medicare Advantage). Enrollment numbers are as of May for 2006, November for 2007, and February for 2008 through 2018.

Source: CMS enrollment data.

- While most MA plans are available to any Medicare beneficiary residing in a given area, some MA plans are available only to retirees whose Medicare coverage is supplemented by their former employer or union. These plans are called employer group plans. Such plans are usually offered through insurers and are marketed to groups formed by employers or unions rather than to individual beneficiaries.
- As of February 2018, about 4.1 million enrollees were in employer group plans, or about 21 percent of all MA enrollees. Employer plan enrollment grew by 12 percent from 2017 and has doubled since 2011.

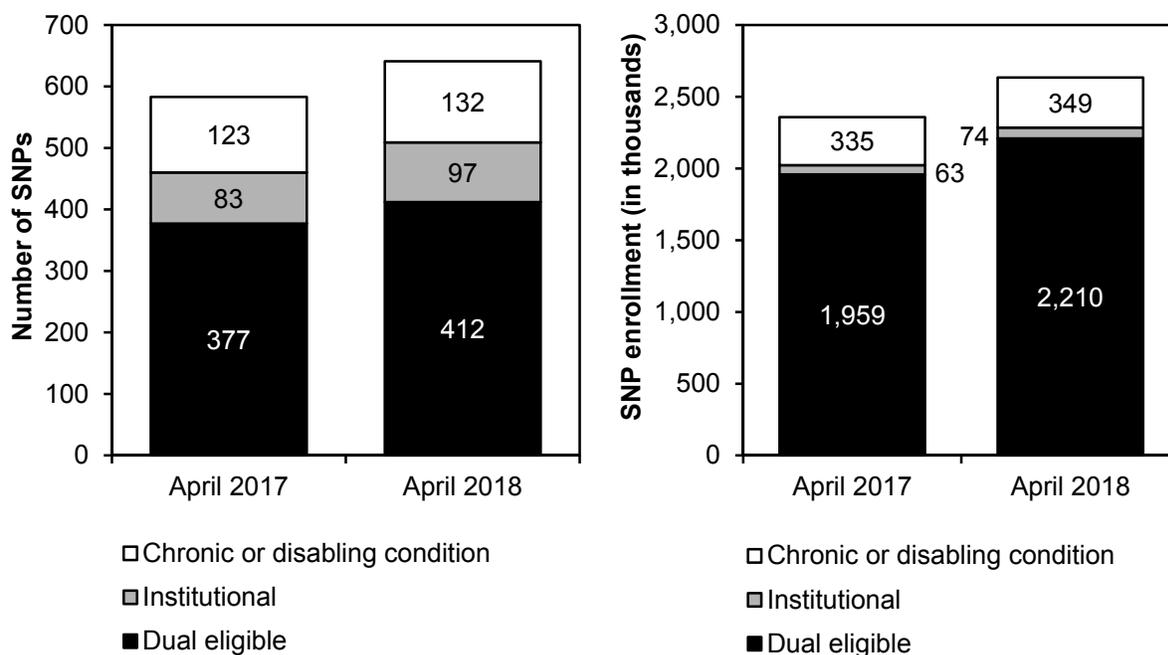
**Chart 9-8. Number of special needs plan enrollees, 2009–2018**



Source: CMS special needs plans comprehensive reports, April 2009–2018.

- The Congress created special needs plans (SNPs) as a new Medicare Advantage (MA) plan type in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 to provide a common framework for the existing plans serving special needs beneficiaries and to expand beneficiaries' access to and choice among MA plans.
- SNPs were originally authorized for five years, but SNP authority was extended several times. The Bipartisan Budget Act of 2018 made SNPs permanent.
- CMS approves three types of SNPs: dual-eligible SNPs enroll only beneficiaries dually entitled to Medicare and Medicaid, chronic condition SNPs enroll only beneficiaries who have certain chronic or disabling conditions, and institutional SNPs enroll only beneficiaries who reside in institutions or are nursing-home certified.
- Enrollment in dual-eligible SNPs has grown continuously and exceeds 2 million in 2018, doubling since 2011.
- Enrollment in chronic condition SNPs has fluctuated as plan requirements have changed, but has risen annually since 2011.
- Enrollment in institutional SNPs declined steadily through 2012 but stabilized, then increased beginning in 2016.

**Chart 9-9. Number of SNPs and SNP enrollment rose from 2017 to 2018**



Note: SNP (special needs plan).

Source: CMS special needs plans comprehensive reports, April 2017 and 2018.

- The number of SNPs increased by 10 percent from April 2017 to April 2018, and the number of SNP enrollees increased by 12 percent. All three types of SNPs showed increases in the number of plans and enrollment.
- In 2018, most SNPs (64 percent) are for dual-eligible beneficiaries, while 15 percent are for beneficiaries who reside in institutions (or reside in the community but have a similar level of need), and 21 percent are for beneficiaries with chronic conditions.
- Enrollment in SNPs has grown from 0.9 million in May 2007 (not shown) to 2.6 million in April 2018.
- The availability of SNPs varies by type of special needs population served (data not shown). In 2018, 86 percent of beneficiaries reside in areas where SNPs serve dual-eligible beneficiaries (the same as in 2017), 56 percent live where SNPs serve institutionalized beneficiaries (up from 52 percent in 2017), and 47 percent live where SNPs serve beneficiaries with chronic conditions (up from 44 percent).

**Chart 9-10. Twenty most common condition categories among MA beneficiaries, as defined in the CMS–HCC model, 2016**

Conditions (defined by HCC)	Percent of beneficiaries with listed condition	Percent of beneficiaries with listed condition and no others
Vascular disease	17.9%	2.1%
Diabetes with chronic complications	17.3	3.1
COPD	14.2	1.8
CHF	11.4	0.5
Specified heart arrhythmias	11.2	1.3
Diabetes without complications	11.0	3.9
Major depressive, bipolar, and paranoid disorders	10.2	1.7
Morbid obesity	7.6	0.9
Rheumatoid arthritis and inflammatory connective tissue disease	6.0	1.0
Breast, prostate, colorectal, and other cancers and tumors	5.1	1.4
Coagulation defects and other specified hematological disorders	4.3	0.4
Angina pectoris	3.7	0.3
Other significant endocrine and metabolic disorders	3.2	0.3
Acute renal failure	3.2	0.1
Ischemic or unspecified stroke	2.9	0.2
Drug/alcohol dependence	2.5	0.2
Seizure disorders and convulsions	2.5	0.3
Cardio-respiratory failure and shock	2.4	0.0
Septicemia, sepsis, systemic inflammatory response syndrome/shock	1.7	0.0
Chronic ulcer of skin, except pressure	1.7	0.1

Note: MA (Medicare Advantage), CMS–HCC (CMS–hierarchical condition category), COPD (chronic obstructive pulmonary disease), CHF (congestive heart failure).

Source: MedPAC analysis of Medicare data files from Acumen LLC.

- CMS uses the CMS–HCC model to risk adjust capitated payments to MA plans so that payments better reflect the clinical needs of MA enrollees given the number and severity of their clinical conditions. The CMS–HCC model uses beneficiaries’ conditions, which are collected into HCCs, to adjust the capitated payments.
- Vascular disease is the most common HCC, but two diabetes HCCs combined are more common than vascular disease. Over 28 percent of MA enrollees are in one of those two diabetes HCCs.

**Chart 9-11. Medicare private plan enrollment patterns, by age and Medicare–Medicaid dual-eligible status, December 2016**

	As percent of Medicare population	Percent of category in FFS	Percent of category in private plans
<b>All beneficiaries</b>	<b>100%</b>	<b>68%</b>	<b>32%</b>
Aged (65 or older)	84	67	33
Under 65	16	73	27
<b>Non–dual eligible</b>	<b>81</b>	<b>69</b>	<b>31</b>
Aged (65 or older)	74	68	32
Under 65	8	72	28
<b>Dual eligible</b>	<b>18</b>	<b>66</b>	<b>34</b>
Aged (65 or older)	11	61	39
Under 65	8	73	27
<b>Dual-eligible beneficiaries by category (all ages)</b>			
<b>Full dual eligibility</b>	<b>13</b>	<b>70</b>	<b>30</b>
<b>Beneficiaries with partial dual eligibility</b>			
QMB only	3	61	39
SLMB only	2	54	46
QI	1	51	49

Note: FFS (fee-for-service), QMB (qualified Medicare beneficiary), SLMB (specified low-income beneficiary), QI (qualified individual). Dual-eligible beneficiaries are eligible for Medicare and Medicaid. See accompanying text for an explanation of the categories of dual-eligible beneficiaries. “Plans” include Medicare Advantage plans as well as cost-reimbursed plans. Data exclude Puerto Rico because of the inability to determine specific dual-eligible categories. As of December 2016, Puerto Rico had 568,000 Medicare Advantage enrollees. Dual-eligible special needs plans in Puerto Rico had 283,000 enrollees in December 2016. Figures may not sum due to rounding.

Source: MedPAC analysis of 2016 denominator and common Medicare environment files and CMS monthly MA reports.

- Medicare plan enrollment among the dually eligible continues to increase. In 2016, 34 percent of dual-eligible beneficiaries were in Medicare private plans, up from 23 percent in 2012.
- A substantial share of dual-eligible beneficiaries (42 percent (not shown in table)) are under the age of 65 and entitled to Medicare on the basis of disability or end-stage renal disease. Regardless of dual-eligibility status, beneficiaries under age 65 are less likely than aged beneficiaries to enroll in Medicare private plans (27 percent vs. 33 percent, respectively).
- Dual-eligible beneficiaries who have full dual eligibility—that is, those who have coverage for their Medicare out-of-pocket costs (premiums and cost sharing) as well as coverage for services such as long-term care services and supports—are less likely to enroll in private Medicare plans than beneficiaries with “partial” dual eligibility. Full dual-eligibility categories consist of beneficiaries with coverage through state Medicaid programs as well as through certain QMBs and SLMBs who also have Medicaid coverage for services. The latter two categories are referred to as QMB-Plus and SLMB-Plus beneficiaries. Beneficiaries with partial dual eligibility have coverage for Medicare premiums (through the QI or SLMB program) or premiums and Medicare cost sharing, in the case of the QMB program. SLMB-only and QI beneficiaries have higher rates of plan enrollment (46 percent and 49 percent, respectively) than any other category shown in this chart, and the rates are higher than the average rate (32 percent) across all Medicare beneficiaries.



SECTION

# 10

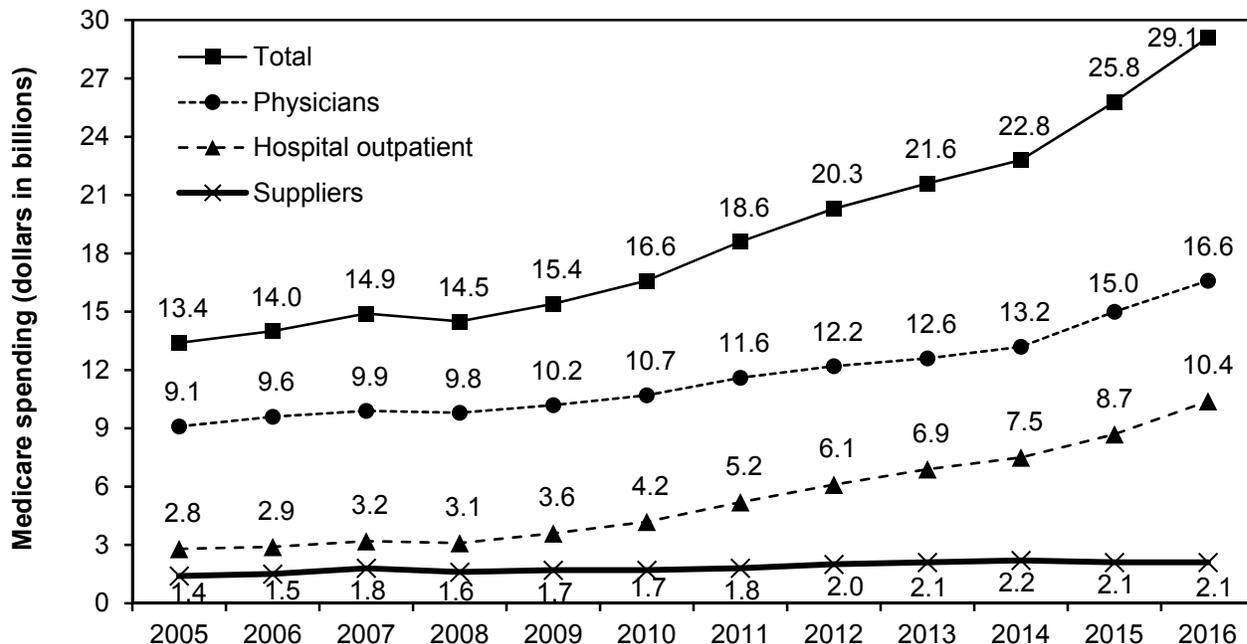
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**Prescription drugs**

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**Chart 10-1. Medicare spending for Part B drugs furnished by physicians, hospital outpatient departments, and suppliers, 2005–2016**



Note: Data include Part B–covered drugs furnished by several provider types including physicians, suppliers, and hospital outpatient departments and exclude those furnished by critical access hospitals, Maryland hospitals, and dialysis facilities. “Medicare spending” includes program payments and beneficiary cost sharing. Data reflect all Part B drugs whether they were paid based on the average sales price plus 6 percent or another payment formula. Data exclude blood and blood products (other than clotting factor). Components may not sum to total due to rounding.

Source: MedPAC and Acumen LLC analysis of Medicare claims data.

- The Medicare program and beneficiaries spent about \$29.1 billion on Part B drugs furnished by physicians, suppliers, and hospital outpatient departments (HOPDs) in 2016, an increase of about 12.9 percent from 2015.
- Medicare’s average sales price (ASP) payment system for Part B drugs began in 2005. Between 2005 and 2016, total spending grew at an average annual rate of 7.4 percent. Spending growth was slower from 2005 to 2009 (about 3.7 percent per year on average) and more rapid from 2009 to 2016 (about 9.5 percent per year on average).
- Of total 2016 Part B drug spending, physicians accounted for 57 percent (\$16.6 billion), HOPDs accounted for 36 percent (\$10.4 billion), and suppliers accounted for 7 percent (\$2.1 billion).
- Part B drug spending has been growing more rapidly for HOPDs than for physicians and suppliers. Between 2009 and 2016, Part B drug spending grew at an average annual rate of 16.5 percent for HOPDs, 7.3 percent for physicians, and 3.2 percent for suppliers.
- Not included in these data are critical access hospitals and Maryland hospitals, which are not paid under the ASP system, and end-stage renal disease facilities, which are paid for most Part B drugs through the dialysis bundled payment rate. Medicare and beneficiaries spent approximately \$660 million in critical access hospitals and \$360 million in Maryland hospitals for Part B drugs in 2016.

**Chart 10-2. Change in Medicare payments and utilization for separately payable Part B drugs, 2009–2015**

	2009	2015	Average annual growth 2009–2015
<b>Total payments: All Part B drugs (in billions)</b>	\$13.2	\$24.0	10.5%
<b>Total payments: All Part B drugs excluding vaccines (in billions)</b>	\$13.0	\$22.6	9.7
Number of beneficiaries using a Part B drug (in millions)	2.9	3.5	3.5
Average total payments per beneficiary who used a Part B drug	\$4,504	\$6,392	6.0
Average number of Part B drugs per beneficiary	1.41	1.37	–0.5
Average payment per Part B drug	\$3,191	\$4,676	6.6
<b>Total payments: All Part B vaccines (in billions)</b>	\$0.2	\$1.4	35.8
Number of beneficiaries using a Part B vaccine (in millions)	13.4	16.2	3.1
Average total payments per beneficiary who used a Part B vaccine	\$16	\$84	31.7
Average number of Part B vaccines per beneficiary	1.08	1.33	3.6
Average payment per Part B vaccine	\$15	\$63	27.2

Note: This analysis includes all Part B drugs paid the average sales price plus 6 percent (ASP + 6 percent) as well as the small group of Part B drugs that are paid based on the average wholesale price or reasonable cost or that are contractor priced. "Vaccines" refers to the three Part B–covered preventive vaccines: influenza, pneumococcal, and hepatitis B. Data include Part B drugs furnished by physicians, hospitals paid under the outpatient prospective payment system, and suppliers. Excluded from the analysis were any Part B drugs that were bundled or packaged in 2009 and/or 2015 (i.e., drugs that were packaged under the outpatient prospective payment system, regardless of the setting where they were furnished, and drugs furnished by dialysis facilities), drugs billed under not-otherwise-classified billing codes, blood and blood products (other than clotting factor), and data for critical access hospitals and Maryland hospitals. The average annual growth rates displayed in the table may differ slightly from the average annual growth rates calculated using the 2009 and 2015 values displayed in the table due to rounding.

Source: MedPAC analysis of Medicare claims data for physicians, hospital outpatient departments, and suppliers.

- Total payments by the Medicare program and beneficiaries for separately payable Part B drugs increased 10.5 percent per year, on average, between 2009 and 2015.
- Excluding the three Part B–covered preventive vaccines, Medicare spending on separately payable Part B drugs grew at an average rate of 9.7 percent per year between 2009 and 2015.
- The largest factor contributing to the growth in Part B drug spending (excluding vaccines) was the change in the price Medicare paid for drugs. Between 2009 and 2015, the average payment per drug increased by 6.6 percent per year. This increase in the average payment per drug reflects increases in the prices of existing drugs and shifts in the mix of drugs, including the adoption of new, higher priced drugs.

(Chart continued next page)

## **Chart 10-2. Change in Medicare payments and utilization for separately payable Part B drugs, 2009–2015 (continued)**

- Growth in the number of beneficiaries using nonvaccine Part B drugs (about 3.5 percent per year on average) also contributed to increased spending. The number of Part B drugs received per user declined from about 1.41 in 2009 to 1.37 in 2015, which modestly offset spending growth.
- Medicare covers three preventive vaccines: influenza, pneumococcal, and—for beneficiaries at high or medium risk—hepatitis B. Although a relatively small share of total Part B drug spending, spending on Part B vaccines grew at an average rate of about 36 percent per year between 2009 and 2015.
- Increased spending on the pneumococcal vaccine Prevnar-13 accounts for a large portion of the growth in vaccine spending. Medicare Part B paid physicians and outpatient hospitals over \$900 million for Prevnar-13 in 2015, up from about \$100 million in 2014 (data not shown). A Centers for Disease Control and Prevention advisory committee recommended a one-time vaccination of Prevnar-13 for all adults ages 65 and older, which led to over 5 million beneficiaries receiving the vaccine in hospital outpatient departments and physician offices in 2015. Because Prevnar-13 has a higher price than other Part B–covered preventive vaccines, its increased use drove the substantial growth in the average payment per vaccine between 2009 and 2015.

