

CANCER BURDEN FOR NATIVE AMERICANS IN WYOMING



**State of Wyoming
Department of Health**

**Cancer Burden for Native Americans in Wyoming
Data Brief**

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Public Health Division
Wendy E. Braund, MD, MPH, MEd, FACPM
State Health Officer and Senior Administrator, Public Health Division

Additional information and copies may be obtained from:
Elizabeth Mikesell
Wyoming Comprehensive Cancer Control Program
6101 Yellowstone Road, Suite 510
Cheyenne, Wyoming 82002
307- 777-8609
Fax: 307-777-2426
liz.mikesell@wyo.gov

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Introduction

In August 2010, the Wyoming Comprehensive Cancer Control Program began discussions with key stakeholders from both the Northern Arapaho and Eastern Shoshone Tribes about their interest in re-establishing Native American Partnership efforts initially begun in 2008. Since that time, regular meetings have been held to learn about the needs of the Tribes and foster trusting relationships. Members of the Native American Partnership represent Eastern Shoshone and Northern Arapaho Tribal Health organizations, Tribal Liaisons to the Governor's Office, the Native Women's Health Program, the Wind River Indian Reservation Tobacco Prevention Program, and US Department of Health and Human Services, Indian Health Service. Department of Health staff represent the Comprehensive Cancer Control Program, Breast and Cervical Cancer Early Detection Program, Colorectal Cancer Screening Program, and Chronic Disease Epidemiology.

The Native American Partnership has collaborated in the development of this data brief focusing on the cancer burden for Wyoming Native American residents. Discussions with the Partnership identified barriers and limitations relating to data collection and its impact on the results reported within this data brief. These are outlined in the "Conclusions" section of this report. It is hoped the data and information summarized in this report will help guide future discussions and project opportunities for the Partnership.

The goal for this report is to compare data to demonstrate similarities and disparities for the burden of cancer on the Tribal community in relationship to the cancer burden of White residents of the state. In this report, comparisons between the two populations are made using statistical tests. Rates are based on ten years of data due to small numbers. These numbers are still relatively small for statistical testing as evidenced by the wide confidence intervals. When numbers are small, the ability to find statistical differences is impaired. When the rates are statistically different, the differences are noted to be significantly different.

Cancer Incidence 2001-2010

Incidence is the number of newly diagnosed cancer cases that occur in the population per unit of time (usually one year). The “rate” is the proportion of the population affected, usually defined as “per 100,000 persons” in a population. Table 1 illustrates the cancer incidence rates from 2001-2010 among White and Native American Wyoming residents. Three of the rates are significantly lower among the Native American population. While the other rates are in some cases higher, they are not statistically different from the White population.

Table 1. Wyoming CANCER INCIDENCE among Native American and White Residents, 2001-2010

Cancer Site	Native American Rate	White Rate
All cancer sites	383.9 / 100,000 (95%CI=338.9–432.9) Significantly lower rate	447.2 / 100,000 (95%CI=441.4–453.0)
Breast (Female Only)	93.7 / 100,000 (95% CI: 338.9 – 432.9)	116.3 / 100,000 (95% CI: 112.2 – 120.4)
Colorectal	52.4 / 100,000 (95% CI: 37.1 – 71.5)	44.1 / 100,000 (95% CI: 42.3 – 45.9)
Lung	62.4 / 100,000 (95% CI: 43.7 – 85.6)	52.6 / 100,000 (95% CI: 50.6 – 54.6)
Prostate	96.8 / 100,000 (95%CI=65.1-137.7) Significantly lower rate	164.4 / 100,000 (95%CI=159.3-169.6)
Melanoma	8.9 / 100,000 (95% CI: 3.1 – 19.4) Significantly lower rate	21.7 / 100,000 (95%CI=20.4-23.0)

Source: Wyoming Cancer Surveillance Program

Average Age at Cancer Diagnosis 2001-2010

Table 2 on the following page shows the average age at cancer diagnosis by cancer site for Native Americans and Whites in Wyoming from 2001 – 2010. For each site, the average age at

cancer diagnosis is lower among Native Americans than Whites. The overall average age at cancer diagnosis was 58.25 years among the Native American population.

