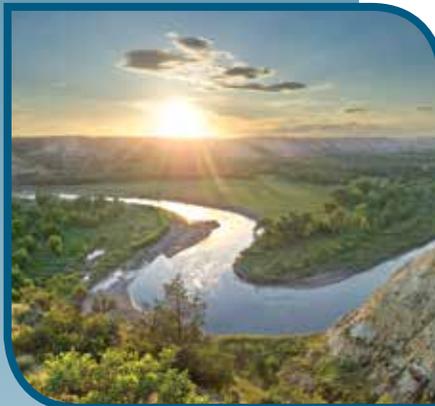


North Dakota Burden of Cancer Report



2013

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This booklet was produced by the North Dakota Cancer Coalition and the North Dakota Department of Health Division of Cancer Prevention and Control.

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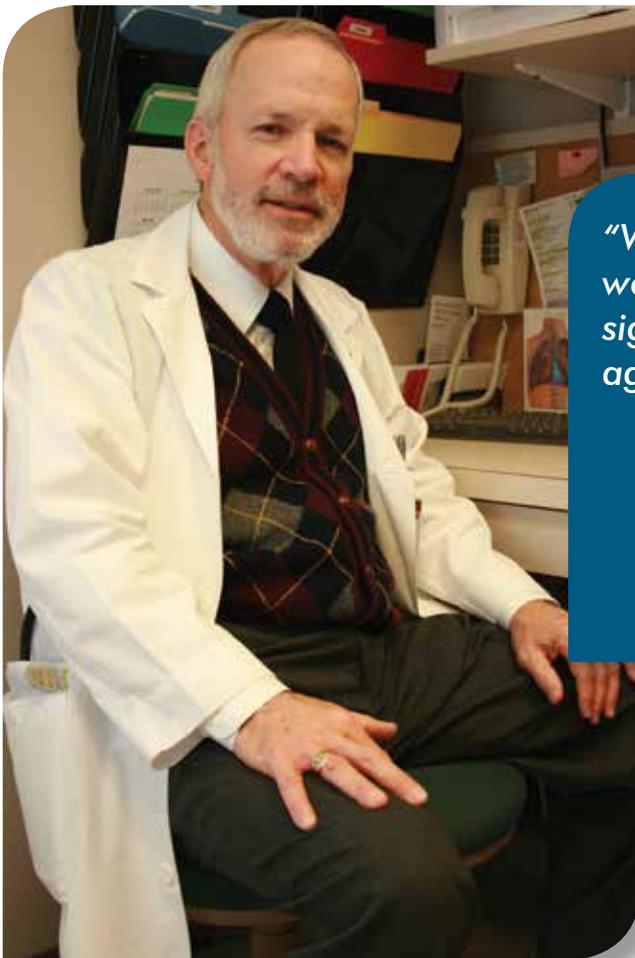
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Forward

This report is a snapshot of cancer's effect on our communities in North Dakota. This document is intended to be used by professionals engaged in the fight against cancer and help them to guide their policy and strategic decisions. We hope that it provides the foundation for ideas and initiatives to reduce North Dakota's cancer burden.

We encourage everyone to get involved in the battle against cancer. Join us in our efforts.

Dr. John Leitch, M.D.
Chair, North Dakota Cancer Coalition



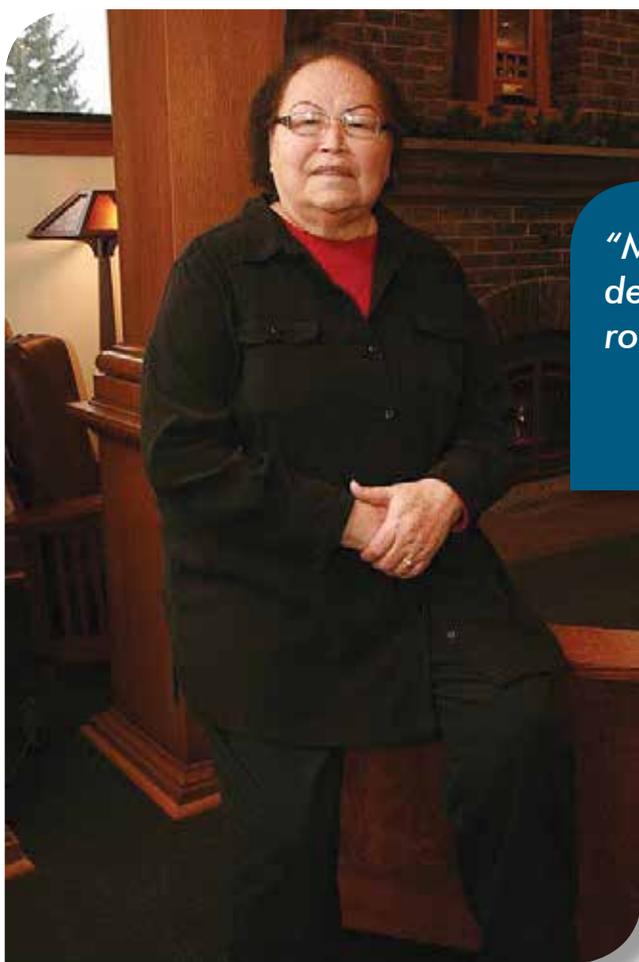
“Working towards a common goal, we have the opportunity to make a significant difference in the fight against cancer.”

John Leitch, M.D., C.M.P.E., Fargo, N.D.
Medical Oncology and Hematology
Sanford Health Roger Maris Cancer Center
North Dakota Cancer Coalition Chair

Introduction

Half of all men and one-third of all women in the U.S. will develop cancer during their lifetime.¹ Cancer is the second leading cause of death behind cardiovascular disease in North Dakota.² 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. In this report you will find general information on cancer in North Dakota, information on the seven North Dakota Cancer Coalition priority cancers, as well as discussion on cancer disparities and survivorship.



