

Administration of Emergency Medicine



AMBULATORY CARE SENSITIVE HOSPITALIZATIONS THROUGH THE EMERGENCY DEPARTMENT BY PAYER: COMPARING 2003 AND 2009

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Abstract—Background: Ambulatory care sensitive hospitalizations (ACSHs) are hospitalizations that may have been preventable with timely and effective outpatient care. Approximately 75% of all ACSHs occur through the emergency department (ED). ACSHs through the ED (ED ACSHs) have significant implications for costs and ED crowding. **Objective:** This study compares rates of ED ACSHs for 2003 and 2009 among patients 18 to 64 years of age with private insurance, Medicaid, or no insurance. **Methods:** Nationally representative estimates of ED ACSHs, defined by the Agency for Healthcare Research and Quality (AHRQ) prevention quality indicators (PQIs), were generated from the 2003 and 2009 Nationwide Inpatient Samples. Census data were used to calculate direct age- and sex-standardized ACSH rates by non-Medicare payers for both years. **Results:** Between 2003 and 2009, the overall rate of ED ACSHs decreased from 7.6 (95% confidence interval [CI] 7.57–7.75) to 7.3 (95% CI 7.2–7.4) per 1000 18- to 64-year-old non-Medicare patients. ED ACSH rates declined significantly from 42.4 (95% CI 42.0–42.8) to 25.3 (95% CI 25.0–25.6) per 1000 patients with Medicaid, and declined modestly from 3.8 (95% CI 3.8–3.9) to 3.3 (95%

CI 3.2–3.4) per 1000 patients with private insurance. However, the ED ACSH rate increased for the uninsured population from 5.4 (95% CI 5.2–5.7) to 6.2 (95% CI 5.9–6.4) per 1000 patients. **Conclusion:** Expansion of Medicaid over the study period was not associated with an increase in ED ACSHs for Medicaid patients. However, an increase in the uninsured population was associated with an increase in the rate of ED ACSH for uninsured patients. © 2016 Elsevier Inc.

Keywords—ambulatory care; emergency medicine; insurance coverage; Medicaid; medically uninsured; preventable hospitalization

INTRODUCTION

Ambulatory care sensitive conditions (ACSCs) were defined in the 1990s as “diagnoses for which timely and effective outpatient care can help to reduce the risks of hospitalization by preventing the onset of an illness or condition, controlling an acute episodic illness or condition, or managing a chronic disease or condition” (1,2). These conditions include acute conditions, such as urinary tract infections and pneumonia, and chronic conditions, such as congestive heart failure, chronic obstructive pulmonary disease, and complications of diabetes. Using hospital administrative discharge data, 13 ACSCs were defined as prevention quality indicators

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(PQI) by the Agency for Healthcare Research and Quality (AHRQ) (3). Hospitalizations for ACSCs ambulatory care sensitive hospitalizations [ACSHs]) have been associated with decreased access to health care after adjusting for propensity to seek care, physician practice style, prevalence of ACSCs, burden of disease, race and ethnicity, and income (4–6).

Patients who are unable to obtain timely outpatient care often seek care in the emergency department (ED) for ACSCs (7–12). These visits often have intermediate acuity and high complexity, with significant implications for costs and ED crowding; they also often require hospitalization (13). Previous studies have focused on ED visits for ACSCs as a marker of preventable ED visits (14). However, focusing on hospitalizations rather than ED visits may better reflect the impact of cost and ED crowding, because the cost of hospitalization may be >20 times the cost of an ED visit, and the availability of hospital beds is one of the most significant drivers of ED boarding (15–19). Population rates of ED ACSHs can serve as indicators of access to and effectiveness of outpatient care that reflect the impact of hospitalizations through the ED for these conditions on health care costs and ED crowding (13,16,19).

The proportion of ED visits for ACSCs and the proportion of hospitalizations for ACSHs have both been decreasing (14,20). However, ED visit rates for ACSCs vary widely by insurance status (14). The decrease in the proportion of ED visits for ACSCs and ED ACSHs may be related to more effective management of chronic conditions and better access to timely acute care. However, the relationship between payer status and ED ACSH is unknown.

The goal of this study was to determine rates of ED ACSHs by payer, and how those rates changed with changes in insurance coverage. We focused on the 18- to 64-year-old population because almost all patients >65 years of age have stable Medicare coverage. We compared the ED ACSH rate for the 18- to 64-year-old non-Medicare population by payer (i.e., private insurance, Medicaid, and uninsured). We examined differences in ED ACSH rates between 2009—a year with a rapid rise in the percentage of uninsured—and 2003—a historical control with a more stable uninsured rate.

METHODS

Study Setting and Population

We compared data from the 2003 and 2009 Nationwide Inpatient Sample (NIS). The NIS is the largest publicly available all-payer inpatient database in the United States and contains data on hospitalizations from a random 20% sample of nonfederal acute care hospitals. This sample is

weighted to allow nationally representative estimates. The 2003 NIS includes >8.0 million discharges from 994 hospitals in 37 states. The 2009 NIS includes 7.8 million discharges from 1050 hospitals in 44 states. Additional information on the NIS is available at the Healthcare Cost and Utilization Project website (www.hcup-us.ahrq.gov/). This study was deemed exempt by the institutional review board at our institution.

Key Outcome Measures

Records for hospitalizations of patients 18 to 64 years of age through the ED were selected from the NIS database. ACSHs were identified by *International Classification of Diseases, 9th revision* diagnosis and procedure codes. Hospitalizations were determined to be ACSHs if they met AHRQ PQI criteria based on any documented diagnosis or procedure code. Qualifying hospitalizations were labeled as acute PQI or chronic PQI. The outcomes measured in this study were the absolute number of ED ACSHs, the proportion of hospitalizations through the ED that were ACSHs, and the per capita rate of ACSHs through the ED for the 18- to 64-year-old population.

Data Analysis

Number of ED ACSHs. To calculate national estimates of the number of hospitalizations for patients with 95% confidence intervals (CIs) we used discharge weighting from the NIS (21). We estimated the total number of each of the following for the 18- to 64-year-old population: all hospitalizations, all hospitalizations through the ED, all ACSHs from any admission source, and all ED ACSHs for 2003 and 2009. National estimates of total ACSHs for the 18- to 64-year-old population were further classified by each separate ACSC and by whether these were acute or chronic ACSCs. These estimates were then categorized by demographic variables included in the NIS: age group (i.e., 18–24, 25–44, and 45–64 years), sex, race, quartiles of median income based on the patient's ZIP code, and payer. The significance of changes between years in the number of ED ACSHs was determined using the Wald test with linear variance adjustments for complex sampled data. Chi-squared tests were used to determine the significance of changes over time in the weighted proportion of ED ACSHs.

Rates of ED ACSHs. Population denominators for each payer class were determined by using the 2004 and 2010 U.S. census current population survey (CPS) annual social and economic supplement (22,23). The distribution of payer by 6 age (years) and sex groups (i.e., men 18–24, men 24–44, men 45–64, women 18–24, women 24–44, and women 45–64 years of age) was also estimated

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