

# Chapter 9: Healthcare Expenditures for Persons with ESRD

- Between 2015 and 2016, Medicare fee-for-service spending for beneficiaries with end-stage renal disease (ESRD) rose by 4.6%, from \$33.8 billion to \$35.4 billion, accounting for 7.2% of overall Medicare paid claims, a figure that has remained stable since 2004 (Figure 9.2). This marks the fifth year of modest growth relative to historical trends, and follows the 2011 implementation of the bundled payment system.
- When \$79 billion in expenditures for chronic kidney disease (CKD) are added (Volume 1, Chapter 7, [https://www.usrds.org/2018/view/v1\\_07.aspx](https://www.usrds.org/2018/view/v1_07.aspx), Tables 7.1 and 7.3), total Medicare expenditures for both CKD and ESRD are over \$114 billion, an increase of 16%.
- In 2016, ESRD spending per person per year (PPPY) increased by 2.5% (Figure 9.4). For the second year in a row, most of the increase in Medicare expenditures for beneficiaries with ESRD was attributable to higher PPPY spending, rather than growth in the number of covered lives.
- For hemodialysis (HD) care, both total and PPPY spending increased between 2015 (\$26.8 billion and \$88,782) and 2016 (\$28.0 billion and \$90,971) (Figures 9.7 and 9.8).
- During this period, total peritoneal dialysis (PD) spending grew by 5.7%, as the share of patients receiving PD continued to rise. However, while PPPY spending on PD rose 1.4% from 2015 to 2016, PD remained less costly on a per-patient basis than HD (Figures 9.7 and 9.8).
- Total and PPPY kidney transplant spending have increased by 4.6% and 2.1%. Total spending for transplant patients increased from \$3.3 billion to \$3.4 billion, and per capita spending increased from \$34,080 to \$34,780 (Figures 9.7 and 9.8).
- Total inpatient spending for patients with ESRD grew rapidly from 2004 until 2009, followed by slower growth from 2009 until 2011, remained quite stable from 2011 to 2015, but then increased by 5.3% in 2016 (Figure 9.5).

## Introduction

The Medicare program for the elderly was enacted in 1965. Seven years later, in 1972, Medicare eligibility was extended both to disabled persons aged 18 to 64 and to persons with irreversible kidney failure who required dialysis or transplantation. When Medicare eligibility was first extended to beneficiaries with ESRD, only about 10,000 individuals were receiving dialysis (Rettig, 2011). By 2016, this patient group grew to 511,270. Even though the ESRD population remains at less than 1% of the total Medicare population, it has accounted for about 7% of Medicare fee-for-service spending in recent years (Figure 9.2).

On January 1, 2011, the Centers for Medicare and Medicaid Services (CMS) implemented the ESRD Prospective Payment System (PPS). This program

bundled Medicare's payment for renal dialysis services together with separately billable ESRD-related supplies (primarily erythropoiesis stimulating agents (ESAs), vitamin D, and iron) into a single, per-treatment payment amount. The bundle payment supports up to three dialysis treatments per individual per week, with additional treatments covered on the basis of medical necessity. The reimbursement to facilities is the same regardless of dialysis modality, but is adjusted for case-mix, geographic area health care wages, and facility size. Research linked the implementation of the PPS with substantial declines in the utilization of expensive injectable medications and increased use of in-home PD by generally healthier patients (Hirth et al., 2013; Civic Impulse, 2013).

Most of the savings from these changes appear to have accrued to dialysis facilities, as CMS initially set

the bundled payment rate at 98% of what spending would have been under the costlier utilization patterns observed prior to the PPS, while changes in practices implied cost reductions in excess of 2%. In the American Taxpayer Relief Act of 2012, Congress authorized CMS to “re-base” the PPS bundled payment rate by an inflation-adjusted decrease of 9%. Re-basing the bundled payment rate would have transferred the savings from dialysis facilities to Medicare and, ultimately, to taxpayers. Before the bundled payment rate reduction could be fully implemented, however, the Protecting Access to Medicare Act of 2015 required that it be phased in by limiting annual adjustments to the bundled payment rate. That legislation also delayed CMS’s plans to include more oral medications (primarily phosphate binders) in the bundle in 2016, to no sooner than 2024.

This chapter presents recent patterns and longer-term trends, including data up to 2016, in both total Medicare spending and spending by type of service.<sup>1</sup>

## Methods

This chapter uses multiple data sources, including data from the Centers for Medicare & Medicaid Services (CMS), the Centers for Disease Control and Prevention (CDC), and the United States Census. Details of these are described in the [Data Sources](#) section of the [ESRD Analytical Methods](#) chapter.

