

Key Messages

Radiation therapy for cancer was the least available with almost 40% of patients being more than a 30 min drive from the nearest facility

The southeast corner of Montana has the least access to cancer treatment services

American Indian communities were disproportionately affected by long drive times for all 3 treatment categories (surgery, chemotherapy, and radiation)

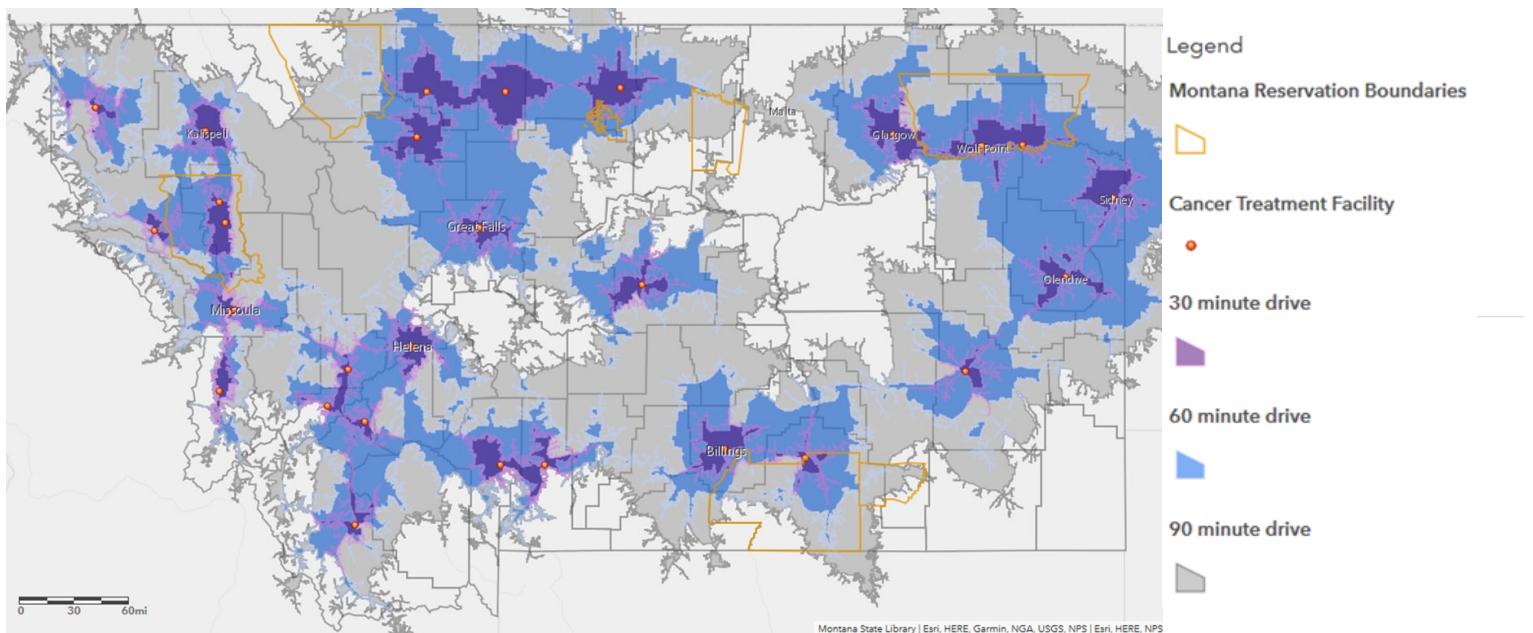
Older adults were disproportionately affected by long drive times for surgery and radiation treat-

Availability of Cancer Treatment in Montana: Where are the Gaps?

Montana is the 4th largest state geographically but it has a relatively small population of just over one million people. The majority of the state has a population density of less than two people per square mile. American Indian (AI) residents are the largest minority group making up about 7% of the population, and much of the AI population live in rural areas on seven reservations.

