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Patients' annual income adequacy, insurance premiums and out-of-pocket expenses related to heart failure care

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ABSTRACT

Objectives: To (1) identify the amount patients spend for insurance premiums, co-payments, deductibles, and other out-of-pocket costs related to HF and chronic health care services and estimate their annual non-reimbursed and out-of-pocket costs; and (2) identify patients' concerns about nonreimbursed and out-of-pocket expenses.
Background: HF is one of the most expensive illnesses for our society with multiple health services and financial burdens for families.
Methods: Mixed methods with quantitative questionnaires and qualitative interviews.
Results: Patients ($N = 149$) reported annual averages for non-reimbursed health services co-payments and out-of-pocket costs ranging from $3913 to $5829 depending on insurance coverage. Thirty one patients (21%) reported inadequate health coverage related to their non-reimbursed costs.
Conclusions: Non-reimbursed costs related to HF care are substantial and vary depending on their insurance, health services use, and out-of-pocket costs. Patient referral to social services to assist with expenses could provide some relief from the burden of high HF-related costs.

Background

In the U.S., families caring for members who have chronic illnesses reported that they spent more than 10% of their annual incomes on out-of-pocket costs for health services.[1] Among those with low incomes, 37% report family medical bill concerns, underscoring the limitations of private insurance alone in protecting people from the high costs of treating chronic conditions.[2] Furthermore, the American Heart Association (AHA) has identified heart failure (HF) as one of the most expensive illnesses for our society, costing over $31 billion annually.[3] Notably, HF patients and their families often pay more for health insurance to cover their multiple and specialty health services,[4] which can put a disproportionate burden on families for non-reimbursed expenses.[4,5] Those families who are unable to purchase more extensive or supplemental coverage are likely to pay higher health insurance premiums, deductibles, and co-payments and have restricted benefits.[6] However, even people covered by comprehensive insurance are not immune to financial hardships from out-of-pocket expenses incurred while managing complex HF care.

These non-reimbursed out-of-pocket costs include a combination of expenditures for annual insurance premiums, deductibles, and co-payments for health services or for items not covered by insurance. Out-of-pocket expenses may also include home care supplies (e.g., co-pays for the necessary prescribed medications, walkers), over-the-counter (OTC) medications, specific dietary needs such as low sodium foods, and transportation costs to obtain health services.[5,6] Yet, the out-of-pocket costs of patients' HF care are rarely measured. This study was undertaken to tabulate the amount of money families report spending out-of-pocket on managing HF, to estimate annual average expenditures, and to describe the financial burden of HF.

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Purpose

The purposes of this study were to (1) identify the amount patients spend for insurance premiums, co-payments, deductibles, and other out-of-pocket costs related to HF and chronic health care services and estimate their annual non-reimbursed health insurance and out-of-pocket costs; and (2) identify patients' concerns about non-reimbursed and out-of-pocket expenses.

Methods

Research design

This was a mixed methods approach with quantitative questionnaires as well as interview responses and collected comments.

Setting and sample

Patients who had a recent HF hospitalization for physician-confirmed acute decompensated HF were invited to participate regardless of ethnicity, gender, or socioeconomic status. Included were those who were ≥21 years of age and who lived within the catchment area. Excluded were those on a waiting list for a heart transplant and patients diagnosed with a malignant disease or terminal illness.[7] After approval from the Institutional Review Board (IRB), 198 patients were recruited through the cardiology practice of a Midwestern university-based medical center and signed consents to participate in this study. Of the 198 patients who enrolled in the study, 149 patients (75.3%) provided non-reimbursed and out-of-pocket cost data.