"My breast cancer diagnosis did not define me. It was only a bump in the road."

Ethel Baker Reeves, Watford City, N.D.
Breast Cancer Survivor

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. Cancer cells are able to travel through the blood and lymph systems and can invade other tissues. The spread of cancer is called metastasis and may result in death if not controlled.

There are more than 100 different types of cancer. Most cancers are named for the organ or type of cell in which they start.

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 of cancer are¹:

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

Cancer Facts and Myths

Many factors act together to cause normal cells to become cancerous. However, it is important to understand certain considerations when assessing a person's risk for cancer¹:

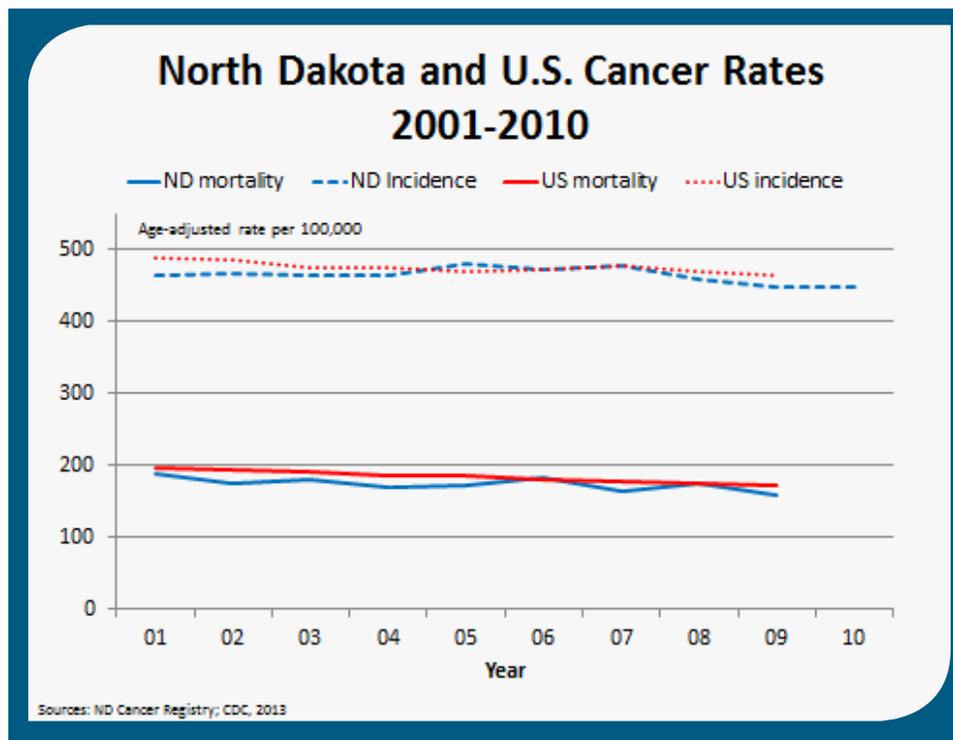
- Not everything causes cancer.
- Not all tumors are cancer.
- Cancer is not caused by an injury.
- Cancer is not contagious; you cannot “catch” it from another person.
- Having one or more risk factors does not mean that you will get cancer. Most people who have risk factors never develop cancer.
- Some people are more sensitive to risk factors than others.

Cancer in North Dakota

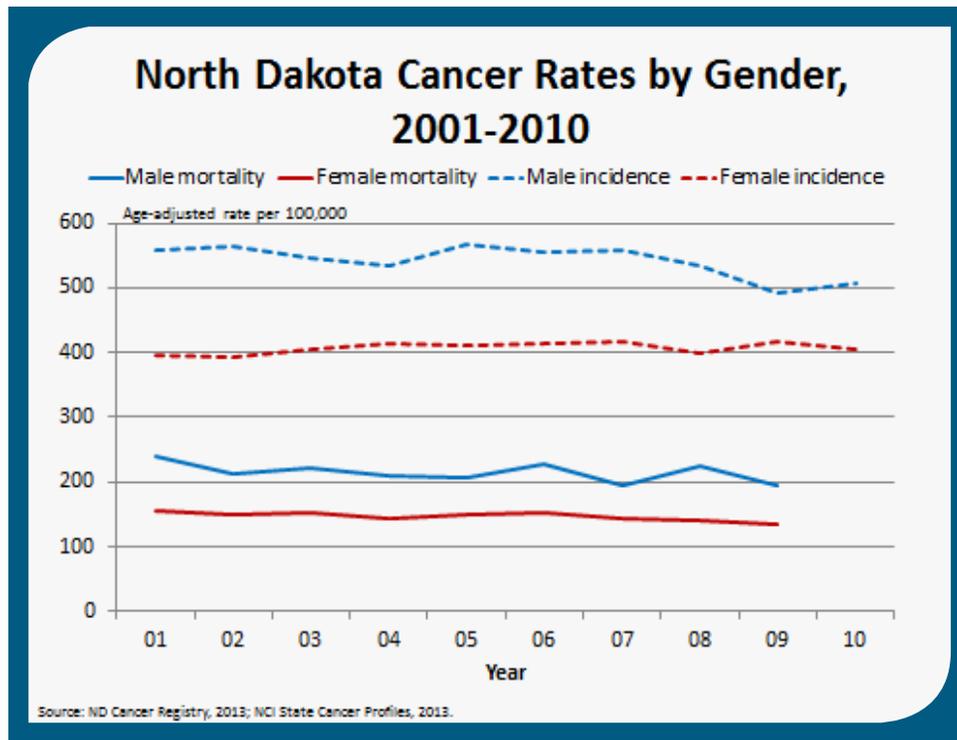
Overview

According to the North Dakota Statewide Cancer Registry (NDSCR), the combined 2005-2009 age-adjusted cancer incidence rate for all sites in North Dakota was 469.0 per 100,000 population. This means that from 2005-2009, there was an average of 3,377 new cases of cancer diagnosed each year. The corresponding U.S. rate was 465.0 per 100,000 population for the same time period.

