Can Lowering Generics Member Cost Share Impact CMS Star Adherence Metrics?

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No external funding provided for this research

Background

- Medication adherence can reduce health care costs and improve health outcomes.[1]
- Quality of Medicare plans are determined by Centers for Medicare and Medicaid Services (CMS) Star Ratings. Adherence is a major component of Medicare Star Ratings and is measured across three drug categories (renin angiotensin system (RAS) hypertension, high cholesterol and oral diabetes drugs).[2,3]
- To improve adherence in the Star drug categories, Prime Therapeutics offered the Stars Formulary program which began on Jan. 1, 2016.
- The Stars Formulary benefit program (SFB) was comprised of a new benefit tier called Tier 6. The Tier 6 benefit was created to significantly reduce a member's cost share for Star adherence generic drugs. A member's cost share was reduced to a $0 to $2 range per 30-day drug supply for select generic drugs within the three Star drug categories.
- Previous research is limited in terms of cost share changes impacting adherence in health plans.
  - A 2010 study from Blue Cross and Blue Shield of North Carolina showed a 3.8% adherence improvement for metformin (diabetes) and a 2.9% improvement for ACE inhibitors (hypertension) when copayments were reduced to $0 for generic medications and reduced for brand name medications for over 700,000 individuals in commercial insurance.[4]
  - A 2009 Blue Cross and Blue Shield of Nebraska study examined adherence improvement for $0 generic copayments in a much smaller population.[5] The study did not show an adherence improvement.

Objective

- To determine if the Star Formulary benefit program that lowered generic drug cost shares for select drugs was associated with improved yearly Star adherence compared to controls.

Methods

- Administrative pharmacy claims and membership eligibility data were used from the Prime Therapeutics database.
- The intervention group for the study was comprised of Medicare Advantage (MAPD) members from plans where the SFB in 2016 was implemented. The comparison group was comprised of MAPD members in plans where the benefit was not implemented.

Study population

- For 2016, the intervention group had 159,196 monthly average members compared to 50,456 members for the control group.
- The intervention group had 166,098 adherence proportion of days covered (PDC) measurements compared to 52,643 adherence PDC measurements for the control group across the combined three Star drug categories initially examined.
- The analysis inclusion criteria were members who:
  1) remained in the same Medicare contract and did not change pharmacy benefit plans during the two-year study period (2015 and 2016);
  2) had been continuously enrolled during the two-year study period (2015 and 2016);
  3) qualified in both years for any of the three CMS Star adherence categories; and
  4) had an end of the year PDC calculated for the same Star drug category in both 2015 and 2016.
- A difference-in-difference study was conducted to assess the improvement in yearly percentage of members adherent who had the SFB in 2016 vs. 2015 (baseline) and compared this difference to a control group of members that did not implement SFB **(Figure 1)**.[6]
- In addition to the difference-in-difference analysis; an individual member-level cost share analysis was conducted for a single insurer with multiple MAPD contracts. For this insurer, some of the contracts received the Stars Formulary (intervention, N = 45,202) and other contracts did not (comparison, N = 21,461).

Outcomes measurement

- Yearly percentage of members adherent was defined using CMS Star criteria.[7,8]
  - Members were considered adherent if they had a PDC that was greater than or equal to 80% at calendar year-end.
  - Members were also required to have at least two claims for the drug class of interest during each year the measure was calculated.

Statistical analysis

- SAS 9.4 (SAS Institute Inc., Cary, NC) was used for all analyses.
- We fit generalized estimating equation (GEE) models with logistic regression for the three adherence categories to estimate the adherence difference-in-difference adjusting for intervention, time period, age, gender and ZIP Code derived socioeconomic factors. Odds ratios (OR) and 95% confidence intervals (CI) were generated.
- A p-value of less than 0.05 was considered statistically significant for all analyses.

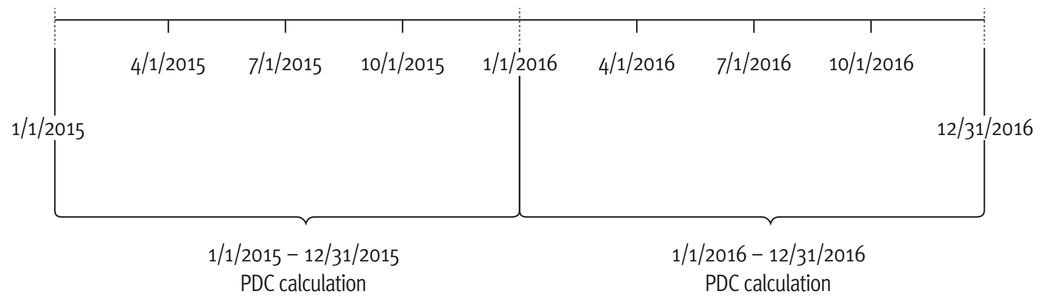
Individual member cost share analysis

- The 2016 average member cost share per 30-day drug supply was compared across the three drug categories for members who had and had not received the SFB.
- An average benefit cost savings was calculated for members who had received the SFB compared to the members who did not receive the SFB.

