Effects of pharmaceutical manufacturer rebates on Part D’s risk adjustment

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Motivation for the analysis

- Goal of risk adjustment is to pay accurately across groups of beneficiaries based on expected average costs of each of these groups
- Rapid growth in rebates and discounts may have reduced the accuracy of Part D’s risk adjustment across disease conditions
  - Annual growth of about 20% since 2007
  - Estimated to sum to 28% of total Part D spending, up from less than 10% in 2007
Payments to plans are risk adjusted to counter incentives for risk selection

- Capitated payments (direct subsidy) are based on plans’ estimates of expected benefit costs for an average enrollee
- CMS uses RxHCC model to adjust payments to reflect the expected costliness of each enrollee
- In 2018, risk adjustment applied to 40% of plans’ revenue covering basic benefit costs (remainder covered by Medicare’s cost-based reinsurance)

Notes: RxHCC (prescription drug hierarchical condition category).
Part D’s risk-adjustment model

- Similar to the HCC model used to adjust payments to Medicare Advantage plans
  - Based on age, sex, disability status, and medical diagnoses (RxHCCs)
  - Uses a regression analysis to estimate coefficients that reflect expected additional drug costs for each variable
- Predicts plans’ basic benefit costs (prices paid at the pharmacy)
  - Excludes reinsurance because that risk is borne by Medicare
  - Pharmacy claims do not reflect postsale rebates and discounts

Notes: HCC (hierarchical condition category), RxHCCs (prescription drug hierarchical condition categories).
How CMS calculates RxHCC risk scores

- RxHCC model coefficients are divided by average drug costs to arrive at relative factors
- Examples of relative factors for community beneficiaries, not receiving Part D’s LIS*:
  - Female 65 – 69 years: 0.239
  - RxHCC30 (diabetes with complications): 0.425
  - RxHCC241 (diabetic retinopathy): 0.307
- Risk score for non-LIS, 65-year old female with diabetes with complications and diabetic retinopathy is:
  \[ 0.239 + 0.425 + 0.307 = 0.971 \]

Notes: RxHCCs (prescription drug hierarchical condition categories), LIS (low-income subsidy), *CMS HHS Announcement of calendar year 2018 Medicare Advantage capitation rates and Medicare Advantage and Part D payment policies and final call letter and request for information.
Rapid growth in rebates raises concerns about the accuracy of Part D’s risk adjustment

- In 2018, plans’ share of direct and indirect remuneration (DIR) offset over 50% of plan liability
- Rebates vary by drug, potentially undermining the accuracy of risk adjustment across RxHCCs

Notes: DIR (direct and indirect remuneration), RxHCC (prescription drug hierarchical condition category). DIR refers to all postsale rebates and discounts that reduce Part D’s basic benefit costs. DATA ARE PRELIMINARY AND SUBJECT TO CHANGE.
Key questions for the analysis of the effects of rebates on Part D’s risk adjusters

- How do rebates affect the RxHCC model’s risk-adjustment factors?
- Are there systematic over- or under-estimation of costs across the condition categories?
- What are the potential implications for plan incentives and payments?
Method used to compare risk adjusters with and without rebates

- Base case: single model* calibrated using 2017 diagnoses to predict 2018 (gross) plan liability
- Used estimated rebates to calculate plan liability net of rebates for 2 categories of drugs:
  - Insulins
  - TNF inhibitors
- Re-estimated the model using net plan liability for 1) insulins, 2) TNF inhibitors, and 3) both insulins and TNF inhibitors
- All models used the same explanatory variables as the current version of the RxHCC model

Notes: TNF (tumor necrosis factor), RxHCC (prescription drug hierarchical condition category). *For simplicity, we used a single community segment model for all of our regression estimates. Individuals who were new to Medicare in 2018 and those who were residing in an institutional settings at some point during 2018 were excluded from the analysis.
## Estimated net plan liability for insulins and TNF inhibitors, 2018

<table>
<thead>
<tr>
<th></th>
<th>Insulins</th>
<th>TNF inhibitors</th>
</tr>
</thead>
<tbody>
<tr>
<td># of users, millions</td>
<td>3.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Total spending, billions</td>
<td>$14.3</td>
<td>$5.4</td>
</tr>
<tr>
<td><strong>Average per user</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spending</td>
<td>$4,410</td>
<td>$45,052</td>
</tr>
<tr>
<td>Plan liability&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1,527</td>
<td>7,630</td>
</tr>
<tr>
<td>Rebate&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1,257</td>
<td>5,191</td>
</tr>
<tr>
<td>Net plan liability</td>
<td>270</td>
<td>2,438</td>
</tr>
</tbody>
</table>

### Chose insulins and TNF inhibitors because:
- Rebate information available in published studies/reports
- Represent drugs with very different use and costs
- Used conservative estimates of rebates
  - Started with the lower bound of estimates
  - Accounted for coverage gap discounts