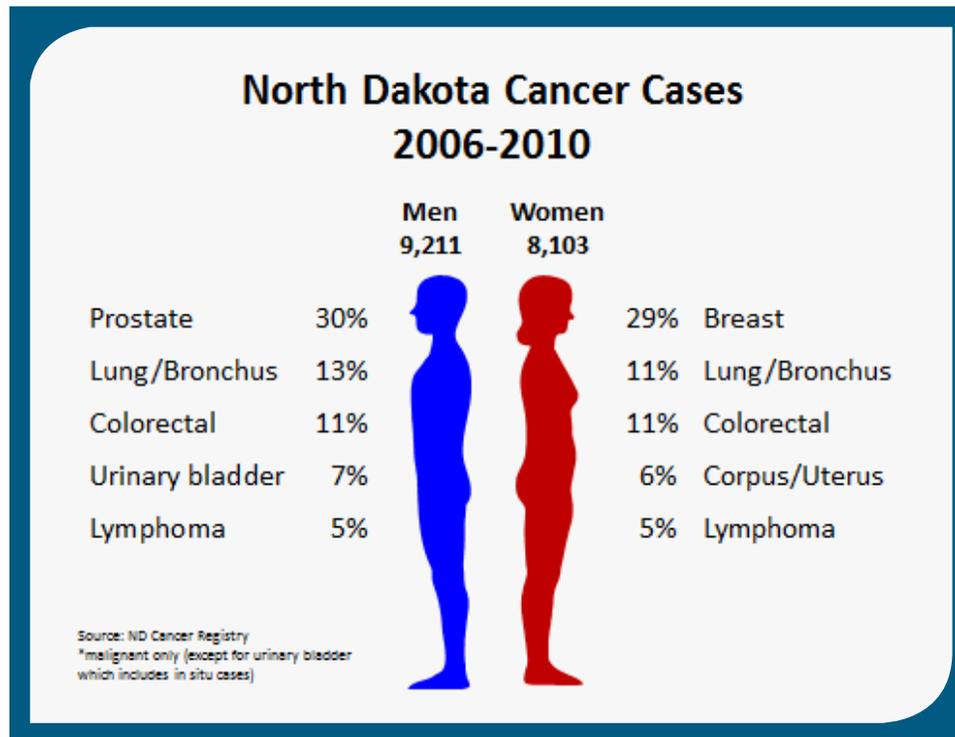
The combined 2005-2009 age-adjusted cancer mortality rate for all sites in North Dakota was 171.1 per 100,000 population, or about 1,310 deaths per year, compared to the U.S. rate of 178.7. Over the five-year period of 2005-2009, incidence and mortality rates have trended slightly down in North Dakota and nationally.



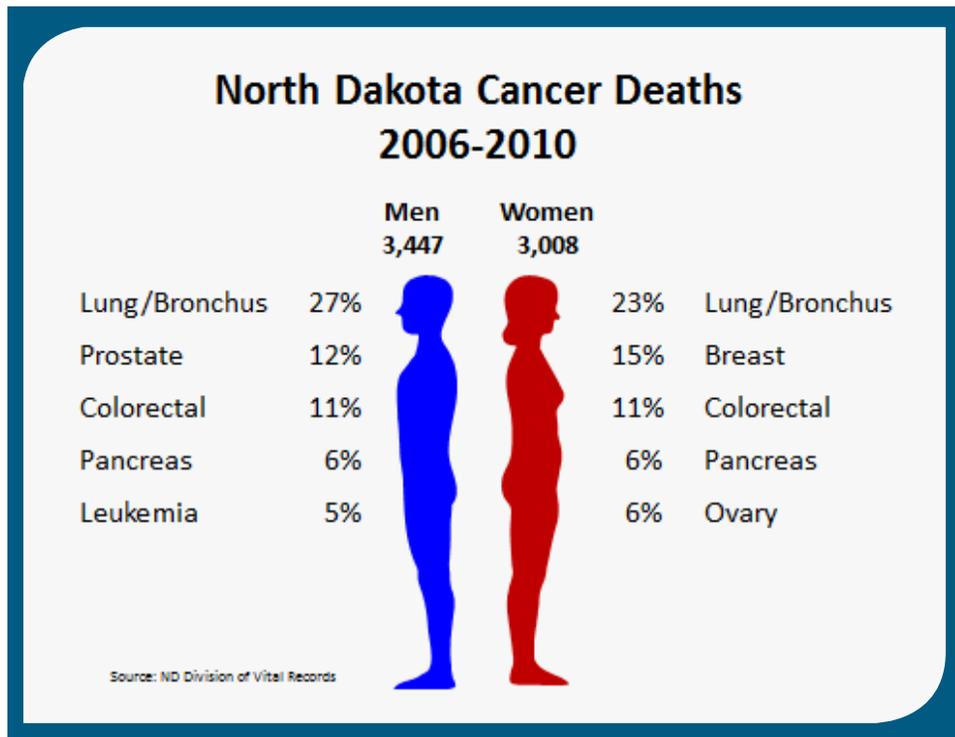
Cancer affects men at a higher rate than women both nationally and in North Dakota. The higher incidence in men also leads to a higher mortality rate as well. Nationally, the risk of developing cancer is one in two for men and one in three for women.



The most commonly diagnosed invasive cancer for the years 2006-2010 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. Coming in fourth is urinary bladder for men and uterine for women. Lymphoma was the fifth most common cancer for both men and women.

