Transportation Barriers to Cancer Care Delivery: A Review.

Abstract
Background/Knowledge Gap: Rural patients with cancer present with more advanced disease at diagnosis and experience worse survival compared to urban patients. Not only do patients living in rural regions face increased travel distance to care, but many also lack reliable access to transportation for cancer screening and treatment. However, the extent to which rural patients experience transportation barriers and the impact on clinical outcomes is not well understood. The purpose of this narrative review is to summarize the literature regarding travel distance and transportation barriers to care for rural patients in order to inform the design of future studies aimed to reduce rural-urban cancer disparities.

Compared to the general population, patients residing in rural areas often must travel a significant distance (>60 miles) for specialized oncology care. Minorities, those living in rural areas, and those residing in southern states were found to have approximately double the travel time to the nearest Cancer Center when compared to the overall U.S. population. Particularly, Hispanic and black populations were shown to have the least amount of access to cancer care facilities, both parent and satellite NCI cancer centers. The degree of cancer care specializations further increased travel time. This poses a great problem for minority patients in particular as they have reported transportation, finances, and insurance as significant sources of distress. Cancer care requires specialty surgical and medical resources that are less likely to be found in rural areas which further increases the urban-rural health disparity.

Methods/Design: The Transportation Barriers Measure is a well-established, validated measure of transportation barriers to access to healthcare within the urban setting, however, We have modified it based on previously published literature and preliminary data within the rural patient population of eastern North Carolina and included questions more specific to a rural setting. We used a focus group approach and interviewed 10 cancer patients at Vidant Health Center. The tool asks interview questions about means of transportation, difficulty arranging transportation, travel time, delayed or missed appointments due to travel time, cost of transportation, difficulties with public transportation, and difficulties with transportation to a pharmacy. We asked patients to listen to the new items that were added to ensure that they are delivered using easy to understand words that make sense to patients. We collected responses from each participant and made the appropriate revisions to the tool to ensure that each question was understandable and straight forward. The revised version of the measure will then be administered to 100 patients. Over the next six months, occurrences of missed, rescheduled, or canceled appointments (including new, follow-up, and treatment visits) will be recorded. When these events occur, the study coordinator will call the patient to identify and record the reason for the event to identify which occurrences were attributable to transportation barriers.

Results/Findings: **In progress**, however, the goal is to combat transportation barriers in order to reduce rural-urban cancer disparities. This goal will be achieved by identification of patients that are considered high-risk for transportation barriers based on the Transportation Barriers Measure. These patients will be referred to a clinical navigation team comprised of social workers, nurse navigators, and lay navigators to provide the patient with eligible transportation-specific resources to reduce occurrences of missed, rescheduled, or canceled appointments.
Conclusions/Implications: **in progress**

**Learning Objectives**
- Discuss the transportation barriers to care in rural cancer patients and how it may impact timeliness of care and prognosis of rural cancer patients
- Define transportation as a social determinant of health

**Tables and/or Figures**

*Figure 3. Conceptual model of relationship between transportation barriers and cancer care delivery.*