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Executive Summary

The State of North Carolina (State) engaged Mercer Government Human Services Consulting (Mercer) to provide an annual report, as prescribed by the State’s Centers of Medicare & Medicaid Services (CMS) state plan, that evaluates the overall impact of the State’s preferred drug list (PDL) and supplemental rebate program, which is enforced by clinical prior authorization (PA). Mercer assessed the following in this report:

- Access to pharmaceutical care for State Medicaid beneficiaries.
- Whether changes in expenditures or utilization in medical services, such as hospitalizations or physician services, have increased or decreased as a result of the PDL and associated multi-state pooling agreement.
- Aggregate cost savings associated with the PDL and the State’s participation in the National Medicaid Pooling Initiative (NMPI) supplemental rebate program.

Background

In March 2002, the State implemented a clinical PA review program as a method to encourage prescribers to prescribe and dispense the most clinically appropriate and cost-effective medications. A state panel of clinical and academic pharmacists and physicians selected the prescription drugs that required clinical PA review and developed the clinical criteria for the program.

In March 2010, the State joined the NMPI supplemental rebate purchasing pool. NMPI is a multi-state Medicaid pharmaceutical purchasing pool administered by Magellan Medicaid Administration, Inc.

State Medicaid programs join multi-state, pooled purchasing programs to combine their purchasing power to influence drug manufacturers to provide greater supplemental rebates. Manufacturers pay supplemental rebates if a state implements a PDL that requires PA review of non-preferred medications, which provides the manufacturers with a competitive advantage if their products are deemed “preferred.” The benefit of joining a multi-state arrangement is typically a significant increase in program savings that are attributed to:

- Additional support with implementing and maintaining a PDL or expanding a state’s PDL program in a short timeframe.
- Market share shift in drug utilization to therapeutically equivalent and typically less costly preferred medications.
• An increase in individual supplemental rebate collections due to purchasing power and contracts negotiated with pharmaceutical manufacturers.

Initially, the State did not establish a PDL when it joined NMPI but only collected pharmaceutical manufacturer supplemental rebates through its participation with the purchasing pool. On September 15, 2010, the State implemented its PDL, enforced through its PA program, in order to encourage appropriate prescription drug utilization. The State originally established 88 PDL therapeutic drug categories that include preferred and non-preferred medications. Since then, the State has reviewed and modified the PDL. In state fiscal year (SFY) 2015 (July 1, 2014 through June 30, 2015), there were 102 PDL therapeutic drug categories. In SFY 2015, PDL changes were implemented in August 2014, November 2014, January 2015, and June 2015.

Summary of Results

Impact on Beneficiaries’ Access to the Preferred Drug List Program Medications

Mercer assessed beneficiaries’ access to PDL program medications in SFY 2015. Key findings for this part of the analysis included:

• Similar to SFY 2014, only a small percentage of individuals reverted to non-preferred medications during SFY 2015. The analysis suggests Medicaid beneficiaries who changed from a non-preferred medication to a preferred medication remained on the preferred medication regimen, except for clinically necessary exceptions.
  — Of the 102 PDL therapeutic drug categories, there were 77 categories that were implemented or had significant changes (that is, drugs added to or removed from the PDL category and/or changes made to non-preferred or preferred drug status) during the study period.
  — Of these 77 categories, there were 60 PDL categories that had beneficiaries who reverted to a non-preferred medication. Only 0.3% (or 8,000) beneficiaries out of a total of 3.0 million continuously eligible Medicaid beneficiaries for these 77 drug categories reviewed switched back to a non-preferred medication after having a paid claim for a preferred medication.
• Relatively few Medicaid beneficiaries did not obtain a drug following a denied claim payment for a non-preferred medication within the same therapeutic drug category. This result is similar to last year.
  — Approximately 2.2% (or 77,000) of continuously eligible Medicaid beneficiaries in SFY 2015 had a denied claim for a non-preferred medication and did not receive a subsequent paid claim for another medication within the same PDL therapeutic drug category during the study period.
  — The overall PDL compliance rate in SFY 2015 was approximately 95.2%. The annual compliance rate decreased 0.7 percentage points compared to SFY 2014 (95.9%).
The approval rate for PDL prior authorization requests was 99.8% in SFY 2015. This high approval rate may indicate prescribers are familiar with the PDL program process and quickly adapt and adhere to the PDL changes.

**Impact on Beneficiaries’ Medical Services Utilization and Expenditures**

Mercer performed a time series comparative analysis of medical services utilization and expenditures for beneficiaries “impacted” by the PDL program to monitor whether the implementation of the PDL program resulted in changes in beneficiaries’ use of medical services. Beneficiaries “impacted” by the PDL were compared to beneficiaries “not impacted” by the PDL program for select PDL therapeutic drug categories.