While there are 65 hospitals across the state, 50 of them are critical access hospitals and only nine have cancer treatment centers (seven are certified by the Commission on Cancer). The Montana Cancer Coalition has identified “increasing availability of and access to diagnostic and cancer treatment” as a key objective for the Montana Comprehensive Cancer Control Plan 2016-2021. This study takes the first step in addressing this objective by identifying the proportion of Montanans diagnosed with invasive cancer from 2011 to 2015 who live more than a 30, 60, or 90 minute drive from a facility that offers services within three broad treatment

Figure 1: Map of Montana with cancer treatment centers that offer at least general surgical treatment for cancer, 2018.



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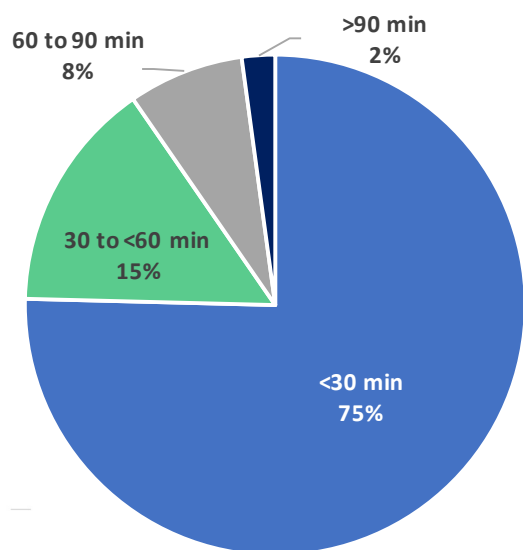
<https://dphhs.mt.gov/publichealth/cancer>

categories: surgery, chemotherapy and radiation. It also identifies which patient groups are more likely to live farther away from treatment facilities.

Surgery Services

Thirty-three facilities across Montana offer at least general surgery to treat cancer (Figure 1). Most of the state's population is no more than a 90 minute drive from one of these facilities. Only 2% of cancer patients who had some surgical treatment lived more than a 90 minute drive from a facility that offers surgical treatment and 75% lived less than a 30 minute drive (Figure 2).

Figure 2: Proportion of surgical patients by the drive time from their home to the nearest center that offers at least general surgical treatment for cancer, 2011-2015.



A significantly higher proportion of patients aged 20 to 44 years lived less than 30 minutes from a surgical treatment center compared to other age groups; and a higher proportion of older adults aged 45 and older lived from 30 to <60 minutes away (Figure 3).

A significantly higher proportion of AI patients lived more than 60 minutes from a surgical treatment center than white patients (Figure 4).

Figure 3: Distribution of drive time to a surgical treatment center by age at diagnosis, 2011-2015.

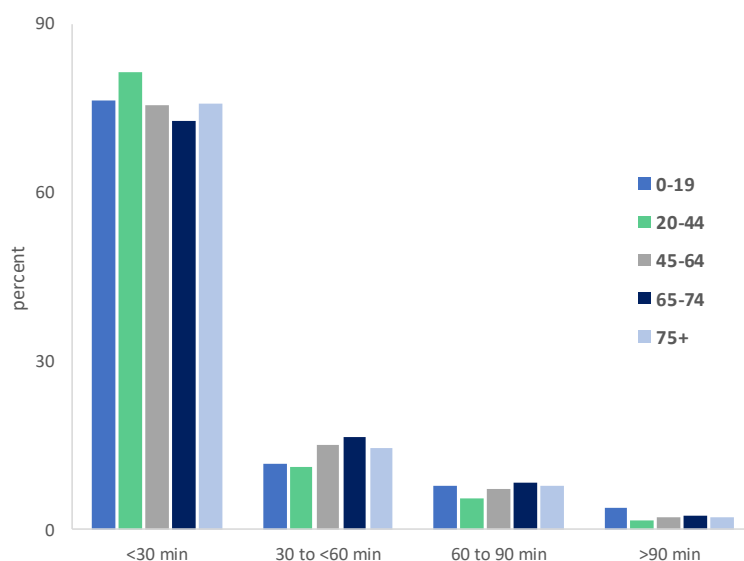
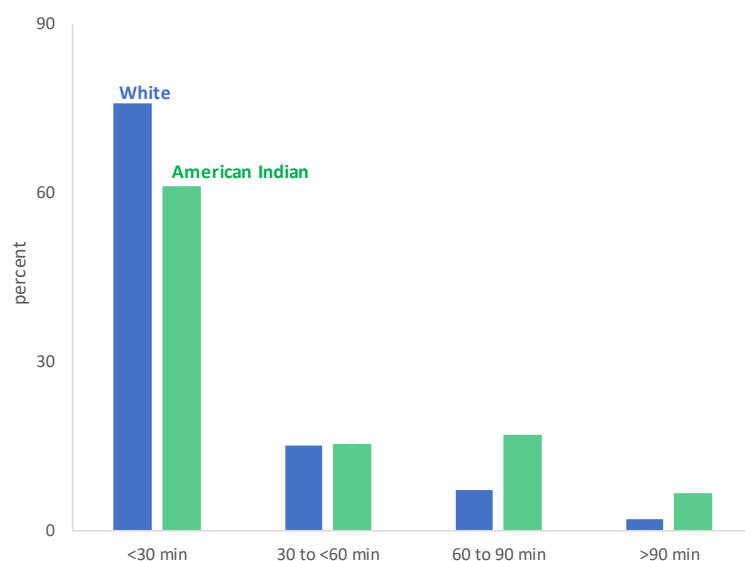