Aggregate costs of ESRD presented in this report include costs for ESRD beneficiaries covered by original Medicare (fee-for-service) for their Medicare Parts A, B, and D benefits. ESRD beneficiaries who are covered by the Medicare Advantage program managed care plans are included separately in this report.

Medicare Parts A, B, and D expenditures can be calculated from the claims submitted for payment for health care provided to these individuals, but not for those enrolled in Medicare Advantage (managed care) plans. The Medicare program pays for services provided through Medicare Advantage plans on a risk-adjusted,

per-capita basis, and not by specific claims for services; these data are reported in Figures 9.1 and 9.3 only.

Only a subset of ESRD patients is eligible to participate in a Medicare Advantage plan. If a person becomes eligible for Medicare solely due to ESRD, they are generally not permitted to enroll in a Medicare Advantage plan and must use fee-for-service Medicare. Current Medicare beneficiaries who develop ESRD are allowed to remain in their Medicare Advantage plan, but, with few exceptions, cannot switch to a Medicare Advantage plan if they were enrolled in fee-for-service Medicare at the time of ESRD onset.

Those who become newly entitled to Medicare due to ESRD and require dialysis experience a three-month waiting period before Medicare coverage begins; an exception is made for those initiating home dialysis training or transplant, where coverage may start as early as the first month of dialysis. If the new ESRD patient has private insurance through an employer or union, there are rules governing what Medicare will pay. During the first 30 months after the start of Medicare eligibility due to ESRD, their private insurance will be considered the primary payer of ESRD services. Medicare acts as the secondary payer and may reimburse some services not covered by the private insurance carrier. At month 31 the roles are reversed, and Medicare becomes the primary payer with the private insurance designated the secondary payer. Medicare becomes primary at any time if the person loses private coverage.

Additionally, Medicare eligibility based solely on ESRD ends for those ESRD patients who receive a kidney transplant or discontinue dialysis. Medicare coverage ends 12 months after the last dialysis treatment and 36 months after a successful transplant. However, if a transplant recipient also qualifies for disability or is over the age of 65, then Medicare entitlement will continue. If a transplant fails and the recipient returns to dialysis, Medicare eligibility is reinstated.

<sup>1</sup> The reader may find information on Medicare Health Maintenance Organizations (HMO; managed care), and private

insurer spending through 2011 in the 2013 Annual Data Report (USRDS, 2013).

In this chapter, we use data from both the Medicare Enrollment Database (EDB) and dialysis claims information to categorize payer status as Medicare primary payer (MPP), Medicare secondary payer (MSP), or non-Medicare. Non-Medicare patients in the EDB include those who are pre- or post-Medicare entitlement, such as patients in the initial three-month waiting period.

A more complete picture of total ESRD-related spending would take into account more than just expenditures by the Medicare program. It would include expenses such as those incurred by private insurance carriers when Medicare is the secondary payer, costs during the waiting period for initial Medicare coverage, and as provided by insurance carriers of people living with a functioning kidney transplant following the termination of Medicare coverage. It would also include the beneficiaries' portion of the cost-sharing with Medicare, including the Parts B and D premiums of those enrolled in Medicare solely due to ESRD, the beneficiaries' deductible, and their co-insurance amounts for ESRD services. In 2016, the Part A and Part B deductibles were \$1,288 and \$166.00, respectively, and the Part B premium was \$104.90 per month. Finally, indirect costs of care such as patient and caregiver travel time and care-giver support for home dialysis would also be

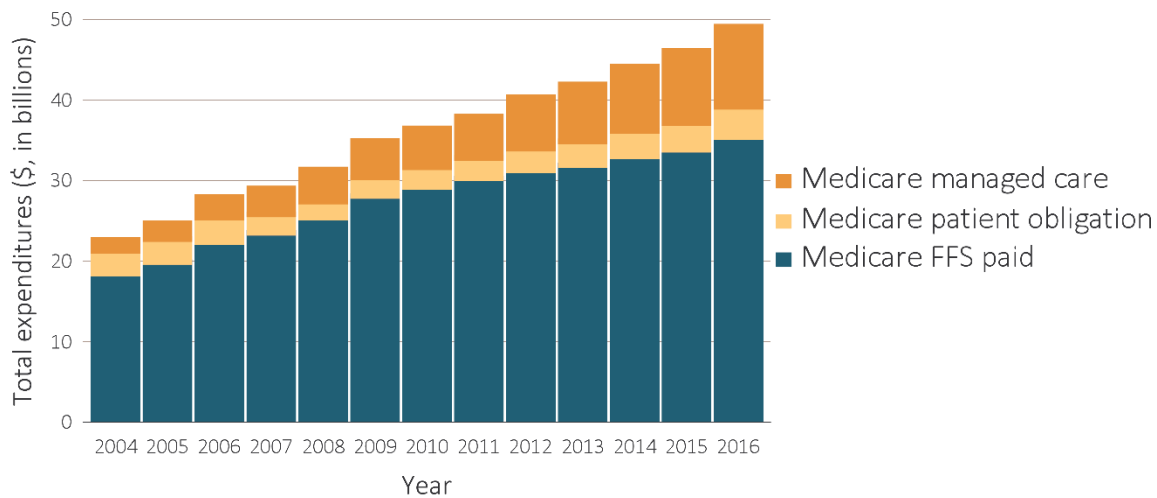
included in a comprehensive measure of costs associated with ESRD.

