

2020

NORTH DAKOTA 2007–2016 BURDEN OF CANCER REPORT



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North Dakota Comprehensive Cancer Control (2020) Burden of Cancer Report

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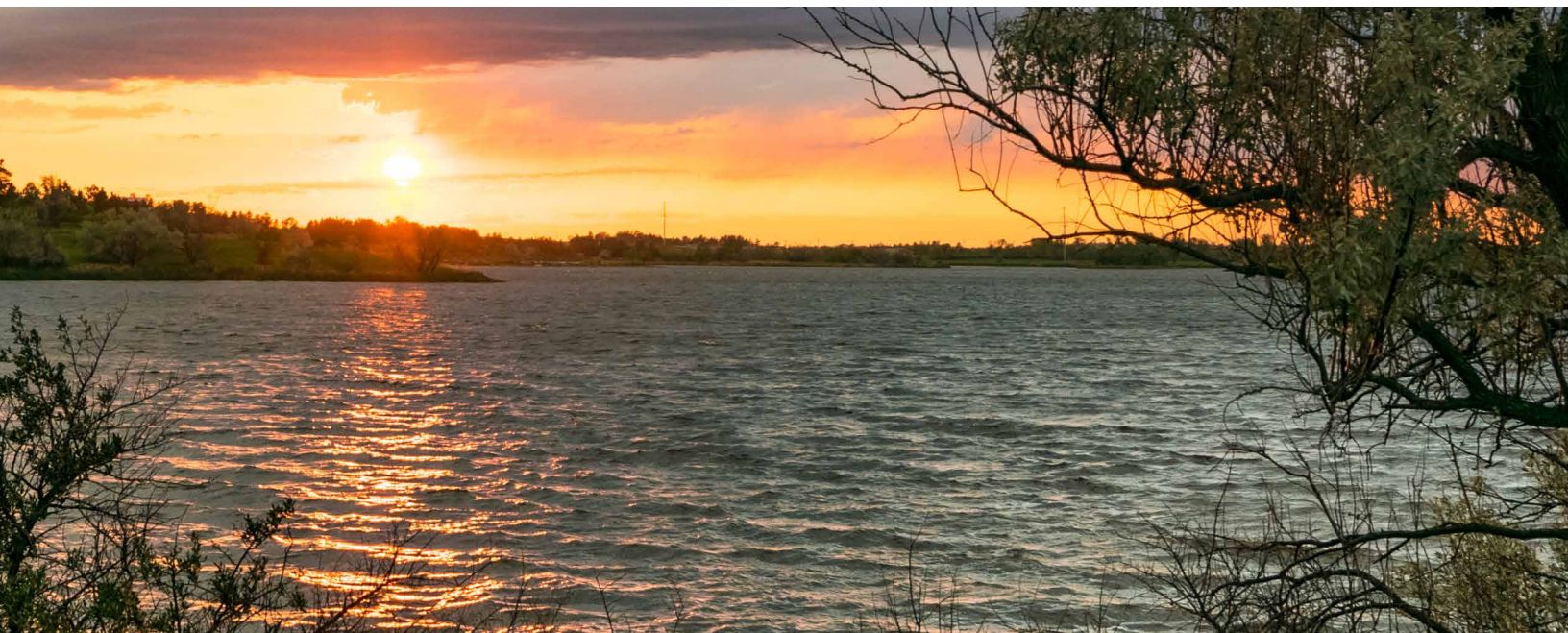
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FORWARD

“The North Dakota Burden of Cancer Report provides an overview of cancer in North Dakota. In understanding state trends in cancer incidence, mortality, screening, and vaccination rates, we can all make informed decisions about appropriate cancer control interventions and priorities. We hope this document will guide local professionals in their policy and strategic decisions to reduce the burden of cancer in North Dakota. We encourage everyone to get involved in the fight against cancer. Together, making data-informed choices, we can make a real impact.”

Mallory Koshiol, MS, CSCS
Chair, North Dakota Cancer Coalition



INTRODUCTION

Half of all men and one-third of all women in the U.S. will develop cancer during their lifetime.² Cancer is the second leading cause of death behind cardiovascular disease in North Dakota.³ With statistics like these, it is likely that you or someone you love has or will be affected by cancer.

This report on the burden of cancer is a look at the impact that cancer currently has on the citizens of North Dakota. Within, you will find general information on cancer in North Dakota and information on the seven North Dakota Cancer Coalition priority cancers.

The impact of cancer in North Dakota can be measured in disease and financial burden. This report focuses on the burden of disease based on prevalence in our state. The cost of cancer is important in the larger discussion of insurance, services, access to care, and employment. In North Dakota, the costs of cancer topped 361 million dollars in 2015; the most recent cost estimate available.*

Cancer: Definition and Causes

Cancer is not a single disease, but a group of diseases that are characterized by the uncontrolled growth and spread of abnormal cells. Many types of cancer form a lump or mass called a tumor.

While the exact cause of why someone develops cancer may not always be known, there are certain risk factors that increase the chance that a person will develop cancer. The most common risk factors for cancer are:

- Growing older
- Tobacco use
- UV (ultraviolet) exposure
- Some viruses and bacteria
- Alcohol
- Family history of cancer
- Poor diet
- Lack of physical activity

Many of these risk factors can be avoided or prevented. Others, such as age or family history, cannot be avoided. People can help protect themselves by avoiding known risk factors whenever possible.