**Chart 10-3. Top 10 Part B drugs paid based on ASP, by type of provider (dollars in millions), 2015 and 2016**

	Total Part B drug spending		Physician and supplier Part B drug spending		Hospital outpatient Part B drug spending	
	2015	2016	2015	2016	2015	2016
Aflibercept	\$1,815	\$2,211	\$1,699	\$2,073	\$115	\$138
Rituximab	1,567	1,671	824	842	744	829
Pegfilgrastim	1,263	1,378	650	682	613	696
Infliximab	1,249	1,343	791	834	458	509
Nivolumab	136*	1,224	N/A*	581	136*	642
Bevacizumab	1,122	1,118	585	562	537	555
Denosumab	919	1,089	583	684	336	404
Ranibizumab	1,151	1,045	1,107	1,006	43	39
Trastuzumab	648	706	313	335	335	371
Abatacept	454	588	315	408	139	180
<b>Total spending, top 10 drugs in 2016</b>	<b>10,329</b>	<b>12,373</b>	<b>6,866</b>	<b>8,009</b>	<b>3,462</b>	<b>4,363</b>
<b>Total spending, all Part B drugs</b>	<b>25,819</b>	<b>29,149</b>	<b>17,138</b>	<b>18,716</b>	<b>8,682</b>	<b>10,434</b>

Note: ASP (average sales price), N/A (not available). The 10 drugs shown in the chart reflect the Part B drug billing codes paid under the ASP methodology with the highest Medicare expenditures in 2016. Data for 2015 are shown for comparison. Data include Part B–covered drugs furnished by several provider types including physicians, suppliers, and hospital outpatient departments, but exclude those furnished by critical access hospitals, Maryland hospitals, and dialysis facilities. “Drug spending” includes Medicare program payments and beneficiary cost sharing. “Total spending, all Part B drugs” reflects all products, whether paid based on the ASP plus 6 percent or another method. Data exclude blood and blood products (other than clotting factor). All products are referred to using their chemical name. “Infliximab” refers to the reference biologic Remicade. Components may not sum to totals due to rounding.  
\*Estimated 2015 spending for nivolumab is underestimated for the hospital outpatient category and not available for the physician and supplier category because the product was billed in a not-otherwise-classified billing code for part of the year and all of the year, respectively.

Source: MedPAC and Acumen LLC analysis of Medicare claims data.

- Part B drugs are billed under more than 700 billing codes, but spending is concentrated. Medicare spending (including cost sharing) on the top 10 drugs paid under the ASP system totaled about \$12.4 billion in 2016, about 42 percent of all Part B drug spending that year.
- As of 2016, all of the top 10 Part B drugs are biologics. Many of these products are used to treat cancer or its side effects (rituximab, pegfilgrastim, nivolumab, bevacizumab, denosumab, and trastuzumab). Drugs used to treat age-related macular degeneration (ranibizumab, aflibercept, and bevacizumab) and rheumatoid arthritis (rituximab, infliximab, and abatacept) are also included in the top 10.
- Medicare spending on immune globulin (for which there are several products billed through separate billing codes) amounted to more than \$1.4 billion in 2016 (data not shown).
- Medicare Part B covers three preventive vaccines—influenza, pneumococcal, and for certain beneficiaries hepatitis B—and pays for them at a rate of 95 percent of the average wholesale price or reasonable cost. In 2016, Medicare Part B spent approximately \$790 million on pneumococcal vaccine, \$470 million on influenza vaccine, and \$35 million on hepatitis B vaccine furnished by physicians, outpatient hospitals, suppliers, end-stage renal dialysis facilities, and certain other types of providers (data not shown).

**Chart 10-4. Growth in ASP for the 20 highest expenditure Part B drugs, 2005–2018**

Part B drug	Total Medicare payments in 2016 (in billions)	Average annual ASP growth				Earliest year of ASP data if not 2005
		2005–2010	2010–2017	2017–2018	2005–2018	
Aflibercept	\$2.2	N/A	0.0%*	–0.9%	–0.2%*	2013
Rituximab	\$1.7	5.0	5.5	7.2	5.4	
Pegfilgrastim	\$1.4	0.8	8.2	7.9	5.3	
Infliximab	\$1.3	2.0	4.9	4.4	3.8	
Nivolumab	\$1.2	N/A	2.7*	2.8	2.8*	2016
Bevacizumab	\$1.1	0.1	3.6	4.0	2.3	
Denosumab	\$1.1	N/A	2.7*	7.5	3.5*	2012
Ranibizumab	\$1.0	–0.2*	–0.9	1.7	–0.5*	2008
Trastuzumab	\$0.7	4.1	5.5	6.5	5.1	
Abatacept	\$0.6	1.4*	13.0	5.8	9.1*	2007
Pemetrexed	\$0.6	4.5	3.4	3.9	3.9	
Bortezomib	\$0.5	6.1	2.8	1.5	3.9	
Octreotide depot	\$0.5	4.9	7.1	9.3	6.4	
Omalizumab	\$0.4	4.6	7.7	8.0	6.5	
Pembrolizumab	\$0.3	N/A	1.9*	2.8	2.3*	2016
Natalizumab	\$0.3	6.6*	12.5	3.4	9.7*	2006
Gamunex-C and Gammaked	\$0.3	7.0*	–0.5	11.7	2.2*	2008
Onabotulinum toxin A	\$0.3	3.1	1.1	3.1	2.0	
Epoetin	\$0.3	–2.1	3.7	–1.5	1.0	
Darbepoetin	\$0.3	–4.4	4.5	1.3	0.7	
Consumer price index for urban consumers		2.6	1.6	2.1	2.0	

Note: ASP (average sales price), N/A (not applicable). Growth rates for ASP are calculated from first quarter to first quarter of each year. “Medicare payments” includes Medicare program payments and beneficiary cost sharing for these drugs furnished by physicians, suppliers, and hospital outpatient departments, but excludes those furnished by critical access hospitals, Maryland hospitals, and dialysis facilities. Vaccines paid 95 percent of the average wholesale price are also excluded. With the exception of Gamunex-C and Gammaked, all products are referred to using their chemical names. “Infliximab” refers to the reference biologic Remicade.

\*Indicates that ASP payment rates were not available for the full period listed, and the average annual growth rate was calculated based on the earliest year that a first quarter payment rate was available.

Source: MedPAC analysis of CMS ASP pricing files and consumer price index for all urban consumers data from the Bureau of Labor Statistics and MedPAC and Acumen LLC analysis of Medicare claims data.

- Between 2017 and 2018, the ASP grew by more than 5 percent for 8 out of the 20 highest expenditure Part B drugs. For 15 of the top 20 Part B drugs, ASP increased faster than the consumer price index for urban consumers between 2017 and 2018.
- Twelve of the top 20 Part B drugs have been on the market since 2005 or earlier. Over the 13-year period from 2005 to 2018, 8 of these 12 products have experienced ASP growth of 3.8 percent per year or more. On a cumulative basis, each of these eight products’ ASPs has grown 67 percent or more since 2005.

**Chart 10-5. Trend in Medicare Part B payment rates for two reference biologics and their biosimilar products**

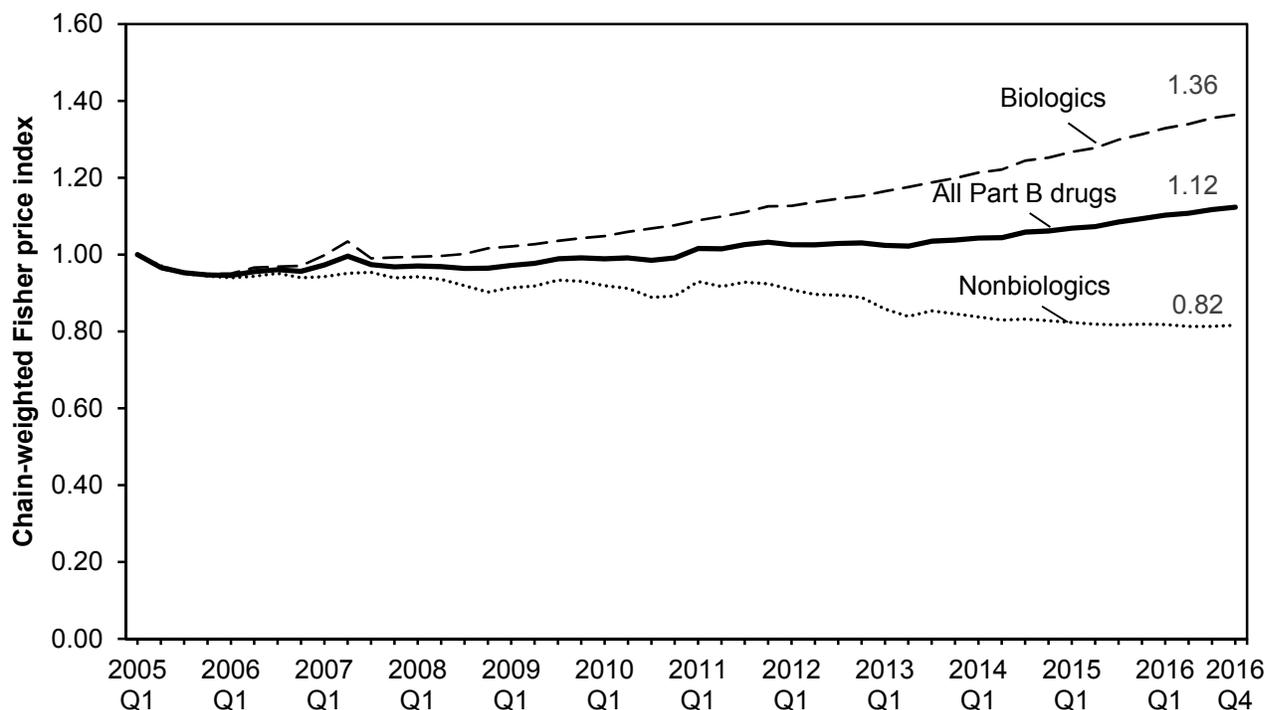
	Medicare payment rate per 1 mcg		Medicare payment rate per 10 mg		
	Reference biologic	Biosimilar	Reference biologic	Biosimilars	
	Neupogen	Zarxio	Remicade	Inflectra	Renflexis
2010 Q1	\$0.72	N/A	\$58.64	N/A	N/A
2015 Q4	1.00	\$0.97	78.76	N/A	N/A
2016 Q1	1.01	0.97	79.91	N/A	N/A
2016 Q2	1.01	0.97	81.60	N/A	N/A
2016 Q3	1.00	0.87	82.28	N/A	N/A
2016 Q4	1.00	0.83	82.87	N/A	N/A
2017 Q1	1.00	0.78	82.22	\$100.31	N/A
2017 Q2	1.01	0.76	85.59	100.31	N/A
2017 Q3	1.01	0.73	85.74	80.19	\$80.19
2017 Q4	1.01	0.72	87.15	78.72	78.72
2018 Q1	1.00	0.69	85.81	75.52	75.52
2018 Q2	1.02	0.68	83.29	69.71	70.38

Note: Q1 (first quarter), Q2 (second quarter), Q3 (third quarter), Q4 (fourth quarter), N/A (not available). A reference biologic is an originator drug product derived from a living organism. A biosimilar product is a follow-on product that is approved based on being highly similar to the reference biologic. Inflectra and Renflexis were paid in the same billing code through first quarter 2018 and consequently had the same payment rate. Beginning second quarter 2018, these products had separate billing codes.

Source: MedPAC analysis of payment rates from CMS ASP pricing files.

- A reference biologic is an originator drug product derived from a living organism. A biosimilar product is a follow-on product that is approved based on being highly similar to the reference biologic.
- Under Part B, Medicare pays for a reference biologic at 106 percent of its own average sales price (ASP). For biosimilars, Medicare pays 100 percent of the biosimilar's ASP plus 6 percent of the reference product's ASP.
- Medicare payment rates for biosimilars have generally been lower than those of the corresponding reference biologics due to biosimilars' lower ASP. In the second quarter of 2018, the biosimilar Zarxio's payment rate was 33 percent less than that of the reference product Neupogen. The biosimilars Inflectra and Renflexis had payment rates that were roughly 16 percent below the reference biologic Remicade's payment rate that quarter.
- Medicare paid more for the biosimilar Inflectra for the first two quarters it was on the market than for the reference biologic, Remicade. A new biosimilar is paid 106 percent of wholesale acquisition cost (a list price set by the manufacturer that does not reflect discounts) for the first two to three quarters on the market until ASP data are available.
- Despite lower prices for biosimilars, reference biologics' prices have not declined significantly. For example, the reference biologic Neupogen's payment rate has increased slightly since the biosimilar Zarxio launched in the fourth quarter of 2015. Following biosimilar entry by Inflectra, Remicade's payment rate initially increased. Although it fell in the first two quarters of 2018, Remicade's payment rate remains higher than it was in the first quarter of 2017, when Inflectra became available.

**Chart 10-6. Price indices for Medicare Part B drugs, 2005–2016**

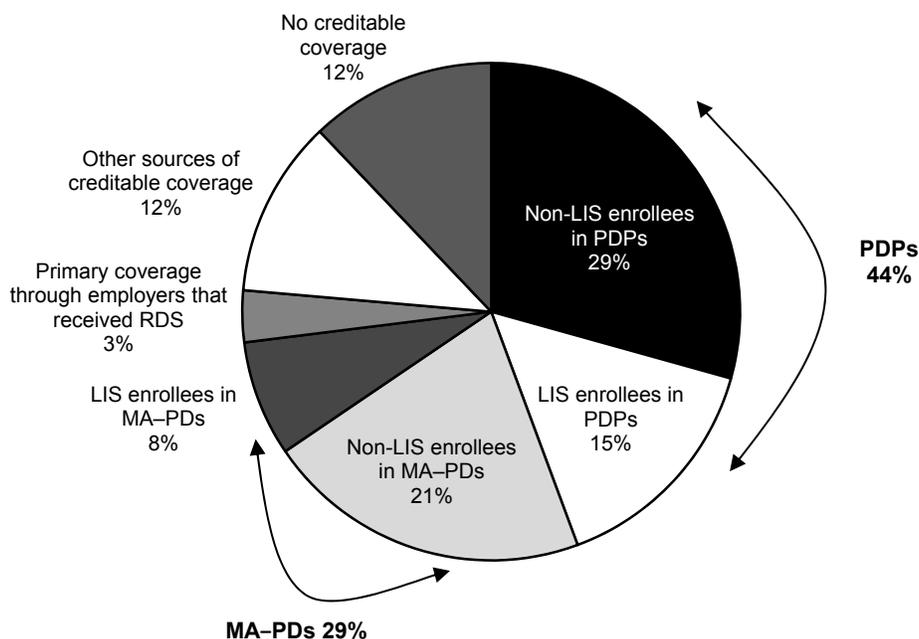


Note: Q1 (first quarter), Q4 (fourth quarter). The Part B price indices reflect growth in the average sales price of Part B–covered drugs over time, measured for individual drugs at the Healthcare Common Procedure Coding System billing code level. These measures of price growth reflect growth in the price of individual products but do not reflect changes in price due to the introduction of new products or the changes in the mix of products used. The Part B biologics price index numbers in this chart and in Chart 10-27 are different due to the different time periods of analysis.

Source: Acumen LLC analysis for MedPAC.

- The Part B price indices reflect growth in the average sales price (ASP) at the individual product level and do not reflect changes in price that occur as a result of shifts in the mix of drugs used or the introduction of new, higher priced drugs.
- Measured by the change in the ASP of individual Part B–covered drugs, the prices of Part B–covered drugs rose by an average of about 12 percent cumulatively between 2005 and 2016 (an index of 1.12).
- Underlying this overall trend in the price index are different patterns by type of product. The price index for Part B–covered biologics increased by 36 percent between 2005 and 2016 (an index of 1.36). In contrast, the price index for nonbiologics declined by 18 percent (an index of 0.82) over this period. The nonbiologic group includes single-source drugs and drugs with generic competition. The downward price trend for nonbiologics in part reflects patent expiration and generic entry for some of these products.

**Chart 10-7. In 2016, 88 percent of Medicare beneficiaries were enrolled in Part D plans or had other sources of creditable drug coverage**



Note: LIS (low-income [drug] subsidy), PDP (prescription drug plan), MA-PD (Medicare Advantage–Prescription Drug [plan]), RDS (retiree drug subsidy). “Creditable coverage” means the value of drug benefits is equal to or greater than that of the basic Part D benefit.

Source: MedPAC analysis of the Medicare denominator file 2016.

- In 2016, more than three-quarters of Medicare beneficiaries either signed up for Part D plans or had prescription drug coverage through employer-sponsored plans under Medicare’s RDS. (If an employer agrees to provide primary drug coverage to its retirees with a benefit value that is equal to or greater than that of Part D (called “creditable coverage”), Medicare provides the employer with a tax-free subsidy for 28 percent of each eligible individual’s drug costs that fall within a specified range of spending.)
- The share of Medicare beneficiaries with primary coverage through employers that received the RDS (3 percent of beneficiaries) was substantially smaller than in 2012 (12 percent; data not shown) because of a shift of enrollees into Part D employer group waiver plans. That shift reflects changes made by the Patient Protection and Affordable Care Act of 2010 that increased the generosity of the Part D benefit by phasing out the coverage gap and by altering the tax treatment of drug expenses covered by the RDS.
- Nearly 23 percent of Medicare beneficiaries received Part D’s LIS in 2015. Of all LIS beneficiaries, two-thirds of them (15 percent of all Medicare beneficiaries) were enrolled in stand-alone PDPs, and the remaining beneficiaries (8 percent) were in MA–PD plans.

*(Chart continued next page)*

### **Chart 10-7. In 2016, 88 percent of Medicare beneficiaries were enrolled in Part D plans or had other sources of creditable drug coverage (continued)**

- Other enrollees in stand-alone PDPs accounted for 29 percent of all Medicare beneficiaries. Another 21 percent of non-LIS enrollees were in MA–PD plans.
- Twelve percent of Medicare beneficiaries had creditable drug coverage, but that coverage did not affect Medicare program spending. Examples of other sources of creditable coverage include the Federal Employees Health Benefits Program, TRICARE, Department of Veterans Affairs, and employers not receiving the RDS.
- Another 12 percent of Medicare beneficiaries had no drug coverage or coverage that was less generous than Part D’s defined standard benefit.

**Chart 10-8. Changes in parameters of the Part D defined standard benefit over time**

	2006	2016	2017	2018	Cumulative change 2006–2018
Deductible	\$250.00	\$360.00	\$400.00	\$405.00	62%
Initial coverage limit	2,250.00	3,310.00	3,700.00	3,750.00	67%
Annual out-of-pocket threshold	3,600.00	4,850.00	4,950.00	5,000.00	39%
Total covered drug spending at annual out-of-pocket threshold	5,100.00	7,515.22	8,071.16	8,417.60	65%
Minimum cost sharing above the annual out-of-pocket threshold					
Copay for generic/preferred multisource drugs	2.00	2.95	3.30	3.35	68%
Copay for other prescription drugs	5.00	7.40	8.25	8.35	67%

Note: Under Part D's defined standard benefit, the enrollee pays the deductible and then 25 percent of covered drug spending (75 percent is paid by the plan) until total covered drug spending reaches the initial coverage limit (ICL). Before 2011, enrollees exceeding the ICL were responsible for 100 percent of covered drug spending up to the annual out-of-pocket threshold. Beginning in 2011, enrollees pay reduced cost sharing in the coverage gap. For 2011 and later years, the amount of total covered drug spending at the annual out-of-pocket threshold depended on the mix of brand-name and generic drugs filled during the coverage gap. The amounts shown are for individuals not receiving Part D's low-income subsidy who have no source of supplemental coverage. Cost sharing paid by most sources of supplemental coverage does not count toward this threshold. Above the out-of-pocket limit, the enrollee pays 5 percent coinsurance or the respective copay shown above, whichever is greater.