Table 2. Average age at Diagnosis, by site among Native American and Whites, Wyoming 2001 – 2010

Cancer Site	Native American	White
All Sites	58.25	64.49
Bladder (w/in situ)	67.00	69.76
Breast	56.74	61.80
Colorectal	58.80	68.23
Lung	68.12	69.00
Prostate	64.46	67.03

Source: Wyoming Cancer Surveillance Program

Cancer Mortality 2001-2010

Mortality is the number of deaths that occur in the population per unit of time (usually one year). The cancer mortality rates for Native American residents are higher than the mortality rates among White residents, but the difference is not statistically significant (See Table 3). Between 2001 and 2010, cancer was the second leading cause of death in both Native American and White Wyoming residents.

Table 3. Wyoming CANCER MORTALITY 2001-2010 among Native American and White Residents

Cancer Site	Native American Rate	White Rate
All cancer sites	185.7 / 100,000 (95% CI = 152.2 - 223.6)	173.1 / 100,000 (95% CI = 169.5 - 176.8)
Breast (Female Only)	15.94 / 100,000 (95% CI = 5.8 - 33.9)	22.1 / 100,000 (95% CI = 20.4 - 23.9)
Colorectal	19.5 / 100,000 (95% CI = 9.7 - 34.1)	17.3 / 100,000 (95% CI = 16.2 - 18.5)
Lung	56.6 / 100,000 (95% CI = 38.3 - 79.7)	44.7 / 100,000 (95% CI = 42.8 - 46.5)
Prostate	27.8 / 100,000 (95% CI = 9.7 - 58.5)	24.4 / 100,000 (95% CI = 22.2 - 26.6)
Urinary Bladder	6.6 / 100,000 (95% CI = 1.3 - 17.4)	4.3 / 100,000 (95% CI = 3.8 - 5.0)

Source: Wyoming Cancer Surveillance Program

Risk Factors for Cancer

In spite of lower cancer incidence rates, Wyoming Native Americans have significant cancer risk factors. The Wyoming Behavioral Risk Factor Surveillance System (BRFSS) collects data from Wyoming adults about their health and related behaviors. Five cancer risk factors are included in the survey. These factors include current tobacco use, being overweight (Body Mass Index greater than 25), not meeting recommendations for physical activity (moderate activity 30 minutes a day for at least five times a week or vigorous activity for 20 minutes at least three times per week), heavy drinking (men: 60 or more drinks in the last month; women: 30 or more drinks in the last month), and eating fruits and vegetables less than five times per day. The data below shows the frequency of having one or more (Table 4) and three or more risk cancer risk factors (Table 5) by race. The data is aggregated from 2007, 2009, and 2011. Table 4 shows that one of five risk factors is present in most of the adult population, and this prevalence is significantly higher among Native American than among White adults.

Table 4. Prevalence of any of Five Cancer Risk Factors by Race/Ethnicity, Wyoming; 2007, 2009, 2011

Wyoming adults reporting any of the following: any current tobacco use, overweight, not meeting recommendations for physical activity, heavy drinking, or eating fruits and vegetables less than five times a day.

Race/Ethnicity	Percent	95% Confidence Interval
Native American	98.9	97.5 – 99.5
White – non-Hispanic	93.5	93.0 – 93.9

Source: Wyoming Behavioral Risk Factor Surveillance System

Table 5 indicates that half of the Native American population in Wyoming has three or more of the five risk factors. This prevalence is significantly higher than the 36.7% of the White population with three or more risk factors. The high prevalence of risk factors points to the importance of cancer screening and lifestyle changes to lower behavioral cancer risks.

Table 5. Prevalence of Three or more of Five Cancer Risk Factors by Race/Ethnicity, Wyoming; 2007, 2009, 2011

Wyoming adults reporting three or more of the following: current tobacco use, overweight, not meeting recommendations for physical activity, heavy drinking or eating fruits and vegetables less than five times a day.