*Source: Chronic Disease Cost Calculator. The Cost Calculator estimates expenditures among persons with the disease that are attributed to that disease. Other studies define disease cost by summing only claims with diagnosis codes for the disease or report all medical expenditures for persons with the disease, which can result in higher estimates.

The Cost Calculator only estimates specific costs due to chronic diseases: medical costs and absenteeism costs (time away from paid work). Other costs of chronic diseases, including productivity losses through presenteeism (impaired productivity while at work, associated with future fair/poor general health), premature mortality, and reductions in the quality of life, are not included in the estimates.

CANCER IN NORTH DAKOTA

Overview

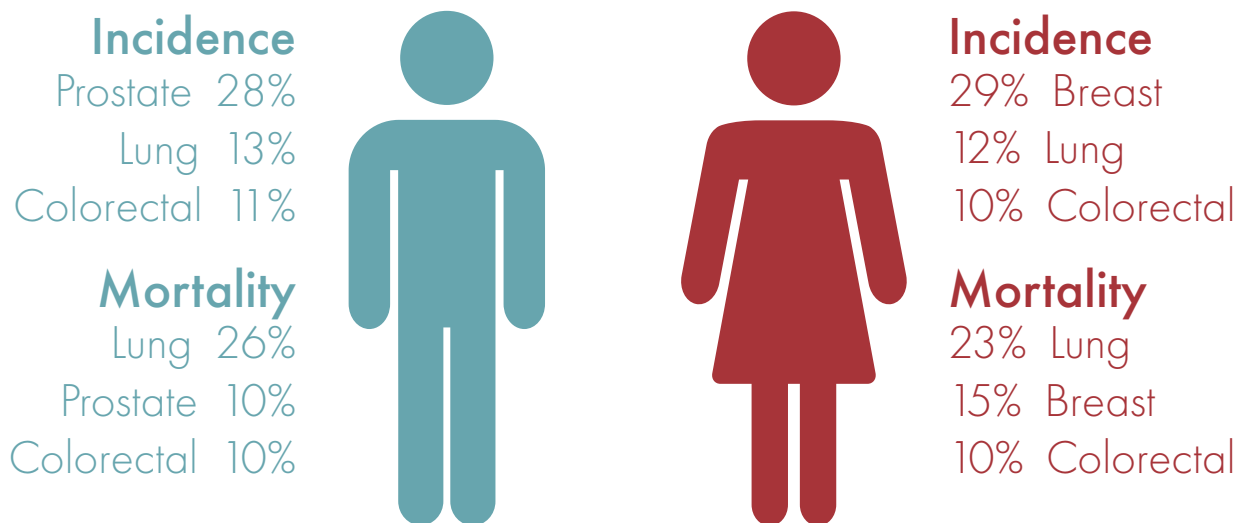
According to the most recent data available from the North Dakota Statewide Cancer Registry (NDSCR), the combined 2007-2016 age-adjusted cancer incidence rate for all sites in North Dakota was 452.3 per 100,000 population. This means that from 2007-2016, there was an average of 3,586 new cases of cancer diagnosed each year. The recent trend for cancer incidence in North Dakota has been stable.

The combined 2007-2016 age-adjusted cancer mortality rate in North Dakota for all cancer sites was 155.2 per 100,000 population, or about 1,287 deaths per year. Cancer mortality overall has seen a modest decline over the most recent five years of data.

The most commonly diagnosed invasive cancers for the years 2007-2016 were prostate for men and breast for women. Lung and colorectal cancers came in as the second and third most common for both men and women. During this time period, lung cancer continued to have the highest death rate, which is consistent with past time periods.