In general, the utilization and paid amount per beneficiary were similar in SFY 2015 by population and medical services categories.

**Estimated Savings**

Mercer estimates the total net savings realized for the clinical PA, PDL, and supplemental rebate program was $172.1 million (State share of $58.8 million) in SFY 2015.

- Of the total savings, approximately $59.6 million (State share of approximately $20.4 million) can be attributed to the clinical PA program.
- Approximately $112.5 million (State share of approximately $38.4 million) can be attributed to the State’s PDL and supplemental rebate program.
- Estimated annual savings equates to an overall return on investment of 52:1\(^1\) for the PDL and supplemental rebate program.

The net PDL and supplemental rebate program savings include:

- $48.8 million attributed to the PDL program.
- $74,000 as a result of shifting medication utilization from non-preferred to preferred medications without the presence of a rejected claim (that is, market shift savings)\(^2\).
- $65.8 million in supplemental rebate collections.
- $2.2 million in administrative costs that offset the gross savings.

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\(^1\) On July 1, 2013, North Carolina implemented NCTracks, a new claims adjudication platform managed by CSC. Under the new contract with CSC, some PDL expenses are no longer itemized and Mercer could not include them in the calculation of the SFY 2015 ROI.

\(^2\) The State contracted Mercer in November 2012 to update the methodology used to calculate the Market Basket shift savings in order to limit the amount of time Market Basket categories can realize savings as a result of the sentinel effect.
Assessment of Beneficiaries’ Access to the Preferred Drug List Program Medications

To monitor the effect of the PDL program on beneficiaries’ access to medications, Mercer evaluated the following:

- Number of beneficiaries who reverted to a non-preferred medication within the same therapeutic drug category for drug categories that were new or had significant changes during the study period.
- Number of beneficiaries who had a prescription claim payment denied that was subject to the PDL program with no subsequent paid claim within the same therapeutic drug category.
- PDL compliance based on prescription utilization.
- Frequency of PDL prior authorization requests for non-preferred medications and the percentage of approvals and denials.

Beneficiaries Reverting to Non-Preferred Medications

Mercer evaluated the number of Medicaid beneficiaries who received a non-preferred medication prior to the PDL category changes (implemented in August 2014, November 2014, January 2015, and June 2015), then received a preferred medication after the PDL program’s changes and finally reverted to a non-preferred medication all within the same therapeutic drug category. Exhibit 1 in Appendix A provides the results of this assessment for the top 10 therapeutic drug categories by beneficiary count that reverted to a non-preferred medication.

Observations

- During the study period, 60 out of 77 therapeutic drug categories evaluated (approximately 78%) had beneficiaries with continuous Medicaid eligibility who reverted to a non-preferred medication after the PDL program changes implemented in SFY 2015.
- The overall percentage of beneficiaries switching back to a non-preferred medication after having tried a preferred medication was very small. The findings for SFY 2015 were similar to SFY 2014.
  - For beneficiaries continuously eligible for Medicaid, only 0.3% (or approximately 8,000) beneficiaries out of a total of 3.0 million beneficiaries from these 77 therapeutic drug categories reverted to a non-preferred medication.
  - In SFY 2013 and SFY 2014 0.1% and 0.3% of beneficiaries reverted to a non-preferred medication after having tried a preferred medication, respectively.
- The top five drug categories by beneficiary count that demonstrated potential beneficiary disruption were neuropathic pain (pain management), injectable narcotic analgesics (pain management), proton pump inhibitors (stomach ulcers), beta agonist bronchodilators
(asthma), and hypoglycemics, insulin and related agents (diabetes) with 4,233, 388, 336, 331, and 323 unique beneficiaries, respectively, who reverted to a non-preferred medication.

— These five drug categories accounted for 70% of the total beneficiaries that reverted to a non-preferred medication following the PDL category changes implemented in SFY 2015.

**Conclusion**

A small percentage of individuals reverted to non-preferred medications following changes made to the PDL program’s drug categories in SFY 2015. This finding suggests that Medicaid beneficiaries who changed from a non-preferred medication to a preferred medication remained on the preferred medication regimen, except for clinically necessary exceptions.

**Beneficiaries with a Denied Non-Preferred Claim Payment and No Subsequent Paid Claim**

In Exhibit 2, Appendix A, Mercer summarized the top 10 drug categories with the greatest number of beneficiaries who had a denied claim payment for a non-preferred prescription and did not receive a subsequent non-preferred or preferred paid claim within the same therapeutic drug category in SFY 2015.

