Submission Id: 5378

Title

Primary care provider availability and economic and racial residential segregation

Priority 1 (Research Category)

Health Care Disparities

Presenters

Hannah Shadowen, MPH, Alex Krist, MD, MPH, Roy Sabo, PhD, Jacqueline Britz, MD

Abstract

Context: Primary care is fundamental to achieving population health and reducing health disparities. Adequate access to primary care includes geographic accessibility to care.

Objective: Understand primary care availability in Virginia in the context of racial residential segregation, rurality, and social deprivation.

Setting/Dataset: Virginia's primary care physicians were geolocated using the US Census Batch geographer processor. Other data sources included: 1) Social Deprivation Index (SDI) from the American Community Survey (ACS), 2) ACS 5 year-estimates for 2019, 3) Rural Urban Commuting Codes from the Economic Research Services.

Population studied: Primary care work force and Virginia residents.

Intervention/Instrument: Residential segregation was determined by the Index of Concentration at the Extremes (ICE) and ranged from -1 to 1 with -1 indicating a larger proportion of low-income Black households than high-income White households. SDI ranges from 0 to 100 with 100 meaning greater deprivation (composite of seven characteristics).

Outcome Measures: Provider availability for each census tract (CT) was measured by Spatial Access Ratio (SPAR) which ranged from 0-4.95 with 0 representing no providers and values over 1 representing greater than average access.

Study Design and Analysis: Primary care physician availability was constructed using the Enhanced Two-Step Floating Catchment Areas using distance decay with driving times of 0-10 minutes and 10-20 minutes from the population weighted centroids of a census tract. Census tracts were stratified by rurality and we conducted a simple linear (ICE score) and negative binomial regression (SDI score).

Results: Of the 2,236 practices with 6,608 providers, we successfully geocoded 1,917 practices with 5,758 providers. Of the 1,875 CTs included, 38 had no providers within a 20-minute drive. Metro CTs had

the greatest provider availability (highest mean SPAR value) followed by small towns, micropolitan areas, and rural CTs (lowest mean SPAR value). There was a significant positive relationship between the availability of providers and SDI score in metro, micro, and small-town areas. In metro areas, as the proportion of low-income Black households increased, provider availability increased.

Conclusion: In metro areas, primary care may be reaching areas that are at high risk of poor health outcomes due to racial and economic segregation. Similar access benefits are not seen in rural areas.