Top Cancers for Men and Women North Dakota, 2007-2016

Percent of all new cases and all cancer deaths



Source: ND Statewide Cancer Registry

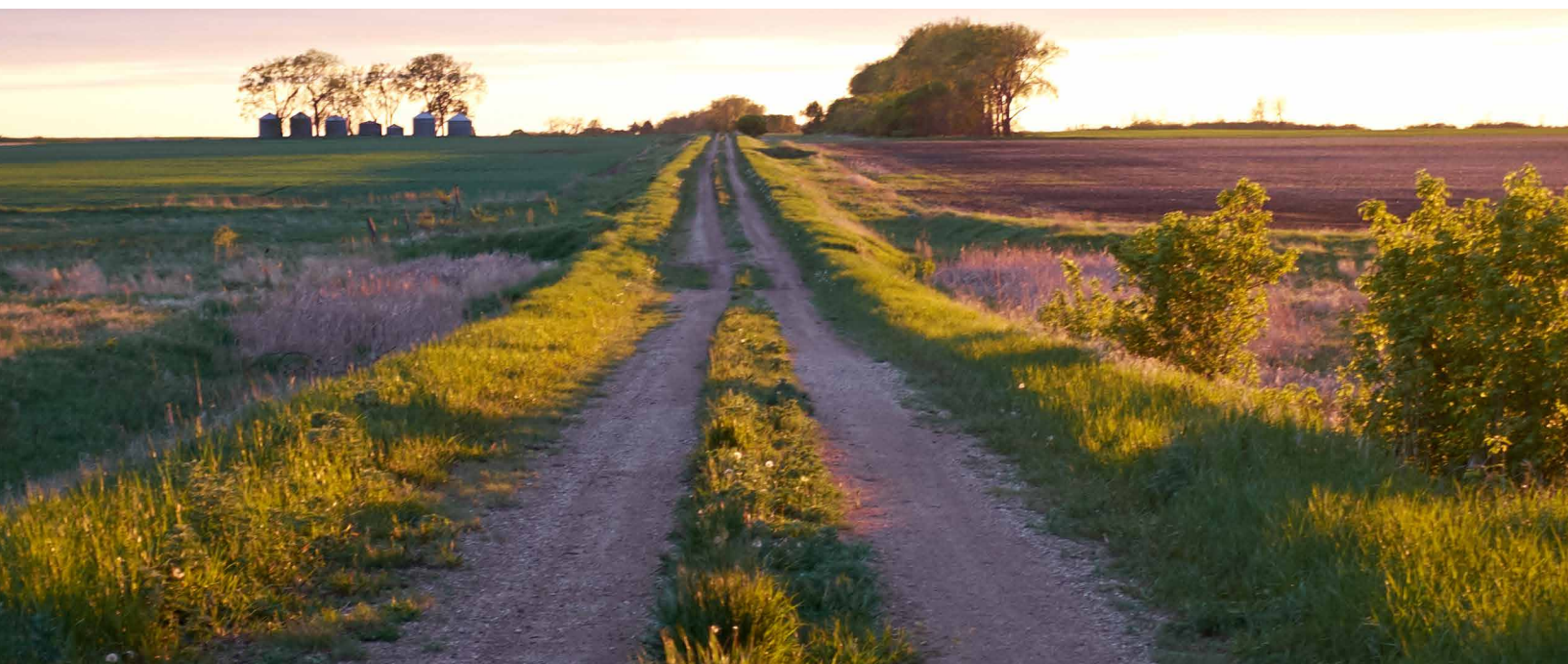
Cancer Staging

Staging describes the severity of a person's cancer based on the size and/or extent (reach) of the original (primary) tumor and whether or not cancer has spread in the body (metastasis). Many cancer registries use "summary staging." This system is used for all types of cancer. It groups cancer cases into five main categories:³

- **In situ:** Abnormal cells are present only in the layer of cells in which they developed.
- **Localized:** Cancer is limited to the organ in which it began, without evidence of spread.
- **Regional:** Cancer has spread beyond the primary site to nearby lymph nodes or tissues and organs.
- **Distant:** Cancer has spread from the primary site to distant tissues or organs or to distant lymph nodes.
- **Unknown:** There is not enough information to determine the stage.

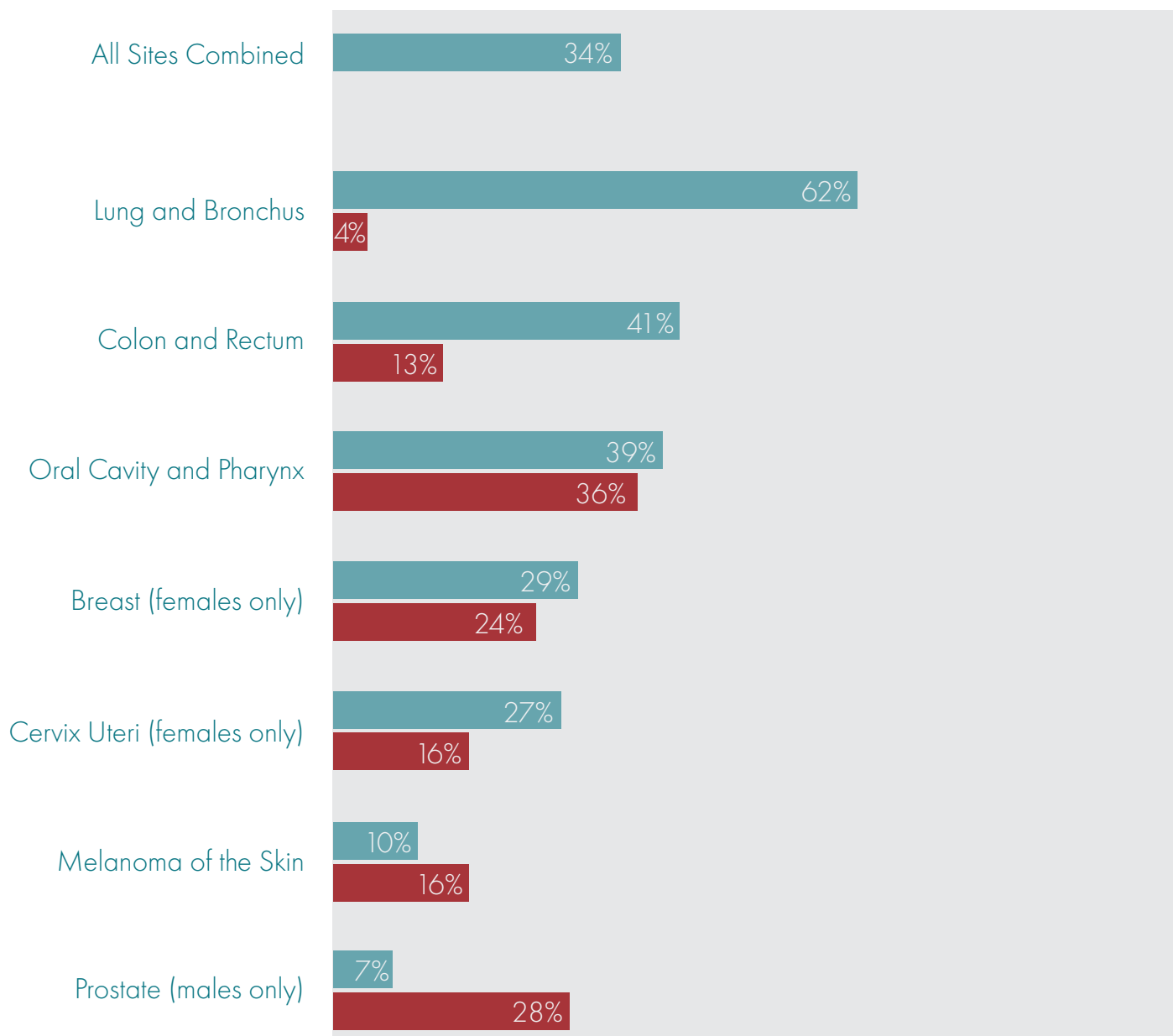
Late-stage cancer refers to cancer that is far along in its growth and has spread to the lymph nodes or other places in the body. When a cancer goes undiagnosed until it reaches a late stage, the survival rate can be severely impacted. For example, the five-year relative survival rate for breast cancer at the local stage is 99%. However, at the distant stage the survival rate falls to 26%.²