**Observations**

- Of the therapeutic drug categories evaluated, 94 had beneficiaries who had a denied claim payment for a non-preferred prescription and did not receive a subsequent paid claim for a non-preferred or preferred medication within the same therapeutic drug category during the study period.
- Overall, 2.2% (or approximately 77,000) of continuously Medicaid eligible beneficiaries had a denied claim payment and did not receive a subsequent paid claim within the PDL drug category.
  — These results are similar to SFY 2013 and SFY 2014, when 2.5% of continuously Medicaid eligible beneficiaries had a denied claim payment and did not receive a subsequent paid claim within the PDL drug category.
- The top 10 drug categories based on beneficiary counts and continuous Medicaid eligibility ranged from a low of 1.1% (NSAIDS [pain relief]) to a high of 36.6% (lipotropics, other [high cholesterol]) of beneficiaries not receiving a subsequent claim within the drug category following a denied claim payment.

**Conclusion**

Consistent with previous years, relatively few Medicaid beneficiaries did not obtain a drug following a denied claim payment for a non-preferred medication within the same therapeutic drug category.
Preferred Drug List Compliance
A primary goal of the State’s PDL program is to encourage prescribers to write prescriptions for preferred medications within designated therapeutic drug categories. Mercer compared the percentage of preferred prescriptions utilized (that is, PDL compliance) between SFY 2014 and SFY 2015 by PDL therapeutic drug category.

- Exhibit 3 in Appendix A represents the top 10 therapeutic drug categories that showed the greatest increase in PDL compliance in SFY 2015 compared to SFY 2014.
- Exhibit 4 in Appendix A represents the top 10 therapeutic drug categories that showed the greatest decrease in PDL compliance in SFY 2015 compared to SFY 2014.

Observations
- The overall PDL compliance rate in SFY 2014 was approximately 95.9%. In SFY 2015, the overall PDL compliance rate decreased to approximately 95.2%, a 0.7 percentage point decrease.
- The drug classes with the greatest percentage point decreases of preferred prescriptions utilized between SFY 2014 and SFY 2015 included:
  - Hepatitis C Agents had the largest decrease in SFY 2015 (28.1 percentage points).
  - Multiple Sclerosis agents experienced a decrease of 14.6 percentage points. Several drugs were added to the non-preferred category in SFY 2015.
  - Phosphate Binders experienced a decrease of 11.3 percentage points. A couple drugs were added to the non-preferred category in January 2015. The remaining categories within the top 10 all decreased between 5 and 11 percentage points.
- The drug classes with the greatest percentage point increase of preferred prescriptions utilized between SFY 2014 and SFY 2015 included:
  - Hypoglycemics, SGLT2 (diabetes) experienced a compliance increase of 63.5 percentage points. Pulmonary Arterial Hypertension (PAH) Agents, oral and inhaled, experienced a compliance increase of 31.0 percentage points. The remaining categories in the top 10 had compliance increases between one and nine percentage points.

The overall PDL compliance rate in SFY 2015 was approximately 95.2%. This is comparable to SFY 2014 (95.9%) and SFY 2013 (96.5%).

Conclusion
The overall high compliance rate and the year-over-year stability of the rate suggests prescribers write prescriptions for preferred medications more frequently than non-preferred medications and adjust quickly to changes made to the PDL.

Preferred Drug List Prior Authorization Requests for Non-Preferred Medications
Mercer summarized the number of PA approvals and denials for non-preferred medications during the study period that were processed by the State’s PA vendor. The top 10 therapeutic
drug categories by total approvals and denials are represented in Exhibit 5, Appendix A. These data include all approvals and denials processed by the call center, through automated PA, by facsimile, through the internet, and by mail.

**Observations**

In SFY 2015, there were 9.9 million PDL prior authorization requests processed with an overall approval rate of 99.8% and an overall denial rate of 0.2%.

- Of the top 10 PDL therapeutic drug categories by the number of PDL prior authorization requests, the approval rate ranged from a minimum of 99.5% for the proton pump inhibitors to 100% for four of the top 10 PDL therapeutic drug categories.

**Conclusion**

The high approval rate for PDL prior authorization requests may indicate prescribers are familiar with the PDL program and can quickly adapt and adhere to therapeutic drug category changes when implemented.
Medical Services Utilization and Expenditures Analysis

To monitor whether the PDL program resulted in changes in beneficiaries’ use and cost of medical services, Mercer evaluated medical services utilization and expenditures for beneficiaries “impacted” by the PDL program, as compared to beneficiaries “not impacted” by the PDL program, for select PDL therapeutic drug categories.