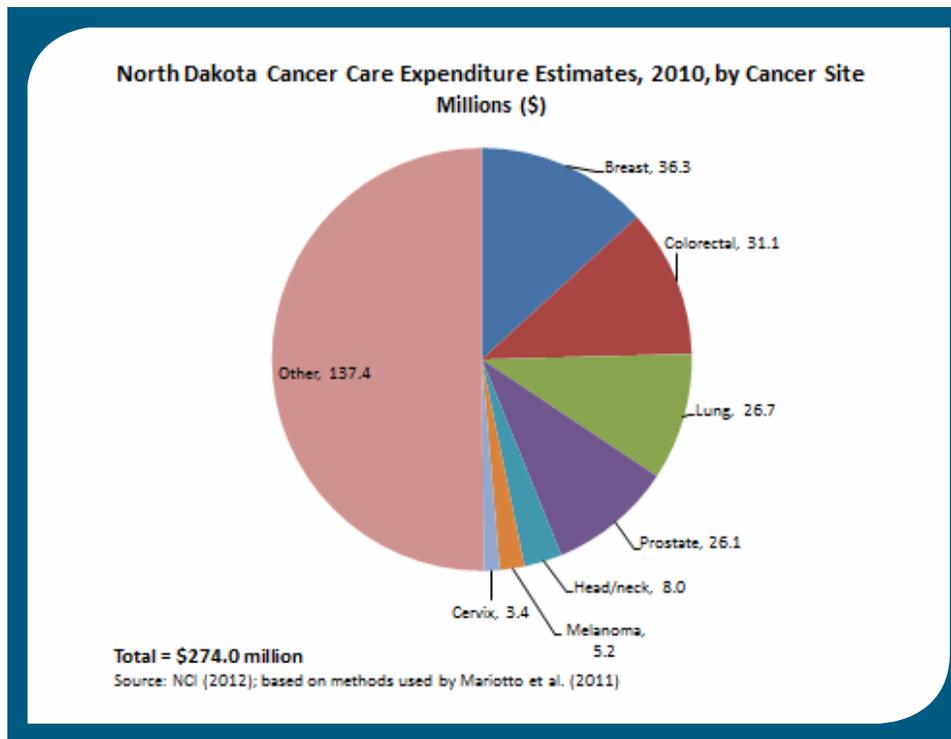


While prostate for men and breast for women are more commonly diagnosed, cancer of the lung has a much higher mortality. One of the reasons for this is that while there are screening tests for both prostate and breast cancer, there is no routine screening for lung cancer which often leads to a delay of diagnosis and treatment.



Financial Cost of Cancer

The financial costs of cancer burden not only the patients, but their families and society as a whole. In 2010, an estimated \$274 million was expended on cancer-related care in North Dakota. The North Dakota Cancer Coalition's priorities of breast, cervical, colorectal, lung, prostate, melanoma and oral-pharyngeal cancers accounted for approximately 50 percent of those expenditures.



The Non-Financial Costs of Cancer

There is a non-financial cost to individuals who develop cancer. Cancer survivors suffer additional burdens due to their disease and the associated treatments. Cancer survivors suffer from lost productivity by being unable to work due to health problems, being limited in amount/kind of work due to health problems, and having lost more days from work than the average population.³ In addition, cancer survivors rated their health status significantly lower than the average and had a higher need for assistance with activities of daily living.

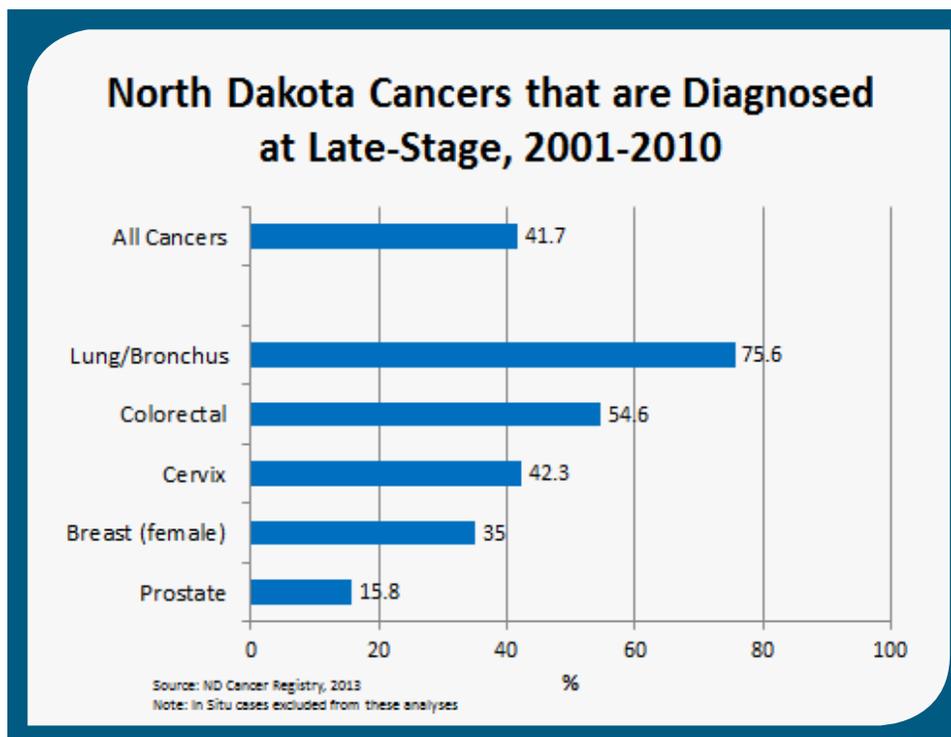
Cancer Staging

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. Many cancer registries use "summary staging." This system is used for all types of cancer. It groups cancer cases into five main categories¹:

- **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 body¹. When a cancer goes undiagnosed until it reaches a late stage, the prognosis will be worse than if the cancer was found early. Survival rates can be severely impacted by the stage at diagnosis. For example, the five-year relative survival rate for breast cancer at the local stage is 89 percent. However, at the distant stage the survival rate falls to 24 percent.