For an explanation of the analytical methods used to generate the study cohorts, figures, and tables in this chapter, see the section on [Chapter 9](#) within the [ESRD Analytical Methods](#) chapter. Downloadable Microsoft Excel and PowerPoint files containing the data and graphics for these figures and tables are available on the [USRDS website](#).

### Overall & Per Person Per Year Costs of ESRD

Figure 9.1 displays Medicare's total annual paid claims for period prevalent ESRD patients from 2004-2016. This represents about three quarters of all spending for the care of U.S. ESRD patients (USRDS, 2014). Medicare fee-for-service (FFS) ESRD spending rose by 4.6% from 2015 to 2016. The Medicare patient obligation amount has also grown over the years in proportion to these paid claims. Patient obligations may be paid by the patient, by a secondary insurer, or may be uncollected. Overall, the patient obligation represented 9.6% of the total fee-for-service Medicare Allowable Payments in 2016. Medicare payments to managed care plans under the Medicare Advantage coverage option also increased from 2004 to 2016.

vol 2 Figure 9.1 Trends in fee-for-service ESRD expenditures, 2004-2016

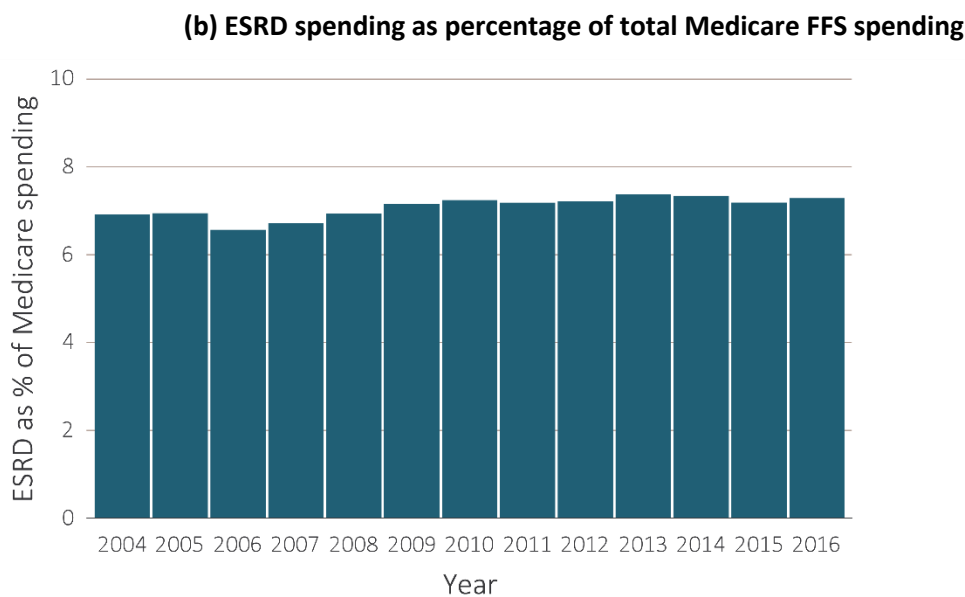
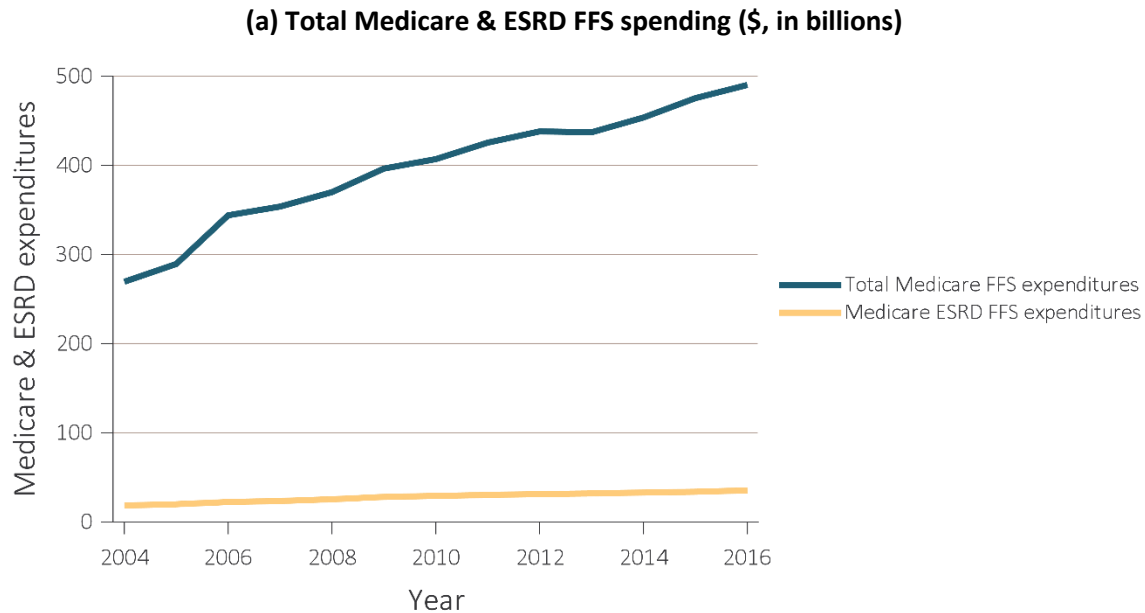