In North Dakota, lung cancer has the highest rate of late-stage diagnosis. Lung cancer also has the highest mortality rate in North Dakota. While there is no standard or routine screening test for lung cancer, screening options are available and recommended for those at the highest risk due to tobacco use. Colorectal cancer is second for late-stage diagnosis in North Dakota and it is our charge as health care professionals to increase screening rates for this and other preventable and treatable cancers.



A Late-Stage Diagnosis Corresponds with a Much Lower Five-Year Survival Rate

■ Percent of cases diagnosed at a late-stage¹
■ 5-year survival rate when diagnosed at a late-stage²



Data source: ND Statewide Cancer Registry

NORTH DAKOTA PRIORITY CANCERS

There are seven different cancers which the North Dakota Comprehensive Cancer Control Program and the North Dakota Cancer Coalition have identified as priorities: breast, cervical, colorectal, lung, melanoma, oral-pharyngeal, and prostate. These cancers have been given priority based on several factors including incidence, mortality, ability to screen, and controllable risk factors.



Breast Cancer

Definition

Cancer that forms in tissues of the breast, usually the ducts and lobules. It occurs in both men and women, although male breast cancer is rare.

A small number of cancers start in other tissues in the breast. These cancers are called sarcomas and lymphomas and are not really thought of as breast cancers.

Incidence and Mortality

Data source: ND Statewide Cancer Registry

Breast cancer is the most diagnosed cancer for women in North Dakota.

The average incidence rate for the years 2007-2016 is 125.1 cases per 100,000. This is a total of 4,943 cases for that period. Breast cancer incidence rates have been stable for this period.

The average mortality rate for the years 2007-2016 is 19.2 cases per 100,000. The total number of deaths due to breast cancer in this period was 865. The long-term trend for breast cancer mortality in North Dakota has been falling.

Screening and Early Detection

Data source: ND Behavioral Risk Factor Surveillance System

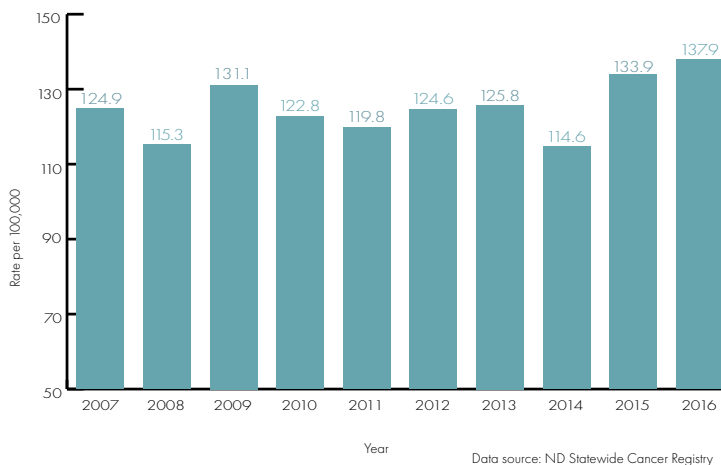
Breast cancer, if detected early, is highly treatable. Breast cancer screening tests, such as mammography, can find breast cancer before it is big enough to feel or cause symptoms. When cancer is detected earlier, treatment can be started earlier in the course of the disease, possibly before it has spread.

The United States Preventive Services Task Force (USPSTF) recommends biennial mammograms for women age 50 to 74 years. The decision to begin screening mammography before age 50 is an individual one that should be discussed with a health care provider.

