Analysis on Delivery of High-Cost Services
Prepared for Oklahoma State Department of Health
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Background

Specific topics requested in this analysis include:

- Evaluate and categorize high-cost services
- Compare cost of OSIM identified conditions across payers
- Provide summary on demographics of populations
- Discuss the methodology for identifying the populations
- Define inpatient/outpatient optimization
- Provide cost of care based on operational benchmarks
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A. Introduction and background
B. High-cost individuals and conditions
C. Cost of care and service types
D. Optimization and operational benchmarks
E. Methodology and assumptions
F. Limitations and qualifications
Reference to full report

This presentation is intended to supplement the full report which documents complete analysis and is titled:

Oklahoma State Innovation Model: Delivery of High-Cost Services
Discussion Draft
August 26, 2015
High-cost services in the State of Oklahoma

- Key to identifying where high-cost services are being delivered is identifying who and where the high-cost patients are located
- Analyze across multiple payers: Medicare, Medicaid, commercial
- Fosters path to meeting OSIM-defined goals:
  - Reduce healthcare expenditures
  - Provide better quality of care
  - Improve health outcomes
80/20 rule on healthcare expenditures

- 80% of healthcare expenditures are for services/procedures performed on 20% of population
- Highlights need to focus on a smaller portion of the population
- Can gain the most by focusing on smaller group of individuals with bigger return on invested resources
Spend by category of service

Average patient

Highest cost patients
OSIM identified conditions

- Phase 1 of OSIM plans requests population-based health measures for selected health topics:
  - Obesity
  - Diabetes
  - Hypertension
  - Tobacco usage
- ICD-9 codes to identify through claims information, where available
- Proxy morbidities utilized for conditions under reported

State of Oklahoma High-Cost Condition Prevalence

<table>
<thead>
<tr>
<th></th>
<th>Commercial</th>
<th>Medicare</th>
<th>Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>32.5%</td>
<td>26.7%</td>
<td>36%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>5.3%</td>
<td>27.8%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>15.4%</td>
<td>68.9%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Tobacco Usage</td>
<td>23.3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Prevalence rates for obesity and tobacco were not based on claims information due to under reporting*
## Insurance market overview

<table>
<thead>
<tr>
<th>Commercial</th>
<th>Medicare</th>
<th>Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Employer-sponsored</td>
<td>• Age and health status eligibility</td>
<td>• Income-based eligibility</td>
</tr>
<tr>
<td>• Market-based benefits</td>
<td>• Member premiums and exposure to cost-sharing</td>
<td>• Little enrollee cost exposure</td>
</tr>
<tr>
<td>• Oklahoma enrollment</td>
<td>• Federal government</td>
<td>• State and federally operated</td>
</tr>
<tr>
<td>800k in 2013</td>
<td>• Oklahoma enrollment</td>
<td>• Oklahoma enrollment</td>
</tr>
<tr>
<td></td>
<td>625k in 2013</td>
<td>800k in 2014</td>
</tr>
</tbody>
</table>

- Analyze high-cost conditions across all three markets
- Important to treat each population differently based on coverage
Total cost of care

- Highlights disparity in cost of the composite population against analyzed conditions
- Does not include all healthcare dollars spent on patients – no Medicare Part D
- Medicaid report information not available for obesity and tobacco use
Relative cost of conditions

### State of Oklahoma
#### High-Cost Condition Relative Cost

<table>
<thead>
<tr>
<th>Condition</th>
<th>Commercial</th>
<th>Medicare</th>
<th>Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>3.42</td>
<td>2.08</td>
<td>N/A</td>
</tr>
<tr>
<td>Diabetes</td>
<td>3.80</td>
<td>1.62</td>
<td>2.27</td>
</tr>
<tr>
<td>Hypertension</td>
<td>2.91</td>
<td>1.28</td>
<td>2.13</td>
</tr>
<tr>
<td>Tobacco Usage</td>
<td>3.60</td>
<td>1.92</td>
<td>N/A</td>
</tr>
<tr>
<td>Entire Population</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Average Annual Cost</td>
<td>$4,041</td>
<td>$11,530</td>
<td>$4,846</td>
</tr>
</tbody>
</table>

- Relative value calculated as condition-specific PMPY over average annual cost
- Medicare summarized costs did not include pharmacy spend
- Medicaid information derived from OHCA provided studies/reports

- Relative value of conditions indicates patients are 2 to 3 times more expensive than average patient
- Medicaid experience excludes nursing facility expenditures and enrollment
Types of services

- Distribution of services does not vary significantly as observed in highest cost members, but facility spending on high-cost conditions is greater than average.
- Actuarial cost models included in report detail cost by category.
- Based on commercial experience.
Degree of healthcare management indicates portion of care that is being well-managed

- Loosely managed:
  - Limited use of evidence-based practices
  - Minimal incentives to manage
  - Limited use of low cost alternatives
  - Excessive use of costly services
  - Little promotion of change

- Well-managed:
  - Active use of evidence-based treatment guidelines
  - Programs to educate physicians on efficiency
  - On-site utilization management
  - Financial incentives rewarding providers for efficiency
  - Use of primary care manager
Calculating potential savings