The medical services utilization and expenditures evaluated included:

- Inpatient hospital admissions
- Emergency room visits
- Outpatient hospital visits
- Physician office visits

Mercer considered beneficiaries “not impacted” by the PDL program if they did not experience a change in drug therapy within a PDL therapeutic drug category. “Not impacted” beneficiaries were taking preferred medications within the same PDL therapeutic drug category. Mercer defined beneficiaries as “impacted” by the PDL program if they changed drug therapies within a PDL therapeutic drug category. “Impacted” beneficiaries were taking non-preferred medications then switched to preferred medications within the same PDL therapeutic drug category.

Mercer’s criteria for selecting the PDL therapeutic drug categories included:

- PDL categories with a relatively large market shift from non-preferred medications before the PDL program’s implementation to preferred medications after implementation.
- PDL categories used as long-term maintenance therapies for chronic disease treatment.

Based on these criteria, Mercer selected the following PDL categories to evaluate:

- Lipotropics and statins used to treat beneficiaries with high cholesterol.
- Inhaled glucocorticoids used to treat beneficiaries with asthma.
- Hypoglycemics, insulins, and related agents used to treat beneficiaries with diabetes.

Mercer has included the data and graphs referenced for this evaluation in the following appendices:

- Appendix B contains graphs of the selected PDL drug categories illustrating utilization per beneficiary for the selected medical services categories.
Appendix C contains graphs of the selected PDL drug categories illustrating paid amount per beneficiary for the selected medical services categories.

Mercer performed a time series comparative analysis of the three selected PDL therapeutic drug categories. The pre-PDL implementation time period was March 15, 2010 through September 14, 2010. The study time period was SFY 2012 through SFY 2015 (July 1, 2011 through June 30, 2015). These time periods were aggregated and used as the data points on the graphs:

- **Pre-implementation period:**
  - March 15, 2010 to June 14, 2010
  - June 15, 2010 to September 14, 2010

- **Study Period:**
  - July 1, 2011 to September 30, 2011
  - October 1, 2011 to December 31, 2011
  - January 1, 2012 to March 31, 2012
  - April 1, 2012 to June 30, 2012
  - July 1, 2012 to September 30, 2012
  - October 1, 2012 to December 31, 2012
  - January 1, 2013 to March 31, 2013
  - April 1, 2013 to June 30, 2013
  - July 1, 2013 to September 30, 2013
  - October 1, 2013 to December 31, 2013
  - January 1, 2014 to March 31, 2014
  - April 1, 2014 to June 30, 2014
  - July 1, 2014 to September 30, 2014
  - October 1, 2014 to December 31, 2014
  - January 1, 2015 to March 31, 2015
  - April 1, 2015 to June 30, 2015

The vertical line on each graph indicates the date of the PDL program’s implementation — September 15, 2010.

**Observations**

- As shown by the graphs in Appendix B, the overall utilization for medical services was relatively low for the selected PDL categories and for each population group.
  - The utilization by population group followed similar experience patterns between the pre-implementation period and study period for the selected PDL categories that Mercer reviewed.
- In Appendix C, the paid amount per beneficiary was also generally similar across time periods by population group and medical services category.
Mercer summarized data paid through September 2015 for this report. No additional data were available at the time of the writing of this report. Although the graphs do not show a significant decrease in utilization and paid amount per beneficiary in Q4 SFY 2015, additional paid data may have an effect on final Q4 SFY 2015 results.

**Conclusion**
In general, the utilization and paid amount per beneficiary experience were similar across time periods by population group and medical services categories. However, since the analysis was not a controlled randomized study, no direct statistical correlation should be made between Medicaid beneficiaries’ medical services utilization and expenditures and the impact of the PDL program’s implementation.
Estimated Savings
Mercer calculated the estimated PDL program savings across all therapeutic drug categories effective during SFY 2015. The savings estimate calculation accounts for:

1. PDL savings, which are the cost benefit of denied point-of-sale outpatient pharmacy claims for non-preferred PDL medications, net of the CMS rebates. The PDL savings also includes offsets in savings due to alternative (that is, preferred) drug therapies dispensed.
2. Market shift savings, which is the savings, net of CMS rebates, achieved from the sentinel effect of beneficiaries switching from a non-preferred medication to a preferred medication without a denied payment claim at the pharmacy.
3. Supplemental rebates collected from manufacturers as reported by the State’s supplemental rebate vendor.
4. Administrative costs.