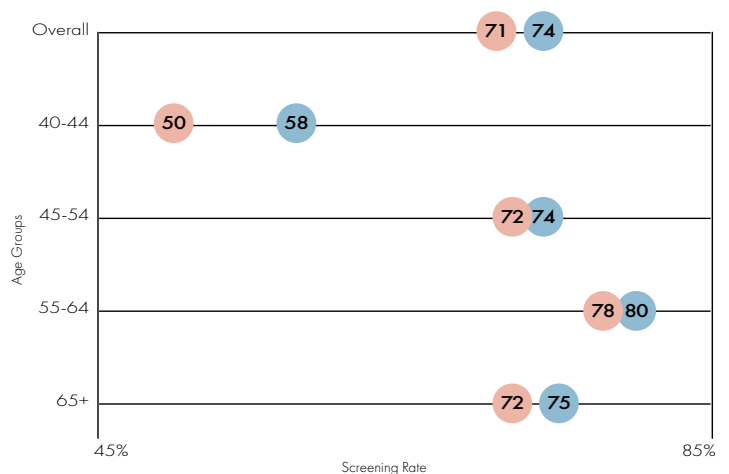
Mammography rates in North Dakota are currently lowest in the 40-44 age range and the 45-54 age group is the only one to have shown improvement from 2012 to 2018. Screening is highest in the 55-64 age range. Overall, mammography screening rates have declined modestly.

The USPSTF changed the guideline for beginning screening from age 40 to age 50. Also, American Cancer Society recommends screening starting at age 45. The changes and discrepancies in screening guidelines may be a contributing factor for the decline in screening, especially in the younger than 50 age groups.

Breast cancer incidence rates were stable between 2007 and 2016.



Mammography screening rates decreased between 2012 and 2018.



Cervical Cancer

Definition

Cancer that forms in tissues of the cervix (the organ connecting the uterus and vagina). It is usually a slow-growing cancer that may not have symptoms, but can be found with regular Pap tests. Cervical cancer is almost always caused by human papillomavirus (HPV) infection. It is preventable and curable if detected early.

Incidence and Mortality

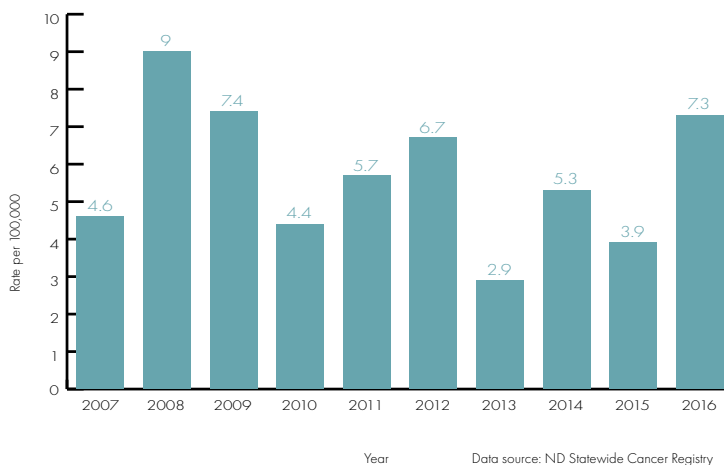
Data source: ND Statewide Cancer Registry

Incidence and mortality of cervical cancer continues to stay low relative to other cancers. This is due to a number of factors including high rates of regular screening and the increasing use of vaccines that prevent the spread of HPV.

The average incidence rate for the years 2007-2016 is 5.7 cases per 100,000. This is a total of 190 cases for that period. While there is year-to-year variability due to low overall numbers, the long-term trend is stable.

The average mortality rate for the years 2007-2016 is 1.3 cases per 100,000. The total number of deaths due to cervical cancer in this period was 52. Due to small numbers and suppression of data, a trend for mortality is not able to be established.

Cervical cancer incidence rates were stable between 2007 and 2016.



Screening and Early Detection

Data source: ND Behavioral Risk Factor Surveillance System

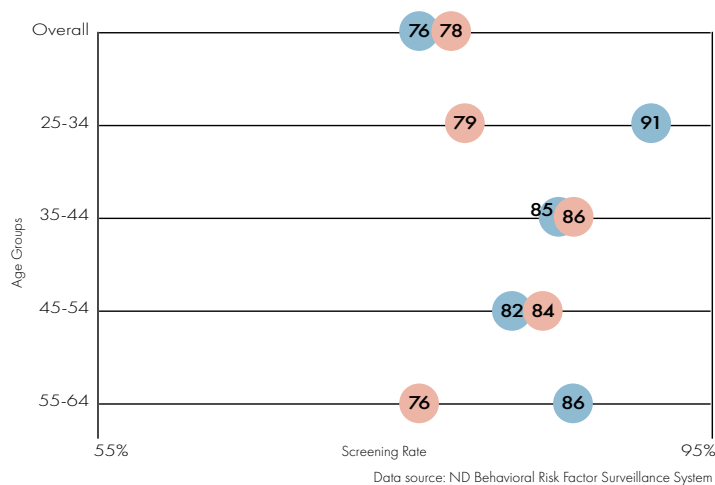
The USPSTF recommends screening for cervical cancer in women age 21 to 65 years with a Pap test every three years or, for women age 30 to 65 years who want to lengthen the screening interval, screening with a combination of cytology and HPV testing every five years.

Between 2012 and 2018, the overall screening rate increased. However, the 25-34 and 55-64 age groups saw sharp declines.

