Overview of the ESRD program: Infectious Complications and Catheters

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Annual Data Report
Disclosures

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Status of the ESRD Program: Important trends and changes in infectious complications

- Growth of the ESRD and dialysis population
- Widening racial and ethnic disparities of incidence rates due to diabetes
- Trends in mortality by modality and years on dialysis: first year death rates finally decline!
- Largest increase for inpatient costs in 2008
- Infectious hospitalization: a major communicable disease challenge related to vascular access complications
Patient counts, by modality
Figure p.3 (Volume 2)

- **Prevalent dialysis**: (2008: 382,343)
- **Prevalent transplant**: (165,639)
- **Incident ESRD**: (112,476)

Incident & December 31 point prevalent patients.
### Medicare & non-Medicare spending

Medicare spending for ESRD, 2008  
(billions of dollars)

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAF paid claims (Part A &amp; B)</td>
<td>23.33</td>
</tr>
<tr>
<td>2% incurred but not reported</td>
<td>0.47</td>
</tr>
<tr>
<td>HMO-Medicare risk</td>
<td>2.73</td>
</tr>
<tr>
<td>Organ acquisition</td>
<td>0.27</td>
</tr>
<tr>
<td><strong>Total Medicare costs</strong></td>
<td><strong>26.80</strong></td>
</tr>
</tbody>
</table>

Non-Medicare spending for ESRD, 2008  
(billions of dollars)

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGHP (MSP)</td>
<td>2.77</td>
</tr>
<tr>
<td>Patient obligations</td>
<td>4.58</td>
</tr>
<tr>
<td>Non-Medicare patients</td>
<td>5.30</td>
</tr>
<tr>
<td><strong>Total non-Medicare costs</strong></td>
<td><strong>12.66</strong></td>
</tr>
</tbody>
</table>

**Total ESRD costs (billions), 2008**: 39.46

Change in Medicare spending, 2007 to 2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>9.8</td>
</tr>
<tr>
<td>Per patient year</td>
<td>5.8</td>
</tr>
<tr>
<td>Adjusted for inflation</td>
<td>1.3 to 2.8%</td>
</tr>
</tbody>
</table>

Medicare spending per patient year, 2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESRD</td>
<td>$65,891</td>
</tr>
<tr>
<td>Hemodialysis</td>
<td>$77,506</td>
</tr>
<tr>
<td>Peritoneal dialysis</td>
<td>$57,639</td>
</tr>
<tr>
<td>Transplant</td>
<td>$26,668</td>
</tr>
</tbody>
</table>
Counts of new & returning dialysis patients
Figure p.2 (Volume 2)

CMS Annual Facility Survey.

USRDS 2010 ADR
Adjusted incident rates & annual percent change

Figure 2.2 (Volume 2)

Incident ESRD patients; rates adjusted for age, gender, & race.

USRDS 2010 ADR
Geographic variations in adjusted incident rates (per million population), by HSA, 1998, 2003 & 2008

Figure p.7 (Volume 2)

Incident ESRD patients, by HSA; rates adjusted for age, gender, & race.
Excludes patients residing in Puerto Rico & the Territories.
Incident counts & adjusted rates, by age

Figure 2.4 (Volume 2)

Age group 45-64 years old is driving the incident population

Incident ESRD patients; rates adjusted for gender & race.

USRDS 2010 ADR
Incident counts & adjusted rates, by primary diagnosis

GN rates have fallen to levels 14 years ago

HTN rates have leveled off

DM rates appear to be falling

Incident ESRD patients; rates adjusted for age, gender, & race.
Adjusted incident rates of ESRD due to diabetes, by age & race.

Figure 2.17 (Volume Two)

Incident ESRD patients; rates are three-year rolling averages.
Adjusted prevalent rates & annual percent change

Figure 2.10 (Volume 2)

December 31 point prevalent ESRD patients; rates adjusted for age, gender, & race.
Geographic variations in adjusted prevalent rates (per million population), by HSA, 1998
Mortality trends: early death on dialysis

- Trends in incident based death rate
  - First year
  - Subsequent years

- Prevalent based death rates by vintage under treatment
Adjusted mortality rates, by modality & year of treatment

Deaths per 1,000 pt years at risk

Hemodialysis

- 1st year
- 2nd year
- 3rd year
- 4th year
- 5th year

patients, 2005.
Adjusted mortality rates in period prevalent patients, by vintage & modality

Period prevalent dialysis patients; adjusted for age, gender, race, & primary diagnosis. Dialysis patients, 2005, used as reference cohort.
Total Medicare Part A & B dollars spent on ESRD, by type of service

Figure 11.5 (Volume 2) USRDS 2010 ADR

ESRD spending obtained from Medicare ESRD claims, & includes all Medicare as primary payor claims as well as amounts paid by Medicare as secondary payor.

USRDS 2010 ADR
Adjusted admissions & days, by modality
Figure 6.3 (Volume 2)

Period prevalent ESRD patients; rates adjusted for age, gender, race, & primary diagnosis. ESRD patients, 2005, used as reference cohort.
Change in all-cause & cause-specific hospitalization rates, by modality

Figure p.16 (Volume 2)

Prevalent ESRD patients; adjusted for age, gender, race, & primary diagnosis. ESRD patients, 2005, used as reference cohort.

Vascular access hospitalizations are “pure” inpatient vascular access events. New vascular access codes for peritoneal dialysis patients appeared in late 1998; therefore, peritoneal dialysis vascular access values are shown as changing since 1999 rather than 1993.
Adjusted admissions for principal diagnoses, by modality

Figure 6.4 (Volume 2)

Adjusted admissions for principal diagnoses, by modality.
Adjusted rates of admission for vascular access infections in the first year of hemodialysis, by month & age

Figure 1.1 (Volume 2)

Racial Differences in Vascular Access Hospitalizations*

Figure 4: Interaction of age and race as predictors of admission for vascular access infection in the first year of hemodialysis after day 90*

*ASN 2010 Poster #604 Admissions for Vascular Access Infections*
Summary of the 2010 Annual Data Report Trends-1

- Incidence of ESRD is slowing and in some cases actually declining
- Racial disparities are widening for rates of ESRD due to DM and HTN in younger populations
- Death rates continue to decline although only modestly
- First year death rates are clearly down for the last three year and now parallel falling rates across additional years on hemodialysis treatment
Summary of the 2010 Annual Data Report Trends-2

- Overall hospitalization rates have changed little over the last 15 years
  - The types of hospitalizations have dramatically changed with Vascular access procedures moving to the outpatient setting
  - Cardiovascular disease hospitalizations have been falling for the last 5 years
- In contrast, hospitalizations due to infections and particularly vascular access infections have more than doubled!
  - There is some evidence these adverse trends may be changing with recent declines in infectious admits
Conclusions

- The growth of the ESRD program in the current era appears to be driven by lower death rates!
- Infectious complications, particularly in the first year, are a major contributor to morbidity and cost!
- The introduction of a new “Bundled” payment system may create new incentives to reduce morbidity, particularly infections and hospitalizations.
- Continued monitoring of the care and outcomes of the ESRD population are needs to promote improved care of this vulnerable population.