In addition, Mercer estimated clinical PA savings realized during SFY 2015. The clinical PA program requires PA for certain drugs prescribed to Medicaid beneficiaries to ensure appropriate clinical criteria adherence, independent of the supplemental rebate program.

Estimated Total Net Savings
Mercer estimates the total net savings for the clinical PA, PDL, and supplemental rebate programs were $172.1 million (State share of $58.8 million).

- Approximately $59.6 million (State share of approximately $20.4 million) can be attributed to the clinical PA program.
- $112.5 million (State share of approximately $38.4 million) can be attributed to the State’s PDL and supplemental rebate program.
- Savings equate to an overall return on investment of 52:1 for the PDL and supplemental rebate program.

A breakout of the savings components, including both State and federal allocations, is represented in the table and exhibit below.
Table 1: Clinical PA, PDL, and Supplemental Rebate Program Net Savings

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>% of Total</th>
<th>State Share</th>
<th>Federal Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDL savings</td>
<td>$48,808,000</td>
<td>n/a</td>
<td>$16,665,000</td>
<td>$32,143,000</td>
</tr>
<tr>
<td>Administrative costs</td>
<td>($2,180,000)</td>
<td>n/a</td>
<td>($744,000)</td>
<td>($1,436,000)</td>
</tr>
<tr>
<td><strong>PDL savings net admin costs</strong></td>
<td>$46,628,000</td>
<td>27%</td>
<td>$15,921,000</td>
<td>$30,707,000</td>
</tr>
<tr>
<td>Market shift savings</td>
<td>$74,000</td>
<td>0%</td>
<td>$25,000</td>
<td>$49,000</td>
</tr>
<tr>
<td>Supplemental rebate collections</td>
<td>$65,839,000</td>
<td>38%</td>
<td>$22,481,000</td>
<td>$43,358,000</td>
</tr>
<tr>
<td><strong>Net PDL savings</strong></td>
<td>$112,541,000</td>
<td>n/a</td>
<td>$38,427,000</td>
<td>$74,114,000</td>
</tr>
<tr>
<td>Net clinical PA savings</td>
<td>$59,600,000</td>
<td>35%</td>
<td>$20,350,000</td>
<td>$39,250,000</td>
</tr>
<tr>
<td><strong>Total net PDL and clinical PA savings</strong></td>
<td>$172,141,000</td>
<td>100%</td>
<td>$58,777,000</td>
<td>$113,364,000</td>
</tr>
</tbody>
</table>

Exhibit 1: Distribution by Savings Component

**Preferred Drug List Savings and Market Shift Savings**

For SFY 2015, Mercer estimated the total PDL savings (item 1 described above) to be $48.8 million and the market shift savings (item 2 described above) to be $74,000 for a combined total of **$48.9 million** (State share of approximately $16.7 million), not including consideration for administrative costs.

The therapeutic drug categories with the largest combined PDL and market shift savings during the study period included:
• Stimulants and related agents
• Acne agents, topical
• Hepatitis C agents
• Anticoagulants

Administrative Costs
In order to effectively administer the PDL program, the State incurs additional costs in the form of staff salaries and benefits, payments to contracted vendors, as well as Medicaid beneficiary PA hearings and appeals costs associated with the PDL program.

In SFY 2015, the State reimbursed their contracted vendors a total of approximately $2.2 million for creating point of sale edits related to the PDL, as well as negotiating, invoicing, and collecting supplemental rebates from contracted pharmaceutical manufacturers. In addition, the State’s staff salaries and benefits related to PDL program operations for the study period were approximately $412,000. Lastly, the State incurred costs of approximately $125,000 as a result of Medicaid beneficiary hearings and appeals for denied payment for non-preferred prescription claims related to the PDL. Total administrative costs associated with the PDL and supplemental rebate program for the study period were $2.2 million (State share of approximately $745,000).

Table 2: Total PDL and Supplemental Rebate Program Administrative Costs

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>State Share</th>
<th>Federal Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff salary and benefits</td>
<td>($412,000)</td>
<td>($141,000)</td>
<td>($271,000)</td>
</tr>
<tr>
<td>Hearings and appeals costs</td>
<td>($125,000)</td>
<td>($43,000)</td>
<td>($82,000)</td>
</tr>
<tr>
<td>Contracted vendor costs</td>
<td>($1,644,000)</td>
<td>($561,000)</td>
<td>($1,083,000)</td>
</tr>
<tr>
<td><strong>Total administrative costs</strong></td>
<td><strong>($2,181,000)</strong></td>
<td><strong>($745,000)</strong></td>
<td><strong>($1,436,000)</strong></td>
</tr>
</tbody>
</table>

Supplemental Rebate Collections
The supplemental rebates for preferred medications collected from pharmaceutical manufacturers in SFY 2015 were approximately $65.8 million (State share of approximately $22.5 million). The supplemental rebates for preferred medications dispensed during the study period continue to be collected and, as such, the total amount of supplemental rebates will continue to increase as those collections continue.

