Economic Trends in Dialysis Delivery

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Economics of health Policy payment reform: 2009 to 2011

• The growth in the ESRD program costs led Congress to mandate a new payment system for dialysis to contain the potential over use fee for service medications

• The impact of these changes have mainly focused on the changes in medication usage but little on the longer term overall costs to Medicare

• This presentation reviews the trends in Medicare expenditures before and after the new Prospective Payment System for dialysis
ESRD expenditures, by payor

Figure 11.1 (Volume 2)

Period prevalent ESRD patients; includes Part D.
Total Medicare costs from claims data; include all Medicare as primary payor claims as well as amounts paid by Medicare as secondary payor.
Total Medicare ESRD expenditures, by modality

Figure 11.6 (Volume 2)

Period prevalent ESRD patients.
Part D-enrolled general Medicare patients from the 5 percent sample & period prevalent dialysis & transplant patients, 2011.
Total Medicare ESRD expenditures per person per year, by modality

Figure 11.7 (Volume 2)

Period prevalent ESRD patients; patients with Medicare as secondary payor are excluded.
Dialysis Bundle payment: 1983 vs 2011

- **Old bundled system**
  - Dialysis procedure labor & supplies (HD/PD paid the same)
  - Monthly routing labs: K, Ca, PO4, Creat, CO2, AST, BUN, KT/V, CBC, INR

- **Outside Bundle**
  - Injections: ESAs, IV Fe, IV Vitamin D, Antibiotics, Carnitine
  - All other lab tests for CVD, DM, risk factor monitoring, cultures, PRAs for Tx

- **Bundle with adjusters**
  - Same as old plus
  - All dialysis labs done by nephrologists
  - All injections included (ESAs, Vit D, IV Fe, Carnitine, Antibiotics, cultures)
  - PO medications: Fe, Vitamin D
    - Sensipar and phosphate binders by 2016

**Base Rates:**
- 2011: $229.63
- 2012: $234.81
- 2013: $240.88
- 2014: $246.47

(re-basing is under discussion)
Prospective Payment System for Dialysis:

- Dialysis is paid on a per treatment basis.
- The same amount is paid for HD and equivalent PD treatments normalized to three times per week for HD.
- PD has a built-in margin in the same way as the original composite rate for dialysis started in 1983.
- Daily Home Hemodialysis is paid for each run beyond three treatments per week based on medical justification.
- Adjusters are added for incident patients, medical conditions, and home training beyond the first 4 months.
Total Medicare ESRD expenditures per person per year, by modality

Figure 11.7 (Volume 2)

Period prevalent ESRD patients; patients with Medicare as secondary payer are excluded.

- Hemodialysis: $88,000 PPPY
- Peritoneal dialysis: $71,000 PPPY
- Transplant: lower expenditures
Percent change in Total Medicare expenditures, PPPY

<table>
<thead>
<tr>
<th>Period</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 to 05</td>
<td>3.2</td>
</tr>
<tr>
<td>05 to 06</td>
<td>7.1</td>
</tr>
<tr>
<td>06 to 07</td>
<td>4.4</td>
</tr>
<tr>
<td>07 to 08</td>
<td>2.4</td>
</tr>
<tr>
<td>08 to 09</td>
<td>1.7</td>
</tr>
<tr>
<td>09 to 10</td>
<td>5.0</td>
</tr>
<tr>
<td>10 to 11</td>
<td>5.8</td>
</tr>
<tr>
<td>04 to 05</td>
<td>2.4</td>
</tr>
<tr>
<td>05 to 06</td>
<td>1.7</td>
</tr>
<tr>
<td>06 to 07</td>
<td>2.4</td>
</tr>
<tr>
<td>07 to 08</td>
<td>5.0</td>
</tr>
<tr>
<td>08 to 09</td>
<td>5.8</td>
</tr>
<tr>
<td>09 to 10</td>
<td>2.12.2</td>
</tr>
<tr>
<td>10 to 11</td>
<td>-0.3</td>
</tr>
</tbody>
</table>