Source: CMS Office of the Actuary.

- The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 specified a defined standard benefit structure for Part D. In 2018, the standard benefit has a \$405 deductible, 25 percent coinsurance on covered drugs until the enrollee reaches \$3,750 in total covered drug spending, and then a coverage gap until out-of-pocket spending reaches the annual threshold. Before 2011, enrollees were responsible for paying the full discounted price of drugs filled during the coverage gap. Because of changes made by the Patient Protection and Affordable Care Act (PPACA) of 2010, enrollees pay reduced cost sharing for drugs filled in the coverage gap. In 2018, the cost sharing for drugs filled during the gap phase is about 35 percent for brand-name drugs and 44 percent for generic drugs. Enrollees with drug spending that exceeds the annual threshold pay the greater of \$3.35 to \$8.35 per prescription or 5 percent coinsurance.
- Most parameters of this defined standard benefit structure have changed over time at the same rate as the annual change in average total drug expenses of Medicare beneficiaries enrolled in Part D, with cumulative changes of more than 60 percent between 2006 and 2018. By comparison, Part D's annual out-of-pocket threshold grew by 39 percent over the same period, reflecting changes in PPACA that aimed to reduce the coverage gap.

*(Chart continued next page)*

## **Chart 10-8. Changes in parameters of the Part D defined standard benefit over time (continued)**

- Within certain limits, sponsoring organizations may offer Part D plans that have the same actuarial value as the defined standard benefit but a different benefit structure, and most sponsoring organizations do offer such plans. For example, a plan may use tiered copayments rather than 25 percent coinsurance or have no deductible but use cost-sharing requirements that are equivalent to a rate higher than 25 percent. Defined standard benefit plans and plans that are actuarially equivalent to the defined standard benefit are both known as “basic benefits.”
- Once a sponsoring organization offers one plan with basic benefits within a prescription drug plan region, it may also offer a plan with enhanced benefits—basic and supplemental coverage combined.
- The Bipartisan Budget Act signed into law in 2018 closes Part D’s coverage gap one year earlier than the previously scheduled 2020 time frame. In 2019, the standard benefit will include 25 percent cost sharing in the coverage-gap phase for brand-name drugs and 37 percent for generics. Under the law, manufacturers of brand-name drugs must provide a 70 percent discount in the coverage gap, and plan sponsors will only be responsible for covering 5 percent of the cost of brand-name drugs in that same phase of the benefit.

## Chart 10-9. Characteristics of stand-alone Medicare PDPs

	2017				2018			
	Plans		Enrollees as of February 2017		Plans		Enrollees as of February 2018	
	Number	Percent	Number (in millions)	Percent	Number	Percent	Number (in millions)	Percent
Total	746	100%	20.5	100%	782	100%	20.8	100%
<b>Type of organization</b>								
National	643	86	19.1	93	677	87	19.4	93
Other	103	14	1.5	7	105	13	1.4	7
<b>Type of benefit</b>								
Defined standard	0	0	0.0	0	0	0	0.0	0
Actuarially equivalent	359	48	12.2	59	361	46	12.4	60
Enhanced	387	52	8.4	41	421	54	8.4	40
<b>Type of deductible</b>								
Zero	280	38	9.7	47	291	37	9.4	45
Reduced	110	15	1.5	7	88	11	1.9	9
Defined standard*	356	48	9.4	46	403	52	9.5	46
<b>Drugs covered in the gap</b>								
Some coverage	208	28	2.9	14	274	35	5.0	24
None	538	72	17.6	86	508	65	15.8	76

Note: PDP (prescription drug plan). The PDPs and enrollment described here exclude employer-only plans and plans offered in U.S. territories. "National" data reflect the total number of plans for organizations with at least 1 PDP in each of the 34 PDP regions. Components may not sum to totals due to rounding. "Actuarially equivalent" includes both actuarially equivalent standard and basic alternative benefits. "Enhanced" refers to plans with basic plus supplemental coverage. \*The defined standard benefit's deductible was \$400 in 2017 and is \$405 in 2018.

Source: MedPAC analysis of CMS landscape, premium, and enrollment data.

- Between 2017 and 2018, the number of stand-alone PDPs increased by nearly 5 percent. Plan sponsors are offering 782 PDPs in 2018 compared with 746 in 2017.
- In 2018, 87 percent of all PDPs are offered by sponsoring organizations that have at least 1 PDP in each of the 34 PDP regions (shown as "national" organizations in the table). Plans offered by those national sponsors account for 93 percent of all PDP enrollment.
- For 2018, the share of PDP offerings that include enhanced benefits (basic plus supplemental coverage) is higher than the share in 2017. The share of PDPs with actuarially equivalent benefits (having the same average value as the defined standard benefit but with alternative benefit designs) declined slightly from 48 percent to 46 percent. Sponsors are offering no PDPs with the defined standard benefit in 2018. Actuarially equivalent plans continue to attract the largest share of PDP enrollees (60 percent), and the share of enrollees choosing to enroll in enhanced benefit plans remains fairly constant at 40 percent in 2018 compared with 41 percent in 2017.
- A larger share of PDPs includes gap coverage for some drugs (usually generics) in 2018 than in 2017, but in 2018, the majority of PDP enrollees (76 percent) continue to enroll in plans that offer no additional benefits in the coverage gap. Because of the changes made by the Patient Protection and Affordable Care Act of 2010, the Part D benefit now includes some coverage for medications filled during the gap phase. In addition, many PDP enrollees receive Part D's low-income subsidy, which effectively eliminates the coverage gap.

## Chart 10-10. Characteristics of MA–PDs

	2017				2018			
	Plans		Enrollees as of February 2017		Plans		Enrollees as of February 2018	
	Number	Percent	Number (in millions)	Percent	Number	Percent	Number (in millions)	Percent
Totals	1,734	100%	11.9	100%	2,003	100%	12.7	100%
<b>Type of organization</b>								
Local HMO	1,241	72	8.5	72	1,422	71	9.1	72
Local PPO	429	25	2.3	19	519	26	2.6	20
PFFS	32	2	0.1	1	30	1	0.1	1
Regional PPO	32	2	1.0	8	32	2	0.9	7
<b>Type of benefit</b>								
Defined standard	24	1	0.1	1	22	1	0.1	<0.5
Actuarially equivalent	148	9	1.3	11	101	5	0.5	4
Enhanced	1,562	90	10.5	89	1,880	94	12.1	96
<b>Type of deductible</b>								
Zero	852	49	5.5	46	908	45	5.4	43
Reduced	711	41	5.5	46	988	49	6.9	54
Defined standard*	171	10	1.0	8	107	5	0.4	3
<b>Drugs covered in the gap</b>								
Some coverage	914	53	6.3	53	703	35	4.7	37
None	820	47	5.6	47	1,300	65	8.0	63

Note: MA–PD (Medicare Advantage–Prescription Drug [plan]), HMO (health maintenance organization), PPO (preferred provider organization), PFFS (private fee-for-service). The MA–PD plans and enrollment described here exclude employer-only plans, plans offered in U.S. territories, 1876 cost plans, special needs plans, demonstrations, and Part B–only plans. Components may not sum to totals due to rounding. “Actuarially equivalent” includes both actuarially equivalent standard and basic alternative benefits. “Enhanced” refers to plans with basic plus supplemental coverage. \*The defined standard benefit’s deductible was \$400 in 2017 and is \$405 in 2018.

Source: MedPAC analysis of CMS landscape, premium, and enrollment data.

- There are almost 16 percent more MA–PD plans in 2018 than in 2017. Sponsors are offering 2,003 MA–PD plans in 2018 compared with 1,734 the year before. HMOs remain the dominant type of MA–PD plan, making up 71 percent of all (unweighted) offerings in 2018. The number of PFFS plans decreased slightly from 32 in 2017 to 30 in 2018. Between 2017 and 2018, the number of drug plans offered by local PPOs increased from 429 plans to 519 plans, and the number of drug plans offered by regional PPOs remained the same at 32 plans.
- A larger share of MA–PD plans than stand-alone prescription drug plans (PDPs) offer enhanced benefits (compare Chart 10-10 with Chart 10-9). In 2018, 54 percent of all PDPs have enhanced benefits compared with 94 percent of MA–PD plans. In 2018, enhanced MA–PD plans attracted 96 percent of total MA–PD enrollment.
- Forty-five percent of MA–PD plans have no deductible in 2018. These plans attracted 43 percent of total MA–PD enrollees in 2018.
- MA–PD plans and PDPs are equally likely to provide some additional benefits in the coverage gap. In 2018, about 35 percent of MA–PD plans include some gap coverage—much lower than the year before. Those plans account for 37 percent of MA–PD enrollment.

## Chart 10-11. Change in average Part D premiums, 2014–2018

	Average monthly premium weighted by enrollment					Cumulative change in weighted average premium, 2014–2018
	2014	2015	2016	2017	2018	
<b>All plans</b>	<b>\$29</b>	<b>\$30</b>	<b>\$31</b>	<b>\$32</b>	<b>\$32</b>	<b>8%</b>
Basic plans	29	26	28	30	30	5
Enhanced plans						
Basic benefits	24	27	27	27	26	7
Supplemental benefits	<u>6</u>	<u>6</u>	<u>7</u>	<u>6</u>	<u>7</u>	21
Total premium	30	33	33	33	33	10
All basic coverage	26	27	27	29	28	6
<b>PDPs</b>	<b>38</b>	<b>37</b>	<b>39</b>	<b>41</b>	<b>41</b>	<b>10</b>
Basic coverage	30	28	29	31	31	4
Enhanced coverage						
Basic benefits	39	39	41	43	42	8
Supplemental benefits	<u>10</u>	<u>9</u>	<u>12</u>	<u>11</u>	<u>15</u>	56
Total premium	49	48	53	54	57	17
All basic coverage	34	33	34	36	35	5
<b>MA–PDs, including SNPs</b>	<b>16</b>	<b>18</b>	<b>18</b>	<b>19</b>	<b>18</b>	<b>16</b>
Basic coverage	25	21	22	26	28	12
Enhanced coverage						
Basic benefits	11	14	15	16	15	33
Supplemental benefits	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>	–35
Total premium	13	17	17	18	17	23
All basic coverage	14	17	16	18	17	21
MA–PD buy-down of basic premium	13	14	15	16	16	20
MA–PD buy-down of supplemental benefits	13	13	14	15	16	22
Base beneficiary premium	32.42	33.13	34.10	35.63	35.02	8

Note: PDP (prescription drug plan), MA–PD (Medicare Advantage–Prescription Drug [plan]), SNP (special needs plan). All calculations exclude employer-only groups and plans offered in U.S. territories. In addition, MA–PD plans exclude Part B–only plans, demonstrations, and 1876 cost plans. The MA–PD data reflect the portion of Medicare Advantage plans' total monthly premium attributable to Part D benefits for plans that offer Part D coverage, as well as Part C rebate dollars that were used to offset Part D premium costs. The fact that average premiums for enhanced MA–PD plans are lower than for basic MA–PD plans could reflect several factors such as changes in enrollment among plan sponsors and counties of operation and differences in the average health status of plan enrollees. Cumulative changes were calculated from unrounded data.

Source: MedPAC analysis of CMS landscape, plan report, enrollment data, and bid data.

(Chart continued next page)

## Chart 10-11. Change in average Part D premiums, 2014–2018 (continued)

- Part D enrollees can select between plans with basic or enhanced benefits (which combine basic and supplemental coverage). Medicare subsidizes 74.5 percent of the average cost of basic benefits; enrollees pay premiums for the remaining 25.5 percent and all of the cost of any supplemental benefits. (For more about how plan premiums are determined, see Part D *Payment Basics* at [http://medpac.gov/docs/default-source/payment-basics/medpac\\_payment\\_basics\\_17\\_partd\\_final86a411adfa9c665e80adff00009edf9c.pdf?sfvrsn=0](http://medpac.gov/docs/default-source/payment-basics/medpac_payment_basics_17_partd_final86a411adfa9c665e80adff00009edf9c.pdf?sfvrsn=0).)
- The overall average premium paid by enrollees for any type of Part D coverage grew slowly from \$29 per month in 2014 to \$32 per month in 2018. However, year-to-year changes have varied by type of benefit (basic vs. enhanced) and type of plan (PDP vs. MA–PD), and they have not necessarily corresponded to changes observed in the base beneficiary premium.
- Across all basic plans and the basic portion of enhanced plans, the average premium for basic benefits grew slowly from \$26 in 2014 to \$28 per month in 2018, a cumulative change of just 6 percent. This slow growth occurred despite very rapid growth in spending for Part D’s catastrophic phase of the benefit (data not shown). In the catastrophic phase, Medicare subsidizes 80 percent of enrollees’ drug spending, so most of the growth in catastrophic spending is not reflected in higher premiums. (For more information about Medicare’s Part D spending, see Chapter 14 of the Commission’s March 2018 report to the Congress at [http://medpac.gov/docs/default-source/reports/mar18\\_medpac\\_ch14\\_sec.pdf?sfvrsn=0](http://medpac.gov/docs/default-source/reports/mar18_medpac_ch14_sec.pdf?sfvrsn=0).)
- Over the five-year period, the average enrollee premium for basic coverage in PDPs ranged between a low of \$28 in 2015 and a high of \$31 per month in 2017 and 2018, increasing by a cumulative 5 percent from 2014 to 2018. Among enhanced plans offered by PDPs, the average enrollee premium has ranged between \$48 in 2015 to \$57 in 2018, increasing by a cumulative 17 percent from 2014 to 2018. Of the \$57 average premium in 2018 among enhanced PDPs, \$42 was for basic benefits, \$15 for supplemental benefits. The portion of enhanced premiums attributable to supplemental benefits has grown more quickly than the portion for basic benefits.
- Between 2014 and 2018, the average Part D premium paid by beneficiaries enrolled in MA–PD plans with basic coverage ranged between a low of \$21 in 2015 and a high of \$28 per month in 2018, increasing by a cumulative 12 percent. The average premium paid by beneficiaries enrolled in MA–PD plans offering enhanced coverage has increased from \$13 in 2014 to \$17 in 2018, a cumulative 23 percent increase. MA–PD plan sponsors typically use a portion of Medicare’s Part C (Medicare Advantage) payments to “buy down” the premiums that plan enrollees would otherwise have to pay for Part D basic premiums and supplemental benefits. Because of those Part C payment “rebates,” in 2018, MA–PD enrollees avoided having to pay \$16 per month in basic premiums and an additional \$16 per month for supplemental coverage, on average.

## Chart 10-12. More premium-free (for LIS enrollees) PDPs in 2018

PDP region	State(s)	Number of PDPs			Number of PDPs that have zero premium for LIS enrollees		
		2017*	2018*	Difference	2017*	2018	Difference
1	ME, NH	23	24	1	8	7	-1
2	CT, MA, RI, VT	21	22	1	7	7	0
3	NY	19	20	1	8	8	0
4	NJ	21	22	1	8	7	-1
5	DC, DE, MD	20	21	1	10	10	0
6	PA, WV	24	26	2	9	9	0
7	VA	23	24	1	7	6	-1
8	NC	22	24	2	7	7	0
9	SC	21	22	1	6	4	-2
10	GA	23	24	1	4	5	1
11	FL	20	21	1	3	2	-1
12	AL, TN	24	25	1	7	6	-1
13	MI	23	24	1	8	9	1
14	OH	22	23	1	6	6	0
15	IN, KY	23	24	1	7	7	0
16	WI	24	25	1	7	8	1
17	IL	23	24	1	9	8	-1
18	MO	23	24	1	4	4	0
19	AR	22	23	1	5	4	-1
20	MS	19	20	1	7	6	-1
21	LA	20	21	1	7	6	-1
22	TX	23	24	1	6	7	1
23	OK	22	23	1	7	7	0
24	KS	22	23	1	5	4	-1
25	IA, MN, MT, ND, NE, SD, WY	22	23	1	6	5	-1
26	NM	23	24	1	9	7	-2
27	CO	23	24	1	7	6	-1
28	AZ	22	23	1	10	10	0
29	NV	23	24	1	4	3	-1
30	OR, WA	21	22	1	8	7	-1
31	ID, UT	24	25	1	9	8	-1
32	CA	24	25	1	6	5	-1
33	HI	19	20	1	5	4	-1
34	AK	18	19	1	5	7	2
	Total	746	782	36	231	216	-15

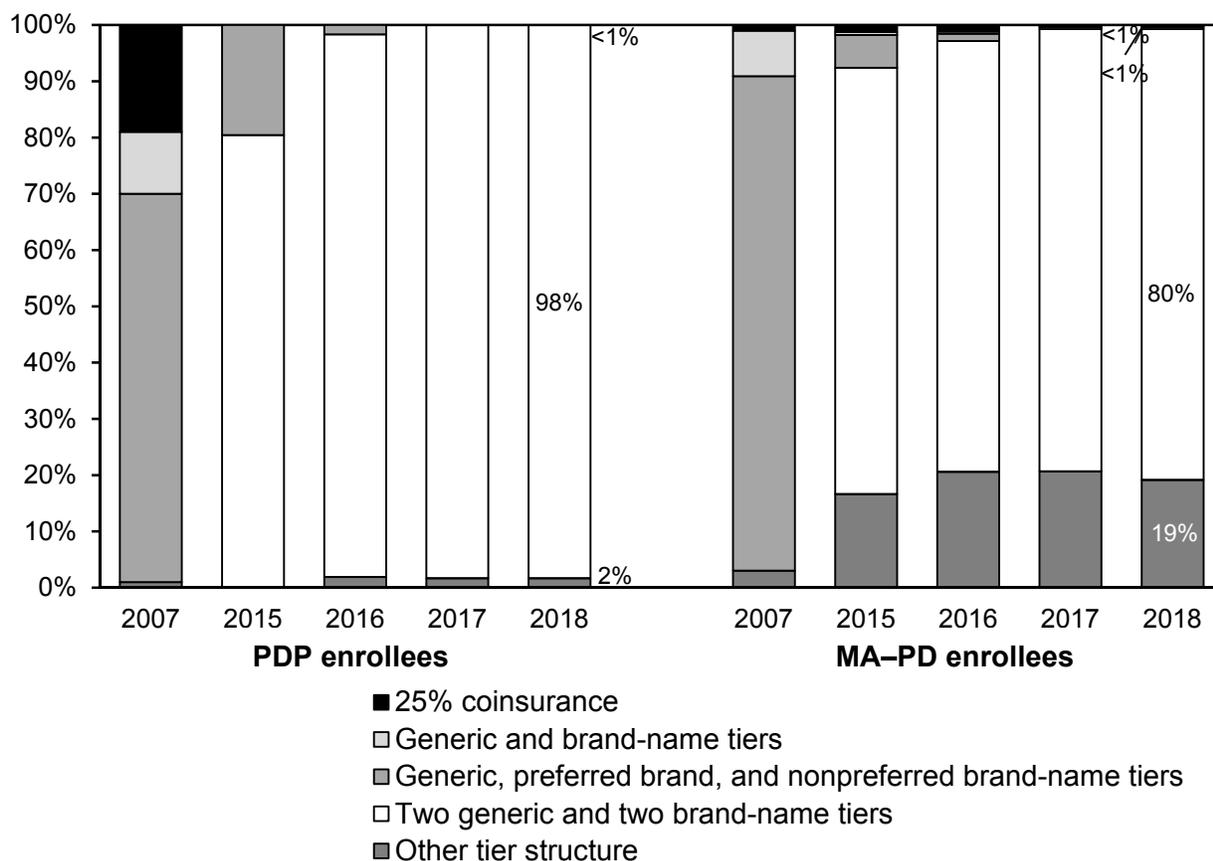
Note: LIS (low-income [drug] subsidy), PDP (prescription drug plan).