Micro Elimination

The World Health Organization (WHO) established that cervical cancer should no longer be considered a public health problem when the age-adjusted incidence rate is less than 4 per 100,000. The North Dakota elimination goal currently being discussed is 1 per 100,000. This goal is achievable through continued efforts to increase HPV vaccination uptake and screening. The WHO has a goal of 90% of girls fully vaccinated by 2030. North Dakota is currently discussing target goals to reach micro elimination.

Pap test screening rates increased between 2012 and 2018.



Colorectal Cancer

Definition

Cancer of the large intestine (colon), the lower part of your digestive system. Rectal cancer is cancer of the last several inches of the colon. Together, they're often referred to as colorectal cancers.

Most cases of colon cancer begin as small, noncancerous (benign) clumps of cells called adenomatous polyps. Over time, some of these polyps become colon cancers.

Incidence and Mortality

Data source: ND Statewide Cancer Registry

Colorectal cancer is the second most diagnosed cancer that affects both men and women in North Dakota.

The average incidence rate for the years 2007-2016 is 47.1 cases per 100,000. This is a total of 3,792 cases for that period. There is a downward trend in incidence due to an increase in screening.

The average mortality rate for the years 2007-2016 is 15.2 cases per 100,000. The total number of deaths due to colorectal cancer in this period was 1,278. The data indicates a downward trend in colorectal cancer mortality in North Dakota.

Screening and Early Detection

The USPSTF recommends screening for colorectal cancer using high-sensitivity fecal occult blood testing, sigmoidoscopy, or colonoscopy beginning at age 50 years and continuing until age 75 years. However, the American Cancer Society guidelines now recommend screening starting at age 45.

People at higher risk of developing colorectal cancer should begin screening at a younger age, and may need to be tested more frequently. The decision to be screened after age 75 should be made on an individual basis in consultation with a health care provider.

Recommended screening tests and intervals are—

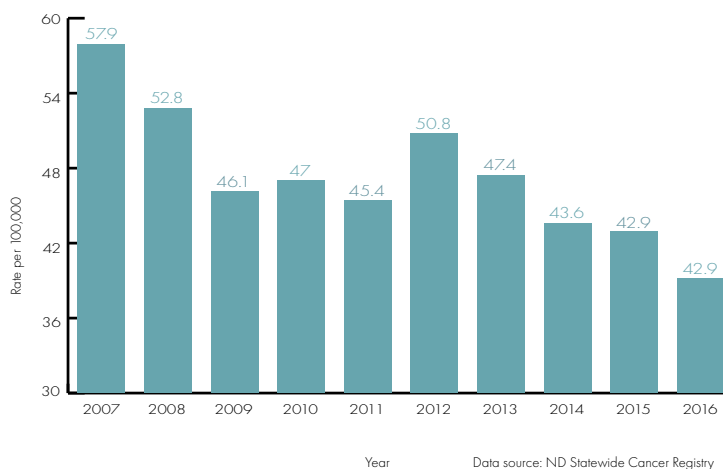
High-sensitivity fecal occult blood test (FOBT), should be done every year.

Flexible sigmoidoscopy, should be done every five years with FOBT every three years.

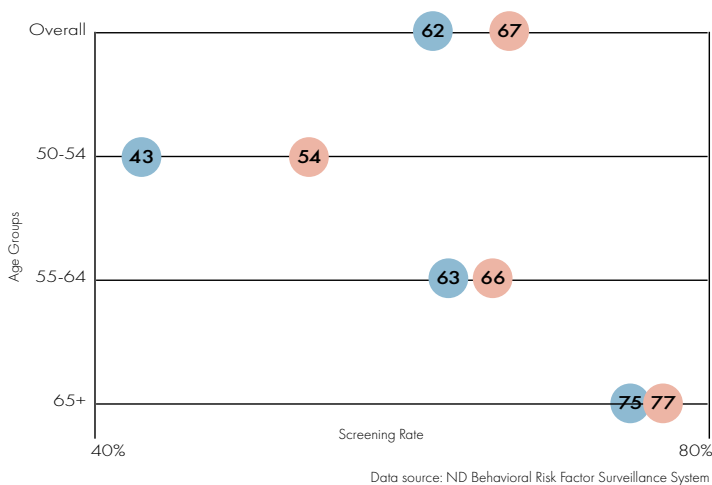
Colonoscopy, should be done every 10 years.

The North Dakota Department of Health has signed on to the National Colorectal Cancer Roundtable (NCCRT) 80% in Every Community initiative and supports that screening goal for North Dakota.

Colorectal cancer incidence rates decreased between 2007 and 2016.



Colorectal cancer screening rates increased between 2012 and 2018.



Lung Cancer

Definition

Cancer that forms in tissues of the lung, usually in the cells lining air passages. The two main types are small cell lung cancer and non-small cell lung cancer. These types are diagnosed based on how the cells look under a microscope. About 80 to 85% of lung cancers are non-small cell lung cancer while 10 to 15% are small cell lung cancer. These types of lung cancer are treated differently.

Incidence and Mortality

Data source: ND Statewide Cancer Registry

Lung cancer is the most diagnosed cancer that affects both men and women in North Dakota.

The average incidence rate for the years 2007-2016 is 56.5 cases per 100,000. This is a total of 4,541 new cases for that period. The trend for incidence is stable with moderate year-to-year variance.