In North Dakota, lung cancer has the highest rate of diagnosis at a late stage. Lung cancer is also the cancer with the highest mortality rate in North Dakota. While there is no standard or routine screening test for lung cancer, other cancers with high rates of late-stage diagnosis can be screened. Colorectal cancer is the second in 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.



Five-year Relative Survival Rates* (%) by Stage at Diagnosis, 2002- 2008

	All Stages	Local	Regional	Distant
Breast	89	98	84	24
Cervical	68	91	57	16
Colorectal	64	90	70	12
Lung and bronchus	16	52	25	4
Prostate	99	100	100	28
Melanoma	91	98	62	15
Oral cavity and pharynx	62	82	57	35

*Rates are adjusted for normal life expectancy and are based on cases diagnosed in the SEER 18 areas from 2002-2008, followed through 2009. Local: an invasive malignant cancer confined entirely to the organ of origin. Regional: a malignant cancer that 1) has extended beyond the limits of the organ of origin directly into surrounding organs or tissues; 2) involves regional lymph nodes by way of lymphatic system; or 3) has both regional extension and involvement of regional lymph nodes. Distant: a malignant cancer that has spread to parts of the body remote from the primary tumor either by direct extension or by discontinuous metastasis to distant organs, tissues, or via the lymphatic system to distant lymph nodes.
Source: Howlader N, Noone AM, Krapcho M, et al. (eds). SEER Cancer Statistics Review, 1975-2009, National Cancer Institute, Bethesda, MD, www.seer.cancer.gov/csr/1975_2009/, 2012.

American Cancer Society, Surveillance Research 2013



North Dakota Cancer Coalition Priority Cancers

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

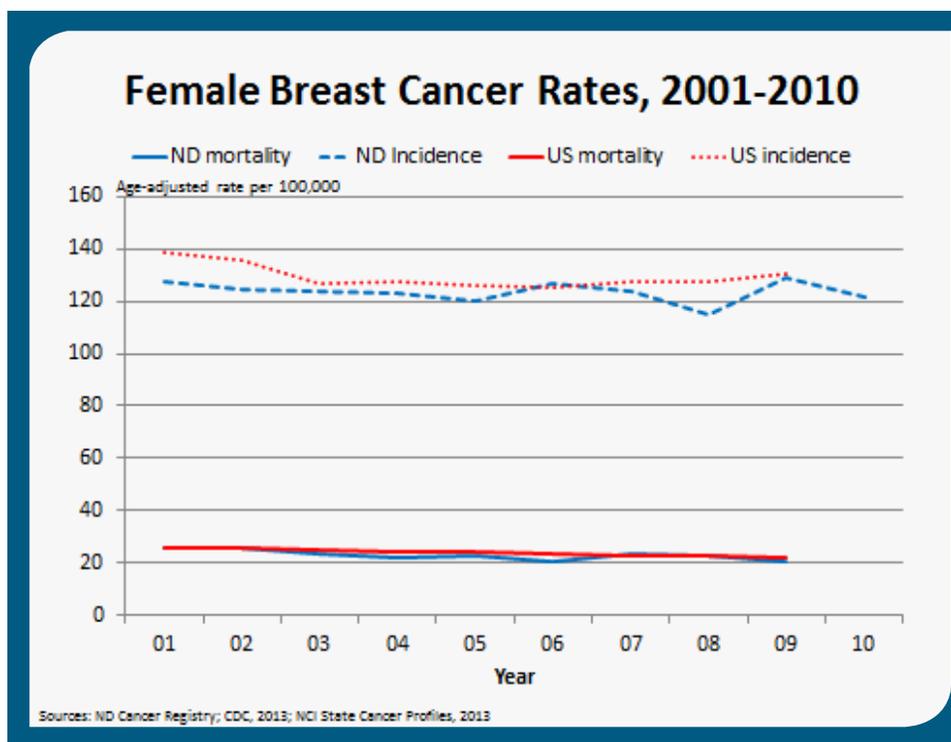
Breast Cancer

Definition

Breast cancer forms in tissues of the breast, usually the ducts (tubes that carry milk to the nipple) and lobules (glands that make milk). It occurs in both men and women, although male breast cancer is rare.

Incidence and Mortality

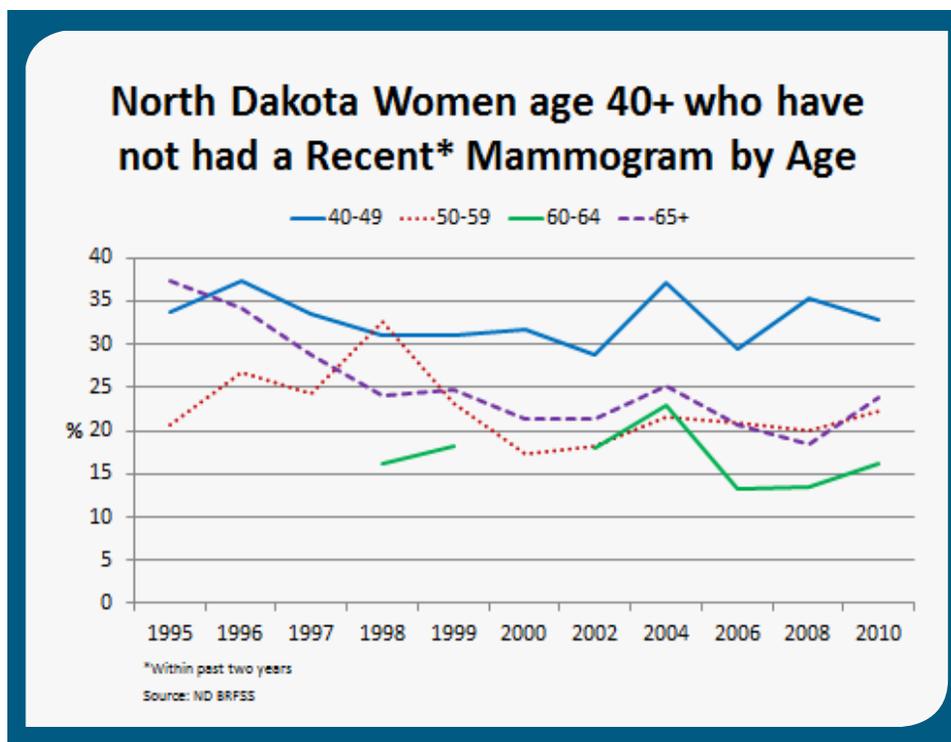
In the United States, breast cancer is the most common non-skin cancer and the second leading cause of cancer-related death in women. In 2010 alone, there were 478 new cases of breast cancer diagnosed in North Dakota while 107 people lost their lives to the disease. From 2006 through 2010 there was a total of 2,388 diagnoses and 465 deaths in North Dakota due to breast cancer.