\*These figures include 25 plans in 2017 and 2 in 2018 that did not accept new enrollees because of CMS sanctions.

Source: MedPAC based on 2017 and 2018 PDP landscape file provided by CMS.

- The total number of stand-alone PDPs increased by 5 percent, from 746 in 2017 to 782 in 2018. The median number of plans offered in PDP regions increased to 24 plans from 22 in 2017 (data not shown). In 2018, AK has the fewest stand-alone PDPs, with 19, and Region 6 (PA, WV) has the most, with 26.
- In 2018, 216 PDPs qualify as premium free to LIS enrollees. With the exception of FL, which has only two plans with no premium for LIS enrollees, at least three premium-free PDPs are available in any given region.

**Chart 10-13. In 2018, most Part D enrollees are in plans that use a five-tier formulary structure**



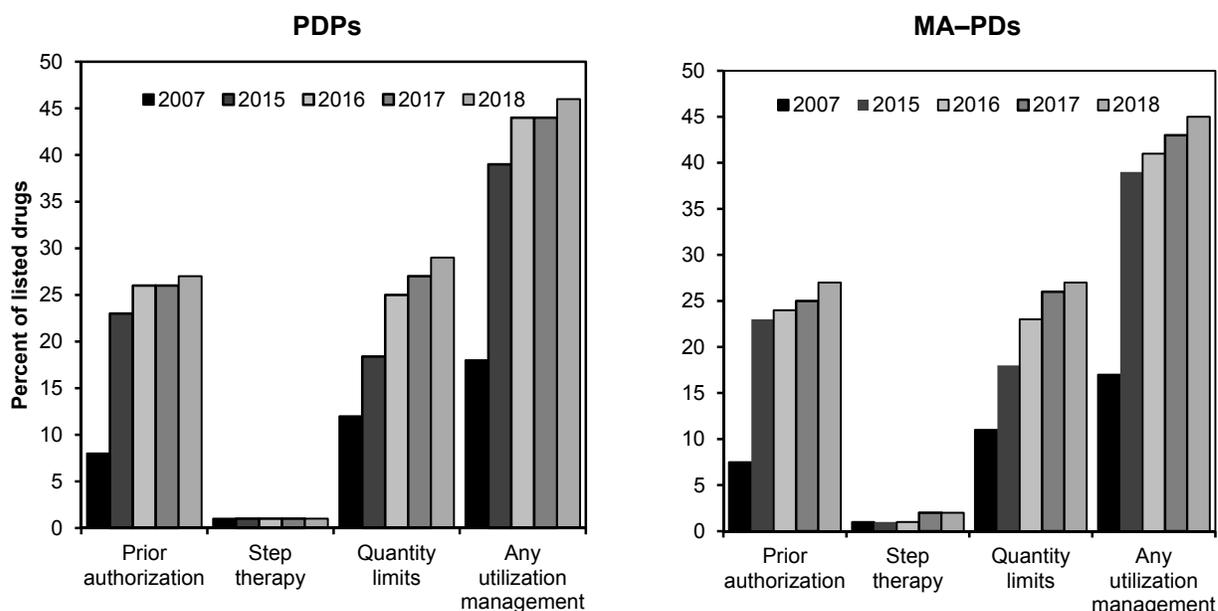
**In addition to the tiers listed above, most formularies also include a specialty tier.**

Note: PDP (prescription drug plan), MA-PD (Medicare Advantage-Prescription Drug [plan]). Calculations are weighted by enrollment. All calculations exclude employer-only groups and plans offered in U.S. territories. In addition, MA-PDs exclude demonstration programs, special needs plans, and 1876 cost plans. Components may not sum to totals due to rounding. Over 99 percent of stand-alone PDPs and MA-PDs have a specialty tier in addition to the tiers listed above. The algorithm used to classify formularies was modified beginning with 2016 data but does not materially affect results.

Source: MedPAC analysis of formularies submitted to CMS.

- Most Part D enrollees choose plans that distinguish between preferred and nonpreferred brand-name drugs and preferred and nonpreferred generic drugs. In 2018, nearly all PDP enrollees continue to enroll in plans with a five-tier structure: two generic and two brand-name tiers plus a specialty tier. Eighty percent of MA-PD enrollees are in such plans in 2018, a slight increase from 79 percent in 2017.
- For enrollees in PDPs with a five-tier structure, the median copay in 2018 is \$37 for a preferred brand-name drug and 40 percent coinsurance for a nonpreferred brand-name drug (data not shown). The median copay for generic drugs is \$1 for generic drugs on the lower tier and \$6 for the higher tier. For MA-PD enrollees, in 2018, the median copay is \$47 for a preferred brand and \$99 for a nonpreferred brand, and \$2 and \$10 for a generic drug on the two generic tiers, respectively.
- Most plans also use a specialty tier for drugs that have a negotiated price of \$670 per month or more. In 2018, median cost sharing for a specialty-tier drug is 27 percent among PDPs and 30 percent among MA-PD plans (data not shown).

**Chart 10-14. In 2018, PDPs and MA–PDs apply some utilization management to more than 45 percent of listed drugs**



Note: PDP (prescription drug plan), MA–PD (Medicare Advantage–Prescription Drug [plan]). Calculations are weighted by enrollment. All calculations exclude employer-only groups and plans offered in U.S. territories. In addition, MA–PD plans exclude demonstration programs, special needs plans, and 1876 cost plans. Values reflect the share of listed chemical entities that are subject to utilization management, weighted by plan enrollment. “Prior authorization” means that the enrollee must get preapproval from the plan before coverage. “Step therapy” refers to a requirement that the enrollee try specified drugs before being prescribed other drugs in the same therapeutic category. “Quantity limits” means that plans limit the number of doses of a drug available to the enrollee in a given time period. The algorithm used to classify formularies was modified beginning with 2016 data but does not materially affect results.

Source: MedPAC analysis of formularies submitted to CMS.

- In addition to the number of drugs listed on a plan’s formulary, plans’ processes for nonformulary exceptions and use of utilization management tools—prior authorization (preapproval for coverage), quantity limits (limitations on the number of doses of a particular drug covered in a given period), and step therapy requirements (enrollees must try specified drugs before being prescribed other drugs in the same therapeutic category)—can affect access to certain drugs.
- In 2018, the average enrollee in a stand-alone PDP faces some form of utilization management for about 46 percent of drugs listed on a plan’s formulary, an increase from 44 percent in 2017. The average MA–PD enrollee faces some form of utilization management for 45 percent of drugs listed on a plan’s formulary, an increase from 43 percent in 2017. Part D plans typically use quantity limits or prior authorization to manage enrollees’ prescription drug use.
- Among the drugs listed on plan formularies for stand-alone PDPs, the share that requires prior authorization in 2018 increased to 27 percent from 26 percent in 2017. The share with quantity limits increased from 27 percent in 2017 to 29 percent in 2018. Among MA–PDs, both the use of prior authorization and the use of quantity limits increased between 2017 and 2018, from 25 percent to 27 percent for prior authorization and from 26 percent to 27 percent for quantity limits. The share of drugs listed on plan formularies that requires the use of step therapy remained very low for both stand-alone PDPs and MA–PDs.

## Chart 10-15. Characteristics of Part D enrollees, 2015

	All Medicare	Part D	Plan type		Subsidy status	
			PDP	MA–PD	LIS	Non-LIS
Beneficiaries <sup>a</sup> (in millions)	58.2	41.9	25.8	16.1	13.1	28.8
Percent of all Medicare	100%	72%	44%	28%	23%	49%
<b>Gender</b>						
Male	46%	43%	42%	43%	40%	44%
Female	54	57	58	57	60	56
<b>Race/ethnicity</b>						
White, non-Hispanic	75	74	78	67	55	82
African American, non-Hispanic	10	11	10	12	20	7
Hispanic	9	10	6	15	16	7
Asian	3	3	3	4	6	2
Other	3	2	2	2	2	2
<b>Age (years)<sup>b</sup></b>						
<65	18	19	21	16	42	8
65–69	27	25	24	26	17	28
70–74	20	20	19	22	13	24
75–79	14	15	14	15	10	17
80+	21	22	22	21	19	23
<b>Urbanicity<sup>c</sup></b>						
Metropolitan	81	82	78	89	81	83
Micropolitan	10	10	12	7	11	10
Rural	7	7	9	4	8	7

Note: PDP (prescription drug plan), MA–PD (Medicare Advantage–Prescription Drug [plan]), LIS (low-income [drug] subsidy). Percentages may not sum to 100 due to rounding.

<sup>a</sup>Figures for “All Medicare” and “Part D” include all beneficiaries with at least one month of enrollment in the respective program. A beneficiary was classified as “LIS” if that individual received Part D’s LIS at some point during the year. For individuals who switched plan types during the year, classification into plan types was based on the greater number of months of enrollment.

<sup>b</sup>Age as of July 2015.

<sup>c</sup>Urbanicity is based on the Office of Management and Budget’s core-based statistical areas as of July 2015. A metropolitan area contains a core urban area of 50,000 or more people, and a micropolitan area contains an urban core of at least 10,000 (but fewer than 50,000) people. About 1 percent of Medicare beneficiaries were excluded because of an unidentifiable core-based statistical area designation.

Source: MedPAC analysis of Medicare Part D denominator file from CMS.

- In 2015, nearly 42 million Medicare beneficiaries (72 percent) were enrolled in Part D at some point in the year. Most of them (25.8 million) were in stand-alone PDPs, with 16.1 million in MA–PD plans. About 13 million enrollees received Part D’s LIS.
- Compared with the overall Medicare population, Part D enrollees are more likely to be female and minority. MA–PD enrollees are less likely to be disabled beneficiaries under age 65 and more likely to be Hispanic compared with PDP enrollees; LIS enrollees are more likely to be female, minority, and disabled beneficiaries under age 65 compared with non-LIS enrollees.
- Patterns of enrollment by urbanicity for Part D enrollees were similar to the overall Medicare population: 82 percent in metropolitan areas, 10 percent in micropolitan areas, and 7 percent in rural areas. (About 1 percent of Medicare beneficiaries were excluded because of an unidentifiable core-based statistical area designation.)

## Chart 10-16. Part D enrollment trends, 2007–2015

	2007	2010	2015	Average annual growth rate		
				2007–2010	2010–2015	2007–2015
<b>Part D enrollment (in millions)*</b>						
Total	26.1	29.7	41.9	4.4%	7.1%	6.1%
By plan type						
PDP	18.3	18.9	25.8	1.1	6.4	4.3
MA–PD	7.8	10.6	16.1	10.9	8.7	9.5
By subsidy status						
LIS	10.4	11.3	13.1	2.7	3.0	2.9
Non-LIS	15.7	18.4	28.8	5.5	9.3	7.9
By race/ethnicity						
White, non-Hispanic	19.4	22.0	30.9	4.3	7.0	6.0
African American, non-Hispanic	2.9	3.3	4.6	4.1	6.7	5.7
Hispanic	2.5	3.0	4.1	5.8	6.4	6.2
Other	1.3	1.4	2.3	3.9	10.3	7.8
By age (years)**						
<65	5.5	6.3	7.9	4.7	4.8	4.8
65–69	5.4	6.6	10.3	6.5	9.4	8.3
70–79	8.8	9.9	14.6	3.8	8.1	6.5
80+	6.4	7.1	9.1	3.2	5.2	4.4
<b>Part D enrollment (in percent)</b>						
Total	100%	100%	100%			
By plan type						
PDP	70	64	62			
MA–PD	30	36	38			
By subsidy status						
LIS	40	38	31			
Non-LIS	60	62	69			
By race/ethnicity						
White, non-Hispanic	74	74	74			
African American, non-Hispanic	11	11	11			
Hispanic	10	10	10			
Other	5	5	5			
By age (years)**						
<65	21	21	19			
65–69	21	22	25			
70–79	34	33	35			
80+	25	24	22			

Note: PDP (prescription drug plan), MA–PD (Medicare Advantage–Prescription Drug [plan]), LIS (low-income [drug] subsidy). A beneficiary was classified as “LIS” if that individual received Part D’s LIS at some point during the year. If a beneficiary was enrolled in both a PDP and an MA–PD plan during the year, that individual was classified into the type of plan with the greater number of months of enrollment. Numbers may not sum to totals due to rounding.

\*Figures include all beneficiaries with at least one month of enrollment.

\*\*Age figures are as of July of the respective year.

Source: MedPAC analysis of Medicare Part D denominator file from CMS.

(Chart continued next page)

## Chart 10-16. Part D enrollment trends, 2007–2015 (continued)

- Part D enrollment grew faster between 2010 and 2015 (average annual growth rate (AAGR) of 7.1 percent) than between 2007 and 2010 (AAGR of 4.4 percent). Between 2010 and 2015, the largest growth in enrollment was observed for beneficiaries ages 65 to 69 (9.4 percent annually, on average), followed by beneficiaries ages 70 to 79 (8.1 percent annually, on average).
- While MA–PD plan enrollment grew faster than PDP enrollment between 2007 and 2010 (nearly 11 percent annually compared with about 1 percent annually, on average, respectively), the growth rates were more comparable between MA–PDs and PDPs between 2010 and 2015 (AAGR of 8.7 percent and 6.4 percent, respectively).
- The number of enrollees receiving the LIS grew modestly between 2007 and 2010 at 2.7 percent per year. Higher growth rates (3.0 percent on average) were observed between 2010 and 2015. The AAGR in the number of non-LIS enrollees was also greater between 2010 and 2015 (9.3 percent) than it was between 2007 and 2010 (5.5 percent). Faster enrollment growth among non-LIS enrollees is partly attributable to the recent growth in employer group waiver plans that shifted beneficiaries into Part D plans from employer plans that had previously received Medicare’s retiree drug subsidy (RDS) (see Chart 10-7 for information on the RDS).

## Chart 10-17. Part D enrollment by region, 2015

PDP region	State(s)	Percent of Medicare enrollment		Percent of Part D enrollment			
		Part D	RDS	Plan type		Subsidy status	
				PDP	MA-PD	LIS	Non-LIS
1	ME, NH	67%	3%	79%	21%	36%	64%
2	CT, MA, RI, VT	71	7	70	30	38	62
3	NY	77	5	55	45	37	63
4	NJ	72	5	83	17	26	74
5	DE, DC, MD	62	5	87	13	33	67
6	PA, WV	75	4	58	42	29	71
7	VA	63	3	74	26	30	70
8	NC	73	4	62	38	32	68
9	SC	71	2	70	30	32	68
10	GA	72	3	58	42	36	64
11	FL	74	4	49	51	31	69
12	AL, TN	73	3	61	39	36	64
13	MI	78	4	75	25	26	74
14	OH	77	4	64	36	26	74
15	IN, KY	73	4	73	27	32	68
16	WI	70	3	59	41	26	74
17	IL	70	7	74	26	31	69
18	MO	74	3	64	36	28	72
19	AR	69	4	74	26	39	61
20	MS	71	2	81	19	46	54
21	LA	73	5	60	40	40	60
22	TX	69	4	64	36	35	65
23	OK	66	2	78	22	32	68
24	KS	70	2	83	17	24	76
25	IA, MN, MT, NE, ND, SD, WY	73	3	74	26	23	77
26	NM	70	3	57	43	38	62
27	CO	71	3	52	48	25	75
28	AZ	72	3	49	51	28	72
29	NV	67	4	52	48	26	74
30	OR, WA	67	6	53	47	28	72
31	ID, UT	68	3	55	45	23	77
32	CA	77	3	49	51	36	64
33	HI	71	2	37	63	26	74
34	AK	41	24	98	2	54	46
	Mean	72	4	62	38	31	69
	Minimum	41	2	37	2	23	46
	Maximum	78	24	98	63	54	77

Note: PDP (prescription drug plan), RDS (retiree drug subsidy), MA-PD (Medicare Advantage-Prescription Drug [plan]), LIS (low-income [drug] subsidy). Definition of regions is based on PDP regions used in Part D.

Source: MedPAC analysis of Part D enrollment data from CMS.

- Among Part D regions in 2015, all but one region (Region 34 (AK)) had over 60 percent of all Medicare beneficiaries enrolled in Part D. Beneficiaries were less likely to enroll in Part D in regions where employer-sponsored drug coverage continued to be available. For example, in Region 34, the share of Medicare beneficiaries enrolled in Part D was 41 percent, while the share of beneficiaries enrolled in employer-sponsored plans that received the RDS was 24 percent. In other regions (Region 5 and Region 7), many beneficiaries likely received their drug coverage through the Federal Employees Health Benefits Program, which does not receive the RDS.

(Chart continued next page)

## Chart 10-17. Part D enrollment by region, 2015 (continued)

- In 2015, all regions except Region 34 experienced a decrease in the number of beneficiaries who received the RDS (data not shown). In some of the regions, the decreases in RDS recipients were accompanied by larger than average increases in Part D enrollment (e.g., Region 1, Region 2, Region 5, and Region 31). The continued trend is likely motivated by changes made by the Patient Protection and Affordable Care Act of 2010 that increased the generosity of Part D coverage and altered the tax treatment of drug expenses covered by the RDS.
- Wide variation was seen in the shares of Part D beneficiaries who enrolled in PDPs and MA–PD plans across PDP regions. The pattern of MA–PD enrollment is generally consistent with enrollment in Medicare Advantage plans.
- The share of Part D enrollees receiving the LIS ranged from 23 percent in Region 25 (IA, MN, MT, NE, ND, SD, and WY) to 54 percent in Region 34 (AK). In 19 of the 34 PDP regions, LIS enrollees accounted for 30 percent to 50 percent of enrollment.