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3 On July 1, 2013, North Carolina implemented NCTracks, a new claims adjudication platform managed by CSC. Under the new contract with CSC, some PDL expenses are no longer itemized and Mercer could not include them in the calculation as had been done in previous analyses.

4 Q4 SFY 2015 supplemental rebate collection amounts were not available at the time of the writing of this report. Mercer estimated SFY 2015 supplemental rebate amounts by annualizing supplemental rebates collected through August 26, 2015 and included the estimated Q4 SFY 2015 supplemental rebate invoice amounts for select mental health drug classes as reported by Magellan Health Services on September 17, 2015.
Limitations of Analysis

For our analysis, Mercer relied on data, information and other sources of data as described in this report. We have relied upon these data without an independent audit. Although we have reviewed the data for reasonableness and consistency, we have not audited or otherwise verified these data. It should also be noted that our review of data may not always reveal imperfections. If the data or information is inaccurate or incomplete, our findings and conclusions may need to be revised.

All estimates are based upon the information available at a point in time, and are subject to unforeseen and random events. Therefore, any projection must be interpreted as having a likely range of variability from the estimate. Any estimate or projection may not be used or relied upon by any other party or for any other purpose than for which it was issued by Mercer. Mercer is not responsible for the consequences of any unauthorized use.
## APPENDIX A

Exhibits for Assessment of Beneficiaries’ Access to PDL Program Medications

**Exhibit 1 — Top 10 PDL Drug Categories by Count of Beneficiaries Who Reverted to Non-Preferred Drug**

<table>
<thead>
<tr>
<th>PDL Therapeutic Drug Category</th>
<th>Count of Beneficiaries with Continuous Eligibility who Reverted to Non Preferred</th>
<th>Total Beneficiaries with Continuous Eligibility</th>
<th>% of Continuously Eligible Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuropathic pain</td>
<td>4,233</td>
<td>68,391</td>
<td>6.2%</td>
</tr>
<tr>
<td>Analgesics, narcotic injectable</td>
<td>388</td>
<td>192,343</td>
<td>0.2%</td>
</tr>
<tr>
<td>Proton pump inhibitors</td>
<td>336</td>
<td>77,151</td>
<td>0.4%</td>
</tr>
<tr>
<td>Bronchodilators, beta agonist</td>
<td>331</td>
<td>172,979</td>
<td>0.2%</td>
</tr>
<tr>
<td>Hypoglycemics, insulin and related agents</td>
<td>323</td>
<td>17,137</td>
<td>1.9%</td>
</tr>
<tr>
<td>Skeletal muscle relaxants</td>
<td>281</td>
<td>59,943</td>
<td>0.5%</td>
</tr>
<tr>
<td>Antihistamines, minimally sedating</td>
<td>198</td>
<td>229,872</td>
<td>0.1%</td>
</tr>
<tr>
<td>COPD agents</td>
<td>181</td>
<td>13,327</td>
<td>1.4%</td>
</tr>
<tr>
<td>Analgesics, narcotics long</td>
<td>170</td>
<td>12,147</td>
<td>1.4%</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>154</td>
<td>41,453</td>
<td>0.4%</td>
</tr>
<tr>
<td><strong>Total for Top 10 PDL Categories</strong></td>
<td><strong>6,595</strong></td>
<td><strong>884,743</strong></td>
<td><strong>0.7%</strong></td>
</tr>
<tr>
<td><strong>Total for All PDL Categories</strong></td>
<td><strong>7,983</strong></td>
<td><strong>3,014,418</strong></td>
<td><strong>0.3%</strong></td>
</tr>
</tbody>
</table>
Exhibit 2 — Top 10 PDL Drug Categories by Total Beneficiary Count Who Had Prescription Claim Payment Denied and No Subsequent Paid Claims

