

Transportation Barriers and Solutions for Maine Cancer Patients

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Abstract

Background: Access to transportation is critical for cancer patients. Research demonstrates that lack of transportation and greater travel distances significantly reduces the likelihood that patients receive first-line oncology treatment and influences the types of treatment they receive. Transportation barriers also disproportionately affect those in rural areas, many of whom lack access to oncology providers.

Methods: A comprehensive cancer transportation needs assessment combined data from multiple sources, including inpatient and outpatient hospital encounters, the Maine Cancer Registry, licensed provider lists and a survey of transportation service providers. GIS mapping was used to visualize where patients travel to receive care. We also examined transportation availability and need by geography, demographics and type of treatment received.

Results: Three counties in Maine have no oncology providers and nine lack radiation treatment services. Those living in isolated rural areas traveled an average of 60 miles to receive treatment, compared to 14 for those in metro areas. Lower socioeconomic status is associated with elevated cancer incidence rates, more transportation barriers, and fewer visits for treatment. Three-quarters of transportation providers rely on volunteer drivers and half do not have adequate funding to meet demand.

Conclusions: Solutions to transportation barriers must be tailored to the community. Rural areas of Maine lack access to oncology providers, so innovative solutions are needed to bring services closer to where patients live. Increased public funding for transportation is vital for reducing transportation barriers, but other solutions include community-based transportation providers, implementation of transportation-friendly policy, telemedicine, lodging resources, and volunteer community-based driver networks.

Background

Maine Cancer Foundation (MCF) is a public foundation with the mission of reducing cancer incidence and mortality in Maine. 100% of funds raised by the Foundation are used to benefit the people of Maine.

Since 2008, MCF has funded transportation providers for Maine cancer patients. In 2017, to continue effective funding of Maine transportation providers, MCF contracted with Market Decisions (MDR) to execute a comprehensive, statewide needs assessment of transportation for Maine cancer patients.

Maine is one of the most rural states in the U.S. and lacks the public infrastructure of larger, more urban, states. Maine cancer patients are particularly vulnerable to lack of transportation for the following reasons:

- The number of appointments required for advanced, cancer care
- The cost of travel for both patients and caregivers
- The inability of patients to drive themselves to care due to illness
- The distance to cancer care

MCF will continue to fund transportation services for Maine cancer patients and, taking into account the results of the Needs Assessment findings, actively support statewide collaboration between Maine transportation providers.

Research Questions

- What is the availability of, and access to cancer treatment facilities by geography?
- What are the scope and availability of transportation services for cancer patients?
- What barriers and costs are associated with transportation?
- What are the travel patterns and distances for cancer patients by geography?
- Are there gaps in availability of services versus need?

Methods

The needs assessment used multiple data sources to create a comprehensive picture of transportation for cancer care in the state.

Areas of Focus	Primary Questions	Data Sources
Availability and access to treatment	Where are cancer care providers located in the state? What types of care do they provide? How many provider days are available for patients?	Licensed provider lists
Availability and access to transportation	What transportation options are available for each county and region? What are the restrictions of these options in terms of cost or eligibility?	Survey of transportation providers Maine Transportation Summit
Transportation experience and need	What sites are they going to? How far do patients travel to receive services? How does travel differ by demographics and type of treatment received?	Maine hospital encounter data
Gaps in services and barriers by geography	What are the cancer incidence and mortality rates by county? Where do gaps exist in availability of service compared to need?	Maine Cancer Registry Maine Transportation Summit

Database of cancer treatment facilities

Included number and availability of oncologists by site, type of services offered.

Transportation provider survey

Surveyed 24 transportation providers about the services available, experience, gaps, and barriers that exist for cancer patients. Interviews were conducted via phone and email in spring of 2017. Survey response rate was 71%.

Analysis of hospital encounter datasets

Analyzed travel patterns for cancer patients receiving care and travel burden by types of cancer treatment, cancer sites, and other factors. Used Google Maps Application Program Interface (API) and Geographic Information System (GIS) software to calculate and map estimated travel distance between patients and where they received care. Includes all cancer diagnosis encounters at in-state hospitals and clinics.