Race/Ethnicity	Percent	95% Confidence Interval
Native American	50.8	41.2 – 60.3
White – non-Hispanic	36.7	35.7 – 37.7

Source: Wyoming Behavioral Risk Factor Surveillance System

Stage at Cancer Diagnosis 2001-2010

According to the National Cancer Institute, the stage of cancer diagnosis is the extent of the cancer in the body. Staging is usually based on the size of the tumor, whether lymph nodes contain cancer, and whether the cancer has spread from the original site to other parts of the body. The most advanced cancers are of distant stage.

The staging terms used in the following data graphs are defined as follows:

In situ – cancer has not invaded the organ.

Local – cancer has invaded the organ of origin.

Regional – cancer has invaded beyond the organ of origin by direct extension to adjacent organs and/or tissues and/or regional lymph nodes.

Distant – direct extension beyond adjacent organs or tissues or metastases to distant site(s) or distant lymph nodes.

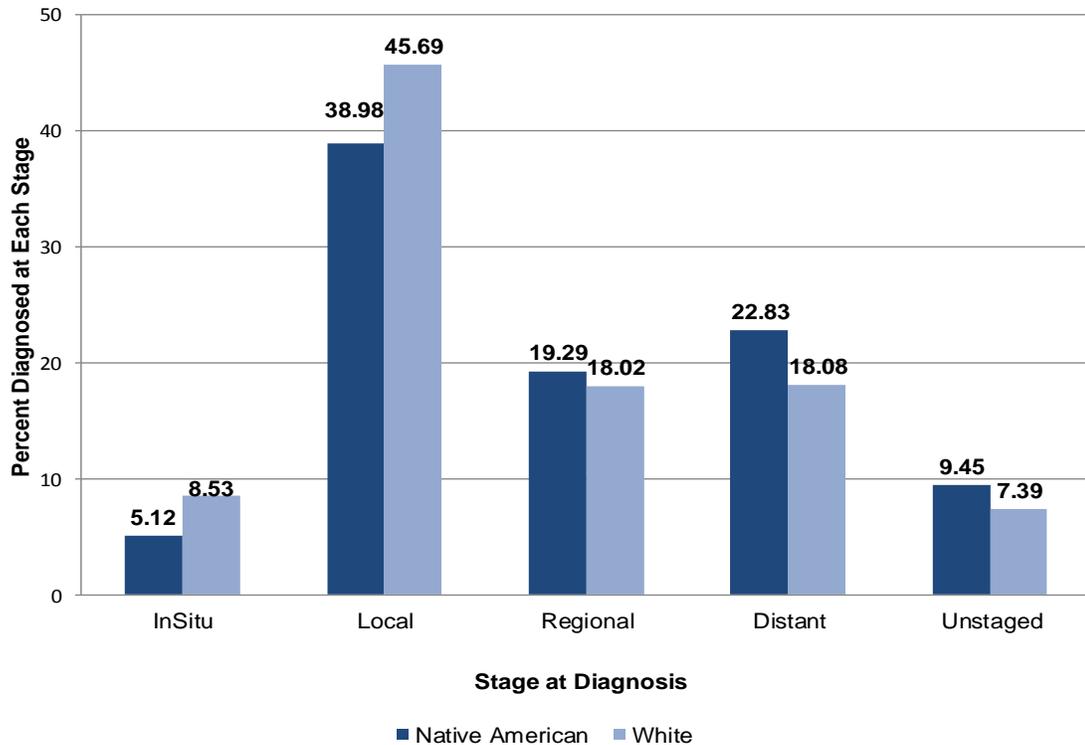
Unstaged – the extent of disease or primary site cannot be determined.

Early detection of cancer is secondary prevention as it involves identifying disease as early as possible, often before symptoms develop and treating the disease immediately thereafter. Screening for certain cancers can increase the probability of effective, timely and cost effective treatment.

The stage in which a cancer is detected plays a part in the survival of a cancer patient. Having a cancer diagnosed at an early stage (local) generally results in a better survival prognosis than a cancer detected in its later stages (distant).

Figure 1 illustrates the stage at diagnosis for all cancers combined among Whites and Native Americans in Wyoming from 2001-2010. A lower percentage of cancers among Native Americans are diagnosed at in situ and local sites than among Whites, meaning that cancers are diagnosed at later stages in Native American residents.