Data Source: USRDS ESRD Database; Reference Table K.1. Abbreviations: ESRD, end-stage renal disease; FFS, fee-for-service.

As illustrated in Figure 9.2, total Medicare fee-for-service spending in the general Medicare population increased by 3.1% in 2016 to \$490.1 billion. The spending for ESRD patients of \$35.4 billion accounted

for 7.2% of the overall Medicare paid claims in the fee-for-service system, a share that has remained approximately constant during the current decade.

**vol 2 Figure 9.2 Trends in (a) total Medicare & ESRD fee-for-service spending (\$, in billions), and (b) ESRD spending as percentage of Medicare fee-for-service spending, 2004-2016**



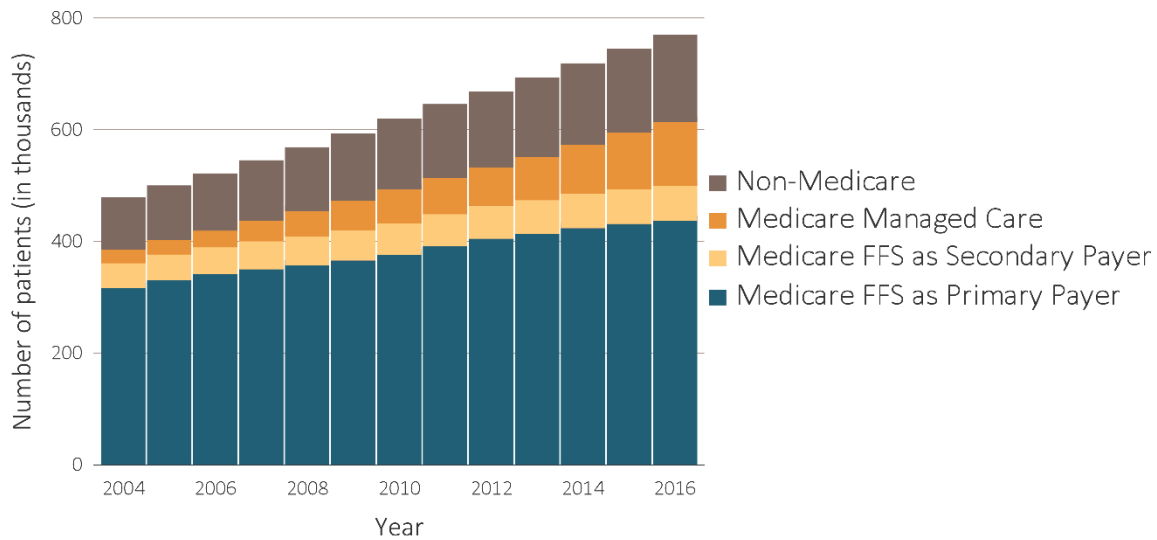
Data Source: Total ESRD spending obtained from USRDS ESRD Database; Reference Table K.1. Total Medicare expenditures obtained from Trustees Report, Table II.B1 <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/TrusteesReports.html>. Abbreviations: ESRD, end-stage renal disease; FFS, fee-for-service.