Cancer Transportation Summit

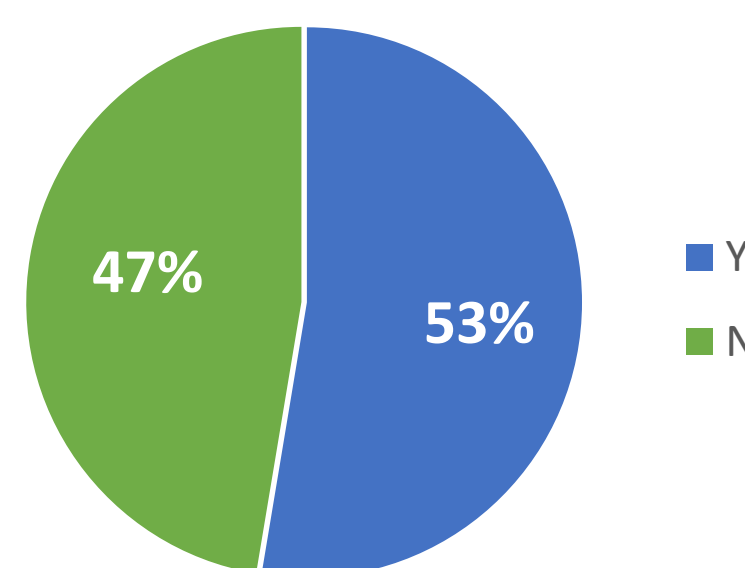
Attended by regional and community transportation providers, Mainers affected by cancer and other stakeholders interested in improving cancer patients' access to care. Discussion groups focused on questions related to transportation resources, needs, and barriers in the state.

Results

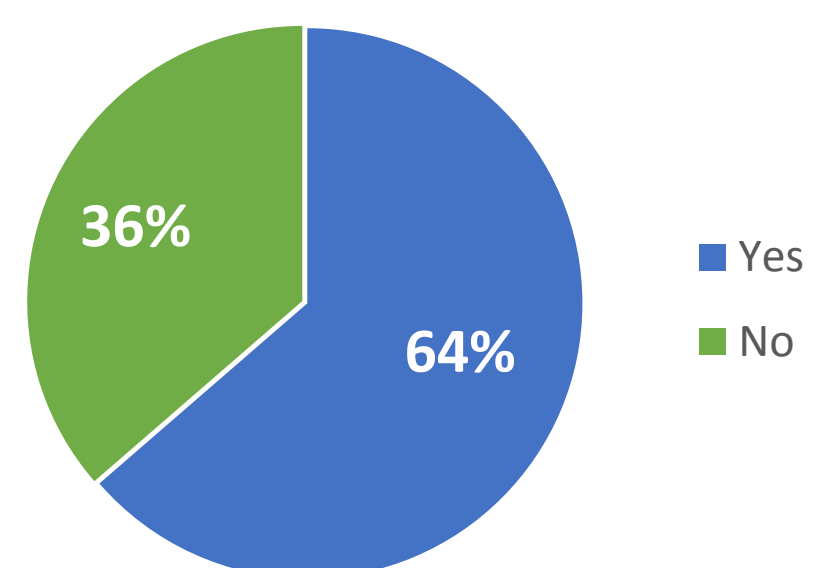
The transportation provider survey contained a number of questions about the travel services available to cancer patients, their experience, gaps, and barriers that exist with transportation. **Nearly half of transportation providers reported having to turn away patients because they lacked the resources to meet demand.** Many patients, especially those with the lowest socioeconomic status, often lack alternate forms of transportation or the ability to travel to appointments.

Public transportation providers are funded through a combination of public funding, grants, and donations, so changes in any component of that flow can severely impact their ability to provide services. In particular, organizations are worried that changes or cuts to Medicaid would have a severe negative impact on the availability and capacity of transportation services.

Ability to help every cancer patient who contacted program in the past 12 months?



