EVALUATING INTERVENTIONS UNDER THE BUNDLED PAYMENTS FOR CARE IMPROVEMENT (BCPI) INITIATIVE: A CASE STUDY FOR THE COPD MARKET

Susan Suponcic1 and Kjell Nygren2
Navigant Consulting, Lawrenceville, NJ, USA (Sanofi, Bridgewater, NJ, USA)

BACKGROUND

• The US healthcare market is increasingly moving towards alternative payment models (APMs) where CMS aspires to have 50% of its payments through alternative payment models (e.g., Value-based care) by 2019.
• Five key programs are being implemented by CMS: Medicare Acute Care Episodes (ACE), Medicare Shared Savings Program (MSSP), Bundled Payments for Care Improvement (BPCI), Comprehensive Care for Joint Replacement (CCJR), and the Oncology Care Model (OCM).

• The move towards alternative payment models, especially bundled payments, is important to have robust methods in place to allow for an evaluation of the impact of specific interventions on outcomes that impact on value-based payments (e.g., re-hospitalization rates).

OBJECTIVES

• Investigate analytical approaches for assessing the impact of post-hospital interventions on re-hospitalization rates associated with COPD bundled care episodes.
• Focus particular attention on approaches that help control for selection biases associated with different interventions with the aim of arriving at robust but easy to interpret methods.
• Compare the outcomes of different approaches and make recommendations regarding the most appropriate way to assess the effectiveness of interventions.

RESULTS

DATA

• 4,623 Patients admitted for inpatient care during the first 6 months of 2013 with a COPD related DRG code (201 COPD W MCC, 191 COPD W CC, or 192 COPD W/O CC/MCC).
• Metrics related to the following were included.
- Demographics (Age, Gender, State, HSQ).
- Initial Hospitalization (DRG Code, LOS, Net and Gross Pay, Discharge Status).
- RX Therapy upon discharge (Flags for Various RX Categories present within 7 days).
- Post-hospitalization Office Visits (count of 30, 60, and 90 day office visit counts).
- Re-hospitalization rates overall and specifically for COPD (with 30, 60, and 90 days of discharge).
- Net and Gross Pays post for 90 day window following hospitalization (Outpatient Services, Re-admissions, RX).

INTERVENTIONS AND OUTCOMES EXAMINED

• Two interventions (Follow up Office-Visits within 30 days of Hospitalization and a Nebulizer RX within 7 days of discharge) were examined.
• The impact on 90 day re-hospitalization rates were examined.

NAÏVE ANALYSIS

A Naïve analysis suggests that Nebulizers are effective interventions while follow-up care within 30 days is not.

90 Day Hospitalization Rates (With and Without Interventions)

<table>
<thead>
<tr>
<th>Intervention</th>
<th>No 30 Day Follow-up</th>
<th>30 Day Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Intervention</td>
<td>30.5%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Follow-up Office-Visit</td>
<td>22.0%</td>
<td>16.5%</td>
</tr>
<tr>
<td>Post-DischARGE RX</td>
<td>20.8%</td>
<td>17.4%</td>
</tr>
</tbody>
</table>

90 Day Hospitalization Rates (With and Without Interventions) Comparison of Initial DRG and LOS

<table>
<thead>
<tr>
<th>Initial DRG</th>
<th>LOS &gt;=4</th>
<th>LOS &lt;4</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRG 190 – LOS&gt;=4</td>
<td>14.8%</td>
<td>13.9%</td>
</tr>
<tr>
<td>DRG 190 – LOS&lt;4</td>
<td>12.5%</td>
<td>11.5%</td>
</tr>
<tr>
<td>DRG 191 – LOS&gt;=4</td>
<td>13.7%</td>
<td>11.2%</td>
</tr>
<tr>
<td>DRG 191 – LOS&lt;4</td>
<td>15.7%</td>
<td>11.8%</td>
</tr>
<tr>
<td>DRG 192 – LOS&lt;4</td>
<td>18.2%</td>
<td>18.4%</td>
</tr>
</tbody>
</table>

CONCLUSIONS

• The move towards alternative payment models and value-based care has increased the importance of developing evidence to show innovations can help improve metrics tracked under these models.
• As most of these metrics are not tracked as part of clinical trials, evaluations must often be conducted post-launch using Real World Data.
• Naïve analyses comparing patients with and without exposure to specific interventions without controlling for important covariates may be deceptive.
• The Cochran-Mantel-Haenszel test is useful when comparing groups with and without exposure to interventions while controlling for covariates.
• Our analysis of the COPD market suggests that Nebulizer RX following COPD hospitalizations reduced hospitalization rates while follow-up office visits do not show a significant benefit.

navigant.com/LifeSciences