Impact of Medication Adherence on Hospitalization Risk and Healthcare Cost

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Publication

**Medical Care**
- One of the leading journals for research on healthcare services
- Published by the American Public Health Association
- Peer-reviewed
Background

Many patients with chronic medical conditions do not take their medications as often as prescribed

- Adherence to medication therapy averages only 50% to 65% for common chronic conditions, such as diabetes and hypertension\(^1,2\)

Poor adherence may increase the risk of health problems, increasing the use of medical resources

The impacts of medication use are often studied in controlled settings (such as clinical trials)

- Do the findings apply in “real life”?
- This study looks at the impacts of medication adherence in a large benefit plan population


Study design

Retrospective analysis of pharmacy and medical claims

Population:
- 137,277 patients under age 65
- Employees and dependents of a large manufacturing employer

Study samples:
- Patients with diabetes, hypertension, high cholesterol, congestive heart failure
- Grouped by level of medication adherence, from low to high

Measures: Drug costs, medical costs, hospitalization risk

Analysis:
- Used regression models to measure the impact of medication adherence on cost and risk
- Adjusted for age, gender, comorbidity, and other possible confounding variables
Key findings

A high level of adherence is often associated with:

Lower medical costs
- For diabetes and high cholesterol: Disease-related medical costs were significantly lower for patients with high adherence
- For diabetes, high cholesterol, and hypertension: All-cause medical costs were significantly lower when adherence was high

Lower net healthcare costs (medical cost offsets)
- For diabetes and high cholesterol, increased medication costs were more than offset by the savings in disease-related medical costs
- Diabetes: Save $7 in medical costs for every additional $1 spent on medications (ROI of 7:1)
- High cholesterol: Average ROI was 5:1

Lower hospitalization risk
- For all 4 conditions, hospitalization rates were significantly lower for patients with high medication adherence
Impact on healthcare costs
Example: Diabetes

+ = Healthcare cost is significantly higher than for the 80-100% adherence group (p<0.05)

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Impact on hospitalization risk
Example: Diabetes

+ = Hospitalization risk is significantly higher than for the 80-100% adherence group (p<0.05)
Conclusions

For some chronic conditions, improving medication adherence can reduce hospitalizations and lower total healthcare costs

- Effects may be strongest where the risk of near-term complications is high (diabetes) or the payback from secondary prevention is high (high cholesterol)

Increased investment in drug therapy can yield a positive return

- The return on investment can range from 4:1 (hypertension) to 7:1 (diabetes)
- Leverage will increase as more generic drugs become available (same savings at a lower cost)
Significance of study

- First study to demonstrate medical cost savings from improved medication adherence in a large benefit plan population
- Study provides a good indication of the potential benefits of medication adherence in patients with chronic disease
- Impacts on medication adherence need to be considered carefully when plan designs and clinical management strategies are modified
- Plan sponsors may benefit from programs that improve medication adherence in subpopulations with chronic conditions