<table>
<thead>
<tr>
<th>PDL Therapeutic Drug Category</th>
<th>Count of Continuously Eligible Beneficiaries with a Denied Claim Payment and No Subsequent Claims</th>
<th>Total Beneficiaries with Continuous Eligibility</th>
<th>% of Continuously Eligible Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuropathic pain</td>
<td>5,767</td>
<td>75,418</td>
<td>7.6%</td>
</tr>
<tr>
<td>Proton pump inhibitors</td>
<td>5,128</td>
<td>81,545</td>
<td>6.3%</td>
</tr>
<tr>
<td>Skeletal muscle relaxants</td>
<td>4,090</td>
<td>66,150</td>
<td>6.2%</td>
</tr>
<tr>
<td>Bronchodilators, beta agonist</td>
<td>3,607</td>
<td>189,192</td>
<td>1.9%</td>
</tr>
<tr>
<td>Analgesics, narcotics long</td>
<td>3,100</td>
<td>13,043</td>
<td>23.8%</td>
</tr>
<tr>
<td>Lipotropics, other</td>
<td>2,611</td>
<td>7,132</td>
<td>36.6%</td>
</tr>
<tr>
<td>Antifungals, topical</td>
<td>2,498</td>
<td>76,159</td>
<td>3.3%</td>
</tr>
<tr>
<td>Acne agents, topical</td>
<td>2,222</td>
<td>22,873</td>
<td>9.7%</td>
</tr>
<tr>
<td>Intranasal rhinitis agents</td>
<td>2,090</td>
<td>119,426</td>
<td>1.8%</td>
</tr>
<tr>
<td>NSAIDS</td>
<td>1,994</td>
<td>176,611</td>
<td>1.1%</td>
</tr>
<tr>
<td><strong>Total for Top 10 PDL Categories</strong></td>
<td><strong>33,107</strong></td>
<td><strong>827,549</strong></td>
<td><strong>4.0%</strong></td>
</tr>
<tr>
<td><strong>Total for All PDL Categories</strong></td>
<td><strong>76,986</strong></td>
<td><strong>3,549,956</strong></td>
<td><strong>2.2%</strong></td>
</tr>
</tbody>
</table>
## Exhibit 3 — Top 10 PDL Drug Categories by Percentage Point Increase in Compliance

<table>
<thead>
<tr>
<th>PDL Therapeutic Drug Category</th>
<th>Preferred % SFY 2014</th>
<th>Preferred % SFY 2015</th>
<th>Percentage Point Difference Between SFY 2014 and SFY 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoglycemics, SGLT2</td>
<td>28.6%</td>
<td>92.1%</td>
<td>63.5%</td>
</tr>
<tr>
<td>PAH agents, oral and inhaled</td>
<td>60.0%</td>
<td>91.0%</td>
<td>31.0%</td>
</tr>
<tr>
<td>Antivirals, topical</td>
<td>84.5%</td>
<td>92.8%</td>
<td>8.3%</td>
</tr>
<tr>
<td>H.Pylori treatment</td>
<td>85.1%</td>
<td>91.6%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Irritable bowel syndrome</td>
<td>84.2%</td>
<td>89.8%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Antipsoriatrics, topical</td>
<td>85.7%</td>
<td>90.6%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Antimigraine agents, triptans</td>
<td>59.3%</td>
<td>62.0%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Intranasal rhinitis agents</td>
<td>95.6%</td>
<td>98.1%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Hypoglycemics, TZD</td>
<td>96.5%</td>
<td>98.0%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Platelet aggregation inhibitors</td>
<td>95.2%</td>
<td>96.3%</td>
<td>1.1%</td>
</tr>
<tr>
<td><strong>Total Compliance for All PDL Categories</strong></td>
<td><strong>95.9%</strong></td>
<td><strong>95.2%</strong></td>
<td><strong>-0.7%</strong></td>
</tr>
</tbody>
</table>
### Exhibit 4 — Top 10 PDL Drug Categories by Percentage Point Decrease in Compliance

<table>
<thead>
<tr>
<th>PDL Therapeutic Drug Category</th>
<th>Preferred % SFY 2014</th>
<th>Preferred % SFY 2015</th>
<th>Percentage Point Difference between SFY 2014 and SFY 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis C agents</td>
<td>71.6%</td>
<td>43.5%</td>
<td>-28.1%</td>
</tr>
<tr>
<td>Multiple sclerosis agents</td>
<td>61.0%</td>
<td>46.4%</td>
<td>-14.6%</td>
</tr>
<tr>
<td>Phosphate binders</td>
<td>96.8%</td>
<td>85.5%</td>
<td>-11.3%</td>
</tr>
<tr>
<td>Lipotropics, other</td>
<td>77.2%</td>
<td>66.9%</td>
<td>-10.3%</td>
</tr>
<tr>
<td>Hepatitis B agents</td>
<td>99.6%</td>
<td>90.6%</td>
<td>-9.0%</td>
</tr>
<tr>
<td>Immunomodulators, atopic dermatitis</td>
<td>100.0%</td>
<td>93.2%</td>
<td>-6.8%</td>
</tr>
<tr>
<td>Angiotensin modulator combinations</td>
<td>95.2%</td>
<td>88.4%</td>
<td>-6.8%</td>
</tr>
<tr>
<td>Hypoglycemics, incretin mimetics/enhancers</td>
<td>82.6%</td>
<td>76.0%</td>
<td>-6.6%</td>
</tr>
<tr>
<td>Bile salts</td>
<td>100.0%</td>
<td>94.7%</td>
<td>-5.3%</td>
</tr>
<tr>
<td>Stimulants and related agents</td>
<td>99.4%</td>
<td>94.1%</td>
<td>-5.3%</td>
</tr>
<tr>
<td><strong>Total Compliance for All PDL Categories</strong></td>
<td><strong>95.9%</strong></td>
<td><strong>95.2%</strong></td>
<td><strong>-0.7%</strong></td>
</tr>
</tbody>
</table>
## Exhibit 5 — Top 10 PDL Categories by PDL Prior Authorization Requests