Data collection measures

Non-reimbursed and out-of-pocket cost questionnaires

Our investigator-designed questionnaires have been verified in previous research data.[8] The questionnaire was mailed to each patient prior to data collection. Patients were asked to list the health services covered by insurance and record any non-reimbursed, out-of-pocket costs associated with HF health care during the previous year. The rationale for selecting the past year was that most patients had HF over this time period, and they had the calendar record of their physician appointments, and recall of emergency department (ED) visits or hospitalizations for costly HF health care. These calendars also spurred patients' recall of transportation, medication, and other out-of-pocket expenses that were then reported and tabulated across the year. These cost questions are similar to those used in other national health cost surveys.[9] Several studies have validated use of cost questionnaires for collection of the wide range of these patient expenses.[10–13] Table 3 is a list of definitions of non-reimbursed and out-of-pocket costs collected in this study.[14]

In addition, the *Family Economic Stability Survey* was used to measure income adequacy in our sample.[8,15–17] Using this survey, patients were asked to rate their ability to pay monthly bills. Ratings are (1) "Can't make ends meet," (2) "Have just enough no more," (3) "Have a little extra sometimes," or (4) "Always have money left over." Reliability of these ratings has been verified by comparing reports from patients and caregivers living in the same household, which were highly correlated in other HF studies[18,19] and in chronic illness studies.[16] Reliability of this simple scale was also based on individuals' awareness of monthly bills.

Following the completion of questionnaires about their health insurance premiums, deductible payments, and other out-of-pocket expenses, patients were asked an open-ended interview question: "Do you have any comments on these costs?" If the patient commented then the prompt questions used were: "Please explain how non-reimbursed and out-of-pocket expenses impact you or your family members." Additional prompt questions were posed: "Is health insurance coverage adequate for you and your family? and "Do you have additional concerns about your health insurance coverage?"

Table 1
Patient clinical and demographic characteristics ($n = 149$).

Patient characteristics	Frequencies (n)
Demographics	
Age, mean years (SD)	61.1 (13.6)
Male gender, n (%)	87 (58)
Race:	
African American, n (%)	70 (47)
White, n (%)	74 (50)
Other race, or more than one race, n (%)	5 (3)
Hispanic, n (%)	10 (6.8)
Employed, n (%)	23 (15)
Comorbidities	
Hypertension, n (%)	135 (91)
Diabetes, n (%)	71 (48)
Chronic lung disease, n (%)	60 (40)
Sleep apnea, n (%)	47 (32)
Current smoker, n (%)	42 (28)
Charlson Comorbidity Index, mean (SD)	6.7 (2.8)
Cardiac function	
Ejection fraction, mean % (SD)	30.3 (16.1)
EF ≥ 40, n (%)	14 (7.1)
Duration of HF, mean years (SD)	6.1 (7.3)

Data analysis

Descriptive statistics were used to summarize the health insurance premiums, deductible payments, and other out-of-pocket expenses. These data were tabulated by a nurse researcher (UP) experienced in financial data content analyses. The range, median, and estimated annual costs reported by each patient were tabulated by category of insurance premiums, deductibles, co-payments, and out-of-pocket expenses. Content analysis, a research technique,[20] was used to summarize the patients' responses and comments related to these questions.

Trustworthiness and credibility of the interview data collection and analysis was maintained throughout.[21] Specifically, each interview was reviewed separately by two trained nurse researchers (UP & DY) who grouped the patients' statements with similar content into distinct categories using the patient's own words. Data saturation was achieved when no new topic was identified. These two researchers then met to compare content and resolve the few differences in topic categorization. Over 90% inter-coder agreement in themes was achieved, and the final categories and themes were reviewed by our team's cardiologist. To protect patients' confidentiality and privacy per HIPAA, the patient names or identifiers were removed from the transcribed information.

Table 2
Type of health insurance coverage ($n = 149$).

Type of health insurance coverage	Frequencies (%)
Private	26 (17.4)
Medicare	77 (51.7)
Medicaid	33 (22.1)
Military-based	12 (8.1%)
No insurance	12 (8%)
Had more than one insurance	21 (14%)
Had supplemental plans	37 (25%)