Figure 1. Stage at Diagnosis, All Cancer Sites among Native Americans and Whites, Wyoming 2001-2010

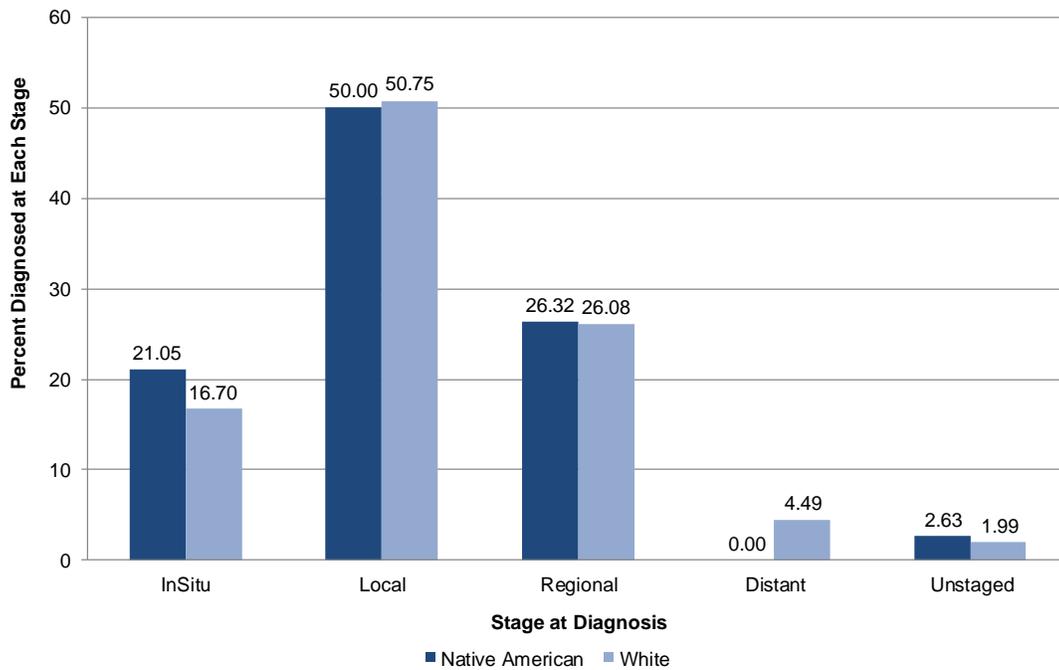


Source: Wyoming Cancer Surveillance Program

Breast Cancer

In Wyoming, breast cancer is the most frequently diagnosed cancer in women (excluding skin cancers) and is second to lung cancer as a cause of cancer deaths for women. Figure 2 illustrates the stage at diagnosis of breast cancer among Native Americans and Whites.

Figure 2. Stage at Diagnosis of Breast Cancer (Females only), among Native Americans and Whites, Wyoming 2001-2010