### Funding Sources for the ESRD Population

Figure 9.3 illustrates the annual number of prevalent ESRD patients by their Medicare status. Data from the Medicare Enrollment Database (EDB) and dialysis claims information were used to categorize payer status as Medicare fee-for-service as primary payer (MPP), Medicare fee-for-service as secondary payer (MSP), Medicare Advantage managed

care plans, or non-Medicare. Non-Medicare patients in the EDB included those who were pre- or post-Medicare entitlement. The number of ESRD patients with MPP grew by 1.2% from 2015 (435,873) to 2016 (441,162). The MSP ESRD population increased by 2.8% from 2015 (61,610) to 2016 (63,340), while the Medicare managed care and non-Medicare ESRD population increased by 12.4% and 3.8%, to 114,316 and 146,354, respectively.

vol 2 Figure 9.3 Trends in numbers of point prevalent ESRD patients, 2004-2016



Data Source: USRDS ESRD Database. December 31 point prevalent ESRD patients. Abbreviations: ESRD, end-stage renal disease; FFS, fee-for-service.

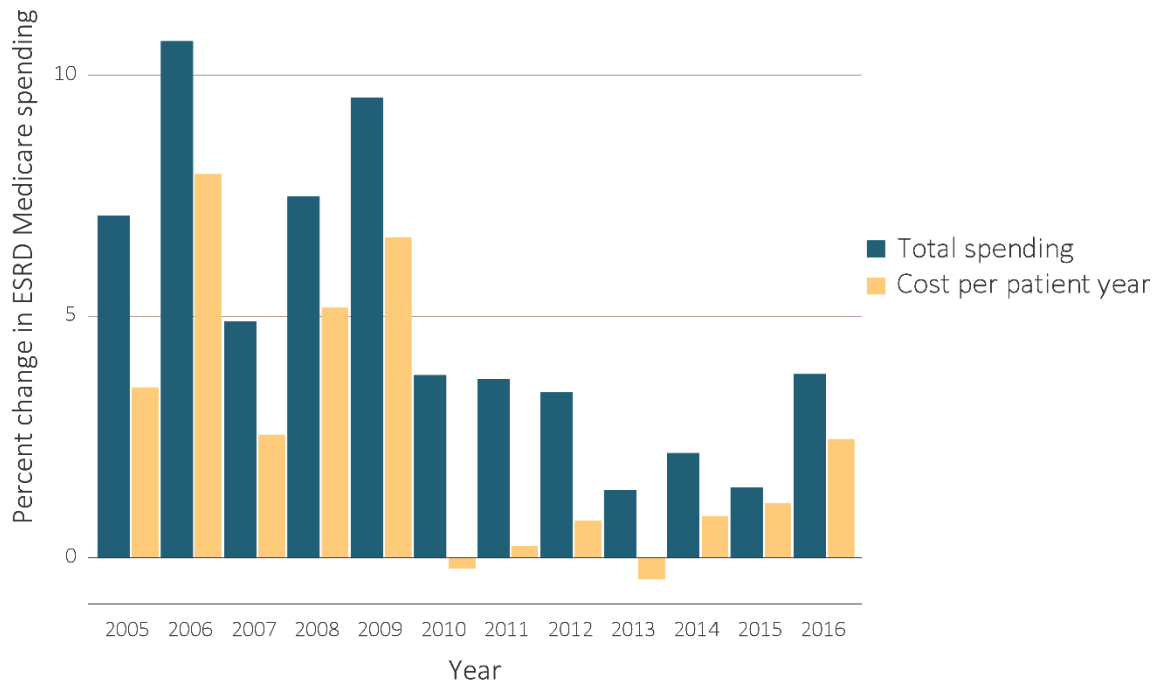
Figure 9.4 displays the annual percent change in Medicare ESRD fee-for-service spending for all ESRD patients for whom Medicare is the primary payer. Part D costs are included in these measures. However, as Part D is a voluntary component of the Medicare program, some recipients do not participate or have an alternate source of pharmaceutical coverage (e.g., from an employer) and would not have medication claims represented in the Part D records.

For the seventh consecutive year, the annual increase in total Medicare ESRD spending for beneficiaries with primary payer status was less than 5%. In 2016, total Medicare paid claims for ESRD

services and supplies increased by 3.7% to \$32.2 billion (see Figure 9.4; for total and specific values see [Reference Table K.4](#)).

