Formulary Exclusion: Assessment of Medical Costs, Pharmacy Costs, and Resource Utilization Compared to a Concurrent Control Group

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Background

Medication adherence was assessed by a 12-month proportion of days covered (PDC) to measure degree and level of adherence. As a result, higher PDC values indicate better medication adherence. Medications were analyzed to determine which product categories had a clinically meaningful impact on medical, pharmacy, and overall costs. In particular, analysis of DM drug classes were conducted separately as well as for the lowest pharmacy cost of care.

Objectives

1. To describe the impact of an EF on adherence to diabetes medications and morbidity as defined by the Charlson comorbidity index.
2. To assess the impact of an EF on costs and resource utilization associated with diabetes and related chronic conditions.

Methods

The study design was a retrospective cohort study of commercial enrollees with diabetes medication claims in 2016 and 2017. The study was approved by the University of Minnesota Institutional Research Board. The University of Minnesota Institutional Review Board approved the study of medical resource utilization and cost associated with medication utilization and clinical outcomes associated with formulary exclusions.

Results

Table 1. Excluded drugs and related criteria for selecting (N = 1,400,000).

<table>
<thead>
<tr>
<th>Excluded drug</th>
<th>Diabetes criteria</th>
<th>Pharmacy criteria</th>
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<tbody>
<tr>
<td>Humulin R, Humulin 70/30</td>
<td>DM diagnosis</td>
<td>Exclusion criteria for insulin availability</td>
</tr>
<tr>
<td>Apdira</td>
<td>DM diagnosis</td>
<td>Exclusion criteria for insulin availability</td>
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<tr>
<td>Exenatide</td>
<td>DM diagnosis</td>
<td>Exclusion criteria for insulin availability</td>
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To further understand the impact of the EF on medical resource utilization and cost, a GEE was fit with negative binomial distribution and Poisson distribution. This analysis was used to calculate the number of visits and costs. The PMPM costs were calculated using the PMPM of pharmacy and medical utilization costs related to the exclusion or non-exclusion formulary products. The PMPM medical cost was calculated using the PMPM of medical utilization costs related to the exclusion or non-exclusion formulary products.

Conclusions

In conclusion, this study was designed to evaluate the impact of formulary exclusion on medical and pharmacy costs and resource utilization. The findings from this study indicate that formulary exclusion may have a significant impact on costs and resource utilization associated with diabetes medication utilization and clinical outcomes associated with formulary exclusions.

Strengths

The study included a large sample size and had a high level of follow-up. The study included a longitudinal design, allowing for the assessment of changes in medical resource utilization and cost over time. The study also included a comprehensive analysis of the impact of formulary exclusion on medical and pharmacy costs and resource utilization.

Limitations

The study had limitations, including the potential for selection bias and the availability of data. The study was also limited by the availability of data on medication adherence and clinical outcomes associated with formulary exclusions.

References