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Title

Factors Influencing Preventable Hospitalizations vary by Geographic Region

Priority 1 (Research Category)

Research methodology and instrument development

Presenters

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Abstract

Context: Several studies have documented that multiple factors that contribute, including geography, to preventable hospitalizations. Other studies identified preventable hospitalization hot spots in the Appalachia and Mississippi Delta regions. Objective: To determine if factors associated with preventable hospitalizations are different in the Appalachia and Delta regions (compared to the rest of the US). Study Design and Analysis: Cross sectional approach included hot spot mapping and spatial regime modeling. First, we modeled preventable hospitalizations with hierarchical condition category [HCC] risk scores, social deprivation index [SDI], rurality, hospital beds per 100,000, primary care physicians (PCP) per 100,000, and the percentage of black Medicare beneficiaries as independent variables. We also included a spatial regime variable, which models Appalachia and Delta regions separately, and a Chow test to determine if coefficients for models are significantly different. Setting/Dataset: Centers for Medicare and Medicaid (CMS) public use file (PUF), Robert Wood Johnson County Health Rankings, Robert Graham Center (SDI); US Counties (n=3,141). Outcome Measures: Preventable Hospitalizations (rates of hospital stays for ambulatory-sensitive conditions per 100,000 Medicare enrollees). Results: The model performed better for non-Appalachia/Delta counties ($r^2 = .33$) compared to the Delta ($r^2 = .17$) and Appalachia ($r^2 = .30$) models. All independent variables were significant (and in the expected direction) in the non-Appalachia/Delta model, while only three were significant in the Delta and Appalachia models (SDI, hospital beds, HCC). Chow test revealed that coefficients varied significantly across the models for all independent variables except SDI and PCP rates. Conclusions: Consistent with previous literature, we find that the factors associated with preventable hospitalizations vary by region. Indeed, capturing the effects of hospital capacity, social deprivation, and population illness burden on rates of ACSC admissions is robust across diverse population segments, and point to challenges in characterizing those in regions such as the Delta and Appalachia.