*FFS: Fee For Service

Composite rate plus FFS* injectibles

PPS Bundle 2011+

Impact of bundled payment on PD
## Distribution of providers opting into the new dialysis composite rate, 2011

**Table 10.a (Volume 2)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of facilities</th>
<th>Number opting for bundle</th>
<th>Percent of facilities</th>
<th>Percent of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>All providers</td>
<td>6,167</td>
<td>5,285</td>
<td>85.7</td>
<td>95.3</td>
</tr>
<tr>
<td>DaVita</td>
<td>1,609</td>
<td>1,605</td>
<td>99.8</td>
<td>100.0</td>
</tr>
<tr>
<td>DCI</td>
<td>209</td>
<td>209</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Fresenius</td>
<td>1,765</td>
<td>1,757</td>
<td>99.5</td>
<td>99.9</td>
</tr>
<tr>
<td>Hospital-based</td>
<td>571</td>
<td>337</td>
<td>59.0</td>
<td>70.1</td>
</tr>
<tr>
<td>Independent</td>
<td>767</td>
<td>601</td>
<td>78.4</td>
<td>82.2</td>
</tr>
<tr>
<td>SDO</td>
<td>619</td>
<td>574</td>
<td>92.7</td>
<td>92.3</td>
</tr>
</tbody>
</table>

Period prevalent dialysis patients 2010–2011; only facilities defined as opting in the new bundle are included.
Total Medicare Costs 2010-2011, PPPY
(Tables K.a and K.b from 2013 USRDS ADR all patients)

Includes all patients and providers - not just those who opted into the composite rate.
Change in Total Medicare PPPY, 2010 to 2011

- All Dialysis: $33.40
- HD: $246.34
- CAPD/CCPD: $4,421.18
- Tx: $180.83
Change in Total Medicare PPPY, 2010-2011, by Claim Type

- $2,000
- $1,000
- $0
- $1,000
- $2,000
- $3,000
- $4,000
- $5,000
- $6,000

All Dialysis
HD
CAPD/CCPD
Tx

- Total inpatient
- Total outpatient
- Total physician/supplier
- Part D
- Skilled nursing facility
- Home health agency
Change in Total Medicare PPPY, 2010-2011, by Claim Type

- $1,500
- $1,000
- $500
- $0
- $500
- $1,000
- $1,500
- $2,000
- $2,500

All Dialysis
HD
CAPD/CCPD
Tx

- Total inpatient
- Total outpatient
- Total physician/supplier
- Part D
Change in Total Medicare PPPY, 2010-2011, by Claim Type
Change in Total Medicare PPPY, 2010-2011, Hemodialysis (largest components)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Change in Total Medicare PPPY '10-'11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Med DRG</td>
<td>$8</td>
</tr>
<tr>
<td>Surg DRG</td>
<td>$689</td>
</tr>
<tr>
<td>Dialysis</td>
<td>$8,538</td>
</tr>
<tr>
<td>ESA</td>
<td>$5,772</td>
</tr>
<tr>
<td>Vit D</td>
<td>$1,222</td>
</tr>
<tr>
<td>IV Iron</td>
<td>$811</td>
</tr>
<tr>
<td>Lab/pathology</td>
<td>$1,158</td>
</tr>
</tbody>
</table>

Overall PPPY Change:
- IP: -$615
- OP: $792
- PB: -$1051
Change in Total Medicare PPPY, 2010-2011, by Claim Type

- $1,500
- $1,000
- $500
- $0
- $500
- $1,000
- $1,500
- $2,000
- $2,500

All Dialysis
HD
CAPD/CCPD
Tx

Total inpatient
Total outpatient
Total physician/supplier
Part D
Change in Total Medicare PPPY, 2010-2011, CAPD/CCPD (largest components)

- IP Overall PPPY Change = $214
- OP Overall PPPY Change = $5,331
- PB Overall PPPY Change = -$1,085

Change in Total Medicare PPPY '10-'11:
- Med DRG: $394
- Surg DRG: $290
- Dialysis: $8,722
- ESA: $3,587
- Vit D: $25
- IV Iron: $174
- Lab/pathology: $1,079
- Overall PPPY: $3,786
Change in Total Medicare PPPY, 2010-2011, by Claim Type