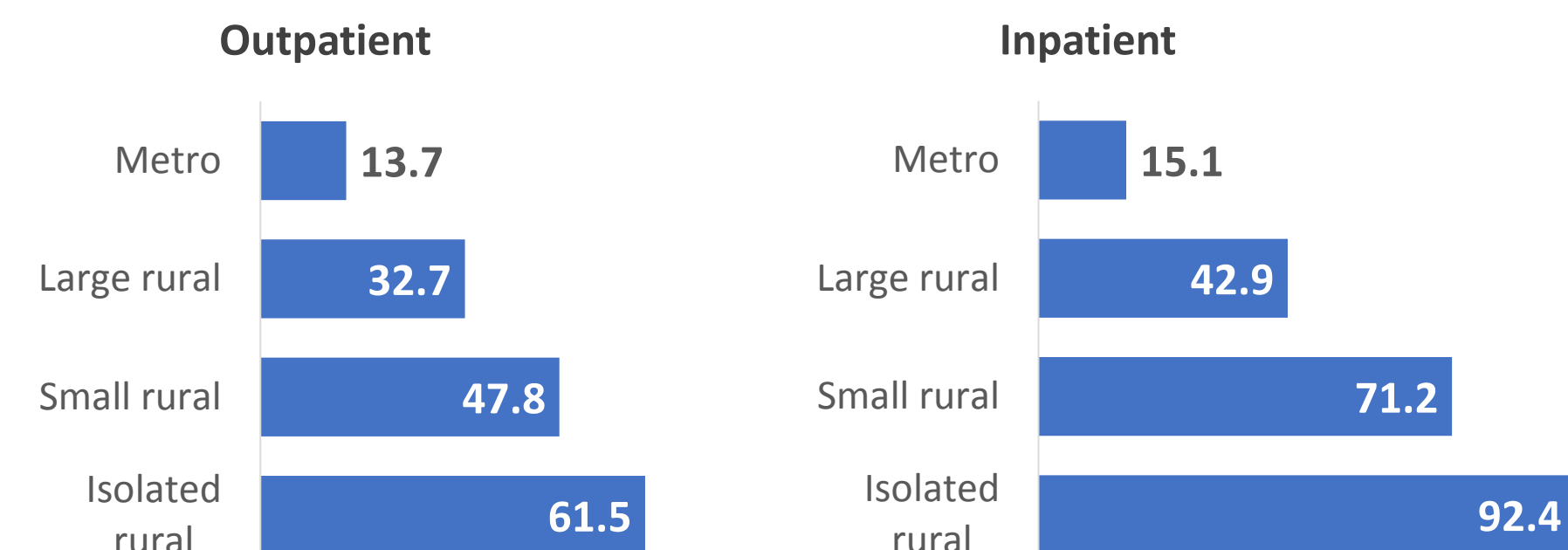
Are there events/policy changes that will impact services or patients' access to transportation in the region?



Results (continued)

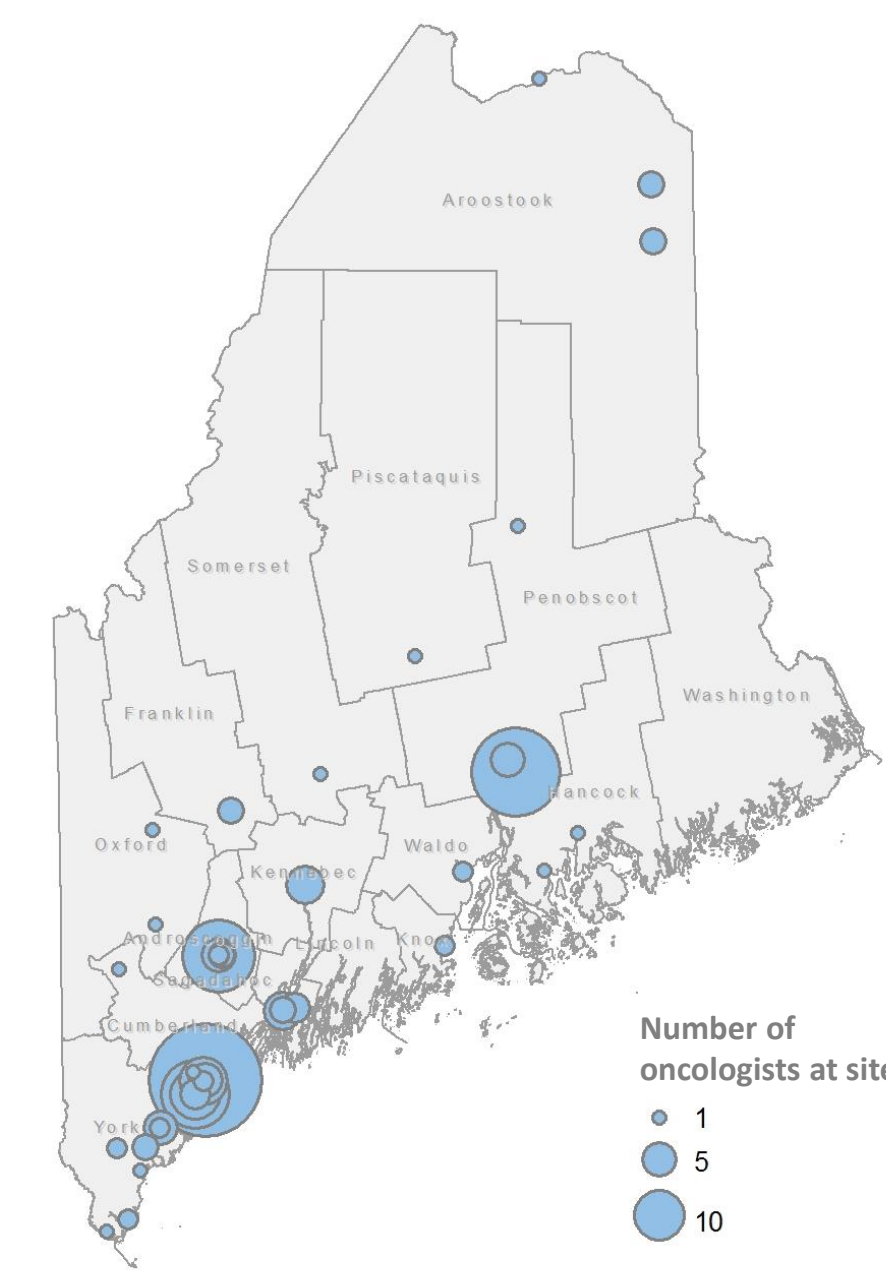
Using Rural-Urban Commuting Areas, from the Federal Office of Rural Health Policy and the Economic Research Service, communities were classified into one of four categories ranging from urban to isolated rural. Those living in the **most rural areas of the state travel 4-6 times further** overall to receive cancer treatment than those living in metro areas.

