

Underrepresentation of Rural Communities in Cancer-Related Clinical Trials: A Population-Based Analysis

A. Chen

Olympic Medical Center

1. Background

Cancer incidence rates are generally higher in rural populations compared to urban ones, particularly for those cancers associated with lifestyle, especially considering tobacco and alcohol as contributors. However, studies have shown that access to potentially life-saving clinical trials is uneven and that patients from rural communities suffer from markedly decreased rates of enrollment.

2. Goals

The purpose of this research is to evaluate the availability of early-phase cancer-related clinical trials in rural communities. Statistical analysis was conducted to compare the number of trials open in rural communities to those in non-rural communities. Only therapeutic clinical trials that were activated and open to accrual were included. This study was limited to Phase I or Phase I/II trials given the potentially heroic basis of such human research.

3. Solutions and Methods

Using publicly available databases, including clinicaltrials.gov, a comprehensive summary of clinical trials focused on breast, lung, colorectal, prostate, skin, pancreatic, bladder, kidney, endometrial, and hematologic cancer—representing the 10 most common cancer diagnoses in the United States—was compiled. For each identified clinical trial, all geographical access sites were categorized as rural or urban based on the 2013 Rural-Urban Continuum Codes from the U.S. Department of Agriculture. The z-test was used to determine statistical significance between proportions.

4. Outcomes

A total of 60 Phase I/II clinical trials were identified accruing at 701 different health care locations (600 urban; 101 rural). The mean number of total sites open to accrual was 31 (range, 10 to 70). For the three cancers with the most clinical trials available to the public (breast, lung, and prostate), the mean proportion of studies accruing at rural community sites was significantly lower compared to urban locations (11 percent versus 75 percent, $p < 0.001$). Across all clinical trials, the corresponding percentages were 14 percent and 80 percent, respectively ($p < 0.001$). For each clinical trial, the mean number of rural community sites open to accrual was 5, compared to 20 for urban settings ($p < 0.001$).

5. Lessons Learned and Future Directions

Potential participation in promising life-saving clinical trials is uneven across geographical settings and patients from rural communities suffer from markedly decreased rates of accessibility. An analysis of root causes underlying this phenomenon will be discussed considering resources and social determinants unique to rural communities.