Figure 4: Distribution of drive time to a surgical treatment center by race, 2011-2015.



Chemotherapy Services

Twenty-seven facilities offer chemotherapy services (Figure 5). As such, 4% of cancer patients who received chemotherapy lived more than 90 minutes from a chemotherapy center (Figure 6). Almost 20% of AI patients lived more than 90 minutes from a chemotherapy treatment center and over 50% lived more than 30 minutes away (Figure 7). There was no significant difference in the age distribution of chemotherapy patients by drive time to a chemotherapy facility.

Figure 5: Map of Montana with cancer treatment centers that offer chemotherapy services, 2018.

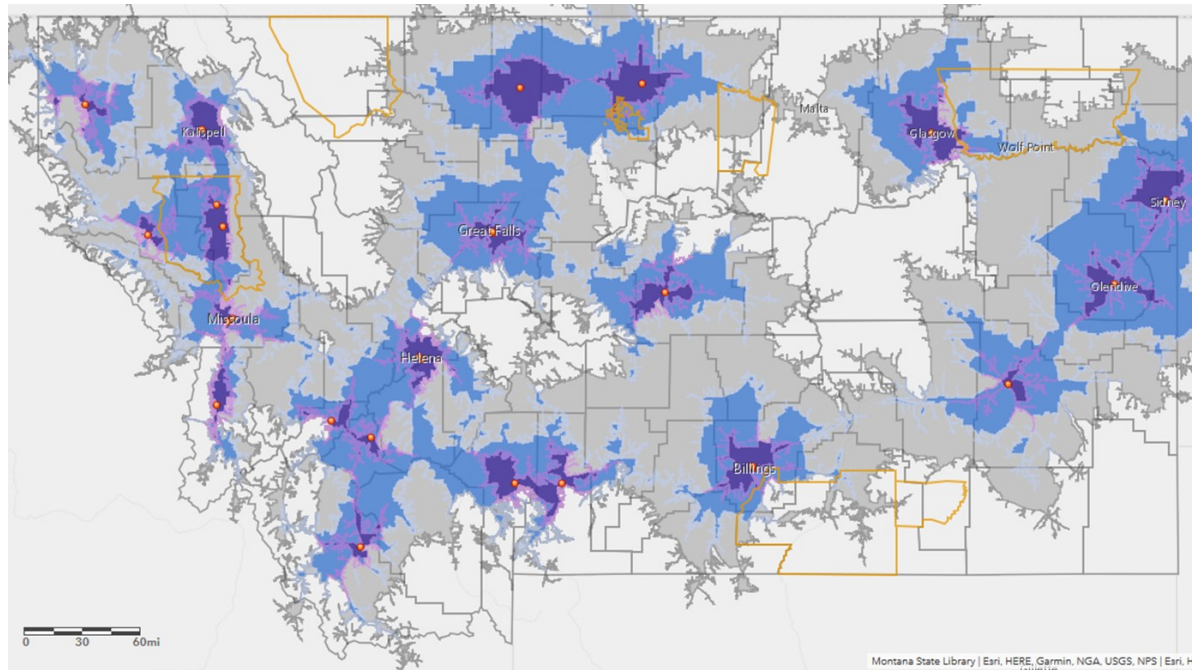


Figure 6: Proportion of chemotherapy patients by the drive time from their home to the nearest center that offers chemotherapy services, 2011-2015.