In 2016, ESRD PPPY spending increased by 2.5%. For the second year in a row, most of the increase in Medicare expenditures for beneficiaries with ESRD was attributable to higher PPPY spending rather than growth in the number of covered lives. This reverses the trend from 2010-2013 when increases in covered lives were the primary cause of spending growth. In 2014, changes in PPPY spending and covered lives contributed about equally to total spending growth.

vol 2 Figure 9.4 Annual percent change in Medicare ESRD spending, 2004-2016

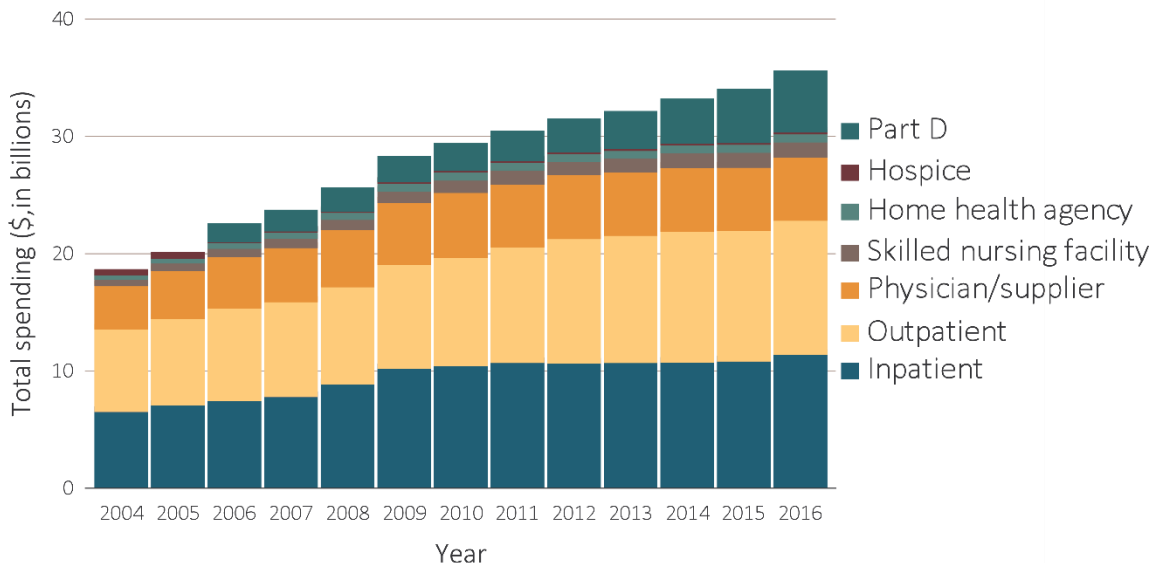


Data Source: USRDS ESRD Database; Reference Table K.4. Total Medicare ESRD costs from claims data; includes all claims with Medicare as primary payer only. Abbreviation: ESRD, end-stage renal disease.

Total Medicare fee-for-service spending for ESRD patients is reported by type of service in Figure 9.5. Between 2015 and 2016, spending for Part D claims grew faster (15.7%) than spending for any other claim type. The increase in Part D (prescription drug)

expenditures is consistent with drug cost trends nationally (CMS, 2016). All other categories of spending rose by less than 6%. The smallest share of Medicare spending for ESRD patients was for hospice care, which increased by 5.8% in 2016.

vol 2 Figure 9.5 Trends in total Medicare fee-for-service spending for ESRD, by type of service, 2004-2016

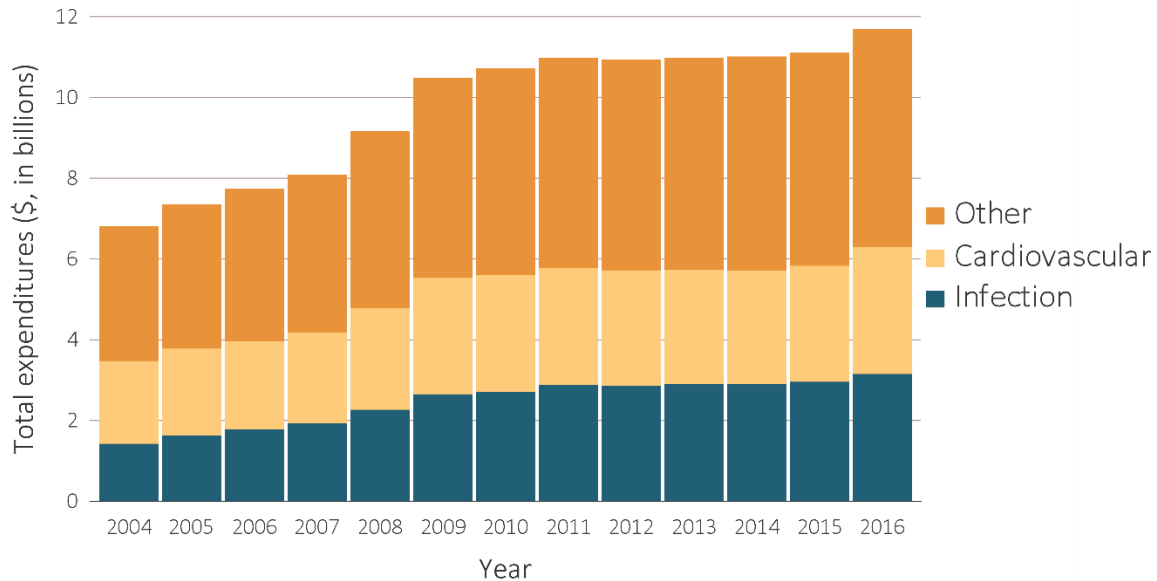


Data Source: USRDS ESRD Database; Reference Table K.1. Total Medicare costs from claims data. Abbreviation: ESRD, end-stage renal disease.