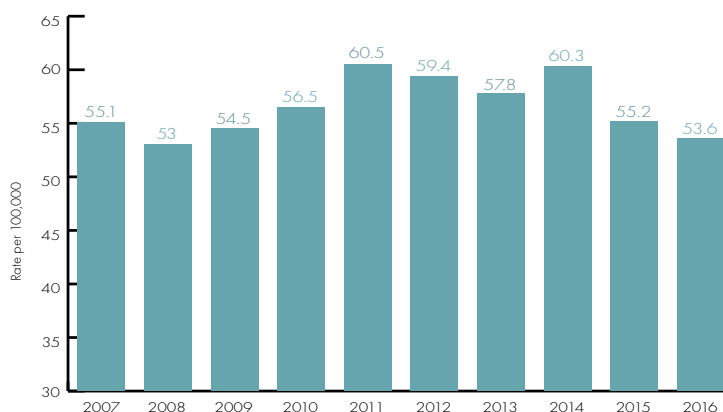
The average mortality rate for the years 2007-2016 is 39.3 cases per 100,000. The total number of deaths due to lung cancer in this period was 3,191. Of the seven priority cancers, lung cancer has the highest mortality rate and lowest five-year survival rate. However, the long-term trend for lung cancer mortality is falling.

Screening and Early Detection

The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 55 to 80 years who have a 30-packs-per-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

Currently, over 60% of lung cancer cases are diagnosed at a late stage where the disease has spread to other parts of the body. The five-year survival rate for those diagnosed with lung cancer at a late stage is about 4 %.

Lung cancer incidence rates were stable between 2007 and 2016.



Year

Data source: ND Statewide Cancer Registry

62.3%
of new lung cancer cases diagnosed at the late stage in North Dakota between 2007-2016.

Data source: ND Statewide Cancer Registry

Melanoma

Definition

A form of skin cancer that begins in melanocytes (cells that make the pigment melanin). It may begin in a mole (skin melanoma), but can also begin in other pigmented tissues, such as in the eye or in the intestines.

While melanoma is more rare than other forms of skin cancer, it is more likely to invade nearby tissues and spread to other parts of the body.

Screening and Early Detection

Although there is no recommended routine screening for melanoma, people of all ages are encouraged to see their health care provider or dermatologist if they identify changes in moles, freckles, or skin that are concerning. That could mean that a mole or freckle is changing in size, color, or shape.

Incidence and Mortality

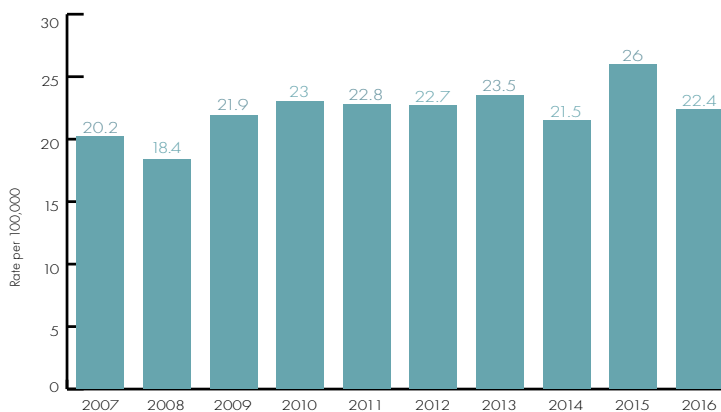
Data source: ND Statewide Cancer Registry

Melanoma is the least common, but most deadly skin cancer. It accounts for only about 1% of all cases, but is responsible for the majority of skin cancer deaths.

The average incidence rate for the years 2007-2016 is 22.3 cases per 100,000. This is a total of 1,684 new cases for that period. The trend for incidence was increasing from 2005-2010, but has since become more stable.

The average mortality rate for the years 2007-2016 is 2.2 cases per 100,000. The total number of deaths due to melanoma in this period was 173. The trend for mortality has been stable.

Melanoma incidence rates increased then stabilized between 2007 and 2016.



Year

Data source: ND Statewide Cancer Registry

32.3%

of individuals reporting having had at least one sunburn in 2012.

Data source: ND Behavioral Risk Factor Surveillance System

Oral Cavity and Pharynx Cancer

Definition

Cancer that forms in tissues of the oral cavity (the mouth) or the oropharynx (the part of the throat at the back of the mouth). The oral cavity and oropharynx help you breathe, talk, eat, chew, and swallow.

While there are multiple types of cancer that can affect the oral cavity and pharynx, in recent years, there has been a rise in cases that are linked to HPV infection.

Incidence and Mortality

Data source: ND Statewide Cancer Registry

Cancers of the oral cavity and pharynx are more than twice as common in men than in women.

The average incidence rate for the years 2007-2016 is 11.7 cases per 100,000. This is a total of 940 new cases for that period. The trend for oral and pharynx cancer incidence in North Dakota is stable.