Screening and Early Detection

Breast cancer, if detected early, is highly treatable. Early detection of breast cancer with screening mammography means that treatment can be started earlier in the course of the disease, possibly before it has spread. Screening tests such as a mammogram are recommended annually beginning at age 40 for those of average risk. Mammography rates in North Dakota are lowest in the 40-49 age range and highest in the 60-64 age range.

Results from randomized clinical trials and other studies show that screening mammography can help reduce the number of deaths from breast cancer among women ages 40 to 70, especially for those older than 50.



Risk Factors and Prevention

Numerous risk factors have been identified for breast cancer including increasing age, personal or family history of breast cancer, reproductive and menstrual history, the presence of certain genetic changes, history of radiation therapy to the chest, long-term use of menopausal hormone therapy, history of taking DES, increased breast density, obesity and lack of exercise.¹

Factors that may reduce the risk of breast cancer include engaging in physical activity, reducing alcohol intake, breastfeeding, and treatments that reduce estrogen levels or block its activity for women who are at high risk.¹

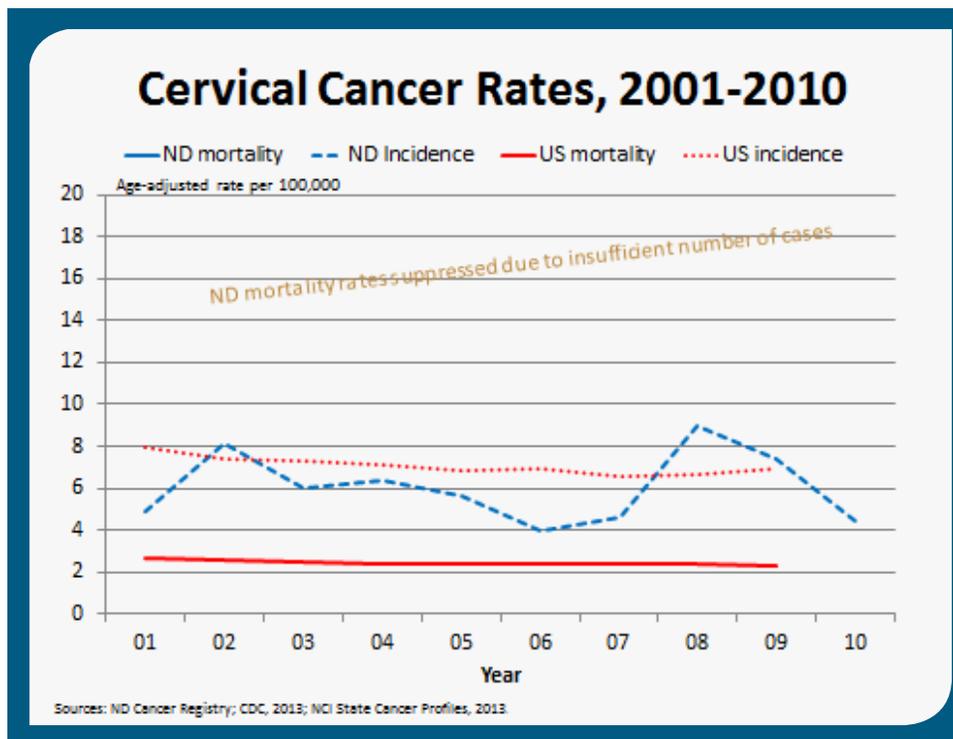
Cervical Cancer

Definition

Cervical cancer 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 (a procedure in which cells are scraped from the cervix and looked at under a microscope). Cervical cancer is almost always caused by human papillomavirus (HPV) infection.

Incidence and Mortality

The incidence and mortality of cervical cancer in North Dakota has been trending down recently. From 2006-2010, there were 92 new cases of cervical cancer diagnosed in North Dakota. While actual mortality numbers are suppressed due to an insufficient number of cases, there was an average of six deaths per year in North Dakota due to cervical cancer over the years 2005-2009.