Of 2016 spending on inpatient hospitalization for those with ESRD, 27.7% resulted from admissions to treat infections and 27.1% to treat cardiovascular conditions (Figure 9.6). Total spending on hospitalizations has remained quite stable between 2009 and 2015 as decreasing hospitalization rates

offset increasing costs of each hospitalization (see [Volume 2, Chapter 4, Hospitalization](#)). However, hospitalization spending rose 5.3% in 2016, reflecting 2.8% increase in hospitalizations for 2016 as compared to 2015 and 2.4% increase in spending per hospitalization.

**vol 2 Figure 9.6 Total Medicare fee-for-service inpatient spending by cause of hospitalization, 2004-2016**



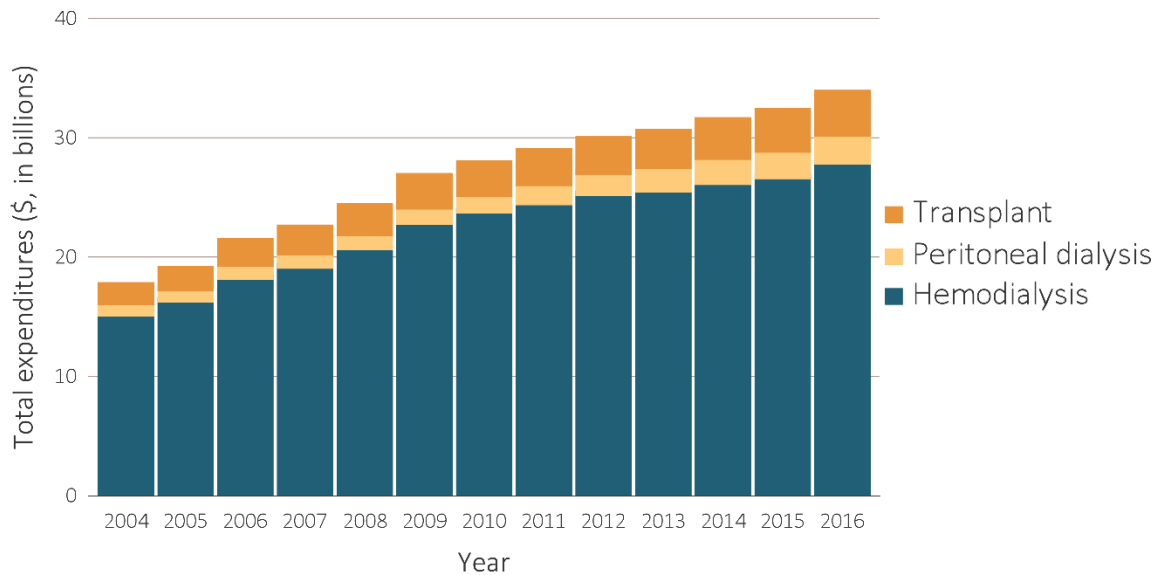
Data Source: USRDS ESRD Database. Total Medicare costs from claims data. Unknown hospitalization cost (<0.01%) was combined with 'Other'. Abbreviation: ESRD, end-stage renal disease.

### ESRD Spending by Modality

For patients receiving HD, both total and PPPY fee-for-service spending increased by 4.6% and 2.5%, respectively, between 2015 and 2016 (Figures 9.7 and 9.8). Note that total spending includes costs for beneficiaries with Medicare as either primary or secondary payer, and PPPY amounts include only beneficiaries with Medicare as primary payer.