**Commercial Population**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Hospital Inpatient PMPY</th>
<th>Reduction Factor</th>
<th>Inpatient PMPY Savings</th>
<th>Condition Prevalence</th>
<th>Commercial Population</th>
<th>Estimated Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>$3,819</td>
<td>5.0%</td>
<td>$191</td>
<td>32.5%</td>
<td>800,000</td>
<td>$50 million</td>
</tr>
<tr>
<td>Diabetes</td>
<td>3,895</td>
<td>5.0%</td>
<td>195</td>
<td>5.3%</td>
<td>800,000</td>
<td>$8 million</td>
</tr>
<tr>
<td>Hypertension</td>
<td>3,050</td>
<td>5.0%</td>
<td>152</td>
<td>15.4%</td>
<td>800,000</td>
<td>$19 million</td>
</tr>
<tr>
<td>Tobacco Usage</td>
<td>4,332</td>
<td>5.0%</td>
<td>217</td>
<td>23.3%</td>
<td>800,000</td>
<td>$40 million</td>
</tr>
</tbody>
</table>

**Medicaid Population**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Hospital Inpatient PMPY</th>
<th>Reduction Factor</th>
<th>Inpatient PMPY Savings</th>
<th>Condition Prevalence</th>
<th>Medicaid Population</th>
<th>Estimated Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>N/A</td>
<td>5.0%</td>
<td>N/A</td>
<td>36.0%</td>
<td>789,000</td>
<td>N/A</td>
</tr>
<tr>
<td>Diabetes</td>
<td>2,216</td>
<td>5.0%</td>
<td>$111</td>
<td>4.5%</td>
<td>789,000</td>
<td>$4 million</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1,947</td>
<td>5.0%</td>
<td>$97</td>
<td>7.5%</td>
<td>789,000</td>
<td>$6 million</td>
</tr>
<tr>
<td>Tobacco Usage</td>
<td>N/A</td>
<td>5.0%</td>
<td>N/A</td>
<td>23.3%</td>
<td>789,000</td>
<td>N/A</td>
</tr>
</tbody>
</table>

- Estimate potential savings utilizing information detailed in report
- Focus on hospital inpatient costs
- Assumes reasonable DoHM improvement goals
Methodology and Assumptions

**Commercial Market**

**2013 Milliman Consolidated Health Cost Guidelines Sources Database (CHSD) Data** – This internal Milliman database is used to develop the Milliman Health Cost Guidelines (HCGs), which is nationally accepted as an industry standard. The 2013 CHSD data contains detailed claims and eligibility records for over 17 million commercially insured lives nationwide.

**Medicare Market**

**2013 CMS Medicare 5% Sample Data** – CMS has publicly released information including Medicare beneficiaries, Medicare claims, Medicare providers, and clinical data. For the use in this analysis, the Medicare 5% sample was utilized which is created based on selecting records with 05, 20, 45, 70 or 95 in positions 8 and 9 of the HIC number (HICN), which represents beneficiary’s Medicare identification number. Similarly to the commercial data used, the 5% sample data was limited to Oklahoma insured lives, but considered data from other states for reasonability checking.

**Medicaid Market**

The Oklahoma Health Care Authority oversees the Medicaid program in the State of Oklahoma. For purposes of our analysis, OHCA provided conditional studies that encompassed many of the high-cost conditions analyzed under this portion of the OSIM project. In addition to the use of these reports, we also utilized the SFY 2014 SoonerCare annual report. Publically available information produced by OHCA can be found on OHCA’s website [www.okhca.org](http://www.okhca.org) under the Research tab.

**Condition identification**

Members in the commercial and Medicare claims information were identified as having a condition using all the (ICD-9) codes listed on the claims within the sample databases. To improve credibility and help lower the risk of false positives, radiology and pathology claims were excluded for the purposes of member’s condition identification. Once a member was identified as having a condition, the entire experience period for that member was retroactively given weight towards that chronic condition. This methodology was utilized because of the limited time span over which the base period of analytics covered (only used calendar year 2013 experience).

The identification of conditions in the Medicaid system was based on the methodology utilized by the OHCA group performing the analysis. Based on a review of the methodology stated in each of the disease specific reports, the focus was consistent with our logic by attempting to use ICD-9 diagnosis code information against a claims and enrollment database.
Limitations and Qualifications

This report is intended to analyze the delivery of high-cost services in the state of Oklahoma insurance market. It is our understanding that the State will use this report to help key decision makers plan and implement a health innovation plan for the State in compliance with the Federal SIM grant awarded to Oklahoma in December of 2014. The report may not be suitable for other purposes. This presentation has been prepared solely for the internal use of, and is only to be relied upon by, the Oklahoma State Department of Health (OSDH). Milliman makes no representations or warranties regarding the contents of this correspondence to third parties. Likewise, third parties are instructed that they are to place no reliance upon this correspondence prepared for OSDH by Milliman that would result in the creation of any duty or liability under any theory of law by Milliman or its employees to third parties. If this presentation is distributed to third parties, it should be distributed only in its entirety.

The results in this presentation are technical in nature and dependent upon specific assumptions and methods. No party should rely upon this presentation without a thorough understanding of those assumptions and methods.

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Differences between our projections and actual amounts depend on the extent to which future experience conforms to the assumptions made for this analysis. It is certain that actual experience will not conform exactly to the assumptions used in this analysis. Actual amounts will differ from projected amounts to the extent that actual experience deviates from expected experience.

The services provided for this project were performed under the signed Contract between Milliman, Inc. (Milliman) and the Oklahoma State Department of Health (OSDH) signed March 27, 2015.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. The authors of this presentation are members of the American Academy of Actuaries and meet the qualification standards for performing the analyses contained herein.