Average Round-Trip Distance (in Miles) by Rurality, 2015

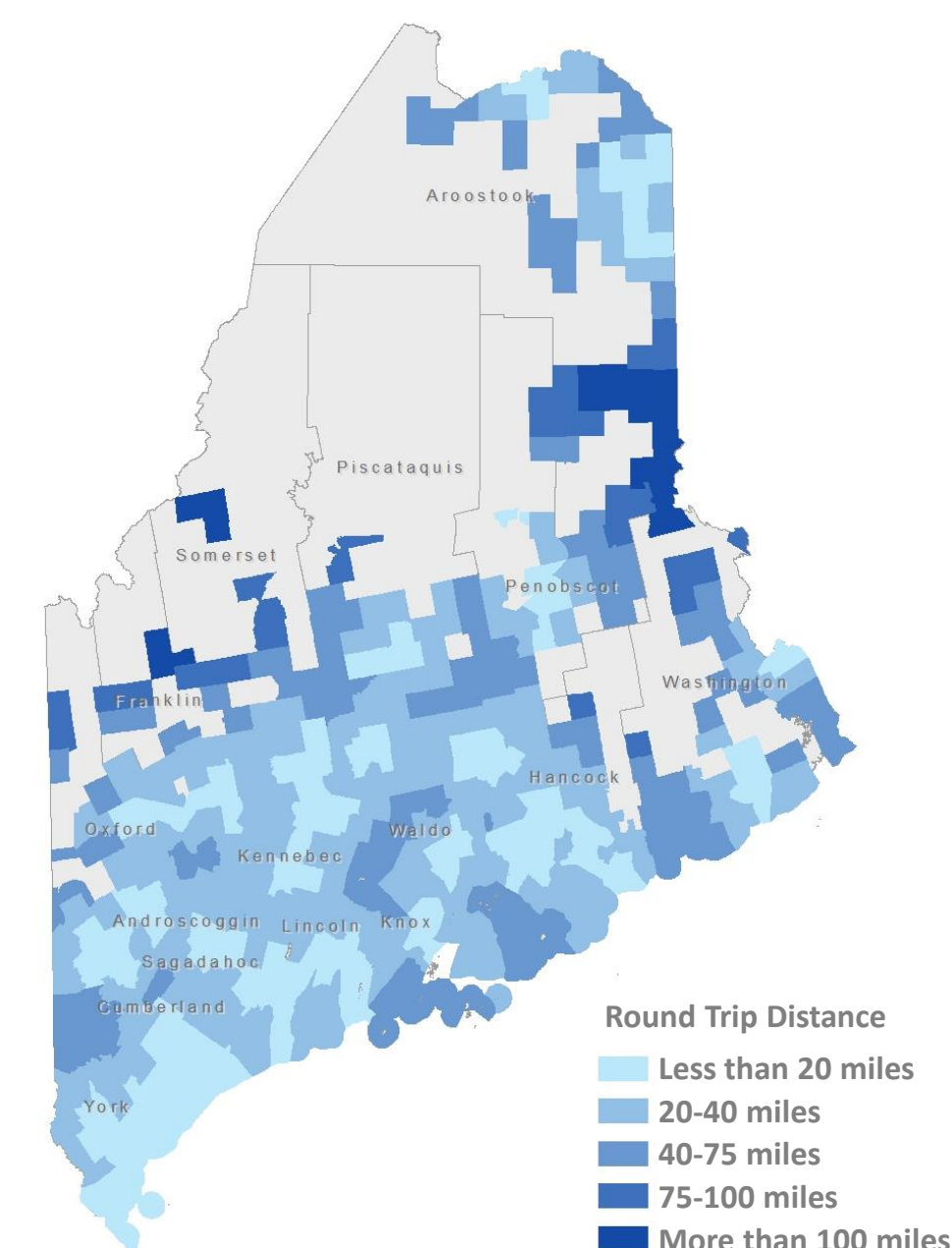


Using the database of facilities and oncologists, information about access and travel distances were mapped using GIS software. Approximately half of Maine's oncologists are located in one county (Cumberland County). Several rural counties do not have any