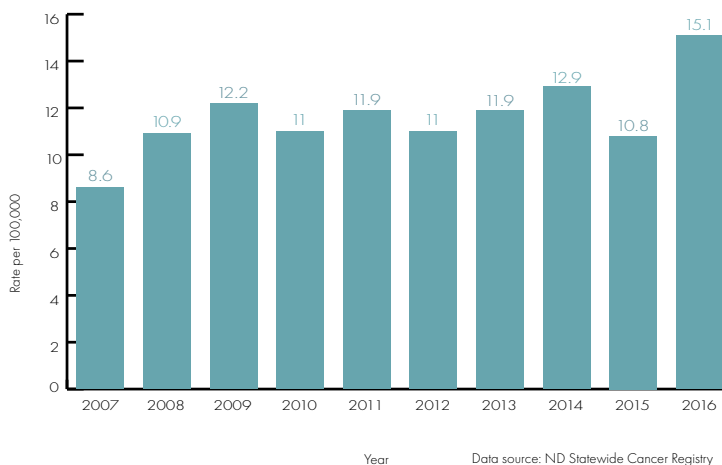
The average mortality rate for the years 2007-2016 is 2.2 cases per 100,000. The total number of deaths due to oral and pharynx cancer in this period was 178. The trend for mortality is also stable.

Screening and Early Detection

There are no routine screenings for oral-pharyngeal cancer. Many dentists will do a visual check for signs such as sores, lumps, and lesions during an oral exam but it is not required, routine, or diagnostic. Individuals are encouraged to see their health care provider if they notice sores and ulcers that persist beyond two weeks, discoloration of mouth tissues, difficult/painful swallowing, swollen tonsils, pain when chewing, persistent sore throat or hoarseness, swelling or lumps in the mouth, and several others.

Late-stage diagnosis of oral cavity and pharynx cancers occurs in over one-third of all new cases.

Oral cavity and pharynx cancer incidence rates were stable between 2007 and 2016.



38.6%
of new oral cavity and pharynx cancer cases diagnosed at the late stage in North Dakota between 2007-2016.

Data source: ND Statewide Cancer Registry

Prostate Cancer

Definition

Cancer that forms in tissues of the prostate gland in the male reproductive system. Prostate cancer usually occurs in older men. Some prostate cancers can grow and spread quickly, but most grow slowly.

Almost all prostate cancers are adenocarcinomas. These cancers develop from the gland cells (the cells that make the prostate fluid that is added to the semen).

Incidence and Mortality

Data source: ND Statewide Cancer Registry

Prostate cancer is the most diagnosed cancer that affects only men in North Dakota as well as being one of the most diagnosed of all cancers. Although the number of men with prostate cancer is large, most men diagnosed with this disease do not die from it.

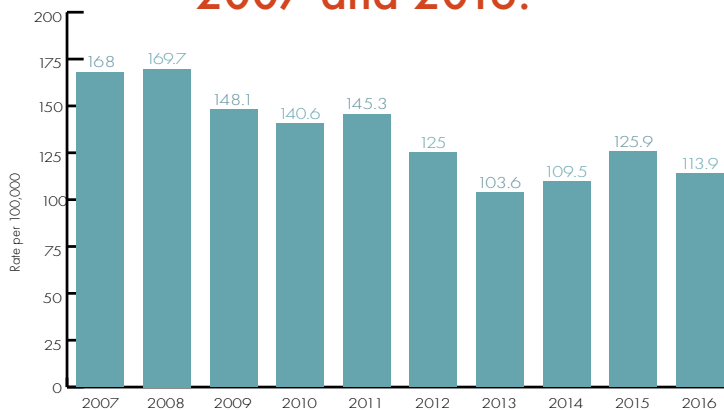
The average incidence rate for the years 2007-2016 is 134 cases per 100,000. This is a total of 5,263 new cases for that period. The trend for incidence of prostate cancer in North Dakota is falling.

The average mortality rate for the years 2007-2016 is 20.2 cases per 100,000. The total number of deaths due to prostate cancer in this period was 720. The trend for mortality due to prostate cancer has been falling in North Dakota.

Screening and Early Detection

There is currently no recommended routine screening test for prostate cancer. However, there are several tests that are being studied, including digital rectal exam, prostate-specific antigen test, and a prostate cancer gene 3 RNA test. Because the current guidelines do not recommend any screening tests, decisions to screen for prostate cancer and what test to use should be a shared process between patients and their health care provider based upon individual risk factors.

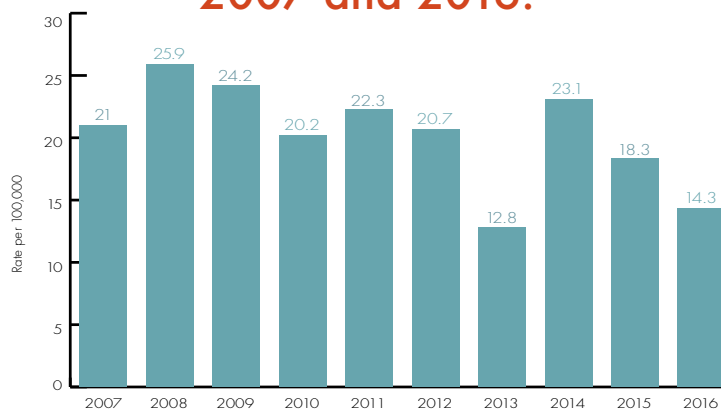
Prostate cancer incidence rates have been falling between 2007 and 2016.



Year

Data source: ND Statewide Cancer Registry

Prostate cancer mortality rates have been falling between 2007 and 2016.



Year

Data source: ND Statewide Cancer Registry

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