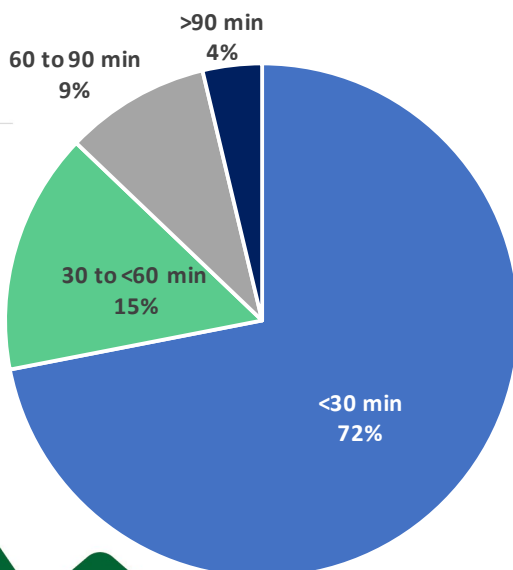
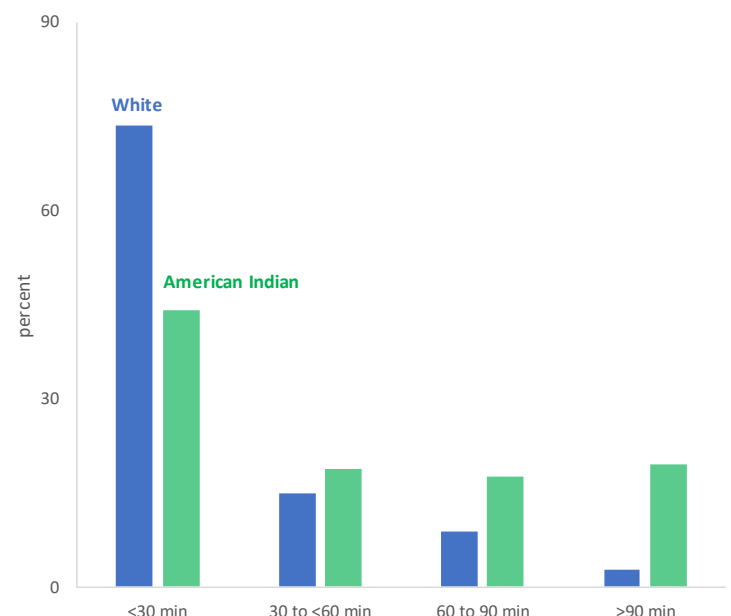


Figure 7: Distribution of drive time to a chemotherapy treatment center by race, 2011-2015.



Radiation Services

Only 15 facilities offer radiation services leaving a larger proportion of the state more than a 90 minute drive from these services (Figure 8). About 40% of cancer patients who received radiation therapy lived more than 30 minutes from a facility that offers radiation (Figure 9). A significantly higher proportion of young adults (20 to 44) lived less than 30 minutes from a radiation treatment center compared to other age groups; and a higher proportion of older adults (45 and older) lived more than 30 minutes away (Figure 10).

Figure 8: Map of Montana with cancer treatment centers that offer radiation services, 2018.