oncology providers. In addition, the state has a limited number of facilities that provide radiation treatment, and half of those sites are located in Cumberland County. The result is excessive travel distances of 100+ miles for many rural patients to receive care.

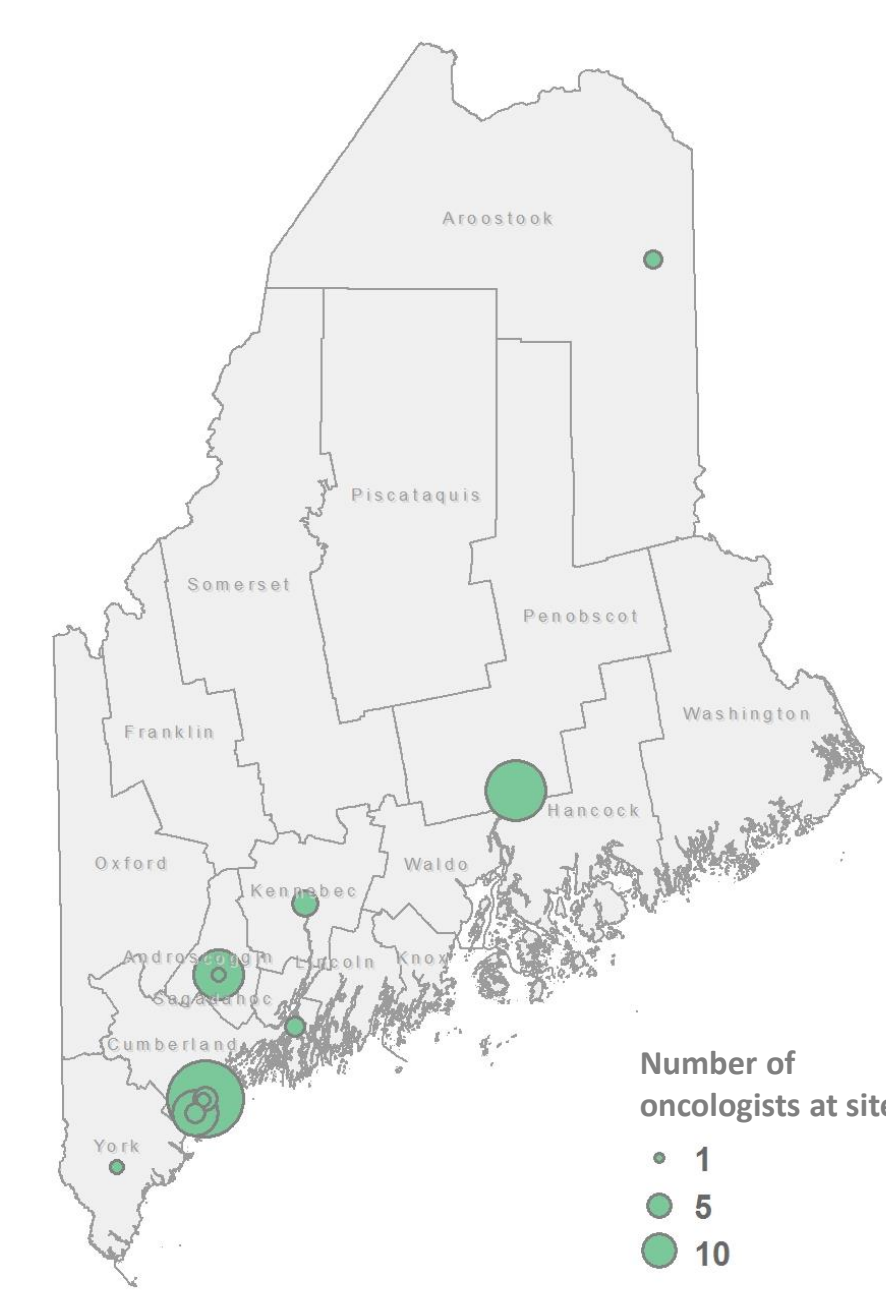
All Cancer Treatment Sites by Size and Geography