### Notes:
- TNF (tumor necrosis factor).
- <sup>1</sup>Plan liability is calculated as the difference between gross spending for basic benefit costs and the portion of the benefit costs paid by Medicare’s reinsurance.
- <sup>2</sup>Based on the methodology CMS use to allocate rebates, we assumed that plans retained 67 percent of rebates, on average. *DATA ARE PRELIMINARY AND SUBJECT TO CHANGE.*
Interpreting the regression findings

- Results are specific to the two categories of drugs we examined—insulins and TNF inhibitors—and are based on estimated rebates.
- Impacts would vary if rebates for other categories of drugs were reflected in the model.
Using plan liability net of rebates reduced relative factors by as much as 75 percent

<table>
<thead>
<tr>
<th>Relative factors</th>
<th>Base case</th>
<th>Net plan liability for insulins</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>RxHCC30: Diabetes with complications</td>
<td>0.612</td>
<td>0.395</td>
<td>-35%</td>
</tr>
<tr>
<td>RxHCC31: Diabetes without complications</td>
<td>0.284</td>
<td>0.251</td>
<td>-12%</td>
</tr>
<tr>
<td>RxHCC241: Diabetic retinopathy</td>
<td>0.412</td>
<td>0.102</td>
<td>-75%</td>
</tr>
<tr>
<td>RxHCC311: Chronic ulcer of skin, except pressure</td>
<td>0.150</td>
<td>0.061</td>
<td>-59%</td>
</tr>
</tbody>
</table>

- Using net plan liability for TNF inhibitors reduced relative factors for inflammatory conditions* by between 20% and 39%
- Similar effects on relative factors for diabetes and inflammatory conditions in the combined model

Notes: RxHCC (prescription drug hierarchical condition category), TNF (tumor necrosis factor). *RxHCC67 (inflammatory bowel disease), RxHCC82 (psoriatic arthropathy/systemic sclerosis), RxHCC83 (rheumatoid arthritis/other inflammatory polyarthropathy), and RxHCC316 (psoriasis other than arthropathy). DATA ARE PRELIMINARY AND SUBJECT TO CHANGE.
Changes in the relative costs for specific conditions affect risk scores for all beneficiaries

- A decrease in the relative costliness of a specific condition means higher relative costs for other conditions.

### Average risk score for beneficiaries

<table>
<thead>
<tr>
<th>Condition</th>
<th>Base case</th>
<th>Net plan liability (combined)</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>With diabetes</td>
<td>1.53</td>
<td>1.39</td>
<td>-9%</td>
</tr>
<tr>
<td>Without diabetes</td>
<td>0.77</td>
<td>0.83</td>
<td>8%</td>
</tr>
<tr>
<td>With inflammatory conditions</td>
<td>1.75</td>
<td>1.63</td>
<td>-7%</td>
</tr>
<tr>
<td>Without inflammatory conditions</td>
<td>0.95</td>
<td>0.96</td>
<td>1%</td>
</tr>
</tbody>
</table>

- Effects on risk scores for individual beneficiaries will vary depending on the RxHCCs indicated for each individual (e.g., risk scores increased for 10% of beneficiaries with diabetes).

Notes: RxHCC (prescription drug hierarchical condition category). DATA ARE PRELIMINARY AND SUBJECT TO CHANGE.
Using net prices would affect plan-level averages less than individual risk scores

- Effects on individual plans would depend on the mix of RxHCCs indicated for their enrollees

- Plan-level average risk scores increased by 0.7% for PDPs and decreased by 1.5% for MA-PDs, on average, when net plan liability used for both insulins and TNF inhibitors
  - Mostly driven by effects of rebates for insulins
  - Reflects differences in RxHCCs (e.g., higher share of MA-PD enrollees had diabetes with complications)

Notes: RxHCC (prescription drug hierarchical condition category), TNF (tumor necrosis factor), PDPs (stand-alone prescription drug plans), MA-PDs (Medicare-Advantage prescription drug plans). DATA ARE PRELIMINARY AND SUBJECT TO CHANGE.
Key takeaways

- Rebates affect the accuracy of the entire risk-adjustment system
  - CMS uses gross, not net prices
  - Rapid and uneven growth in rebates has reduced the accuracy of the model
- To improve payment accuracy, policymakers may want to initially focus on drugs with the largest impact—i.e., those with large rebates and used to treat highly prevalent conditions
Policy implications

- Risk adjustment based on pharmacy prices creates or worsens misaligned incentives
  - Incentives for risk selection
  - Use of formularies that prefer high-price, high-rebate drugs
- Using net prices in the risk-adjustment model would improve the accuracy of payments
- Accurate risk adjustment would be particularly important under the Commission’s recommendations to restructure the Part D benefit
Discussion

▪ Questions or comments?

▪ Commissioner feedback on future direction
  ▪ We plan to include the material in the Part D chapter of the March 2021 Report to the Congress
  ▪ Research/explore administrative changes required (e.g., data submission requirements, agency resources) and potential unintended consequences
  ▪ Are there other angles you would like us to pursue?