<table>
<thead>
<tr>
<th>PDL Therapeutic Drug Category</th>
<th>PDL Prior Authorization Requests</th>
<th>Approved</th>
<th>Denied</th>
<th>Approval %</th>
<th>Denial %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antihistamines, minimally sedating</td>
<td>702,647</td>
<td>702,445</td>
<td>202</td>
<td>100.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Stimulants and related agents</td>
<td>702,353</td>
<td>701,930</td>
<td>423</td>
<td>99.9%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Antidepressants, other</td>
<td>696,109</td>
<td>695,216</td>
<td>893</td>
<td>99.9%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Neuropathic pain</td>
<td>531,580</td>
<td>529,519</td>
<td>2,061</td>
<td>99.6%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Analgesics, narcotic injectable</td>
<td>468,607</td>
<td>468,534</td>
<td>73</td>
<td>100.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Bronchodilators, beta agonist</td>
<td>463,305</td>
<td>463,015</td>
<td>290</td>
<td>99.9%</td>
<td>0.1%</td>
</tr>
<tr>
<td>NSAIDS</td>
<td>412,468</td>
<td>412,051</td>
<td>417</td>
<td>99.9%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Proton pump inhibitors</td>
<td>350,986</td>
<td>349,319</td>
<td>1,667</td>
<td>99.5%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Cephalosporins and related antibiotics</td>
<td>310,039</td>
<td>310,032</td>
<td>7</td>
<td>100.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>287,113</td>
<td>287,051</td>
<td>62</td>
<td>100.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Total for Top 10 PDL Categories</strong></td>
<td><strong>4,925,207</strong></td>
<td><strong>4,919,112</strong></td>
<td><strong>6,095</strong></td>
<td><strong>99.9%</strong></td>
<td><strong>0.1%</strong></td>
</tr>
<tr>
<td><strong>Total for All PDL Categories</strong></td>
<td><strong>9,899,152</strong></td>
<td><strong>9,882,310</strong></td>
<td><strong>16,842</strong></td>
<td><strong>99.8%</strong></td>
<td><strong>0.2%</strong></td>
</tr>
</tbody>
</table>
APPENDIX B

Graphs of Medical Services Utilization
Lipotropics, Statins

**Inpatient Admissions per Beneficiary**
- Lipotropics, Statins

**Emergency Room Visits per Beneficiary**
- Lipotropics, Statins

**Outpatient Visits per Beneficiary**
- Lipotropics, Statins

**Physician Office Visits per Beneficiary**
- Lipotropics, Statins
Glucocorticoids, Inhaled

**Inpatient Admissions per Beneficiary**

**Emergency Room Visits per Beneficiary**

**Outpatient Visits per Beneficiary**

**Physician Office Visits per Beneficiary**
Hypoglycemics, Insulin and Related Agents

Inpatient Admissions per Beneficiary

Emergency Room Visits per Beneficiary

Outpatient Visits per Beneficiary

Physician Office Visits per Beneficiary
APPENDIX C

Graphs of Medical Services Expenditures
Glucocorticoids, Inhaled

Inpatient Admissions Paid per Beneficiary

Emergency Room Visits Paid per Beneficiary

Outpatient Visits Paid per Beneficiary

Physician Office Visits Paid per Beneficiary

Dates of Service

Dates of Service

Dates of Service

Dates of Service

No Change in Drug Therapy

No Change in Drug Therapy

No Change in Drug Therapy

No Change in Drug Therapy

Had Change in Drug Therapy

Had Change in Drug Therapy

Had Change in Drug Therapy

Had Change in Drug Therapy

Hypoglycemics, Insulin and Related Agents