## Chart 10-18. Components of Part D spending growth

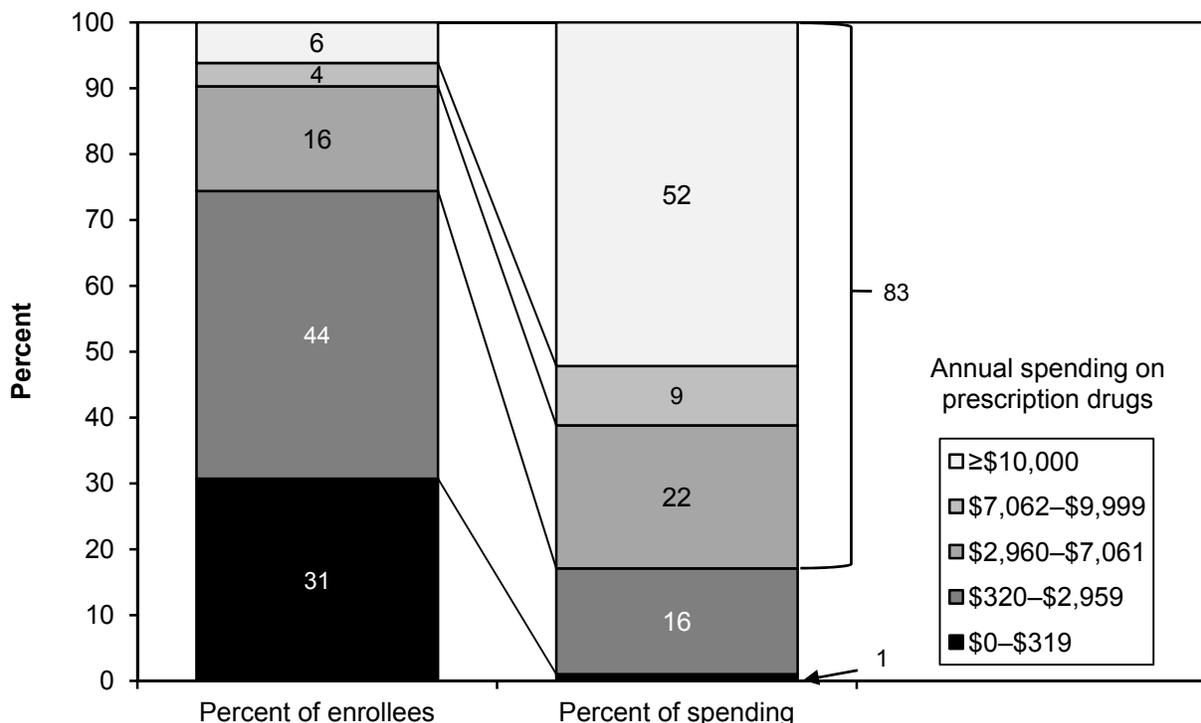
	2009	2015	Average annual growth 2009–2015
<b>Total gross spending (in billions)</b>	<b>\$73.7</b>	<b>\$137.7</b>	<b>10.9%</b>
High-cost beneficiaries	29.2	78.9	18.0%
Lower cost beneficiaries	44.6	58.5	4.6%
<b>Number of beneficiaries using a Part D drug (in millions)</b>	<b>26.5</b>	<b>38.9</b>	<b>6.6%</b>
High-cost beneficiaries	2.4	3.6	7.4%
Lower cost beneficiaries	24.1	35.3	6.5%
<b>Amount per beneficiary who used Part D drugs</b>			
Gross drug spending per year	\$2,781	\$3,531	4.1%
Average price per 30-day prescription	\$55	\$65	2.7%
Number of 30-day prescriptions	50.4	54.5	1.3%
<b>Amount per high-cost beneficiary who used Part D drugs</b>			
Gross drug spending per year	\$12,294	\$21,642	9.9%
Average price per 30-day prescription	\$110	\$193	9.8%
Number of 30-day prescriptions	111.4	112.1	0.1%
<b>Amount per lower cost beneficiary who used Part D drugs</b>			
Gross drug spending per year	\$1,846	\$1,658	–1.8%
Average price per 30-day prescription	\$42	\$34	–3.2%
Number of 30-day prescriptions	44.5	48.5	1.5%

Note: "High-cost beneficiaries" refers to individuals who incurred spending high enough to reach the catastrophic phase of the benefit. "Gross spending" reflects payments to pharmacies from all payers, including beneficiary cost sharing, but does not include rebates and discounts from pharmacies and manufacturers that are not reflected in prices at the pharmacies. Changes in the average price per prescription reflect both price inflation and changes in the mix of drugs used. Components may not sum to totals due to rounding.

Source: MedPAC analysis of Part D prescription drug event data and denominator files from CMS.

- Between 2009 and 2015, gross spending on drugs under the Part D program grew by an annual average rate of 10.9 percent. The annual growth in spending was considerably higher (18.0 percent) among high-cost beneficiaries (individuals who incurred spending high enough to reach the catastrophic phase of the benefit) compared with less than 5 percent for lower cost beneficiaries.
- During the 2009 through 2015 period, the number of beneficiaries who used Part D drugs grew by an annual average rate of 6.6 percent, with faster growth observed among high-cost beneficiaries (7.4 percent) than lower cost beneficiaries (6.5 percent).
- Overall, between 2009 and 2015, the growth in prices per 30-day prescription accounted for nearly two-thirds (2.7 percent) of the 4.1 percent average annual growth in spending per beneficiary among beneficiaries who used Part D drugs.
- The average annual growth rate in overall spending per beneficiary reflects two distinct patterns of price and spending growth for high-cost beneficiaries and lower cost beneficiaries. Among high-cost beneficiaries, annual growth in prices (9.8 percent) accounted for nearly all of the spending growth (9.9 percent) during this period. In contrast, among lower cost beneficiaries, the average annual decrease in prices (–3.2 percent) resulted in an overall decrease in spending (–1.8 percent annually), despite an increase in the number of prescriptions filled during the same period.

**Chart 10-19. The majority of Part D spending was incurred by slightly over one-quarter of all Part D enrollees, 2015**



Note: "Spending" (gross) reflects payments from all payers, including beneficiaries (cost sharing), but does not include rebates and discounts from pharmacies and manufacturers that are not reflected in prices at the pharmacies. Annual spending categories used for this analysis generally correspond to the parameters of the defined standard benefit. In 2015, an individual without Part D's low-income subsidy or other sources of supplemental coverage would have reached the catastrophic phase of the benefit at \$7,061.76 in total drug spending, assuming that expenses for brand-name drugs accounted for 85.9 percent of total drug spending in the coverage gap. Components may not sum to totals due to rounding.

Source: MedPAC analysis of Medicare Part D prescription drug event data from CMS.

- Medicare Part D spending is concentrated in a subset of beneficiaries. In 2015, about 26 percent of Part D enrollees had annual spending of \$2,960 or more (at which point enrollees were responsible for a higher proportion of the cost of the drugs until their spending reached \$7,061.76 under the defined standard benefit). These beneficiaries accounted for 83 percent of total Part D spending.
- The costliest 10 percent of beneficiaries, those with drug spending above the catastrophic threshold under the defined standard benefit, accounted for 61 percent of total Part D spending. Sixty-one percent of beneficiaries with the highest spending received Part D's low-income [drug] subsidy (data not shown; see Chart 10-20). Spending on prescription drugs is less concentrated than Medicare Part A and Part B spending. In 2013, the costliest 5 percent of beneficiaries accounted for 42 percent of annual Medicare fee-for-service (FFS) spending, and the costliest quartile accounted for 84 percent of Medicare FFS spending (see Chart 1-11).
- In 2015, the share of Part D enrollees with annual gross spending at or above \$10,000 remained unchanged from 2014 at 6 percent. Those costliest 6 percent of enrollees accounted for 52 percent of spending in 2015, up from 46 percent in 2014 (2014 data not shown).

**Chart 10-20. Characteristics of Part D enrollees, by spending levels, 2015**

	Annual drug spending		
	<\$2,960	\$2,960–\$7,061	≥\$7,062
<b>Sex</b>			
Male	43%	41%	43%
Female	57	59	57
<b>Race/ethnicity</b>			
White, non-Hispanic	74	75	70
African American, non-Hispanic	11	11	14
Hispanic	10	9	11
Other	6	5	6
<b>Age (years)</b>			
<65	17	19	37
65–69	26	20	18
70–74	21	20	16
75–80	15	16	12
80+	22	25	17
<b>LIS status*</b>			
LIS	26	38	61
Non-LIS	74	62	39
<b>Plan type**</b>			
PDP	59	66	72
MA–PD	41	34	28

Note: LIS (low-income [drug] subsidy), PDP (prescription drug plan), MA–PD (Medicare Advantage–Prescription Drug [plan]). “Spending” (gross) reflects payments from all payers, including beneficiaries (cost sharing), but does not include rebates and discounts from pharmacies and manufacturers that are not reflected in prices at the pharmacies. A small number of beneficiaries were excluded from the analysis because of missing data. Percentages may not sum to 100 due to rounding. \*A beneficiary was assigned LIS status if that individual received Part D’s LIS at some point during the year. \*\*If a beneficiary was enrolled in both a PDP and an MA–PD plan during the year, that individual was classified in the type of plan with the greater number of months of enrollment.

Source: MedPAC analysis of Medicare Part D prescription drug event data and Part D denominator file from CMS.

- In 2015, Part D enrollees with annual spending at or above \$7,062 were more likely to be minority, disabled and under age 65, and receiving the LIS compared with those with annual spending below \$2,960.
- Part D enrollees entered the catastrophic phase of the benefit at about \$7,062 in total drug spending in 2015. While LIS enrollees are more likely to reach the catastrophic phase of the benefit, their share has been declining, from more than three-quarters in 2010 and earlier years to 65 percent in 2013 (not shown in chart) and 61 percent in 2015. This decline reflects more rapid growth in enrollment of individuals who do not receive the LIS as well as the growth in average prices of drugs taken by those individuals.
- The majority of Part D enrollees with spending at or above \$7,062 were enrolled in stand-alone PDPs (72 percent). In contrast, beneficiaries with annual spending below \$2,960 were more likely to be in MA–PDs compared with those with higher annual spending (41 percent compared with 28 percent). This contrast reflects the facts that LIS enrollees are more costly on average and are more likely to be in PDPs.

## Chart 10-21. Part D spending and use per enrollee, 2015

	Part D	Plan type		LIS status	
		PDP	MA–PD	LIS	Non-LIS
Total gross spending (billions)*	\$137.4	\$93.8	\$43.6	\$67.8	\$69.6
Total number of prescriptions (millions)	2,119	1,336	783	792	1,328
Average spending per prescription	\$65	\$70	\$56	\$86	\$52
<b>Per enrollee per month</b>					
Total spending	\$290	\$324	\$236	\$469	\$211
OOP spending	33	35	30	6	45
Manufacturer gap discount	12	14	9	N/A	18
Plan liability	183	201	153	310	127
Low-income cost-sharing subsidy	47	55	34	153	N/A
Other**	15	19	9	<1	22
Number of prescriptions	4.5	4.6	4.2	5.5	4.0

Note: PDP (prescription drug plan), MA–PD (Medicare Advantage–Prescription Drug [plan]), LIS (low-income [drug] subsidy), OOP (out-of-pocket), N/A (not applicable). “Total gross spending” reflects payments from all payers, including beneficiaries (cost sharing), but does not include rebates and discounts from pharmacies and manufacturers that are not reflected in prices at the pharmacies. Total spending does not necessarily equal the sum of OOP spending, manufacturer gap discount, plan liability, and low-income cost-sharing subsidy because other smaller sources of payment are not shown. Part D prescription drug event (PDE) records are classified into plan types based on the contract identification on each record. For purposes of classifying the PDE records by LIS status, monthly LIS eligibility information in Part D’s denominator file was used. Estimates are sensitive to the method used to classify PDE records to each plan type and LIS status. “OOP spending” includes all payments (other than manufacturer gap discount) that count toward the annual OOP spending threshold. “Plan liability” includes plan payments for drugs covered by both basic and supplemental (enhanced) benefits. In addition to the major categories shown in the chart, total spending includes amounts paid by other relatively minor payers such as group health plans, workers’ compensation, and charities. “Number of prescriptions” is standardized to a 30-day supply.  
 \*\*Total gross spending” includes about \$5.8 billion in manufacturer discounts for brand-name drugs filled by non-LIS enrollees during the coverage gap.  
 \*\*\*Other” amount includes payments by patient assistance organizations and third-party payers other than Part D plans that reduce the patient cost-sharing liability.

Source: MedPAC analysis of Medicare Part D PDE data and denominator file from CMS.

- In 2015, gross spending on drugs for the Part D program totaled \$137.4 billion, with more than two-thirds (\$93.8 billion) accounted for by Medicare beneficiaries enrolled in stand-alone PDPs. Part D enrollees receiving the LIS accounted for nearly 50 percent (\$67.8 billion) of the total. Manufacturer discounts for brand-name drugs filled by non-LIS enrollees while they were in the coverage gap accounted for 4.2 percent of the total, or 8.3 percent of the gross spending by non-LIS enrollees (data not shown).
- The number of prescriptions filled by Part D enrollees totaled over 2.1 billion, with over 60 percent (more than 1.3 billion) accounted for by PDP enrollees. The 31 percent of enrollees who received the LIS accounted for about 37 percent (792 million) of the total number of prescriptions filled.
- In 2015, Part D enrollees filled 4.5 prescriptions at \$290 per month on average, an increase from \$268 per month (for 4.5 prescriptions) in 2014 (2014 data not shown). The average monthly plan liability for PDP enrollees (\$201) was considerably higher than that of MA–PD enrollees (\$153), while the difference in average monthly OOP spending was smaller between the two types of plans (\$35 vs. \$30, respectively). The average monthly low-income cost-sharing subsidy was much higher for PDP enrollees (\$55) compared with MA–PD enrollees (\$34).
- Average monthly spending per LIS enrollee (\$469) was more than double that of a non-LIS enrollee (\$211), while the average number of prescriptions filled per month by an LIS enrollee was 5.5 compared with 4.0 for a non-LIS enrollee. LIS enrollees had much lower OOP spending, on average, than non-LIS enrollees (\$6 vs. \$45, respectively). Part D’s LIS pays for most of the cost sharing for LIS enrollees, averaging \$153 per month in 2015.

**Chart 10-22. Trends in Part D spending and use per enrollee, 2007–2015**

	Average spending and number of prescriptions						Average annual growth rate, 2007–2015	
	2007	2011	2012	2013	2014	2015	Number	Percent
<b>Average spending per month</b>								
All Part D	\$212	\$239	\$235	\$242	\$268	\$290	\$10	4.0%
By LIS status								
LIS	301	364	362	377	427	469	21	5.7
Non-LIS	156	167	167	179	196	211	7	3.9
By plan type								
PDP	239	274	270	275	303	324	11	3.9
MA–PD	151	178	178	185	211	236	11	5.7
<b>Average number of prescriptions per month*</b>								
All Part D	3.9	4.3	4.3	4.5	4.5	4.5	0.1	1.7
By LIS status								
LIS	4.6	5.1	5.2	5.4	5.5	5.5	0.1	2.2
Non-LIS	3.4	3.8	3.8	4.0	4.0	4.0	0.1	2.1
By plan type								
PDP	4.1	4.5	4.5	4.6	4.6	4.6	0.1	1.4
MA–PD	3.4	3.9	4.0	4.1	4.2	4.2	0.1	2.6

Note: LIS (low-income [drug] subsidy), PDP (prescription drug plan), MA–PD (Medicare Advantage–Prescription Drug [plan]). “Spending” (gross) reflects payments from all payers, including beneficiaries (cost sharing), but does not include rebates and discounts from pharmacies and manufacturers that are not reflected in prices at the pharmacies. Part D prescription drug event (PDE) records are classified into plan types based on the contract identification on each record. For purposes of classifying the PDE records by LIS status, monthly LIS eligibility information in Part D’s denominator file was used. Estimates are sensitive to the method used to classify PDE records to each plan type and LIS status.  
\*Number of prescriptions is standardized to a 30-day supply.

Source: MedPAC analysis of Medicare Part D PDE data and denominator file from CMS.

- Between 2007 and 2015, average per capita spending for Part D–covered drugs grew at an average annual rate of 4 percent, or by over 36 percent cumulatively. Growth in average per capita spending has fluctuated over the years, ranging from –1.5 percent between 2011 and 2012 to nearly 11 percent between 2013 and 2014.
- Spending growth for non-LIS enrollees was lower than that for LIS enrollees (average annual growth rate of 3.9 percent compared with 5.7 percent) during the 2007 to 2015 period. The growth in the number of prescriptions filled by LIS and non-LIS enrollees was comparable during this period.
- The growth in per capita drug spending among MA–PD enrollees exceeded that of PDP enrollees during the 2007 to 2015 period (5.7 percent compared with 3.9 percent), but the average growth was the same for both PDP and MA–PD enrollees in terms of the dollar increase (\$11), and the average per capita spending for MA–PD enrollees continued to be below that of PDP enrollees by about \$90.

**Chart 10-23. Top 15 therapeutic classes of drugs covered under Part D, by spending and volume, 2015**

Top 15 therapeutic classes by spending			Top 15 therapeutic classes by volume		
	Dollars			Prescriptions	
	Billions	Percent		Millions	Percent
Diabetic therapy	\$17.5	12.7%	Antihypertensive therapy agents	219.4	10.4%
Antivirals	13.6	9.9	Antihyperlipidemics	213.9	10.1
Asthma/COPD therapy agents	9.0	6.6	Diabetic therapy	135.4	6.4
Antihyperlipidemics	7.8	5.6	Beta-adrenergic blockers	132.4	6.2
Antipsychotics	6.2	4.5	Antidepressants	124.4	5.9
Antineoplastic enzyme inhibitors	5.0	3.7	Peptic ulcer therapy	109.4	5.2
Antihypertensive therapy agents	4.9	3.6	Diuretics	103.4	4.9
Analgesic (anti-inflammatory/antipyretic, non-narcotic)	4.7	3.4	Calcium channel blockers	92.4	4.4
Anticonvulsant	4.4	3.2	Thyroid therapy	82.3	3.9
Analgesics (narcotic)	4.2	3.1	Analgesics (narcotic)	82.0	3.9
Peptic ulcer therapy	4.0	2.9	Anticonvulsant	79.2	3.7
Anticoagulants	3.7	2.7	Asthma/COPD therapy agents	58.3	2.8
Antidepressants	2.6	1.9	Antibacterial agents	54.8	2.6
Cognitive disorder therapy (antidementia)	2.6	1.9	Antianxiety agents	39.0	1.8
Antineoplastic (immunomodulators)	2.5	1.8	Analgesic (anti-inflammatory/antipyretic, non-narcotic)	38.9	1.8
Subtotal, top 15 classes	92.6	67.4	Subtotal, top 15 classes	1,565.3	73.9
Total, all classes	137.4	100.0	Total, all classes	2,119.2	100.0

Note: COPD (chronic obstructive pulmonary disease). "Spending" (gross) reflects payments from all payers, including beneficiaries (cost sharing), but does not include rebates and discounts from pharmacies and manufacturers that are not reflected in prices at the pharmacies. "Volume" is the number of prescriptions, standardized to a 30-day supply. Therapeutic classification is based on the First DataBank Enhanced Therapeutic Classification System 1.0. Components may not sum to totals due to rounding.

Source: MedPAC analysis of Medicare Part D prescription drug event data from CMS.