Source: Wyoming Cancer Surveillance Program

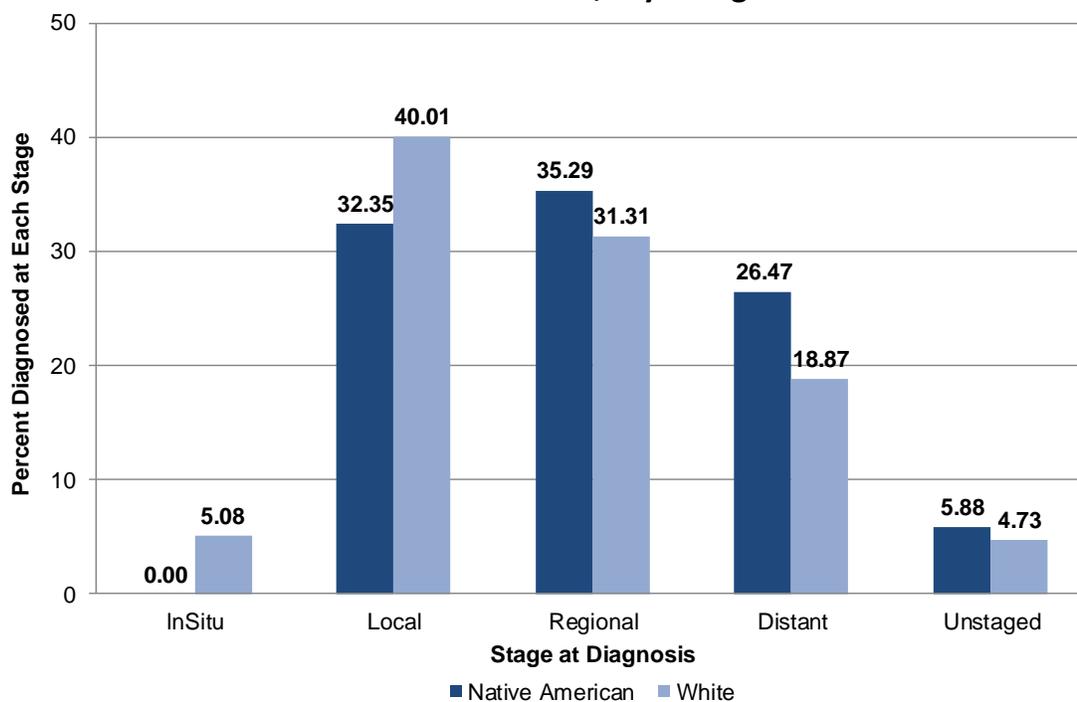
According to the Wyoming BRFSS survey from 2007-2010, more Native American women in Wyoming reported not having a mammogram in the previous two years (34.3%, 95%CI=25.6 - 44.3) than White women in Wyoming (31.1%, 95% CI=30.1 - 32.1). The difference was not statistically different.

Mammography can detect breast cancer at an early stage, when treatment is most effective and a cure is more likely. Each woman should talk with her healthcare provider to determine her personal risk of breast cancer, what the potential harms and benefits of screening are, and what screening schedule is best for her. All women are encouraged to visit with their healthcare provider about clinical and self-breast examinations.

Colorectal Cancer

Colorectal cancer is one of the top five cancers for both men and women in Wyoming – both in incidence and mortality. Figure 3 illustrates the stage at diagnosis of colorectal cancer among Native Americans and Whites in Wyoming from 2001-2010. A higher percentage of colorectal cancers are diagnosed at local and in situ stages in Whites than Native Americans.

Figure 3. Stage at Diagnosis of Colorectal Cancer among Native Americans and Whites, Wyoming 2001-2010



