Contribution ID: **107** Type: **Student Poster Competition**

Mapping Spatial Accessibility to Screening Mammography in Iowa, 2016 - 2022

Thursday, July 18, 2024 12:20 PM (20 minutes)

Breast cancer continues to be the dominant form of new cancers diagnosed in Iowa. Mammography screening is essential for early detection of breast cancer and has led to significant reductions in mortality. Spatial accessibility plays a vital role in determining whether women receive mammograms. Spatial accessibility examines the travel time along the road network between the patient's home and the facility where they receive care and the capacity of a facility to serve the population in demand. Utilizing mammogram machine data combined with population estimates, we explore rural-urban variation in spatial accessibility to mammograms in Iowa from 2016-2022.

We use a constrained optimization models from 2016 to 2022 to allocate the estimated population of screening-age women to Zip Code Tabulation Areas (ZCTA) with mammogram machines within 30 minutes of their residence ZCTA. Each year, we account for machine capacity and patient travel time. We use rural-urban commuting area (RUCA) codes to examine accessibility by category of rurality.

In all years, screening capacity is insufficient to meet the theoretical demand of mammogram screening given travel and capacity constraints. In Iowa from 2016 to 2022, the models were able to allocate the demand to approximately 85% to 89% of the population in a given year. The largest proportion of unallocated demand is in the Suburban and Rural areas.

Small changes in mammography facility availability, such as the addition of one mammogram machine, can greatly improve spatial accessibility to screening, especially in suburban and rural areas.

Keywords: mammography, screening, breast cancer, accessibility

Primary authors: GRUBBS, Caitlyn (University of Iowa); CARREL, Margaret (University of Iowa)

Presenter: GRUBBS, Caitlyn (University of Iowa)

Session Classification: Student Poster Competition

Track Classification: Health, Justice, Human Rights, Policy & Practice: Healthcare Accessibility