Chapter Eleven
Costs of ESRD

The wave is the recoil of the stroke and it will be greater or less in proportion as the stroke is greater or less. A wave is never alone but is mingled with as many other waves as there are inequalities on the banks where the wave is produced...

Leonardo da Vinci
otal Medicare spending in 2007 rose 7 percent, to nearly $410 billion, while costs for end-stage renal disease (ESRD) rose 6 percent, to $24 billion — 5.8 percent of the entire Medicare budget. While this appears to be a significant drop in expenditure levels — ESRD constituted 6.5–6.6 percent of the Medicare budget in 2002–2005 — these levels are not directly comparable, as Part D prescription drug costs have been included in the Medicare total since 2006, but are not yet available for the ESRD population. In coming years the USRDS Coordinating Center will assess ESRD prescription drug costs as they become available in the Part D data, correcting this inconsistency. Within its overall ESRD expenditures, Medicare HMO costs rose nearly 26 percent, to $2.1 billion. Recent attention to therapies with erythropoiesis stimulating agents (ESAs) has raised awareness of their costs to the healthcare system. After rising each year since 1992 (including growth of 11–19 percent in 2002–2004) to reach nearly $2 billion, Medicare costs for ESAs have been stable for the last three years. The First Average Sale Price was introduced three years ago to control the cost shifting of margins, as investigations showed that many providers had very profitable discount agreements, accounting for significant margins paid under the Medicare system. The composite rate payment was thus rebased, and the margins generated for injectables addressed by allowing providers to receive only 6 percent above the sale price, monitored under quarterly reporting to CMS. There have also been other changes in ESA payment policies, including limited billing when hemoglobin levels are greater than 13 g/dl for three months. These alterations, along with regular changes in package insert warnings regarding ESA safety, have led to reductions in both ESA dosing and hemoglobin levels. Data on the transition from CKD to ESRD show very high expenditures in the month of dialysis initiation, reaching nearly $15,000 for Medicare patients. Most of these high costs, not surprisingly, are related to hospitalization. As shown in Chapter Three, catheter use is very high in the first month of ESRD, and is associated with high rates of hospitalization for access failure, declotting procedures, repeated fistula placements, and infectious complications. Comparisons between Medicare per person per month (PPPM) expenditures and those for employer group health plan (EGHP) patients show that inpatient/outpatient costs for dialysis services have grown 26 and 62 percent, respectively, between 2000 and 2007, to $4,341 and $9,760. Physician/supplier payments have increased in the most recent period, and are now highest in the EGHP population. These differences may represent cost shifting between Medicare and EGHP payors, but could also illustrate differences in the ability of smaller payors to negotiate pricing compared to Medicare. There is considerable variation in provider billings to Medicare and to the EGHP payors. Yet data show little correlation to patient outcomes. Such findings continue to raise concerns about the dialysis payment system, provider incentives, and the cost-effective use of Medicare trust funds, as well as the high payment rates sustained by EGHP payors. More comprehensive studies are needed to assess the relationship of patient morbidity and mortality to the level of care indicated by expenditures. The USRDS will continue to examine provider-specific practices, along with associated costs and outcomes, in future ADRs.

**Figure 11.1:** See page 379 for analytical methods.
After a nearly 17 percent rise in 2006, total Medicare costs rose just 7 percent in 2007, to $410 billion. ESRD dollars grew 6.1 percent, to $23.9 billion—5.8 percent of the Medicare budget. (As of 2006, total Medicare costs now include Part D. Because Part D is not included in available ESRD data, ESRD’s portion of Medicare costs has fallen.) (Figure 11.2; see page 379 for analytical methods.)

The estimated number of prevalent Medicare ESRD patients (Figure 11.3) rose 3.1 percent between 2006 and 2007, reaching more than 437,000, while the non-Medicare ESRD population grew 8.2 percent, to nearly 90,000.

In 2007, the one-year change in total Medicare spending on ESRD fell to 2.6 percent, down from 4.2 percent in 2006, while per person per year costs grew 1.0 percent, down from 1.9 the previous year. By type of service, 38 percent of Medicare’s ESRD dollars are now spent on outpatient services, and 35 percent on services provided in an inpatient setting.

Total Medicare expenditures for hemodialysis totaled nearly $17.6 billion in 2007, a 2.9 percent increase over the prior year. Costs for peritoneal dialysis reached $949 million, down slightly from 2006, and those for transplant rose 1.1 percent to $1.9 billion—9 percent of total expenditures. Per person per year Medicare costs remained quite stable in 2007, rising 1.0 percent for hemodialysis, and falling 0.4 and 1.9 percent for peritoneal dialysis and transplant. (Figures 11.3–7; see page 379 for analytical methods. December 31 prevalent ESRD patients (11.3); period prevalent ESRD patients (11.6–7).
Expenditures during the transition to ESRD

Estimated Medicare costs for organ acquisition have increased 83 percent since 2000, to $591 million, while transplant costs have increased at a similar rate of 89 percent, reaching $668 million in 2007. Between 2006 and 2007, however, acquisition costs fell nearly 3 percent, while transplant costs rose 2.0 percent. **Figure II.11:** see page 379 for analytical methods.