Source: Wyoming Cancer Surveillance Program

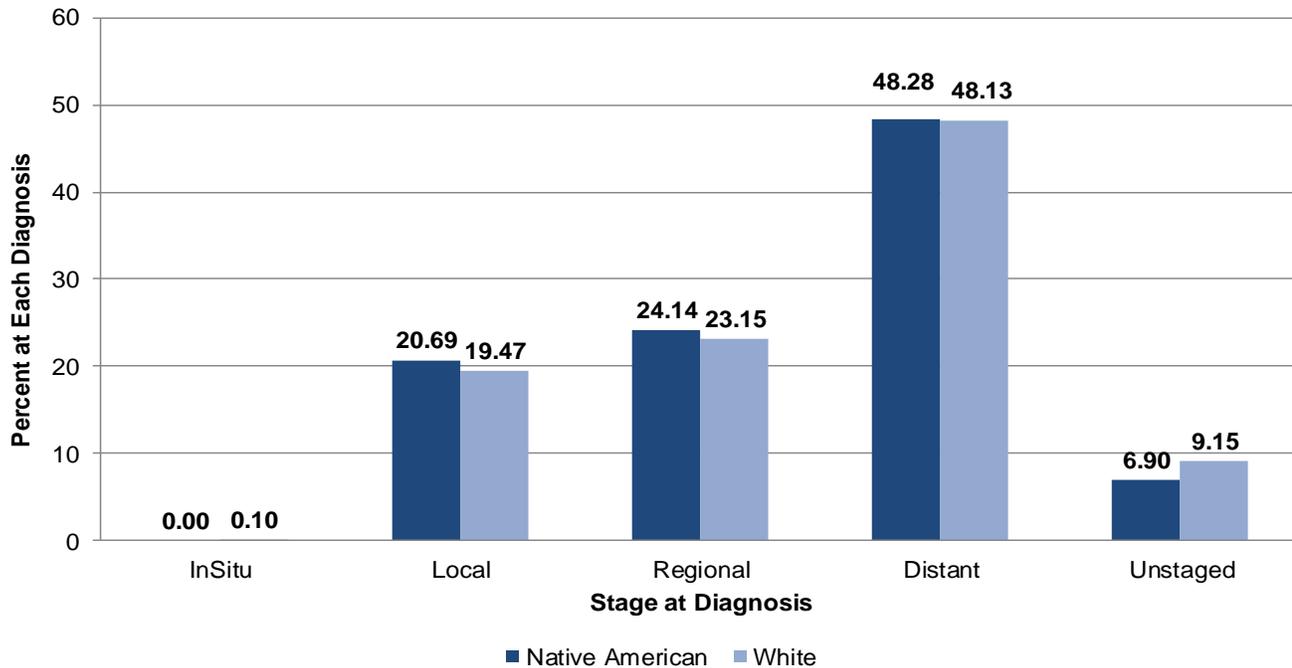
Wyoming BRFSS data from 2005 – 2009 shows that 51.4% of Native Americans reported never having had a sigmoidoscopy/colonoscopy as compared to 40.8% of Whites; however, this difference was not statistically significant.

Colorectal cancer screening can result in the identification and removal of polyps before they become cancerous as well as the detection of cancer that is at an early stage. Screening reduces mortality both by decreasing the incidence of cancer and by detecting a higher proportion of cancers at early, more treatable stages. There are multiple procedures that can be utilized for colorectal cancer screening. Individuals should talk with their healthcare provider about when to begin screening for colorectal cancer, what tests to have, the benefits and risks of each test, and how often to schedule appointments.

Lung Cancer

Figure 4 illustrates the stage at diagnosis of lung cancer. The percentages are relatively similar among the two groups with a majority of cases being diagnosed at distant stages.

Figure 4. Stage at Diagnosis of Lung Cancer, among Native American and Whites, Wyoming 2001-2010



Source: Wyoming Cancer Surveillance Program

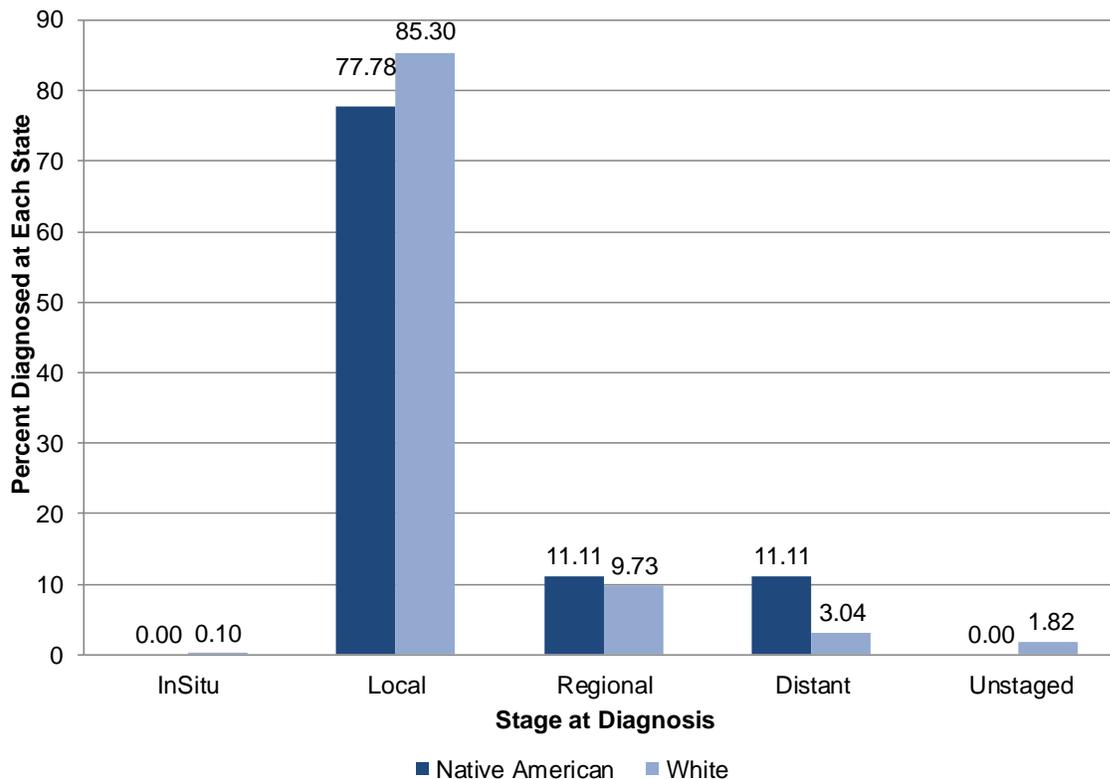
From 2007 – 2010, the Wyoming BRFSS survey found that significantly more Native Americans were current smokers (43.6%, 95%CI = 36.7 - 50.9) than Whites (19.8%, 95%CI=19.2 – 20.5).