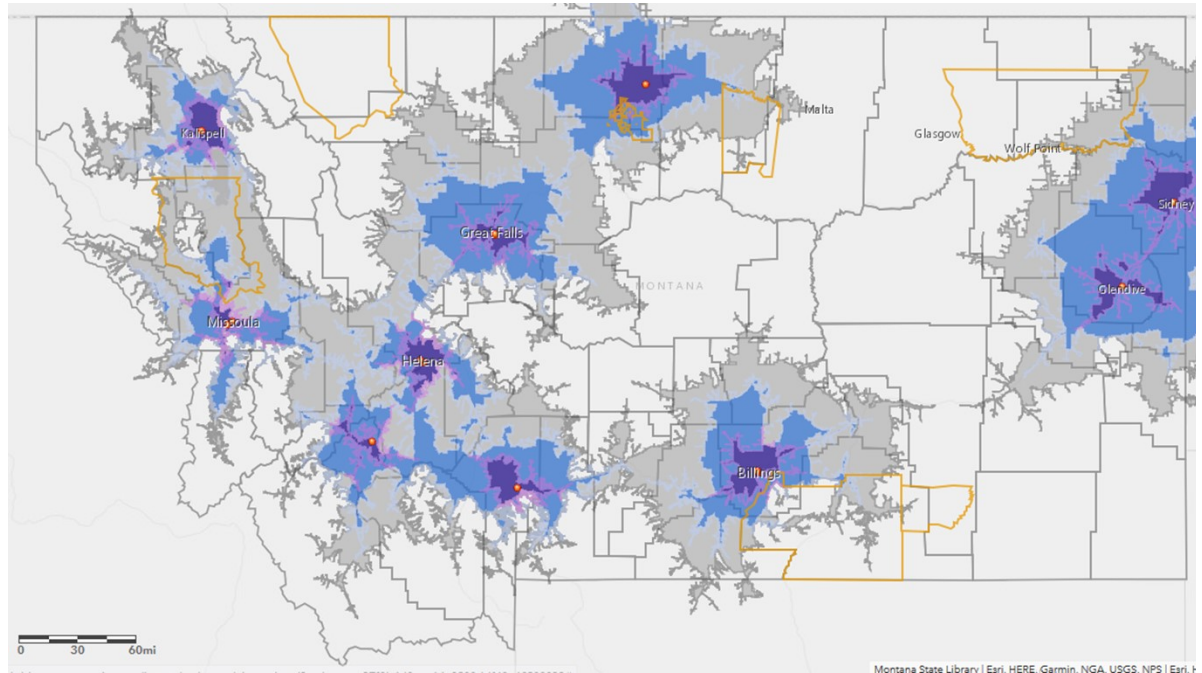


Figure 9: Proportion of radiation patient by the drive time from their home to the nearest center that offers radiation services, 2011-2015.

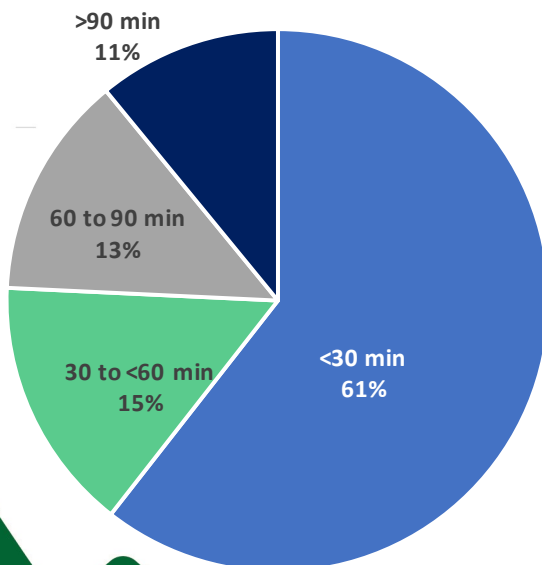


Figure 10: Distribution of drive time to a radiation treatment center by age at diagnosis, 2011-2015.