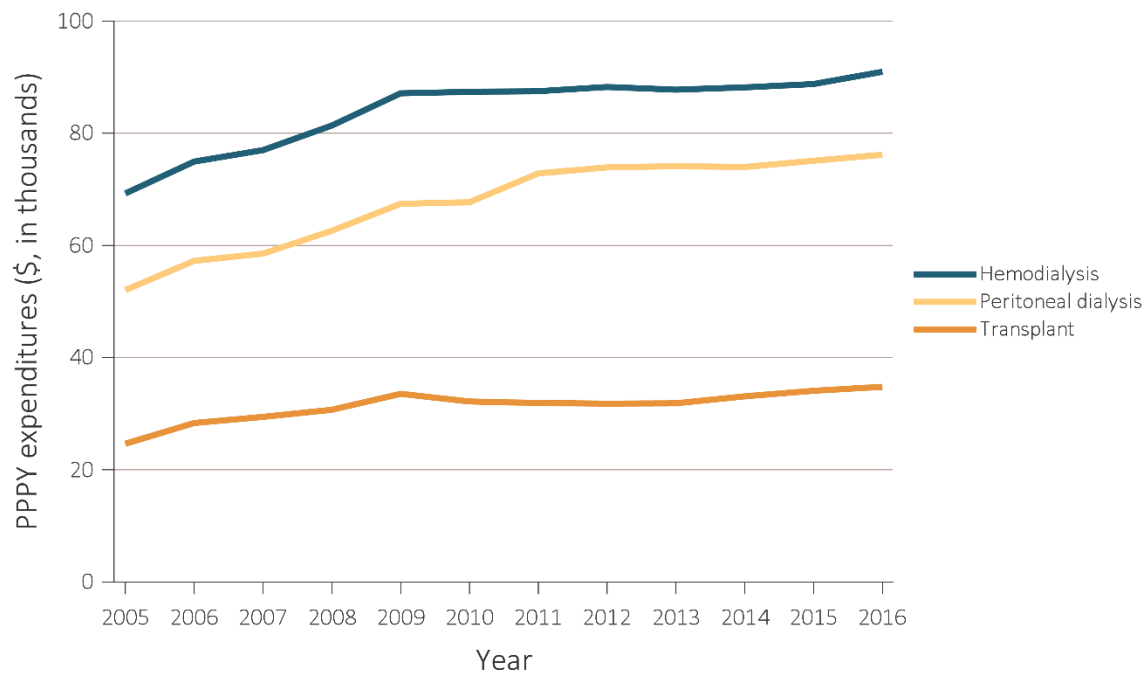
Between 2015 and 2016, total spending on PD increased by 5.7%, as the share of patients receiving PD continued to rise. However, while growth on PD spending on a PPPY basis also increased slightly between 2015 and 2016 (1.4%), it remained less costly on a per-patient basis in 2016 (\$76,177) than HD (\$90,971). Finally, transplant spending in 2016 increased from 2015 levels by 4.6% in total and 2.1% in PPPY expenditures. In 2016, the PPPY cost for transplant patients, \$34,780, remained far lower than spending for either dialysis modality.

vol 2 Figure 9.7 Total Medicare ESRD expenditures, by modality, 2004-2016



Data Source: USRDS ESRD Database. Total Medicare costs from claims data for period prevalent ESRD patients. Abbreviation: ESRD, end-stage renal disease.

vol 2 Figure 9.8 Total Medicare ESRD expenditures per person per year, by modality, 2004-2016



Data Source: USRDS ESRD Database; Reference Tables K.7, K.8, & K.9. Period prevalent ESRD patients; includes all claims with Medicare as primary payer only. Abbreviations: ESRD, end-stage renal disease; PPPY, per person per year.



## References

- American Taxpayer Relief Act of 2012, Pub. L. No. 112-240 § 632, 2313 Stat. 126.
- Centers for Medicare and Medicaid Services, National Health Expenditures 2014 Highlights  
<https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/highlights.pdf>. Accessed September 7, 2016.
- Civic Impulse. 367; 113th Congress, Medicare Access to Rehabilitation Services Act of 2013: A bill to amend title XVIII of the Social Security Act to repeal the Medicare outpatient rehabilitation therapy caps.  
<https://www.govtrack.us/congress/bills/113/s367>. Accessed October 24, 2014.
- Hirth RA, Turenne MN, Wheeler JR, Nahra TA, Sleeman KK, Zhang W, Messana JA. The initial impact of Medicare's new prospective payment system for kidney dialysis. *Am J Kidney Dis* 2013, 62(4):662-669.
- The Henry J. Kaiser Family Foundation (Kaiser). Medicare indicators: Prescription drug plans: enrollment.  
<http://kff.org/state-category/medicare/prescription-drug-plans/enrollment-prescription-drug-plans-medicare/>. Accessed July, 13, 2017.
- The Henry J. Kaiser Family Foundation. Medicare Advantage. <http://kff.org/medicare/fact-sheet/medicare-advantage/> Accessed August 16, 2016.
- Rettig RA. Special treatment—the story of Medicare's ESRD Entitlement. *N Engl J Med* 2011; 364:596-598.
- United States Renal Data System. USRDS 2013 Annual Data Report: Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2013.
- United States Renal Data System. 2014 Annual Data Report: Epidemiology of Kidney Disease in the United States. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2014.

## Notes