Results

- Overall, 137,174 (intervention: 108,903; comparison: 28,271) of the potential 218,741 (intervention: 166,098; comparison: 52,643) PDC measurements from the combined three Star drug categories in 2016 met analysis criteria (63%).
- Yearly adherence had an unadjusted statistically significant improvement of 1.4% points for the SFB compared to controls, p < 0.01 **(Table 1)**.
  - The cholesterol Star drug category had a statistically significant unadjusted yearly adherence improvement of 1.5% points, p < 0.01.
  - The hypertension Star drug category had a statistically significant unadjusted yearly adherence improvement of 1.4% points, p < 0.01.
  - The diabetes Star category had an unadjusted yearly adherence improvement of 1.4% points, however, the difference was not statistically significant, p = 0.08.
- A statistically significant adjusted 9% reduced odds of non-adherence was found, OR: 0.91 (95% CI: 0.86 – 0.97), for both cholesterol and hypertension categories over time compared to controls **(Table 2)**.
- An 8% reduced odds of non-adherence for the diabetes category was found among the intervention group but was not statistically significant compared to controls **(Table 2)**.
- The members in the Star Formulary benefit program had reduced pharmacy cost shares for hypertension, cholesterol and diabetes that ranged from $2.50 to $2.98, per 30-day drug supply.

Figure 1. Difference-in-Difference Calculation Timeline



PDC = Proportion of days covered

Table 1. Difference-in-Difference for the Intervention Group versus Comparison Group

Comparison	PDC hypertension difference-in-difference	PDC cholesterol difference-in-difference	PDC diabetes difference-in-difference
Intervention group vs comparison group	-0.8 points vs -2.2 points +1.4 points, p < 0.01* N = 59,260	0.4 points vs -1.1 points +1.5 points, p < 0.01* N = 60,095	0.0 points vs -1.4 points +1.4 points, p = 0.08 N = 17,819

PDC = Proportion of days covered measured using CMS definition[7,8]

*Statistical significance for the intervention group compared to the control group

Table 2. Odds Ratio Estimates for the Percentage Adherent from 2015 to 2016 by Drug Categories, Generalized Estimating Equation — Logistic Regression Models, Probability of Non-Adherence

Difference-in-difference	Unadjusted models OR (95% CI)	Adjusted models† OR (95% CI)	P-value
Hypertension, N = 59,260	0.91 (0.86 – 0.96)	0.91 (0.86 – 0.97)	< 0.01*
Cholesterol, N = 60,095	0.91 (0.86 – 0.96)	0.91 (0.86 – 0.97)	< 0.01*
Diabetes, N = 17,819	0.92 (0.84 – 1.02)	0.92 (0.84 – 1.02)	0.05

†Models adjusted for intervention, time period, age, gender and ZIP Code derived socioeconomic factors

*Statistical significance for the intervention group compared to the control group

Table 3. Individual Member Cost Share Analysis, Stratification by Intervention and 2016

Members' group	Hypertension 2016 cost share per 30-day drug supply	Cholesterol 2016 cost share per 30-day drug supply	Diabetes 2016 cost share per 30-day drug supply
Intervention group	N = 19,374 Avg. cost share: $1.48	N = 19,717 Avg. cost share: $5.21	N = 6,111 Avg. cost share: $12.05
Comparison group	N = 9,339 Avg. cost share: $3.98	N = 9,106 Avg. cost share: $8.19	N = 3,016 Avg. cost share: $14.85
Benefit cost savings for client	Avg. cost share: -$2.50	Avg. cost share: -$2.98	Avg. cost share: -$2.80

Note: This may not reflect the cost share for all claims. For example: Only generic drugs were in the new Tier 6 cost share. Branded drugs have a higher cost share.

Conclusions

- Decreasing the Star category generic drugs cost share by $2.50 to $3.00 per 30-day drug supply appears to improve adherence.
- Medicare plans may want to consider a Star Formulary benefit program, in order to improve adherence.
- Examining other aspects of the benefit design and the impact on adherence such as deductibles and 90-day incentives benefits are future research areas.

Limitations

- The potential for other adherence programs occurring during these time periods could have impacted our results. However, based on our examination, the adherence programs were similar in the contracts studied.
- Thirty-seven percent of all 2016 Star PDC adherence measurements were excluded because of study design restrictions such as continuous enrollment in the same contract and having a PDC calculated in the Star drug category for both years.
- Based on restrictions, we cannot be certain how adherence differs for new initiators in 2016.
- Administrative pharmacy claims have the potential for miscoding and include assumptions of member actual drug use.
- Tier 6 drug lists were defined at the contract and plan level. Therefore, the list of generic adherence drugs covered as Tier 6 varied by contract and plan.

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Pharmacy Quality Alliance (PQA), May 17, 2018, Baltimore, Maryland

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