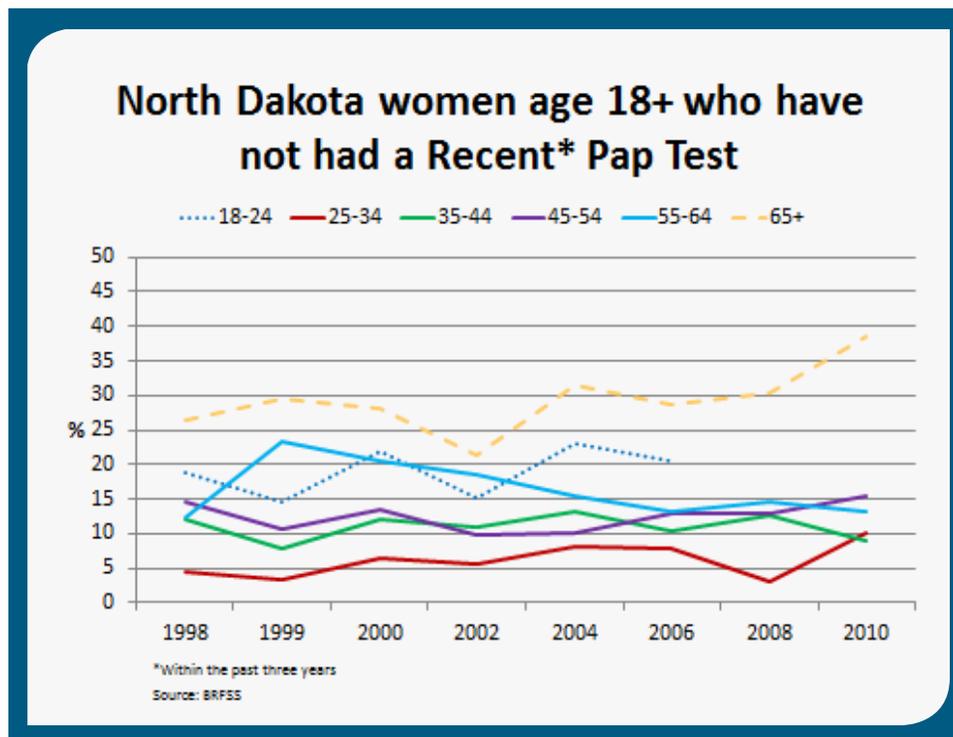


Screening and Early Detection

Routine cervical screening has been shown to greatly reduce both the number of new cervical cancers diagnosed each year and deaths from the disease. Among women at average risk, screening is now recommended for ages 21 through 65 years and the preferred screening method for women 30 to 65 years is now HPV and Pap “co-testing” every five years.

Cervical cancer screening includes two types of screening tests: the Pap test or Pap smear, and HPV testing. The main purpose of screening with the Pap test is to detect abnormal cells that may develop into cancer if left untreated. The screening rates in North Dakota are highest in the 25-34 and 35-44 age groups with about 90 percent having had a recent Pap test in 2010.

HPV testing is used to look for the presence of DNA or RNA from high-risk HPV types in cervical cells. These tests can sometimes detect HPV infections before cell abnormalities are evident.



Risk Factors and Prevention

The most common cause of cervical cancer is infection of the cervix with human papillomavirus (HPV).¹ HPV infections that cause cervical cancer are spread mainly through sexual contact. Women who become sexually active at a young age and who have many sexual partners are at a greater risk of HPV infection and developing cervical cancer.

Smoking cigarettes and breathing in secondhand smoke increase the risk of cervical cancer. Among women infected with HPV, dysplasia and invasive cancer occur two to three times more often in current and former smokers.¹ Secondhand smoke causes a smaller increase in risk.

HPV may be prevented by avoiding sexual activity. Avoiding sexual activity decreases the risk of HPV infection. The use of barrier methods of birth control (such as a condom or gel that kills sperm) help protect against HPV infection. HPV vaccines have been shown to prevent infection with the two types of HPV that cause most cervical cancers. The vaccines protect against infection with these types of HPV for six to eight years.