- In 2015, the top 15 therapeutic classes by spending accounted for slightly over two-thirds of the \$137.4 billion spent on prescription drugs covered by Part D plans. The top 15 therapeutic classes by volume accounted for nearly three-quarters of the roughly 2.1 billion prescriptions dispensed in 2015.
- While many of the same therapeutic classes on the top-15 list appear year after year, the ranking has changed from time to time. For example, market entries of new hepatitis C therapies more than doubled Part D spending on antivirals between 2013 and 2014 (data not shown). In 2015, antivirals accounted for \$13.6 billion, up from \$4.3 billion in 2013. The growth in spending for drugs to treat cancer has resulted in two classes of antineoplastic therapies (enzyme inhibitors and immunomodulators) appearing on the top-15 list for the first time in 2015, compared with just one class between 2012 and 2014 and none before 2012.
- In 2015, spending on drugs to treat diabetes totaled \$17.5 billion, an increase of about 24 percent from \$14.1 billion in 2014 (2014 data not shown), continuing the double-digit growth trend we have observed during the last few years. The number of prescriptions filled for diabetic therapy totaled 135.4 million, an increase of 7.4 percent from 126.1 million in 2014 (2014 data not shown).

(Chart continued next page)

## Chart 10-23. Top 15 therapeutic classes of drugs covered under Part D, by spending and volume, 2015 (continued)

- Antianxiety agents appeared on the top-15 list by volume for the first time in 2013. The number of prescriptions for antianxiety agents totaled 39 million in 2015, an increase of about 11 percent from 35.2 million in 2013 (2013 data not shown). Before 2013, the use of antianxiety drugs was relatively low (8.5 million in 2012; data not shown). The increase in the use of antianxiety agents since 2012 reflects the addition of benzodiazepines to the list of Part D–covered drugs beginning in 2013.
- Nine therapeutic classes are among the top 15 in both spending and volume. Diabetic therapy dominates the list by spending, accounting for more than 19 percent of spending for the top 15 therapeutic classes, followed by central nervous system agents (antipsychotics, anticonvulsants, and antidepressants) and cardiovascular agents (antihyperlipidemics and antihypertensive therapy agents), each accounting for about 14 percent of spending. Cardiovascular agents (antihyperlipidemics, antihypertensive therapy agents, beta-adrenergic blockers, calcium channel blockers, and diuretics) dominate the list by volume, accounting for about 50 percent of the prescriptions in the top 15 therapeutic classes.

## Chart 10-24. Part D patterns of prescribing by provider type, 2015

	Part D	Provider type	
		Primary care*	Specialty/others
Number of individual prescribers (thousands)	1,102	462	640
Percent of all individual prescribers		42%	58%
Average beneficiary (patient) count	153	195	122
Average per beneficiary			
Gross spending	\$723	\$771	\$687
Number of prescriptions	6.3	8.9	4.3
<b>Top 1 percent of prescribers based on number of prescriptions filled per beneficiary</b>			
Number of individual prescribers	9,680	7,940	1,740
Percent of all individual prescribers		82%	18%
Total gross spending (billions)	\$9.3	\$7.9	\$1.4
Percent of total gross spending (by column)	7%	11%	2%
Total number of prescriptions (millions)	138	121	17
Percent of all prescriptions filled	10%	12%	4%
Average per beneficiary			
Gross spending	\$3,764	\$3,424	\$5,319
Number of prescriptions	43	43	43

Note: "Gross spending" reflects payments from all payers, including beneficiaries (cost sharing), but does not include rebates and discounts from pharmacies and manufacturers that are not reflected in prices at the pharmacies. Numbers may not sum to totals due to rounding. "Number of prescriptions" is a count of prescription drug events and is not adjusted for the size (number of days' supply) of the prescriptions. As such, they are not comparable with the 2015 prescription counts shown in Chart 10-18 and Chart 10-21 through Chart 10-23.

\*The definition of "primary care" used here is based on the definition used for the Primary Care Incentive Payment Program and includes practitioners who have a primary Medicare specialty designation of family practice, internal medicine, pediatrics, geriatrics, nurse practitioner and clinical nurse specialist, or physician assistant.

Source: MedPAC analysis of Medicare Part D prescriber-level public use file from CMS.

- In 2015, about 1.1 million individual providers wrote prescriptions for Medicare beneficiaries that were filled under Part D. Of those, about 42 percent were primary care providers and 58 percent were specialty or other types of providers.
- The average count of (Medicare-only) beneficiaries (patients) was higher among primary care providers compared with specialty and other types of providers—195 beneficiaries versus 122 beneficiaries.

(Chart continued next page)

## Chart 10-24. Part D patterns of prescribing by provider type, 2015 (continued)

- On a per beneficiary basis, average gross spending for Part D prescriptions was higher for prescriptions written by primary care providers (\$771) compared with the average for specialty and other providers (\$687). Primary care providers also wrote more prescriptions per beneficiary, on average, than specialty and other providers: 8.9 compared with 4.3.
- Nearly 9,700 prescribers were among the top 1 percent of all prescribers, as ranked by the average number of Part D prescriptions filled per beneficiary in 2015. Of those prescribers, 82 percent were primary care providers and 18 percent were specialty and other providers.
- The top 1 percent of prescribers accounted for 7 percent of total gross spending and 10 percent of all prescriptions filled. Among primary care prescribers, results were more concentrated: The top 1 percent of prescribers accounted for 11 percent of gross spending and 12 percent of all prescriptions.
- Among the prescriptions that were written by prescribers in the top 1 percent of all prescribers in 2015, per beneficiary Part D spending averaged \$3,764 for 43 prescriptions filled.

**Chart 10-25. Part D patterns of prescribing for selected specialties, 2015**

	Number of individual Part D prescribers (thousands)	Share of all Part D prescribers (percent)	Average per beneficiary	
			Gross spending (in dollars)	Number of prescriptions
All Part D	1,102.2	100%	\$723	6.3
All specialty/others	640.0	58	687	4.3
Selected specialties:				
Psychiatry	25.7	4	1,373	13.3
Cardiology	20.8	3	686	8.8
Ophthalmology	19.7	3	414	4.1
Psychiatry & neurology	13.9	2	1,243	11.0
Neurology	13.4	2	2,800	7.7
Gastroenterology	13.1	2	2,559	3.8
Urology	10.7	2	404	4.0
Pulmonary disease	9.2	1	2,297	7.0
Nephrology	8.3	1	1,610	9.3
Hematology & oncology	8.1	1	6,041	6.3
Endocrinology	5.6	1	1,996	8.5
Infectious disease	5.1	1	6,687	9.6
Rheumatology	4.6	1	2,584	8.3
Medical oncology	3.0	<0.5	5,570	5.9

Note: "Gross spending" reflects payments from all payers, including beneficiaries (cost sharing), but does not include rebates and discounts from pharmacies and manufacturers that are not reflected in prices at the pharmacies.  
 "Number of prescriptions" is a count of prescription drug events and is not adjusted for the size (number of days' supply) of the prescriptions. As such, they are not comparable with the 2015 prescription counts shown in Chart 10-18 and Chart 10-21 through Chart 10-23.

Source: MedPAC analysis of Medicare Part D prescriber-level public use file from CMS.

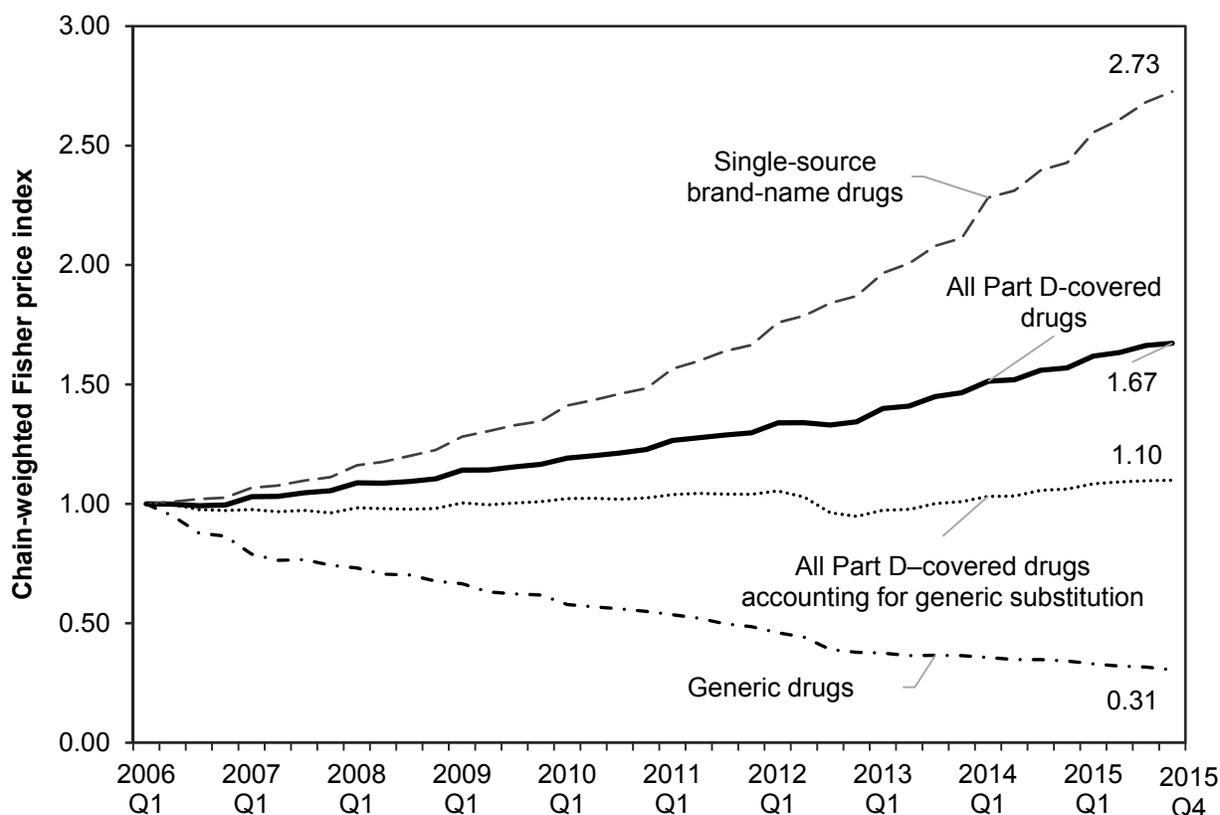
- Of specialty care prescribers, psychiatrists were among the most numerous, making up 4 percent of all Part D prescribers in 2015. Cardiologists, ophthalmologists, psychiatrist/neurologists, neurologists, gastroenterologists, and urologists each made up another 2 percent to 3 percent of Part D prescribers.
- Psychiatrists wrote an average of 13.3 prescriptions per beneficiary, with an average of \$1,373 in gross spending per patient. Those are higher than the overall Part D averages of 6.3 prescriptions and \$723 in average gross spending per beneficiary. Other specialties with comparatively high average gross spending per beneficiary include psychiatry/neurology, neurology, gastroenterology, pulmonary disease, nephrology, hematology/oncology, endocrinology, infectious disease, rheumatology, and medical oncology.

*(Chart continued next page)*

## **Chart 10-25. Part D patterns of prescribing for selected specialties, 2015 (continued)**

- Other specialties such as ophthalmology and urology had lower average gross spending per beneficiary. Cardiologists had average gross spending per beneficiary similar to that of all Part D specialty prescribers (\$686 vs. \$687, respectively), but wrote an average of 8.8 prescriptions per beneficiary—considerably more than the average of 4.3 per beneficiary for all Part D specialty prescribers. This distinction reflects the widespread availability of generic cardiology medications.

**Chart 10-26. Price growth for Part D–covered drugs, 2006–2015**

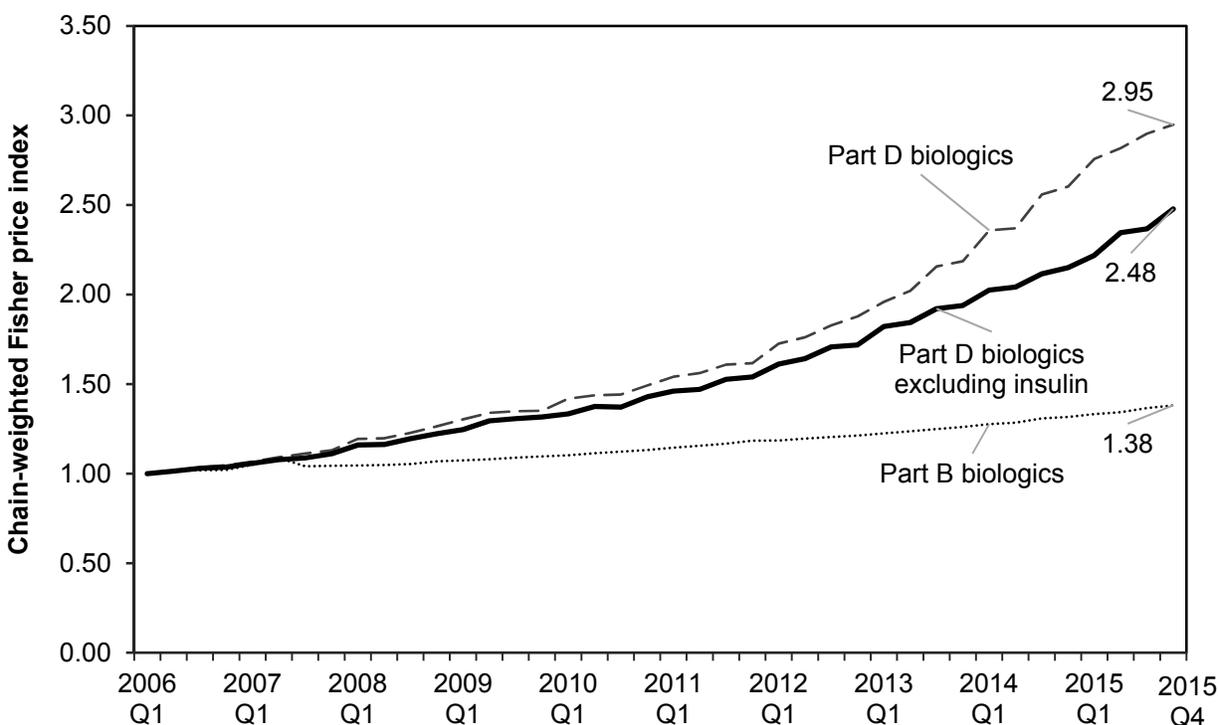


Note: Part D indexes reflect total amounts paid to pharmacies and do not reflect retrospective rebates or discounts from manufacturers and pharmacies. These measures of price growth reflect growth in the price of individual products, but do not reflect changes in price due to the introduction of new products or the changes in the mix of products used.

Source: Acumen LLC analysis for MedPAC.

- Measured by individual national drug codes, prices of drugs and biologics covered under Part D rose 67 percent cumulatively between 2006 and 2015 (an index of 1.67) (prices reflect total amounts paid to pharmacies and do not reflect retrospective rebates or discounts from manufacturers and pharmacies).
- As measured by a price index that takes generic substitution into account, Part D prices increased by just 10 percent cumulatively over the nine-year period. Before 2013, increased generic use kept overall prices stable by offsetting increases in prices of brand-name drugs. From 2013 to 2015, however, the introduction of new generics slowed, and prices for brand-name drugs grew more rapidly—as reflected by an uptick in the price index.
- Overall, between 2006 and 2015, prices of generic drugs covered under Part D decreased to 31 percent of the average price observed at the beginning of 2006. In comparison, prices of single-source, brand-name drugs (drugs with no generic substitutes) grew by a cumulative 173 percent during the same period.

**Chart 10-27. Comparison of price growth for Part B and Part D biologics, 2006–2015**



Note: Part D indexes reflect total amounts paid to pharmacies and do not reflect retrospective rebates or discounts from manufacturers and pharmacies. The Part B index reflects growth in the average sales price of Part B–covered biologics over time, measured for individual biologics at the Healthcare Common Procedure Coding System billing code level. These measures of price growth reflect growth in the price of individual products but do not reflect changes in price due to the introduction of new products or the changes in the mix of products used. The Part B biologics price index numbers in this chart and in Chart 10-6 are different due to the different time periods of analysis.

Source: Acumen LLC analysis for MedPAC.

- Measured by the change in the average sales price of individual Part B–covered biologics, the prices of Part B–covered biologics rose by an average of 38 percent cumulatively between 2006 and 2015 (an index of 1.38). Measured by individual national drug codes, prices of biologics covered under Part D rose 195 percent cumulatively during the same period (an index of 2.95) (prices reflect total amounts paid to pharmacies and do not reflect retrospective rebates or discounts from manufacturers and pharmacies).
- Prices of noninsulin biologics covered under Part D grew less rapidly (by an average of 148 percent cumulatively) compared with the growth in prices of all Part D biologics (a cumulative 195 percent) during the same period.
- These measures of price growth reflect growth in price at the individual product level and do not reflect changes in price that occur as a result of shifts in the mix of biologics used or the introduction of new, higher priced biologics.
- Currently, biologics that may be covered under either Part B or Part D are limited to a subset of drugs within therapeutic classes such as therapies to treat inflammatory conditions (e.g., rheumatoid arthritis) and certain types of cancer.

SECTION

11

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**Other services**

**Dialysis**

**Hospice**

**Clinical laboratory**

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## Chart 11-1. Number of dialysis facilities is growing, and most facilities are for profit and freestanding

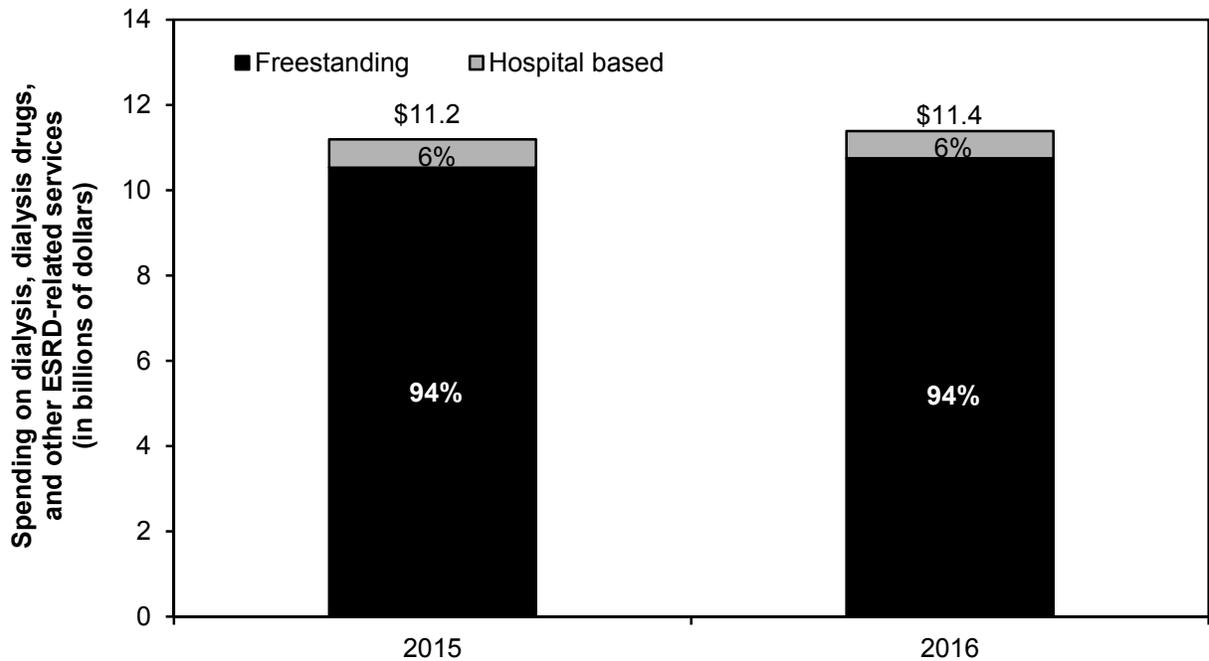
	2017	Average annual percent change	
		2012–2017	2016–2017
Total number of:			
Dialysis facilities	7,014	4%	4%
Hemodialysis stations	120,928	3	3
Mean number of hemodialysis stations per facility	17	-0.6	-0.8
	<u>Share of total</u>		
Hospital based	6%	-3	-2
Freestanding	94	4	5
Urban	82	4	5
Rural, micropolitan	11	2	1
Rural, adjacent to urban	4	2	2
Rural, not adjacent to urban	2	2	0
Frontier	0.5	3	3
For profit	88	5	5
Nonprofit	12	-1	-2

Note: "Nonprofit" includes facilities designated as either nonprofit or government. "Average annual percent change" is based on comparing 2012, 2016, and 2017 end-of-year files. Components may not sum to totals due to rounding.

