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Background

Persons taking several medications simultaneously may be at increased risk for adverse safety events. Research has shown that those taking numerous medications have a higher likelihood of emergency room (ER) visits and hospitalizations. Providers, public and private insurers, and society as a whole have incentives to evaluate and better understand the implications of taking multiple prescriptions.

Premera Blue Cross, a not-for-profit health plan based in the state of Washington, instituted an education program for their polypharmacy members as a quality of care initiative for addressing safety-related issues in this population. The goal of the Polypharmacy Program is to promote medication reviews between patients and physicians, and to minimize prescription-related safety problems. The program involves selecting polypharmacy members who meet the eligibility criteria described below. These members receive an educational packet in the mail which includes:

- a “brown bag”, for carrying their medications to their physician,
- a blank medication list for listing current medications, and
- a safety-related information brochure.

Study Population

- Eligible patients were selected from Premera’s pharmacy claims database.
- Both retail and mail-order pharmacy claims were used to identify eligible members.
- The criteria for receiving the program mailing in October, 2005 were:

  - Members or dependents >= 19 years of age
  - On five or more maintenance medications from a custom list of chronic treatments during a 3-month period
  - January to March 2005 was the index period to determine eligibility to receive the mailing

Premera’s Polypharmacy Program

Prescription-Count Category Percent By Number of Monthly Pharmacy Claims (claims assessed for 1-year)

Key Findings For Pharmacy and Medical Claims (October 2005 to September 2006)

- A privately insured polypharmacy population consisting of 10,880 persons from three states (WA, AK, AZ) had an average of 6.53 (sd. 2.65) monthly prescriptions during a one-year period.
  - WA (-91%), AK (-9%), AZ (<1%)
- For descriptive purposes only, pharmacy claims were grouped into mean monthly prescription-count categories to illustrate the distribution of claims.
  - Roughly 10-20% in each of seven categories
  - Range: <=4 Rx per month to >9 Rx per month
- A one-year descriptive analysis of ER visits and hospitalizations indicates an increasing trend for both types of safety events as the average number of monthly prescriptions increased.
  - Unadjusted logistic regressions (using a continuous mean monthly prescription variable) indicated an 12% and a 14% higher odds of having an ER visit and hospitalization, respectively, for a person prescribed one additional medication across the range.
  - ER unadjusted OR (95% CI): 1.116 (1.098, 1.133)
  - Hospital unadjusted OR (95% CI): 1.143 (1.118, 1.160)
- Logistic regressions adjusted for age and gender were consistent in demonstrating the main effect of increased numbers of prescriptions relating to statistically significantly higher odds of safety events, 13% and 14%, respectively for ER and hospitalization.
  - ER adjusted OR (95% CI): 1.128 (1.109, 1.146)
  - Hosp adjusted OR (95% CI): 1.143 (1.121, 1.165)

Conclusions

■ Members taking higher numbers of mean monthly prescriptions demonstrated a statistically significant increased odds of ER and hospitalization events over a one-year period.
■ Further evaluation of persons prescribed multiple medications may help to identify opportunities for improving patients’ safety outcomes and for improving the clinical appropriateness of care.

Next Steps

■ We will further evaluate confounding factors related to the more severe health status of a population taking multiple medications (e.g., comorbidities).
■ We are in the process of more comprehensively assessing this polypharmacy population by evaluating their pharmacy and medical claims and the associated costs.
■ Our next step is to investigate the effects of the safety-focused mailing intervention by assessing claims using a 1-year pre-intervention and 1-year post-intervention approach.

Limitations of Current Evaluation

■ The assessment is a high-level, general characterization of the Polypharmacy Program members who met the criteria.
■ This description of members and/or dependents taking multiple medications does not include an assessment of specific health conditions, severity, comorbidities, or particular diagnoses.
■ This evaluation does not assess treatment patterns preceding or following a hospitalization or ER event.
■ Causality cannot be inferred from the current assessment.
■ This characterization does not consider cost comparisons.

References


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