Bar chart showing changes in total Medicare PPPY for different claim types from 2010 to 2011. The categories include All Dialysis, HD, CAPD/CCPD, and Tx. The chart indicates changes in dollars, with categories ranging from $-1,500 to $+5,500.
Change in Total Medicare PPPY, 2010-2011, Transplant (largest components)

Overall PPPY Change = -$222
Overall PPPY Change = $233
Overall PPPY Change = -$341

- Change in Total Medicare PPPY, 2010-2011,
Changes in Mean Monthly Dose of Medications in the Outpatient Setting (2013 ADR, Fig 10.7)

<table>
<thead>
<tr>
<th></th>
<th>2010 July</th>
<th>2011 July</th>
<th>2012 July</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPO Dose</strong></td>
<td>76826.3</td>
<td>61069.6</td>
<td>47141.7</td>
</tr>
<tr>
<td></td>
<td>20.5%</td>
<td>38.6%</td>
<td></td>
</tr>
<tr>
<td><strong>IV Iron Dose</strong></td>
<td>383.8</td>
<td>329.7</td>
<td>303.2</td>
</tr>
<tr>
<td></td>
<td>14.1%</td>
<td>21.0%</td>
<td></td>
</tr>
<tr>
<td><strong>IV Vit D Dose</strong></td>
<td>56.4</td>
<td>48.3</td>
<td>47.6</td>
</tr>
<tr>
<td></td>
<td>14.3%</td>
<td>15.6%</td>
<td></td>
</tr>
</tbody>
</table>
Distribution of HD/PD Patients, 2007-2011
(Table D.1, USRDS 2013 ADR)

Period Prevalent Dialysis Patients

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent of Dialysis Pts that are PD</th>
<th>Percent of Dialysis Pts that are HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>6.9%</td>
<td>93.1%</td>
</tr>
<tr>
<td>2008</td>
<td>6.7%</td>
<td>93.3%</td>
</tr>
<tr>
<td>2009</td>
<td>6.8%</td>
<td>93.2%</td>
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<td>7.1%</td>
<td>92.9%</td>
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<td>2011</td>
<td>7.6%</td>
<td>92.4%</td>
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Change in Total Medicare PPPY, 2010-2011

- Both HD and PD show a large increase in PPPY for dialysis (bundle), HD experiences an offset of similar magnitude through the reduction of injected medications.

- The increase in margin for PD patients was anticipated as part of the PPS.

- The mix of HD/PD has an impact on the payment model as PD usage increases.

- Mean doses of injected medications have continued to drop since the development of the bundled payment.
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<tr>
<td>Low-volume: &lt;4000 trts/yr for 3 years</td>
<td>1.202</td>
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<tr>
<td>Onset of dialysis ≤ 4 months</td>
<td>1.51</td>
</tr>
<tr>
<td>Acute conditions:</td>
<td></td>
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<tr>
<td>Pericarditis</td>
<td>1.114</td>
</tr>
<tr>
<td>Bacterial pneumonia</td>
<td>1.135</td>
</tr>
<tr>
<td>Gastrointestinal bleeding with hemorrhage</td>
<td>1.183</td>
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<tr>
<td>Chronic conditions:</td>
<td></td>
</tr>
<tr>
<td>Hereditary hemolytic or sickle cell anemia</td>
<td>1.072</td>
</tr>
<tr>
<td>Myelodysplastic syndrome</td>
<td>1.099</td>
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Adjustments to the Prospective Payment System

- Incident patients under 65 not previously covered by Medicare typically have a 90-day waiting period before Medicare pays.

- An exception is if the patient begins home dialysis
  - Home HD
  - PD

- Can be considered a financial incentive to start patients with home dialysis, as opposed to in-center HD
Incident patients using home dialysis, by therapy type

Figure 1.18 (Volume 2)
Adjustments to the Prospective Payment System

- Although home therapy represents a small portion of all dialysis therapy, it appears as though more patients are initiating with a home therapy.

- There are many factors that influence the decision to attempt home therapy, however the financial incentives are clear and must be balanced by patient choice.