

Cancer Incidence Disparities by Geographic Location - UChicago vs. Baylor Catchment Area for African Americans

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1. Background

- Two catchment areas of 2 different geographic locations:
 - University of Chicago: 5 counties [urban/suburban location in the United States Midwest]
 - Baylor: 9 counties [urban/rural location in the South of the United States]
- Historical background of the African American communities in both catchment areas
- Cancer outcomes known to be affected by geography:
 - Access to health care
 - Exposure to environmental factors
 - Urban vs. rural status difference

2. Goals

- Primary goals:
 - Mapping incidence patterns in the African American communities in both catchment areas
 - Comparing rates of specific cancers:
 - Breast cancer
 - Prostate cancer
 - Ovarian cancer
 - Liver cancer
- Secondary goals:
 - High incidence in specific geographic clusters
 - Urban-rural differences
 - Distribution of health care facilities impact

3. Solutions and Methods

- Data sources:
 - SEER
 - Stat for counties of both catchment areas
 - Catchment area definitions from NCI
 - Social determinants of health data (county level)
- Analytical approach:
 - Geospatial mapping
 - Statistical analysis of variations (across regions)
 - Population density
 - Accessibility to health care facilities mapping

4. Outcomes

- To be completed with data, but structure will include:
- Comparative analysis of:
 - Urban vs. rural incidence rates
 - Differences between two states (interstate)

- Distances to treatment/health care centers
- Population density correlations
- Identification of high-risk geographic areas
- Regional patterns specific to each cancer type
- Using:
 - Linear regressions
 - Random forest models
 - Clustering techniques (k-means)

5. Lessons Learned and Future Directions

- Geographic-specific intervention strategies
- Resource allocation recommendations
- Health care access improvement opportunities
- Cross-regional collaboration possibilities
- Future research needs for complete coverage
- Policy implications for reducing geographic disparities