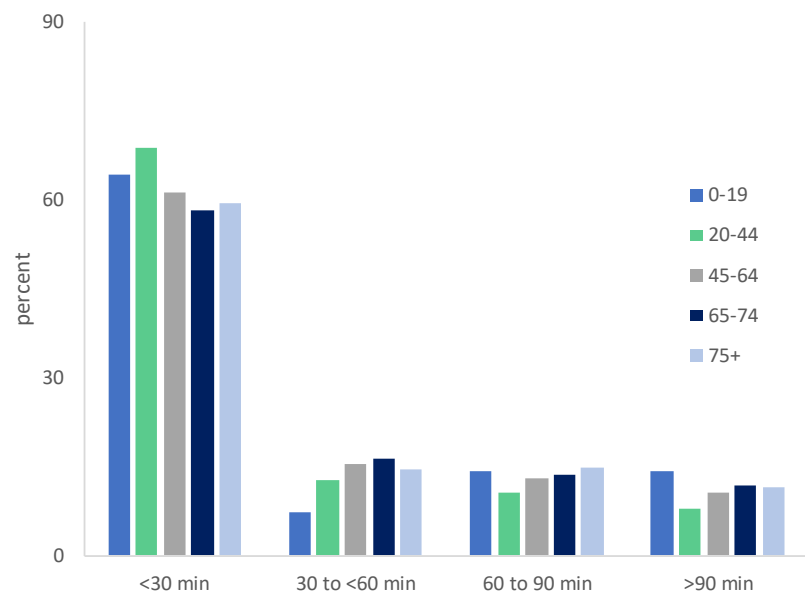
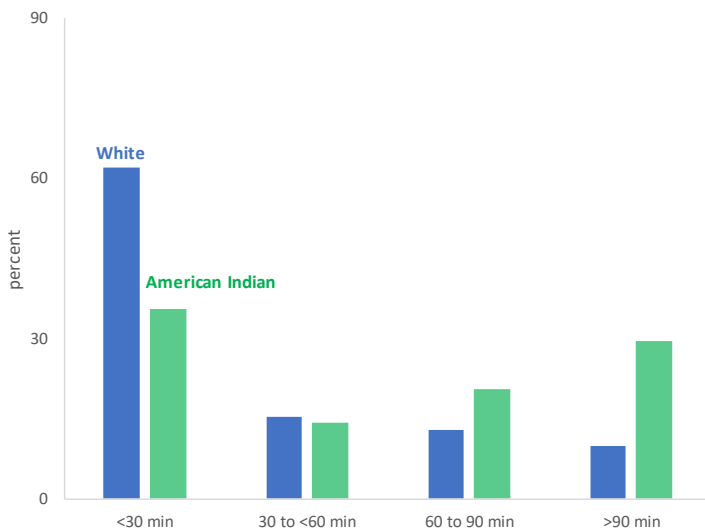


Figure 11: Distribution of race by drive time to a radiation treatment center, 2011-2015.



A higher proportion of AI patients lived more than a 60 minute drive from a radiation treatment center than white patients (Figure 11).

Conclusions

Radiation treatment was the least available treatment type. The southeast corner of MT has the least access to cancer treatment services within the state. American Indian communities are disproportionately affected by long drive times for all three treatment categories. Older adults were disproportionately affected by long drive times for surgery and radiation treatments. The Montana Cancer Coalition will use this information to target communities and populations in most need of closer cancer treatment services for intervention.

Limitations

Treatment categories used in this analysis were very broad and did not account for specialty care that may be needed based on cancer site or stage. As such, many cancer patients who live close to a facility that offers some cancer treatments may still need

to travel for their cancer care. Further analysis should be done to describe the actual drive times of Montana cancer patients. Furthermore, this analysis did not account for transportation resources of the patients. Even a 30 minute drive could be a barrier to care if the patient does not have reliable transportation.

Methods

Information on which treatment services were offered at each facility was first obtained from a survey conducted by the Montana Cancer Coalition. The 44 responding facilities had the opportunity to give detailed information about what services are available at their facility. For the 21 non-responding facilities, treatment data from the Montana Central Tumor Registry was used to determine if each treatment service was offered. A facility was considered to offer the treatment service if at least one patient diagnosed from 2011 to 2015 had the facility listed as the treatment facility for their treatment.

Cancer treatment services were divided into three broad categories: surgery, chemotherapy, and radiation. These categories were defined by treatment summary information within the MCTR that categorize whether each type of treatment was received but not details of the specific treatment or schedule.

All Montana residents diagnosed with invasive cancer from 2011 to 2015 were included in the study. Patients were divided into groups according to which treatment services they received in their first round of treatment. A patient could be included in more than one treatment group if they received more than one type of treatment.

GIS Online software from ESRI was used to calculate the 30, 60, and 90 minute drive time areas around each facility and for the spatial join between these areas and patients' address at diagnosis. Chi square analysis was used to compare the distribution of age at diagnosis and race by drive time categories.