REAL COST DRIVERS OF CANCER CARE & IMPLICATIONS FOR PAYMENT REFORM

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STUDY ON THE COST DRIVERS OF CANCER CARE

• Conducted by the actuarial firm Milliman

• Analyzed Medicare and commercial data from 2004 through 2014 to:
  – Identify trends in the overall costs of cancer care
  – Identify trends in the component costs of cancer care
  – Create comparisons between trends in costs for actively treated cancer patients and general population
  – Examine site of care cost differences

• Commissioned by COA
  – Sponsors: Bayer, Bristol-Myers Squibb, Eli Lilly and Company, Janssen Pharmaceuticals, Merck, Pfizer, PhRMA, and Takeda.
WHY CONDUCT THE STUDY?

• Better understand the complete picture of what is driving cancer care costs
• Lots of media attention
  – Hype versus data?
  – What’s real?
• Lots of DC/political attention
  – Current proposal from CMS entirely focused on the drug component
• Indications from previous studies and analyses that the “real picture” is different from all the hype
• We can’t really address cancer costs until we understand what are the drivers of cost
• Payment reform arguments are rooted in economic premises
STUDY DESIGN

• 2004 through 2014
• Medicare 5% sample
• Truven Health Analytics MarketScan commercial claims data base
  – 15 to 50 million lives annually, depending on data year
• Cancer patients identified according to diagnosis coding
• Active treatment subset identified by chemotherapy, radiation therapy, and cancer surgery codes
• Data based on paid claims
KEY FINDINGS

• Total cancer care costs not increasing any faster than overall medical costs
  – Both for Medicare and commercial populations
• Drugs are the fastest growing component of cancer care costs but increases offset by lower increases in inpatient hospitalizations and cancer surgeries
  – Drug cost increases fueled by biologics
• Site of care – where cancer care delivered – shifts dramatic and also fueling increased costs of cancer care
  – $2 billion higher spending to Medicare alone in 2014
In the Medicare population, prevalence increased from 7.3% to 8.5% between 2004 and 2014, a 16% increase.

In the commercial population, prevalence increased from 0.7% to 0.9% between 2004 and 2014, a 26% increase.
CANCER & OVERALL COSTS INCREASING AT SIMILAR RATES

- Per-patient costs increasing at similar rates throughout the study period for 3 populations:
  - Total population
  - Actively treated cancer population
  - Non-cancer population
- For Medicare, these 3 populations trended at 35.2% versus 36.4% and 34.8% respectively
- For commercial, these 3 populations trended at 62.9% versus 62.5% and 60.8%
- The 95% confidence intervals for each cohort’s trend line overlap and by this measure the 10-year cost trends between these 3 populations are not statistically different.
COMPONENT COST DRIVERS PRESENT A MORE COMPLEX PICTURE THAN JUST DRUGS

- Increases in spending:
  - Chemotherapy
    - 15% to 18% in Medicare and 15% to 20% in commercial
  - Biologics
    - 3% to 9% in Medicare and 2% to 7% in commercial

- Lower rate in increased spending:
  - Hospital inpatient admissions
    - 27% to 24% in Medicare and 21% to 18% in commercial
  - Cancer surgeries
    - 15% to 11% in Medicare and 15% to 13% in commercial
## COST DRIVERS VARY OVER STUDY PERIOD

<table>
<thead>
<tr>
<th>Service Category</th>
<th>2004-2014 PPPY Cost Trends</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Medicare</td>
</tr>
<tr>
<td>Hospital Inpatient Admissions</td>
<td>22%</td>
</tr>
<tr>
<td>Cancer Surgeries (inpatient and outpatient)</td>
<td>0%*</td>
</tr>
<tr>
<td>Sub-Acute Services</td>
<td>51%</td>
</tr>
<tr>
<td>Emergency Room</td>
<td>132%</td>
</tr>
<tr>
<td>Radiology – Other</td>
<td>24%</td>
</tr>
<tr>
<td>Radiation Oncology</td>
<td>204%</td>
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<tr>
<td>Other Outpatient Services</td>
<td>48%</td>
</tr>
<tr>
<td>Professional Services</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Biologic Chemotherapy</strong></td>
<td><strong>335%</strong></td>
</tr>
<tr>
<td>Cytotoxic Chemotherapy</td>
<td>14%</td>
</tr>
<tr>
<td>Other Chemo and Cancer Drugs</td>
<td>-9%</td>
</tr>
<tr>
<td><strong>Total PPPY Cost Trend</strong></td>
<td><strong>36%</strong></td>
</tr>
</tbody>
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• Percent of chemotherapy administered in community oncology practices decreased from 84.2% to 54.1%
  – Cost Medicare $2 billion more in 2014 alone
• Percent of chemotherapy administered in 340B hospitals increased from 3.0% to 23.1% (670% increase)
  – 340B hospitals account for 50.3% of all hospital outpatient chemotherapy administrations
SAME PATTERN IN COMMERCIAL

92%

51%

Commercial - percent of chemotherapy infusions by site of service

- Physician office
- Hospital outpatient facility

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Compared to patients receiving all chemotherapy in a physician office, those receiving all chemotherapy in a hospital outpatient facility had PPPY costs that were:

- $13,167 (37%) higher in 2004
- $16,208 (34%) higher in 2014
• Compared to patients receiving all chemotherapy in a physician office, those receiving all chemotherapy in a hospital outpatient facility had PPPY costs that were:
  – $19,475 (25%) higher in 2004
  – $46,272 (42%) higher in 2014
WHAT IF SITE OF SERVICE SHIFT HAD NEVER HAPPENED?

Modeled Data

Medicare - observed vs. modeled PPPY cost for actively treated chemotherapy patients
(8% cost difference in 2014)

Commercial - observed vs. modeled PPPY cost for actively treated chemotherapy patients
(6% cost difference in 2014)
## Modeled Data

<table>
<thead>
<tr>
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<th>Cost impact in billions in 2014</th>
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<tbody>
<tr>
<td></td>
<td>Shift to 25% of 2004 observed levels</td>
</tr>
<tr>
<td>Estimated Medicare FFS spending cost difference in 2014 if observed chemotherapy infusion site of service distribution</td>
<td>$0.5</td>
</tr>
</tbody>
</table>
TAKE AWAYS FROM THE COST DRIVERS STUDY

• Increasing prices of cancer drugs are a real problem but not focus of all cancer costs as per the media and the academics
  - Cut cancer drug spending in half (totally unrealistic) and spending is only cut by 9-10%
• Medicare is being subsidized by commercial payers
  - Commercial chemotherapy costs 129.2% higher in community oncology practices for commercial than Medicare
  - 145.3% higher in outpatient hospitals
• Site of care shift is an additional real driver of cancer care costs
  - Cost Medicare $2 billion alone on one year (2014)
THE CONSOLIDATING LANDSCAPE OF CANCER CARE

Community Oncology Cancer Care Impact Map

2010

COA Impact Report 2016

2016