Cancer of the lung and bronchus is the leading cause of cancer-related deaths in Wyoming and one of the top cancers diagnosed every year. According to the American Cancer Society, lung cancer accounts for more deaths than any other cancer in both men and women. Cigarette smoking is the most important risk factor for lung cancer with the risk increasing with both quantity and duration of smoking.

Prostate Cancer

Figure 5 illustrates the stage of diagnosis of prostate cancer among Native Americans and Whites in Wyoming in 2001-2010. Prostate cancer is more frequently diagnosed at a local stage among White men than Native American men. Prostate cancer is the most commonly diagnosed cancer in Wyoming.

Figure 5. Stage at Diagnosis of Prostate Cancer Native American and Whites, Wyoming 2001-2010



Source: Wyoming Cancer Surveillance Program

BRFSS does not ask the prostate cancer screening questions each year, so data is not included in the 2007-2010 estimates by race for Wyoming.

Each man should talk with his healthcare provider about his personal risk for prostate cancer and the best screening options available to him. Due to the controversy surrounding routine testing for early prostate cancer detection, informed decision making relating to screening is very important.

Five Year (60 Months) Relative Survival Rates, 2001-2010

A five-year (60 month) survival rate is important when discussing cancer, as it is the goal that every survivor strives to meet. A person who is diagnosed with cancer is considered “cured” if he/she can survive five (5) years after treatment and is found to have no more cancer. This does not mean that he/she may not develop another cancer after five years, or even have a reoccurrence, but for that initial diagnosis, he/she is considered “cured.”

Table 6 illustrates the five year survival rates among Native Americans and Whites by cancer site. The survival rate among whites is greater in each cancer site, which the exception of colorectal cancer.

Table 6. Wyoming Five Year SURVIVAL RATE by Race 2001-2010

Cancer Site	Native American Rate	White Rate
All Sites	52.4%	67.7%
Bladder	28.1%	75.8%
Breast	86.9%	89.5%
Colorectal	63.1%	60.4%
Lung	7.5%	16.3%
Prostate	57.9%	98.6%

Source: Wyoming Cancer Surveillance Program

Table 7 lists the survival rates by year, stage and rates. Native American four and five year survival rates are significantly lower than whites at the local stage (italicized numbers). The other rates are not statistically different.