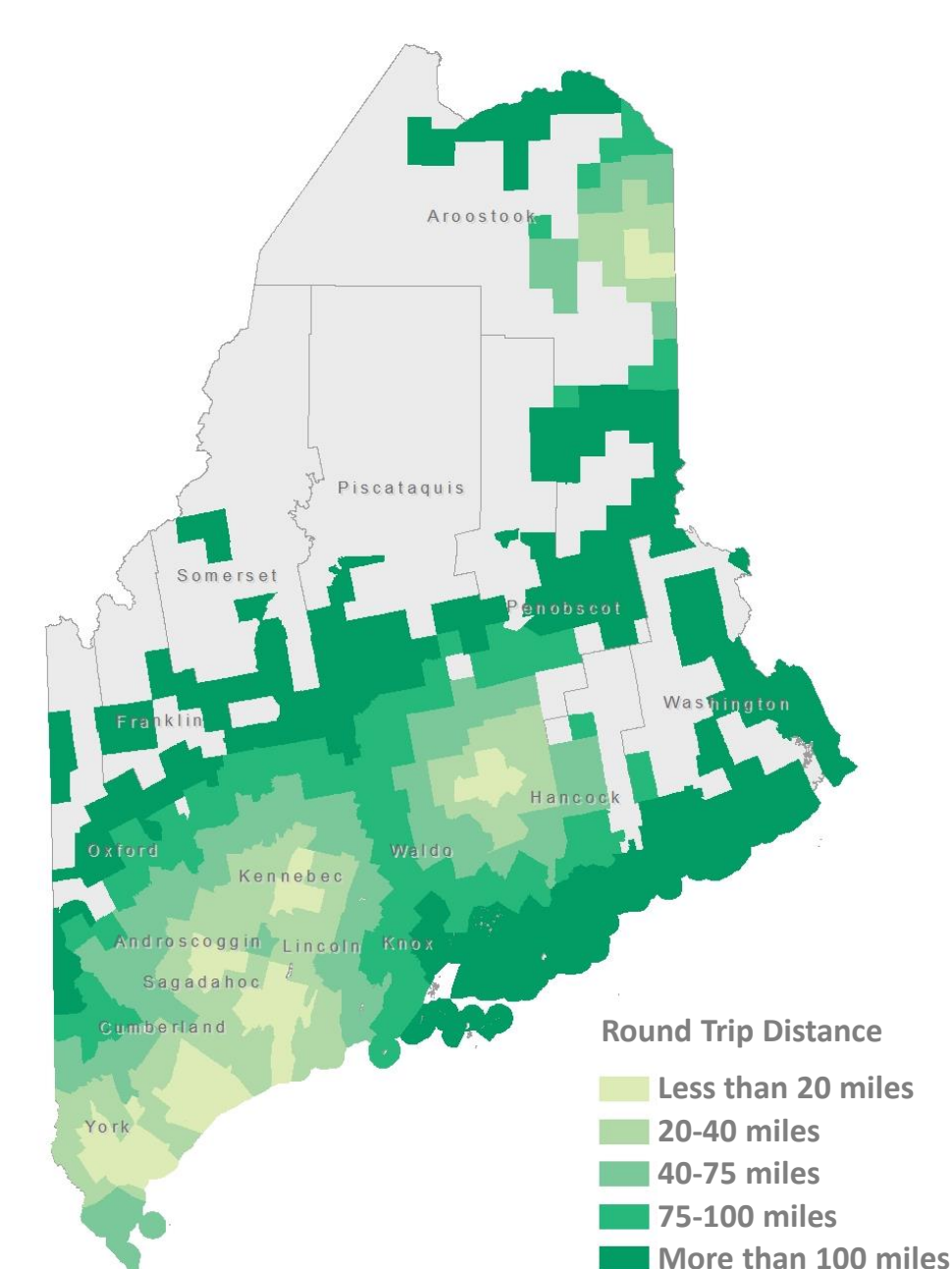
Minimum round-trip travel distance to receive chemotherapy treatment



