

Medicaid Coverage Interruption Increases Risk of Preventable Hospitalizations

Bindman AB, Chattopadhyay A, Auerback GM. Interruptions in Medicaid coverage and risk for hospitalization for ambulatory care-sensitive conditions. *Ann Intern Med* 2008;149:854-60.

Study Overview

Objective. To evaluate the hospitalization rate for ambulatory care-sensitive conditions (ACSC) among Medicaid beneficiaries with insurance coverage interruptions.

Design. Retrospective cohort study.

Setting and participants. 4,735,797 adults in California aged 18 to 64 years who received a minimum of 1 month of Medicaid coverage between 1998 and 2002. Data from the California hospital patient discharge claims database was linked by deterministic and probabilistic match to the Medicaid Monthly Eligibility File for the corresponding period, with a 98% success rate.

Model. The primary exposure variable was a time-varying covariate that indicated whether a beneficiary had experienced an interruption of Medicaid coverage in the prior month. Confounders adjusted for in the model included demographic characteristics, type of Medicaid coverage (ie, Temporary Assistance to Needy Families [TANF], Supplemental Security Income [SSI], or other), non-Medicaid forms of insurance, managed care enrollment, number of hospitalizations, and comorbidity composite scores. The life-table technique was used to analyze the probability of hospitalization over time for ACSC among beneficiaries with continuous versus interrupted coverage. Cox proportional hazards models were constructed to create a hazard ratio associated with interrupted Medicaid coverage.

Main outcome measures. Time to hospitalization for an ACSC, defined by the Agency of Healthcare Research and Quality as a condition that can be managed with timely and effective outpatient treatment to avoid hospitalization (eg, asthma, diabetes, hypertension, chronic obstructive pulmonary disease, congestive heart failure).

Main results. A total of 62% of Medicaid beneficiaries experienced at least 1 interruption in coverage during the study period. Beneficiaries with interruption were more likely to be female, young, and Hispanic. The most common ACSCs resulting in hospitalization were diabetes (23%), congestive

heart failure (22%), asthma (14%), and chronic obstructive pulmonary disease (14%). Interruptions in coverage were associated with a higher risk for hospitalization for an ACSC (adjusted hazard ratio [HR], 3.66 [95% confidence interval {CI}, 3.59-3.72]; $P < 0.001$). The increased risk for hospitalization primarily occurred in the first 3 months after coverage interruption. In subgroup analyses, the association between interrupted coverage and hospitalization was higher for TANF-eligible beneficiaries (adjusted HR, 8.56 [95% CI, 8.06-9.08]) as compared with SSI-eligible beneficiaries (adjusted HR, 1.72 [95% CI, 1.67-1.76]), who often lost prescription services but not physician services during Medicaid interruption.

Conclusion. Interruptions in Medicaid coverage were associated with a higher rate of hospitalization for ACSC in a large population in California over a 5-year period. The risk of hospitalization was higher in the first 3 months after coverage interruption and in beneficiaries who lacked any form of back up coverage, suggesting a strong link between Medicaid coverage continuity and utilization of inpatient services for ACSC.

Commentary

Interruption or lack of health insurance coverage is a major problem in the United States. Approximately 85 million people (38% of the U.S. population aged < 65 years) were uninsured for at least part of a recent 3-year period [1]. Low-income U.S. citizens are at a notably higher risk for coverage discontinuity created by administrative barriers, such as the need to redemonstrate Medicaid eligibility every 3 months [2]. Beneficiaries with interrupted insurance coverage are less likely to receive high-quality primary care and preventive services [3], potentially increasing their risk for hospitalization from ACSC, subsequent health decline, and morbidity and mortality at higher overall cost to the health care system.

This study sought to discern in a large linked sample of California Medicaid beneficiaries whether coverage interruption was associated with a higher risk of hospitalization due to ACSC. A remarkably high proportion of beneficiaries (over 60%) experienced coverage interruptions during the 5-year study period. These interruptions were associated

with a 3.66 times higher risk of hospitalization for ACSC, with even greater risks for beneficiaries without any form of back up insurance coverage. These robust findings are consistent with a previous cross-sectional study showing higher rates of psychiatric hospitalization among Medicaid beneficiaries with mental illness who had coverage interruptions [4]. This current study by Bindman et al is notable for its much larger sample size and linked data files, which allowed for longitudinal evaluation of coverage interruptions over time. The longitudinal assessment allows stronger inferences to be made regarding the role of coverage interruption in increasing ACSC hospitalizations. Further, multiple sensitivity and stratified subgroup analyses were conducted by beneficiary type, order of previous hospitalizations, and time of enrollment, all of which confirmed major findings.

A few key limitations deserve mention. Most importantly, the researchers lacked information from the claims database on why interruptions occurred and whether beneficiaries with interruptions transitioned to other insurance coverage as opposed to losing coverage altogether. If in fact a significant proportion of beneficiaries gained private insurance coverage, then the explanatory model of the study is called into question. Because only a small proportion of beneficiaries were hospitalized, it is not possible to know whether the pattern of insurance discontinuity was the same for nonhospitalized beneficiaries. Another potential issue is misclassification of Medicaid coverage given that newly enrolled beneficiaries are often granted retroactive coverage for up to 3 months prior to enrollment. Furthermore, this study was a retrospective cohort study from 1 state, not a prospective,

blinded, randomized trial. Thus, unmeasured confounding might have occurred between the groups. Finally, given the lack of direct measures of ambulatory service provision and the retrospective design, the study can, at best, make a strong inference of association as opposed to clear causation.

Applications for Clinical Practice

The interruption of Medicaid insurance coverage is strongly associated with an increased risk of hospitalization due to an ACSC. Policies that reduce the frequency of Medicaid coverage interruptions may enable the provision of more continuous and coordinated primary care services that can prevent health events that trigger high-cost inpatient hospitalizations.

—Review by Asaf Bitton, MD

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