**Table 7 Survival Rates by Stage among Native American and Whites,
Wyoming 2001 – 2010**

Race	In Situ	Local	Regional	Distant
1 year				
Native American	100%	95.1% (80.7-98.8)	83.70% (56.6-94.6)	61.80% (40.5-77.4)
White	100%	97.20% (96.3-97.9)	81.40% (79.2-83.5)	52.70% (50.0-55.3)
2 year				
Native American	100%	88.70% (72.1-95.7)	83.70% (56.6-94.6)	46.90% (27.0-64.6)
White	100%	95.60% (94.5-96.6)	71.20% (68.6-73.7)	39.40% (36.8-42.0)
3 year				
Native American	100%	88.70% (72.1-95.7)	79.10% (51.1-92.2)	43.00% (23.8-61.0)
White	100%	94.80% (93.4-95.9)	64.90% (62.1-67.6)	33.10% (30.6-35.7)
4 years				
Native American	100%	79.40% (61.1-89.9)	79.10% (51.1-92.2)	35.00% (17.1-53.6)
White	100%	93.90% (92.3-95.2)	62.30% (59.3-65.1)	28.60% (26.1-31.1)
5 years				
Native American	100%	68.90% (50.0-81.8)	74.30% (45.1-89.5)	22.00% (8.1-40.0)
White	100%	93.00% (91.3-94.4)	58.70% (55.7-61.6)	26.40% (24.0-29.0)

Source: Wyoming Cancer Surveillance Program

Conclusions

- ❖ In spite of a lower incidence of cancer, Native American residents in Wyoming have a high prevalence of cancer risk factors and the prevalence is significantly higher than among the White population. As recommended by the Centers for Disease Control and Prevention, approaches that promote health and support and reinforce healthful behaviors within the Native schools, worksites and communities should be implemented to expand access to healthy foods and beverages, promote increased physical activity, reduce tobacco use, and eliminate exposure to secondhand smoke. These approaches can help make the healthy choice the easy choice.
- ❖ This report also found that cancer among the Wyoming Native American population is diagnosed at a later stage compared to the White population. This disparity speaks to the importance of promotion and education of early detection and cancer screening among the Native community. Additionally, patient navigation is recognized as a valuable tool to increase access to cancer screening services. The Native American Women's Health Program offers patient navigation support for breast and cervical cancers to women living on the Wind River Indian Reservation. However, this is the only program of its kind and is only able to focus on women for breast and cervical cancer screenings.
- ❖ Traditional ceremonies and customs are commonly practiced among the Native American community for spirituality, wellness and health. There is a need for education of non-Native healthcare providers not only to increase the understanding of the importance of traditional practices and ceremonies, but also to increase understanding and honor the Native culture as it relates to health and well-being. This understanding could help lead to an incorporation of Western medicine with traditional medicine and improve health care of Native population.
- ❖ Chronic disease prevention efforts within the Native American community should also recognize the importance of the impact of culture on health. Efforts should incorporate the idea that health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (World Health Organization definition). Efforts should also incorporate cultural understanding into health promotion activities and messages.

- ❖ The lower incidence rate of some cancers among the Wyoming Native American population may seem surprising, especially in light of the high prevalence of risk factors. However, examining the average age at death offers some explanation. In Wyoming from 2001 – 2010, the average age of death among Native Americans was 53.1 years, while in the White population, the average age of death was 71.7 years. This indicates that some Native Americans do not live to the average age of cancer diagnosis (58 years). Death rates due to diabetes, chronic liver disease and unintentional injuries were significantly higher among the Native American population than the white population (2001 – 2010 Vital Statistics data).
- ❖ Health literacy, including the understanding of a cancer or chronic disease diagnosis, may be lower in the Native American community than other communities. This decreased knowledge may lead to mistrust and fear of medical system among some individuals, which is a significant barrier to individuals' consideration of treatment options and discussion with family support systems.
- ❖ There are significant barriers and limitations to data collection among the Native American population. Many individuals do not have telephone services to participate in the BRFSS surveys. Health data that are collected is done so by a variety of service provider entities, including Indian Health Service, Tribal Health Centers, Medicaid, local healthcare providers and state cancer screening programs. There is a significant percentage of the Native American population who do not regularly see a doctor, so some of the information only reflects those individuals who do seek medical care. Most often, medical care is received for acute illness or treatment and health screenings and preventive services cannot always be discussed or obtained. This fragmentation of data is identified as a barrier to the ability to “see the bigger picture” of the burden of cancer and other chronic diseases for Native Americans in Wyoming.