Category: Catchment Area Data, Social Determinants of Health, and Equity – Work in Progress – Faculty

Geographic Access to Diagnostic Facilities and Its Impact on Endometrial Cancer Presentation in New Mexican Women

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1. Background

Access to health care is fundamental for cancer prevention, diagnosis, and treatment. While there are multiple barriers reducing access, including provider shortages, financial constraints/lack of insurance, inconvenient service hours and stigma/bias based on race, gender, and ethnicity, geographic barriers are less commonly considered. Studies evaluating geographic access to health care show that communities with more minority residents and lower socioeconomic status often face reduced access to services. Additionally, rural and frontier regions are frequently linked to poorer cancer outcomes. Geographic barriers to health care often intersect with sociodemographic factors. Therefore, New Mexico, a largely rural/frontier state and a majority-minority state, with a much larger proportion of Hispanic or Latino and American Indian/Alaska Native population then average in the United States, provides an opportunity to investigate the interactions between geographic and social barriers to health care access.

Early-stage cancer diagnosis is essential for better survival outcomes; however, for cancers without screening tests it is often more complicated. Endometrial cancer is the most common gynecological cancer, yet early-stage diagnosis can be challenging as symptoms are typically nonspecific and resemble those of more common conditions.

2. Goals

Using population-based data from the New Mexico Tumor Registry (NMTR), we aimed to determine whether longer travel distance to cancer diagnostic facilities resulted in more late-stage endometrial cancer diagnoses.

3. Solutions and Methods

New Mexican women with malignant endometrial cancer (International Classification of Diseases for Oncology, Third Edition [ICDO-3] topography code C54.1) diagnosed between 2018-2022 were identified from the NMTR. Cancer specific characteristics, along with patient demographics (including age; race and ethnicity; marital status; and insurance), residential address, and diagnostic facility were extracted for analysis. The primary endpoint was staged at diagnosis, categorized as early-stage (localized) vs. late-stage (regional and distant). Patient residential address and cancer diagnostic facility address were geocoded and driving distance between them estimated using the Route Analysis tool in the Network Analyst package in ArcGIS. Logistic regression models were utilized to investigate the association between travel distance and stage at diagnosis.

4. Outcomes

A total of 982 women diagnosed with early- or late-stage endometrial cancer had complete residential and diagnostic facility addresses for geocoding. More women were diagnosed with early-stage (72 percent) than late-stage (28 percent) disease. Those with late-stage disease were more likely to be older and have high-risk disease (endometrioid grade three, serous carcinoma, clear cell carcinoma, or carcinosarcoma). The odds of women being diagnosed with late-stage endometrial cancer (compared to early-stage) was 0.88 (95 percent CI 0.58-1.32) for those with a travel distance of 10 to 75 km and 0.93 (95 percent CI 0.59-1.48) for those with a travel distance of greater than 75 km, compared to a travel distance of less than 10

km, after adjusting for race/ethnicity, age at diagnoses, insurance coverage, and marital status and risk group.

5. Lessons Learned and Future Directions

Our findings indicate that travel distance to a diagnostic facility is not associated with later-stage endometrial cancer for women in New Mexico. This is encouraging in a predominantly rural and frontier state. However, because rural populations continue to experience poorer cancer outcomes and survival, future work will examine whether travel distance and time to cancer specialists and treatment facilities influence stage of disease at diagnosis, treatment received, timeliness of care, and survival.