Radiation Treatment Sites by Size and Geography



Minimum round-trip travel distance to receive radiation treatment



Transportation Summit Discussion Groups

What are the unique challenges of serving cancer patients in your community?

- The time and effort required to recruit, background check, and train drivers and volunteers.
- Coordinating and managing schedules. Drivers cannot always accommodate last-minute schedule changes.
- The need for more funding is always an issue, especially when resources are declining.
- Travel reimbursements/gas cards don't address everyone's needs.
- Volunteers don't always have ability to help patients requiring non-ambulatory care or those with mobility issues.
- A lack of treatment services in parts of the state.
- Getting the word out about services, or lack of resources to market services.
- Important to remember human aspect to transportation. Cancer patients should have opportunities made available so they don't need to beg for help.

Discussion

- Cancer patients in rural areas face significant transportation barriers and lack access to treatment.
- Many of the transportation providers in the state are small, community-driven, and made up of volunteers.
- Half of transportation providers reported not being able to meet demand for services.
- A lack of public transportation in rural areas leaves patients without affordable transportation options. Taxis are not public transportation.
- Disruptions in funding, such as a cut to Medicaid, could have a catastrophic impact on access to transportation.
- Those living in the most rural areas travel 4-6 times further to receive cancer treatment than those living in urban areas.
- Lower socio-economic status is associated with higher levels of cancer incidence and longer travel distances. Results in higher need, and more barriers to travel among this critical group.
- A lack of oncologists in the most rural areas (such as Washington County in Maine) results in excessive travel distances of 100+ miles for patients in these areas.

Potential Solutions

Even in predominately rural areas, each community is unique and requires solutions that meet the specific needs and circumstances of patients in the area. Some of the potential solutions include:

- Increase access to and capacity of regional transportation services
- Increase the number and capacity of informal volunteer and community-based transportation networks
- Improve and expand public transportation options and funding
- Partner with hospitals to provide transportation to their cancer patients
- Advocacy for transportation funding
- Education and outreach to inform patients about transportation options and remove barriers
- Pilot innovative solutions that help solve transportation barriers, improve coordination, and increase capacity
- Expand access to oncology providers and facilities in the most rural areas (telemedicine)
- Convene a cancer transportation council to continue moving this work forward

References

- Syed, S. T., Gerber, B. S., & Sharp, L. K. (2013). Traveling towards disease: transportation barriers to health care access. *Journal Of Community Health*, 38(5), 976-993.
- Salloum, R. G., Smith, T. J., Jensen, G. A., & Lafata, J. E. (2012). Factors associated with adherence to chemotherapy guidelines in patients with non-small cell lung cancer. *Lung Cancer*, 75(2), 255-260.
- Guidry J.J., Adey L.A., Zhang D., Winn R.J. (1997). Transportation as a barrier to cancer treatment. *Cancer Practice* [01 Nov 1997, 5(6):361-366]
- Branch, L. G., & Nemeth, K. T. (1985). When elders fail to visit physicians. *Medical Care*, 23(11), 1265-1275.
- Terry Meden; Celeste St. John-Larkin; Deborah Hermes; et al. (2002). Relationship Between Travel Distance and Utilization of Breast Cancer Treatment in Rural Northern Michigan. *JAMA*. 2002;287(1):111