Source: Compiled by MedPAC from the 2012, 2016, and 2017 CMS Dialysis Compare end-of-year files.

- Between 2012 and 2017, the number of facilities has increased, on average, 4 percent per year. The average size of a facility has remained relatively constant, averaging about 17 dialysis treatment stations per facility (17.7 stations in 2012, 17.4 stations in 2016, and 17.2 stations in 2017).
- Since 2012, facilities' capacity to provide care—as measured by hemodialysis treatment stations—grew 3 percent annually. Capacity at urban facilities grew by 4 percent per year, while capacity at rural facilities grew at a rate of 2 percent per year (data not shown).
- Since 2012, the number of freestanding and for-profit facilities increased, while hospital-based and nonprofit facilities decreased. Freestanding facilities increased from 91 percent to 94 percent of all facilities, and for-profit facilities increased from 85 percent to 88 percent of all facilities.

**Chart 11-2. Medicare spending for outpatient dialysis services furnished by freestanding and hospital-based dialysis facilities, 2015 and 2016**



Note: ESRD (end-stage renal disease).

Source: Compiled by MedPAC from the 2015 and 2016 institutional outpatient files from CMS.

- In 2016, total spending for dialysis, dialysis drugs, and ESRD-related clinical laboratory tests was \$11.4 billion. Medicare paid all facilities under a modernized prospective payment system that includes in the payment bundle certain dialysis drugs and ESRD-related clinical laboratory tests that were separately paid before 2011.
- Between 2015 and 2016, total ESRD expenditures increased by 2 percent.
- Freestanding dialysis facilities treated most dialysis beneficiaries and accounted for 94 percent of expenditures in 2016.

**Chart 11-3. The ESRD population is growing, and most ESRD patients undergo dialysis**

	2005		2011		2015	
	Patients (thousands)	Percent	Patients (thousands)	Percent	Patients (thousands)	Percent
Total	485.90	100%	612.4	100%	703.2	100%
Dialysis	343.0	71	427.7	70	495.4	70
In-center hemodialysis	311.3	64	382.9	63	435.7	62
Home hemodialysis*	2.1	0.4	7.0	1	8.6	1
Peritoneal dialysis*	28.3	6	36.1	6	49.3	7
Unknown	1.3	0.3	1.9	0.3	1.8	0.3
Functioning graft and kidney transplants	142.9	29	184.5	30	207.8	30

Note: ESRD (end-stage renal disease). Totals may not equal sum of components due to rounding. Data include both Medicare and non-Medicare patients.  
\*Home dialysis methods.

Source: Compiled by MedPAC from the United States Renal Data System.

- Persons with ESRD require either dialysis or a kidney transplant to maintain life. The total number of ESRD patients increased by 4 percent annually between 2005 and 2015.
- In hemodialysis, a patient's blood flows through a machine with a special filter that removes wastes and extra fluids. In peritoneal dialysis, the patient's blood is cleaned by using the lining of his or her abdomen as a filter. Peritoneal dialysis is the most common form of home dialysis.
- Most ESRD patients undergo hemodialysis administered in a dialysis facility three times a week. Between 2005 and 2015, the total number of in-center hemodialysis patients grew by 3 percent annually, while the total number of peritoneal dialysis patients increased by about 6 percent annually. Although a smaller proportion of all dialysis patients undergo home hemodialysis, the number of these patients grew 15 percent per year during this period.
- Functioning graft patients are patients who have had a successful kidney transplant. Patients undergoing kidney transplant may receive either a living kidney or a cadaveric kidney donation. In 2015, 30 percent of transplanted kidneys were from living donors and the remainder were from cadaver donors (data not shown).

## Chart 11-4. Asian Americans and Hispanics are among the fastest growing segments of the ESRD population

	Share of total in 2015	Average annual percent change 2010–2015
Total (N = 703,243)	100%	3%
<b>Age (years)</b>		
0–17	1	0.4
18–44	15	1
45–64	44	3
65–79	31	6
80+	9	3
<b>Sex</b>		
Male	58	4
Female	42	3
<b>Race/ethnicity</b>		
White	61	3
African American	31	3
Native American	1	2
Asian American	6	6
Hispanic	17	5
Non-Hispanic	80	3
Unknown	2	0
<b>Underlying cause of ESRD</b>		
Diabetes	38	4
Hypertension	26	4
Glomerulonephritis	16	2
Other causes	20	3

Note: ESRD (end-stage renal disease). Totals may not equal sum of the components due to rounding. ESRD patients include those who undergo maintenance dialysis and those who have a functioning kidney transplant.

Source: Compiled by MedPAC from the United States Renal Data System.

- Among ESRD patients, 40 percent are over age 65. About 60 percent are White.
- Diabetes is the most common cause of renal failure.
- The number of ESRD patients increased by 3 percent annually between 2010 and 2015. Among the fastest growing groups of patients are patients between the ages of 65 and 79, Asian Americans, and Hispanics.

## Chart 11-5. Characteristics of Medicare fee-for-service dialysis patients, 2016

	Share of all FFS dialysis patients
<b>Age (years)</b>	
Under 45	11%
45–64	38
65–74	27
75–84	18
85+	6
<b>Sex</b>	
Male	56
Female	45
<b>Race</b>	
White	48
African American	36
All other	17
<b>Residence</b>	
Urban county	84
Rural county, micropolitan	10
Rural county, adjacent to urban	5
Rural county, not adjacent to urban	2
Frontier county	1
<b>Prescription drug coverage status</b>	
Enrolled in Part D plan or other source of creditable drug coverage	89
LIS	58
<b>Dually eligible for Medicare and Medicaid</b>	48

Note: FFS (fee-for-service), LIS (low-income [drug] subsidy). Urban counties contain a core area with 50,000 or more people, rural micropolitan counties contain at least one cluster of at least 10,000 and fewer than 50,000 people, rural counties adjacent to urban areas do not have a city of 10,000 people in the county, and rural counties not adjacent to urban areas do not have a city of 10,000 people. Frontier counties are counties with six or fewer people per square mile. Totals may not sum to 100 percent due to rounding.

Source: MedPAC analysis of dialysis claims files and denominator files from CMS.

- Compared with all Medicare patients, FFS dialysis patients are disproportionately younger and African American (see Chart 2-5).
- In 2016, about 17 percent of FFS dialysis patients resided in a rural county.
- Nearly half of all dialysis patients were dually eligible for Medicare and Medicaid services.
- Nearly 90 percent of FFS dialysis patients were enrolled in Part D plans or had other sources of creditable drug coverage.

## Chart 11-6. Aggregate margins varied by type of freestanding dialysis facility, 2016

Type of facility	Share of freestanding dialysis treatments	Aggregate margin
All facilities	100%	0.5%
Urban	88	1.3
Rural	12	-4.9
Treatment volume (quintile)		
Lowest	20	-17.1
Second	20	-7.9
Third	20	-2.6
Fourth	20	1.9
Highest	20	6.7

Note: Margins include payments and costs for composite rate services, injectable drugs, and other end-stage renal disease-related services.

Source: Compiled by MedPAC from 2016 cost reports and the 2016 institutional outpatient file from CMS.

- For 2016, the aggregate Medicare margin for composite rate services and injectable drugs was 0.5 percent.
- Generally, freestanding dialysis facilities' margins vary by the size of the facility; facilities with greater treatment volume have higher margins on average. Differences in capacity and treatment volume explain some of the differences observed between the margins of urban and rural facilities. Urban facilities are larger on average than rural facilities with respect to the number of dialysis treatment stations and Medicare treatments provided. Some rural facilities have benefited from the low-volume adjustment that is included in the new end-stage renal disease payment method that began in 2011.

## Chart 11-7. Hospice spending and use increased in 2016

	2000	2015	2016	Average annual change, 2000–2015	Change, 2015–2016
Medicare payments (in billions)	\$2.9	\$15.9	\$16.8	11.9%	6.0%
Beneficiaries in hospice (in millions)	0.534	1.381	1.427	6.5%	3.3%
Number of hospice days for all hospice beneficiaries (in millions)	25.8	95.9	101.2	9.1%	5.5%
Average length of stay among decedents (in days)	53.5	86.7	87.8	3.3%	1.3%
Median length of stay among decedents (in days)	17	17	18	0 days*	1 day*

Note: Average length of stay is calculated for decedents who used hospice at the time of death or before death and reflects the total number of days the decedent was enrolled in the Medicare hospice benefit during his/her lifetime. Due to rounding, the percentage change displayed in the chart may not equal the percentage change calculated using the yearly data displayed in the chart.

\*This figure reflects the raw change rather than the percentage change.

Source: MedPAC analysis of the denominator file, the Medicare Beneficiary Database, and the 100 percent hospice claims standard analytic file from CMS.

- Total Medicare payments to hospices were about \$16.8 billion in 2016, 6 percent higher than the prior year.
- The number of Medicare beneficiaries receiving hospice services and total number of days of hospice care continued to grow in 2016.
- Average and median length of stay among decedents increased slightly between 2015 and 2016.

**Chart 11-8. Hospice use increased across beneficiary groups from 2000 to 2016**

	Share of decedents using hospice			Average annual percentage point change 2000–2015	Percentage point change 2015–2016
	2000	2015	2016		
All	22.9%	48.6%	49.7%	1.7	1.1%
FFS beneficiaries	21.5	47.6	48.7	1.7	1.1
MA beneficiaries	30.9	51.1	51.9	1.3	0.8
Dual eligibles	17.5	43.1	44.1	1.7	1.0
Non–dual eligibles	24.5	50.3	51.4	1.7	1.1
<b>Age (years)</b>					
<65	17.0	29.9	30.1	0.9	0.2
65–84	24.7	46.1	46.8	1.4	0.7
85+	21.4	57.1	59.1	2.4	2.0
<b>Race/ethnicity</b>					
White	23.8	50.5	51.8	1.8	1.3
Minority	17.3	38.4	39.1	1.4	0.7
<b>Gender</b>					
Male	22.4	44.5	45.4	1.5	0.9
Female	23.3	52.3	53.7	1.9	1.4
<b>Beneficiary location</b>					
Urban	24.2	49.7	50.7	1.7	1.0
Micropolitan	18.3	44.9	46.3	1.8	1.4
Rural, adjacent to urban	17.5	44.5	45.7	1.8	1.2
Rural, nonadjacent to urban	15.0	38.9	40.2	1.6	1.3
Frontier	13.1	33.6	33.8	1.4	0.2

Note: FFS (fee-for-service), MA (Medicare Advantage). “Beneficiary location” refers to the beneficiary’s county of residence. Urban, micropolitan, and rural designations are based on the urban influence codes. This chart uses the 2013 urban influence code definition. The frontier category is defined as population density equal to or less than six persons per square mile.

Source: MedPAC analysis of data from the denominator file and the Medicare Beneficiary Database from CMS.

- Hospice use grew in all beneficiary groups in 2016, continuing the trend of a growing proportion of beneficiaries using hospice at the end of life.
- Despite this growth, hospice use continued to vary by demographic and beneficiary characteristics. Medicare decedents who were older, White, female, MA enrollees, not dual eligible, or living in an urban area were more likely to use hospice than their respective counterparts.

**Chart 11-9. Number of Medicare-participating hospices has increased due to growth in for-profit hospices**

	2000	2014	2015	2016
All hospices	2,255	4,092	4,199	4,382
For profit	672	2,588	2,730	2,938
Nonprofit	1,324	1,305	1,294	1,273
Government	257	199	175	171
Freestanding	1,069	3,024	3,163	3,369
Hospital based	785	535	517	501
Home health based	378	510	494	487
SNF based	22	23	25	25
Urban	1,455	3,102	3,235	3,449
Rural	757	944	920	904

Note: SNF (skilled nursing facility). Numbers may not sum to totals because of missing data for a small number of providers. The rural and urban definitions in this chart are based on updated definitions of the core-based statistical areas (which rely on data from the 2010 census).

Source: MedPAC analysis of Medicare cost reports, Provider of Services file, and the standard analytic file of hospice claims from CMS.

- There were 4,382 Medicare-participating hospices in 2016. Most of them were for-profit hospices.
- Between 2000 and 2016, the number of Medicare-participating hospices grew by more than 2,000 providers. For-profit hospices accounted entirely for the net growth.
- Growth in the number of providers has occurred predominantly among freestanding providers. The number of hospital-based providers has declined. The number of home health-based providers has declined modestly since 2014. The number of SNF-based providers is small and has changed little over the years. (A hospice's status as freestanding versus hospital based, home health based, or SNF based reflects the type of cost report submitted by the provider and does not necessarily reflect the location of care.)
- The number of hospices located in rural areas has declined in the last several years, decreasing about 4 percent between 2014 and 2016. The number of providers located in rural areas is not necessarily an indicator of access to care. The share of rural decedents using hospice has been increasing since 2000 (see Chart 11-8).

## Chart 11-10. Hospice cases and length of stay, by diagnosis, 2016

Diagnosis	Share of total cases	Share of cases with length of stay greater than 180 days
Cancer	27%	9%
Alzheimer's, nervous system disorders, organic psychosis	23	34
Circulatory, except heart failure	18	25
Heart failure	10	22
Respiratory disease	6	15
Other	6	15
Chronic airway obstruction, NOS	5	28
Genitourinary disease	3	9
Digestive disease	2	9
All	100	21

Note: NOS (not otherwise specified). Cases include all patients who received hospice care in 2016, not just decedents. "Diagnosis" reflects primary diagnosis on the beneficiary's last hospice claim. The share of cases with length of stay greater than 180 days reflects the share of hospice patients who received hospice care in 2016 whose lifetime length of hospice stay exceeded 180 days at the end of 2016 (or at the time of death or discharge in 2016 if the beneficiary was not enrolled in hospice at the end of 2016).

Source: MedPAC analysis of 100 percent hospice claims standard analytic file from CMS and the Medicare Beneficiary Database.

- In 2016, the most common primary diagnoses among Medicare hospice patients were cancer (27 percent), neurological conditions (Alzheimer's disease, nervous system disorders, and organic psychosis) (23 percent of cases), circulatory conditions other than heart failure (18 percent), and heart failure (10 percent).
- Length of stay varies by diagnosis. One-quarter or more of hospice patients in 2016 with Alzheimer's disease and other nervous system disorders, chronic airway obstruction, and circulatory conditions (other than heart failure) had lengths of stay exceeding 180 days. Long hospice stays were least common among beneficiaries with cancer, genitourinary disease, and digestive disease.

**Chart 11-11. Hospice average and median length of stay among decedents increased slightly in 2016**

Year	Average length of stay (in days)	Percentiles of length of stay (in days)				
		10th	25th	50th	75th	90th
2000	53.5	3	6	17	56	141
2001	54.9	3	6	17	57	146
2002	58.2	3	6	17	59	157
2003	62.2	3	6	17	62	170
2004	66.0	3	5	17	63	180
2005	71.3	3	5	17	67	194
2006	75.6	3	5	17	70	208
2007	79.7	3	5	17	73	222
2008	83.4	2	5	17	75	235
2009	84.4	3	5	17	76	237
2010	86.1	3	5	17	77	240
2011	86.3	2	5	17	78	240
2012	88.0	2	5	18	80	246
2013	87.8	2	5	17	79	246
2014	88.2	2	5	17	79	247
2015	86.7	2	5	17	80	240
2016	87.8	2	5	18	82	244

Note: Data reflect hospice length of stay for Medicare decedents who used hospice at the time of death or before death. "Length of stay" reflects the total number of days the decedent was enrolled in the Medicare hospice benefit during his or her lifetime.

Source: MedPAC analysis of the denominator file and the Medicare Beneficiary Database from CMS.

- Average length of stay among decedents was 87.8 days in 2016, a slight increase from 2015. Average length of stay grew substantially between 2000 (53.5 days) and 2012 (88.0 days) and has oscillated modestly since then.
- There is wide variation in hospice length of stay. In 2016, hospice length of stay among decedents ranged from 2 days at the 10th percentile to 244 days at the 90th percentile.
- Since 2000, growth in average length of stay among decedents has largely been the result of increases in length of stay for patients with the longest stays. Length of stay at the 90th percentile was about 100 days greater in 2016 than in 2000.
- Short stays in hospice have changed little since 2000. Among decedents, median length of stay was 18 days in 2016 and has been 17 or 18 days since 2000. Hospice length of stay at the 10th percentile (two days) and 25th percentile (five days) has been unchanged for at least five years.

**Chart 11-12. Hospice length of stay among decedents, by beneficiary and hospice characteristics, 2016**

	Average length of stay (in days)	Length of stay percentiles (in days)		
		10th	50th	90th
<b>Beneficiary</b>				
Diagnosis				
Cancer	53	3	17	129
Neurological	148	4	35	435
Heart/circulatory	94	2	16	280
COPD	118	2	27	348
Other	53	2	8	146
Site of service				
Home	90	4	26	239
Nursing facility	106	3	20	309
Assisted living facility	152	5	51	430
<b>Hospice</b>				
For profit	106	3	22	308
Nonprofit	66	2	13	180
Freestanding	91	2	18	255
Home health based	69	2	15	186
Hospital based	55	2	12	147

Note: COPD (chronic obstructive pulmonary disease). Average length of stay is calculated for Medicare beneficiaries who died in 2016 and used hospice that year, and it reflects the total number of days the decedent was enrolled in the Medicare hospice benefit during his or her lifetime. "Diagnosis" reflects primary diagnosis on the beneficiary's last hospice claim.

Source: MedPAC analysis of 100 percent hospice claims standard analytic file data, Medicare Beneficiary Database, Medicare hospice cost reports, and Provider of Services file data from CMS.

- Hospice average length of stay among decedents varies by both beneficiary and provider characteristics. Most of this variation reflects differences in length of stay among patients with the longest stays (i.e., at the 90th percentile). Length of stay varies much less for patients with shorter stays (i.e., at the 10th or 50th percentile).
- Beneficiaries with neurological conditions and COPD have the longest stays while beneficiaries with cancer have the shortest stays, on average.
- Beneficiaries who receive hospice services in assisted living facilities have longer stays on average than beneficiaries who receive care at home or in a nursing facility.
- For-profit and freestanding hospices have longer average lengths of stay than nonprofit and provider-based (home health– and hospital-based) hospices.

