Title:
Prescription Drug Spending and Medication Adherence in a National Heart Failure Sample

Blake Tyler McGee, MPH, BSN, BSFS
Emory University Nell Hodgson Woodruff School of Nursing, Atlanta, GA, USA

Session Title:
Research Poster Session 2

Slot (superslotted):
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Keywords:
cost sharing, health policy and heart failure

References:


Abstract Summary:
Healthcare payers and providers are reconsidering the role of patient cost-sharing in chronic diseases. However, no recently published studies have looked specifically at heart failure, and none has used nationally representative data. This study examines whether cost-sharing for heart failure treatment is associated with adherence in a national Medicare sample.

Learning Activity:

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<th>LEARNING OBJECTIVES</th>
<th>EXPANDED CONTENT OUTLINE</th>
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<tr>
<td>Explain the relevance of cost-sharing to treatment adherence and health outcomes in heart failure</td>
<td>Presentation of original findings from a national sample, building on previous research, that suggest an inverse relationship between cost-sharing and adherence</td>
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<td>Discuss the potential implications of targeted cost-sharing relief for high-value, evidence-based health services</td>
<td>Contextualization of findings within larger health policy discourse about the optimal role and extent of cost-sharing, including implications for value-based benefit design</td>
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Abstract Text:
Purpose:

Nurse scientists can and should contribute more to health policy analysis. Many nurses have experience caring for persons with heart failure (HF), which is the most common cause of hospitalization among older adults in the U.S. and accounts for $32 billion in health care expenditures annually in this country (Heidenreich et al., 2011). Survival depends on adherence to a complex daily regimen of prescription medications and dietary restrictions in the context of declining physical and cognitive function. When HF patients do not adhere to prescribed regimens, they frequently require costly acute care for complications such as fluid overload and impaired gas exchange.

A primary reason for non-adherence to chronic disease treatment in the U.S. is the cost of prescription drugs, even when part of the cost is borne by third-party payers. Numerous studies have shown that persons with higher point-of-care cost-sharing requirements (e.g. copayments and deductibles) are less likely to fill the prescriptions they need to manage their illness. Emerging evidence also links medication cost-sharing to increased downstream health care utilization and costs. However, only one published study in the past 11 years has investigated this issue in persons with HF, and results from nationally representative samples are lacking.

The current study, therefore, uses data from the national Medicare Current Beneficiary Survey (MCBS) to examine the relationship between medication cost-sharing and adherence in HF. The principal study aim is to examine the association between average out-of-pocket spending on common HF medications in Medicare "Part D" prescription drug plans and the adequacy of drug supply obtained by Part D enrollees with HF. Ethics approval for this study was obtained from the Emory University Institutional Review Board with a waiver of additional informed consent documentation.

Methods:

This study consists of secondary analysis of 2010-12 cost and use data from the MCBS, a rotating panel survey of a nationally representative sample of beneficiaries of Medicare, the federal U.S. health insurance program for adults over age 65 or with a qualifying disability. The MCBS comprises in-depth questionnaires of personal health and financial information, administered three times yearly for four years and supplemented with medical bills, receipts and other personal records. Questionnaire responses are linked to administrative and claims data from the Centers for Medicare & Medicaid Services, the government agency that administers the Medicare program.

Since there are over 700 types of Part D plans and the MCBS does not include data on cost-sharing requirements for specific plans or drugs, the mean 30-day out-of-pocket payment by the beneficiary for each HF drug served as a proxy for cost-sharing. Adherence was approximated by the medication possession ratio (MPR), which is computed by dividing the total days supplied for all but the last refill by the number of days between the first and last refills. The result can range from 0 (perfectly non-adherent) to 1 (perfectly adherent). Excess days supplied were discarded, and the MPR was truncated at 1.0, consistent with the literature.

For this study, only two drug classes were considered: beta-blockers and angiotensin antagonists, the latter comprising angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs). This is because most patients with clinically diagnosed HF should be prescribed an agent from each of these two classes (Caboral-Stevens, 2014), and it is unlikely that a prescriber would discontinue a class altogether after initiation. Therefore, a low MPR for the entire class is a reasonable reflection of poor patient adherence rather than prescriber discontinuation. Because some patients do switch from an ACE inhibitor to an ARB, and these two types of agents are rarely prescribed together, the angiotensin antagonist class combines them.

Results:
The study sample comprises 912 MCBS participants who were continuously enrolled in Part D coverage and met the case definition for heart failure, i.e. at least one inpatient or two outpatient/practitioner Medicare claims were filed with a principal or secondary diagnosis corresponding to HF, during the reference year (DiMartino, Shea, Hernandez, & Curtis, 2010). Of these, 58.9% are female, 13.5% are African-American or black, and 7.05% are of Hispanic or Latino background.

Preliminary results consist of univariate and bivariate analysis of key study variables. Non-parametric correlation analysis is indicated due to the skewed distribution of cost data. The mean out-of-pocket payment for a 30-day supply of a beta-blocker in this population was $3.68 (SD = 7.06). The MPR for beta-blockers was significantly and inversely correlated with mean out-of-pocket expenditure ($r = -.075, p = .045$). The mean out-of-pocket payment for a 30-day supply of angiotensin antagonists was $7.21 (SD = 15.11). The MPR for angiotensin antagonists was also significantly and inversely correlated with out-of-pocket spending on those drugs ($r = -.101, p = .010$).

Results of multivariate analysis are forthcoming. Covariates such as race and ethnicity, gender, age, education, income, marital status and self-reported health status will be examined for potential confounding effects. Similarly, a sub-analysis will examine these relationships separately among respondents who are co-eligible for the Medicaid program (primarily for low-income persons) or receive the Part D low-income subsidy versus those who do not.

**Conclusion:**

The preliminary results of this study suggest an inverse correlation between out-of-pocket spending on prescription drugs and treatment adherence for heart failure among Medicare Part D enrollees. Despite participation in plans that provide some prescription drug coverage, this nationally representative sample may have faced financial barriers that inhibit optimal therapy to prevent heart failure complications. This finding is all the more notable given the burden that heart failure imposes on the U.S. health care system in terms of resource use.

Upon completion of multivariate analysis, this study will provide policymakers, insurers and consumers with nationally valid evidence about the potential of targeted cost-sharing relief to improve adherence for the nation’s most expensive cardiovascular disorder. The findings may inform ongoing discussions about the design of health care benefits for other costly chronic disorders, as well. They also can support nurses from the boardroom to the bedside in providing optimal patient education and advocacy.