Total per person per month (PPPM) costs during the transition to ESRD increase sharply after the initiation of therapy. For Medicare patients beginning ESRD therapy in 2006, costs rose from $6,056 in the month prior to initiation to $14,761 in the month following. In the MarketScan population the increase was five-fold, from $6,297 to $32,031. The pattern is similar for PPPM inpatient costs, with an even sharper, six-fold rise in costs for MarketScan patients. In the months following initiation, total PPPM costs for MarketScan patients remain higher than those of their Medicare counterparts, and are 3.2 times greater at month six. PPPM inpatient costs, in contrast, become almost equal, suggesting a greater use of outpatient services in the MarketScan population.

Among Medicare and MarketScan patients starting ESRD therapy in 2006, inpatient costs for vascular access hospitalizations in the month after initiation were $1,433 and $2,067, respectively, while costs for cardiovascular hospitalizations reached $3,326 and $6,517 — twice as high for MarketScan patients as for those with Medicare coverage. **Figures II.8–10:** see page 379 for analytical methods. Incidental Medicare (age 67 & older) & MarketScan (younger than 67) ESRD patients, 2006.
Per person per month (PPPM) ESRD costs vary by insurer. Inpatient/outpatient costs for MarketScan patients with a transplant during the year, for example, reached $11,407 in 2007—a 53 percent greater than the $7,457 PPPM incurred by their Medicare counterparts. And at $2,483, costs for MarketScan patients with a functioning graft are 3.2 times higher than the $782 spent for Medicare patients. Physician/supplier costs for those with a transplant event during the year are also higher—24 percent—for MarketScan patients. Costs for those on dialysis or with a functioning transplant, in contrast, are 24 and 54 percent greater in the Medicare population.

After rising steadily through the 1990s and early years of this decade, costs for erythropoiesis stimulating agents (ESAs) appear to have plateaued, and indeed fell in 2007 for the first time—2.2 percent, to $1.8 billion. Costs for IV vitamin D and IV iron rose 5.3 and 4.5 percent, to $438 million and $255 million, though for both injectables the one-year rate of growth was slower than in 2006.

In 2007, PPPY costs for Zemplar reached $1,894, considerably higher than the $999 and $498 for Hectorol and Calcijex, the other main forms of IV vitamin D. Costs for IV iron, in contrast, are more evenly distributed between Venofer and Ferrlecit, at $688 and $792. Costs for INFeD reach just $414.

Per person per month costs for ESAs and IV iron show a sharp geographic pattern, with costs highest along the Gulf Coast and the Eastern Seaboard and lowest in the western half of the country. Figure 11.13–15 see page 379 for analytical methods. Period prevalent dialysis patients.
After rising since 2002, PPPY physician/supplier costs for patients with an arteriovenous (AV) fistula fell 8.7 percent in 2007, to $81. Costs for patients with an AV graft continue to fall, to $52 in 2007. The 2007 decline in PPPY catheter costs can be attributed to changes in the Medicare reimbursement policy. 

Per person per year total costs are greatest for patients with a catheter or arteriovenous graft, at $79,364 and $72,729, respectively, in 2007. PPPY costs for patients with an arteriovenous fistula, in contrast, are 25 and 18 percent lower, at just under $60,000. Between 2006 and 2007, costs rose 1.0 percent overall, and 3.0 percent for patients with a catheter. 

Per person per year access event costs are greatest for patients with a catheter or arteriovenous graft, at $5,960 and $7,451, respectively, in 2007. Among patients with an arteriovenous fistula, in contrast, PPPY costs reach just $3,194 — 57 percent lower than the costs incurred by patients with an AV graft. 

Per person per year costs continue to fall for vascular access services performed by surgeons — 39 percent since 1995, to $29 in 2007. Costs for those performed by nephrologists, however, continue to rise, and, at $19 in 2007, were nearly 10 times greater than in 2000. 

Total inpatient PPPY costs for vascular access infection — across all access types — reached $603 in 2006. Costs have generally been on the rise since the late 1990s, and are currently 35 percent greater than in 1998. 

Total expenditures per person per year for vascular access infection — across all access types — rose 1.0 percent overall, and 3.0 percent for patients with a catheter. 

Prevalent hemodialysis patients.
Total Medicare costs rose 7.0% in 2007, to $410 BILLION. Costs for ESRD rose 6.1 percent, to 23.9 billion — 5.8% of the Medicare budget. • 11.2

In 2007, the one-year change in total Medicare spending on ESRD fell to 2.6%, while per person per year costs grew 1.0%. • 11.4

In 2007, total Medicare costs were $17.6 BILLION for hemodialysis, and $1.9 BILLION for transplant. • 11.6

For new Medicare ESRD patients in 2006, costs rose from $6,056 in the month prior to initiation to $14,761 in the month following. • 11.8

In 2007, estimated ORGAN ACQUISITION costs reached $591 million, while TRANSPLANT costs rose to $668 million. • 11.11

Costs for erythropoiesis stimulating agents appear to have plateaued, & fell in 2007 for the first time — to $1.8 BILLION. • 11.13

At just under $60,000, PPPY costs for patients with an AV FISTULA are 18–25% lower than those for patients with a catheter or graft. • 11.17

ACCESS EVENT costs are $5,960 & $7,451 per person per year for patients with a catheter or AV graft, compared to $3,194 for those with an AV fistula. • 11.18

Costs for vascular access services performed by nephrologists continue to rise, & at $19 PPPY in 2007, were nearly 10 TIMES greater than in 2000. • 11.19