## Chart 11-13. More than half of Medicare hospice spending in 2016 was for patients with stays exceeding 180 days

	Medicare hospice spending, 2016 (in billions)
All hospice users in 2016	\$16.8
Beneficiaries with LOS > 180 days	9.5
Days 1–180	3.2
Days 181–365	3.0
Days 366+	3.3
Beneficiaries with LOS ≤ 180 days	7.4

Note: LOS (length of stay). LOS reflects the beneficiary's lifetime LOS as of the end of 2016 (or at the time of death or discharge in 2016 if the beneficiary was not enrolled in hospice at the end of 2016). All spending reflected in the chart occurred only in 2016. Break-out groups do not sum to total because of rounding.

Source: MedPAC analysis of 100 percent hospice claims standard analytic file data and the common Medicare enrollment file from CMS.

- In 2016, Medicare hospice spending on patients with stays exceeding 180 days was about \$9.5 billion, more than half (57 percent) of all Medicare hospice spending that year.
- About \$3.3 billion, or about 20 percent, of Medicare hospice spending in 2016 was on hospice care for patients who had already received at least one year of hospice.

## Chart 11-14. Hospice aggregate Medicare margins, 2009–2015

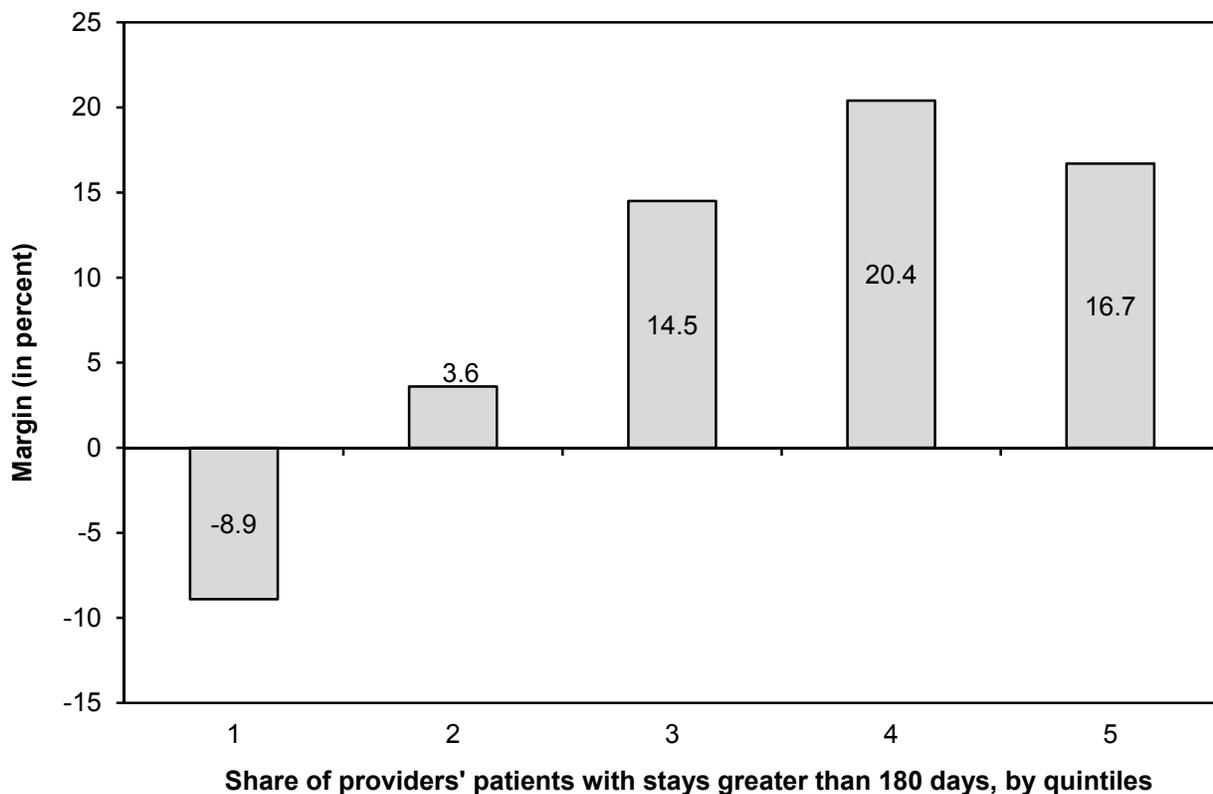
	Share of hospices (2015)	Medicare margin				
		2009	2012	2013	2014	2015
All	100%	7.4%	10.0%	8.5%	8.2%	10.0%
Freestanding	75	10.2	13.3	12.0	11.6	13.8
Home health based	12	6.2	5.5	2.5	3.7	3.3
Hospital based	12	-12.4	-17.1	-17.4	-20.8	-22.9
For profit	65	11.8	15.4	14.7	14.6	16.4
Nonprofit	31	3.6	3.6	0.9	-0.9	0.1
Government	4	N/A	N/A	N/A	N/A	N/A
Urban	79	7.9	10.3	8.8	8.7	10.5
Rural	21	3.2	7.3	5.9	3.3	4.9
Below cap	87.7	7.9	10.3	8.6	8.4	10.0
Above cap	12.3	1.5	5.2	7.0	6.0	9.9
Above cap (including cap overpayments)	12.3	18.4	21.3	20.1	18.8	21.4

Note: N/A (not available). Margins for all provider categories exclude overpayments to above-cap hospices except where specifically indicated. Margins are calculated based on Medicare-allowable, reimbursable costs. The percentages of freestanding and provider-based (home health–based and hospital-based) hospices do not sum to 100 percent because skilled nursing facility–based hospices are not broken out separately.

Source: MedPAC analysis of Medicare hospice cost reports, 100 percent hospice claims standard analytic file, and Medicare Provider of Services data from CMS.

- The aggregate Medicare margin was 10.0 percent in 2015, up from 8.2 percent in 2014.
- In 2015, freestanding hospices had higher margins (13.8 percent) than home health–based (3.3 percent) and hospital-based hospices (-22.9 percent).
- The 2015 margin among for-profit hospices was high at 16.4 percent. Nonprofit hospices as a group had a margin of 0.1 percent in 2015, but the subset of nonprofit hospices that were freestanding had a higher margin, 5.0 percent (latter figure not shown in chart).
- The aggregate 2015 margin was higher for urban hospices (10.5 percent) than rural hospices (4.9 percent).
- Hospices that exceeded the cap (Medicare’s aggregate average per beneficiary payment limit) had a 2015 margin of more than 21 percent before the return of the cap overpayments.

**Chart 11-15. Medicare margins were higher among hospices with more long stays, 2015**



Note: Margins exclude overpayments to hospices that exceeded the cap on the average annual Medicare payment per beneficiary. Margins are calculated based on Medicare-allowable, reimbursable costs. For hospice providers in the lowest (first) quintile, the share of stays greater than 180 days was less than 12.6 percent; it was between 12.6 percent and 19.7 percent in the second quintile; it was between 19.7 percent and 26.4 percent in the third quintile; it was between 26.4 percent and 34.1 percent in the fourth quintile; and it was greater than 34.1 percent in the highest (fifth) quintile.

Source: MedPAC analysis of Medicare hospice cost reports and 100 percent hospice claims standard analytic file from CMS.

- Medicare’s per diem payment system for hospice has provided an incentive for longer lengths of stay.
- Hospices with more patients who had stays greater than 180 days generally had higher margins in 2015. Hospices in the lowest length-of-stay quintile had a margin of –8.9 percent compared with a 20.4 percent margin for hospices in the second highest length-of-stay quintile.
- Margins were somewhat lower in the highest length-of-stay quintile (16.7 percent) compared with the second highest quintile (20.4 percent) because some hospices in the highest quintile exceeded Medicare’s aggregate payment cap and were required to repay the overage. Hospices exceeding the cap had a margin of more than 21 percent before the return of overpayments (see Chart 11-14).

## Chart 11-16. Hospices that exceeded Medicare’s annual payment cap, selected years

	2002	2012	2013	2014	2015
Share of hospices exceeding the cap	2.6%	11.0%	10.7%	12.2%	12.3%
Average payments over the cap per hospice exceeding the cap (in thousands)	\$470	\$510	\$460	\$370	\$320
Payments over the cap as a share of overall Medicare hospice spending	0.6%	1.4%	1.3%	1.2%	1.0%

Note: The cap year is defined as the period beginning November 1 and ending October 31 of the following year. These estimates of hospices that exceeded the aggregate cap are based on the Commission’s analyses. While the estimates are intended to approximate those of the Medicare claims-processing contractors, they are not necessarily identical to the contractors’ estimates because of differences in available data and methodology.

Source: MedPAC analysis of 100 percent hospice claims standard analytic file data, Medicare hospice cost reports, Provider of Services file data from CMS, and CMS Providing Data Quickly system. Data on total spending for each fiscal year are from the CMS Office of the Actuary.

- The share of hospices exceeding the aggregate cap was just over 12 percent in 2015, similar to 2014.
- Medicare payments over the cap represented 1.0 percent of total Medicare hospice spending in 2015.
- On average, above-cap hospices exceeded the cap by about \$320,000 per provider in 2015, down from about \$370,000 per provider in 2014.

## Chart 11-17. Hospice live-discharge rates, 2013–2016

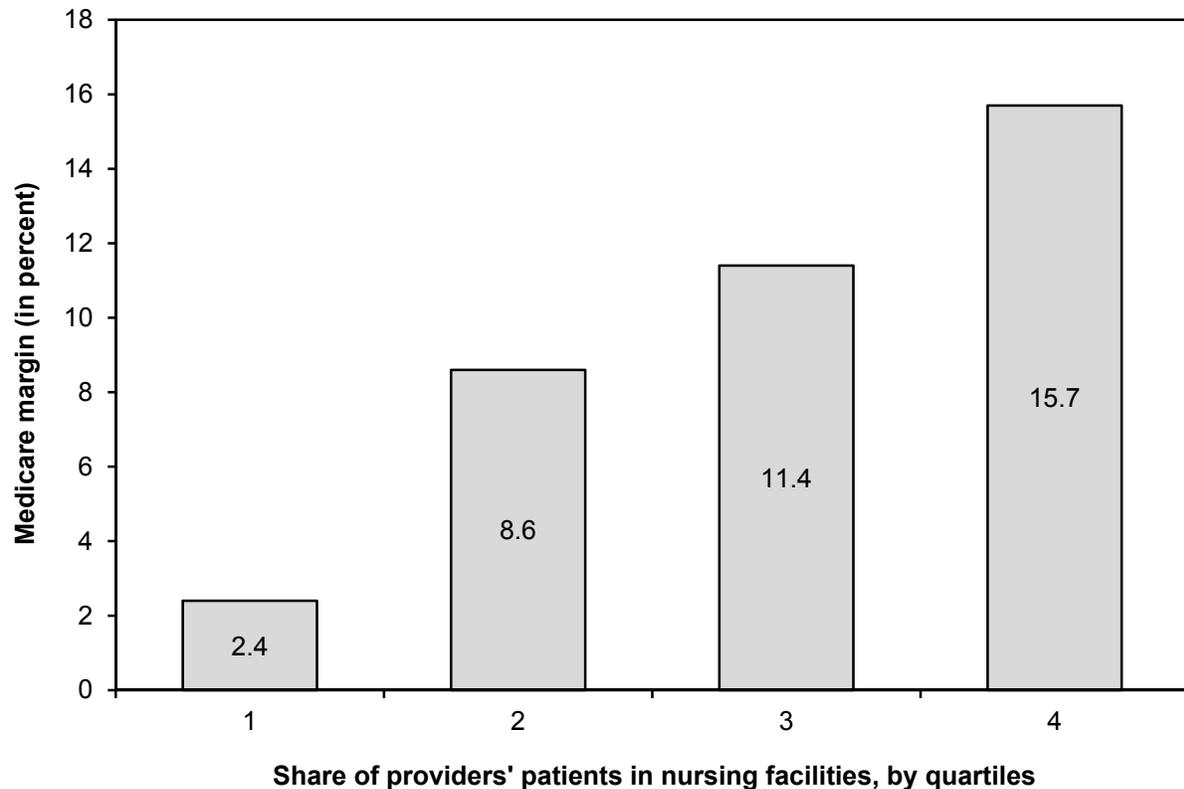
	2013	2014	2015	2016
Live discharge as a share of all discharges, by reason for live discharge				
All live discharges	18.4%	17.2%	16.7%	16.9%
No longer terminally ill	7.8	7.3	6.9	6.8
Beneficiary revocation	7.3	6.6	6.3	6.4
Transfer hospice providers	2.0	2.0	2.1	2.1
Move out of service area	0.9	0.9	1.0	1.2
Discharge for cause	0.4	0.3	0.3	0.3
Providers' overall rate of live discharge as a share of all discharges, by percentile				
10th percentile	9.3	8.5	8.4	8.3
25th percentile	13.2	12.3	12.0	12.2
50th percentile	19.4	18.7	18.4	19.1
75th percentile	30.2	30.2	29.6	31.3
90th percentile	47.2	50.0	50.0	53.3

Note: Percentages may not sum to totals due to rounding. "All discharges" includes patients discharged alive or deceased.

Source: MedPAC analysis of 100 percent hospice claims standard analytic file.

- Between 2015 and 2016, the overall live-discharge rate increased slightly from 16.7 percent to 16.9 percent. This slight increase in the live-discharge rate follows a several-year period when the live-discharge rate was declining.
- Between 2015 and 2016, the rate of live discharge by the reported reason for discharge changed modestly. Live discharges due to the beneficiary moving out of the service area or revoking the hospice benefit increased slightly, while live discharges due to the beneficiary no longer being terminally ill decreased slightly.
- Live discharges accounted for half or more of total discharges among the 10 percent of hospices with the highest live-discharge rates (i.e., the 90th percentile) in 2016.

**Chart 11-18. Margins were higher among hospices with a greater share of their patients in nursing facilities, 2015**

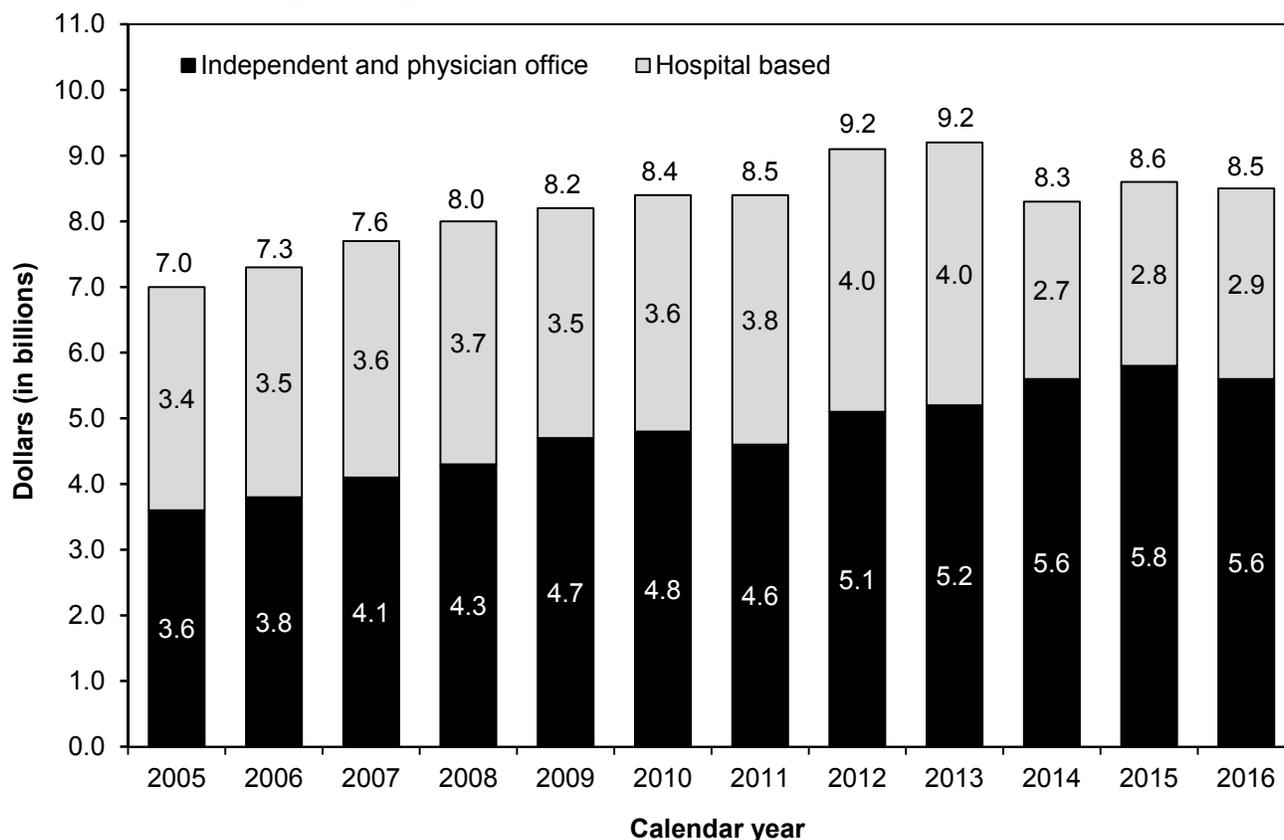


Note: Margins exclude overpayments to hospices that exceed the cap on the average annual Medicare payment per beneficiary. Margins are calculated based on Medicare-allowable, reimbursable costs.

Source: MedPAC analysis of Medicare hospice cost reports and 100 percent hospice claims standard analytic file from CMS.

- Hospices with a large share of their patients in nursing facilities have higher margins than other hospices.
- The higher profitability of hospices serving many nursing facility patients may be due to a combination of factors, such as longer lengths of stay, possible efficiencies in treating patients in a centralized location (e.g., lower mileage costs and less staff time for travel), and overlap in responsibilities between the hospice and the nursing facility.

**Chart 11-19. Medicare spending for clinical laboratory services, 2005–2016**



Note: Spending is for services paid under the clinical laboratory fee schedule. Hospital-based services are furnished in labs owned or operated by hospitals. Total spending appears on top of each bar. The components of each bar may not sum to the total at the top of each bar due to rounding. The spending data include only program payments; there is no beneficiary cost sharing for clinical lab services.

Source: The annual report of the Boards of Trustees of the Medicare trust funds 2017.

- Medicare spending for clinical laboratory services in all settings grew by an average of 3.4 percent per year between 2005 and 2013. This growth was primarily driven by rising volume since there were very few increases in payment rates during those years.
- Medicare spending for lab services declined by 9.1 percent in 2014 because, beginning in 2014, many lab tests provided in hospital outpatient departments are no longer paid separately under the clinical lab fee schedule. Instead, many of these tests are packaged with their associated visits or procedures under the hospital outpatient prospective payment system.
- Medicare spending for lab services increased by an average of 0.9 percent per year from 2014 to 2016. In 2016, independent and physician-office labs accounted for 66 percent of Medicare spending for all lab services; hospital-based labs accounted for the remaining 34 percent.





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