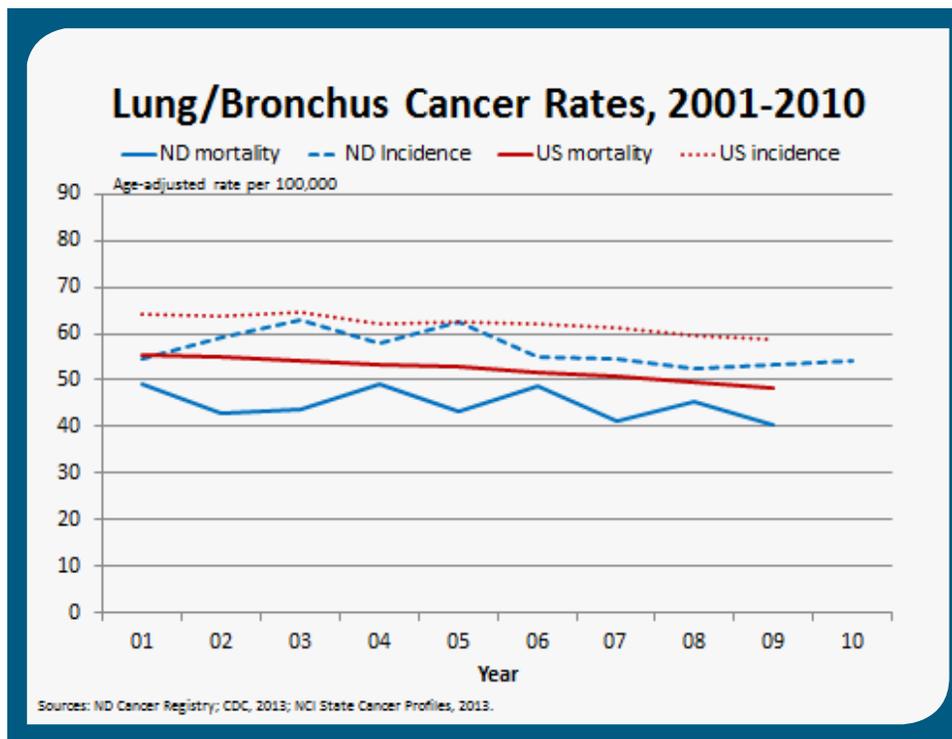
Lung Cancer

Definition

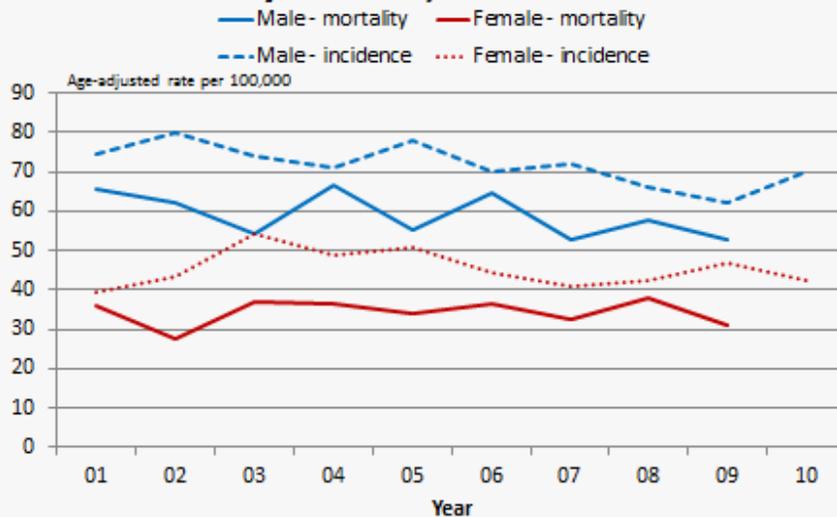
Lung cancer forms in tissues of the lung, usually in the cells lining air passages. The two main types are small cell lung cancer and non-small cell lung cancer. These types are diagnosed based on how the cells look under a microscope.

Incidence and Mortality

Incidence of lung cancer in North Dakota has been stable. The five-year rate from 2006-2010 was 53.9 new cases and 42.8 deaths per 100,000 age-adjusted population. Total new cases were 2,791 and total deaths were 1,650. There was an average of 407 new lung cancer cases and 330 deaths per year in this period. The male rate of incidence and mortality are much higher than for women, which may be partly attributable to the higher rates of smoking among men.



North Dakota Lung and Bronchus Cancer by Gender, 2001-2010



Screening and Early Detection

There are currently no standard or routine screening tests for lung cancer. Lung cancer screening with CT scans is the only screening test shown to lower the chance of dying from lung cancer.¹ Low-dose spiral CT scan (LDCT scan) is a procedure that uses low-dose radiation to make a series of very detailed pictures of areas inside the body. It uses an x-ray machine that scans the body in a spiral path. This procedure is also called a low-dose helical CT scan.

Risk Factors and Prevention

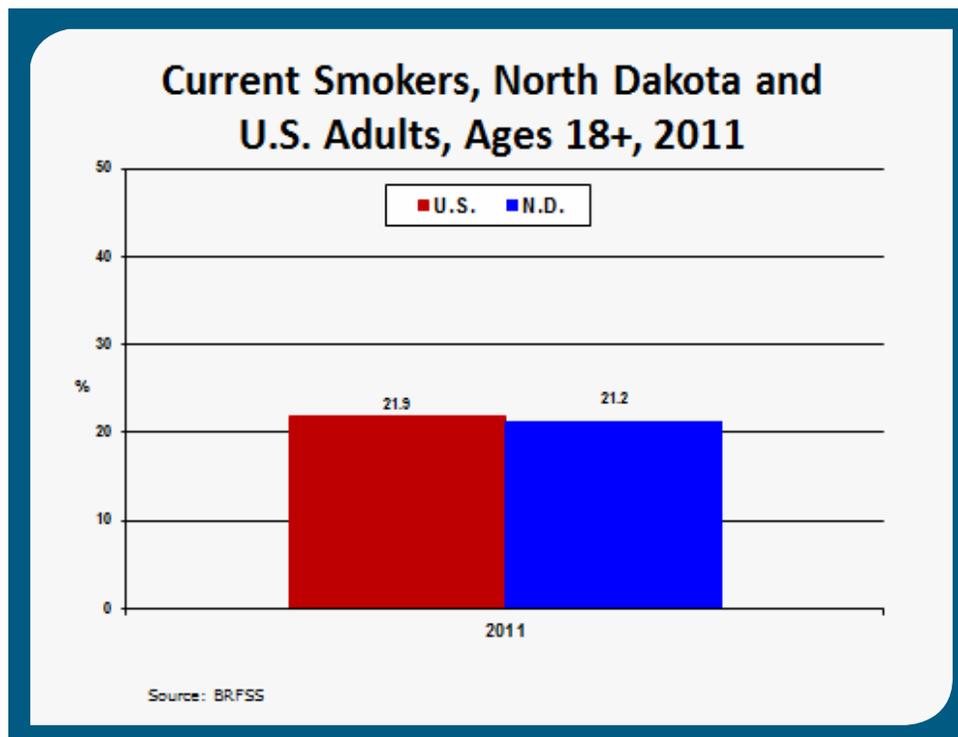
Tobacco smoking is the most important risk factor for lung cancer. Tobacco smoking causes about nine out of 10 cases of lung cancer in men and about eight out of 10 cases of lung cancer in women.¹ People who smoke have about 20 times the risk of lung cancer compared to those who do not smoke. Being exposed to secondhand tobacco smoke is also a risk factor for lung cancer.

Having a family history of lung cancer is a risk factor for lung cancer. People with a relative who has had lung cancer may be twice as likely to have lung cancer as people who do not have a relative who has had lung cancer.

Studies show that high levels of radon gas inside homes and other buildings increase the number of new cases of lung cancer and the number of deaths caused by lung cancer. Radon is a radioactive gas that comes from the breakdown of uranium in rocks and soil which can enter homes through cracks in floors, walls or the foundation.

The best way to prevent lung cancer is to not smoke. Smokers can decrease their risk of lung cancer by quitting. In smokers who have been treated for lung cancer, quitting smoking lowers the risk of new lung cancers. After a person has quit smoking for 10 years, the risk of lung cancer decreases 30 percent to 50 percent.

Lowering radon levels may lower the risk of lung cancer, especially among cigarette smokers. High levels of radon in homes may be reduced by taking steps to prevent radon leakage, such as sealing basements.



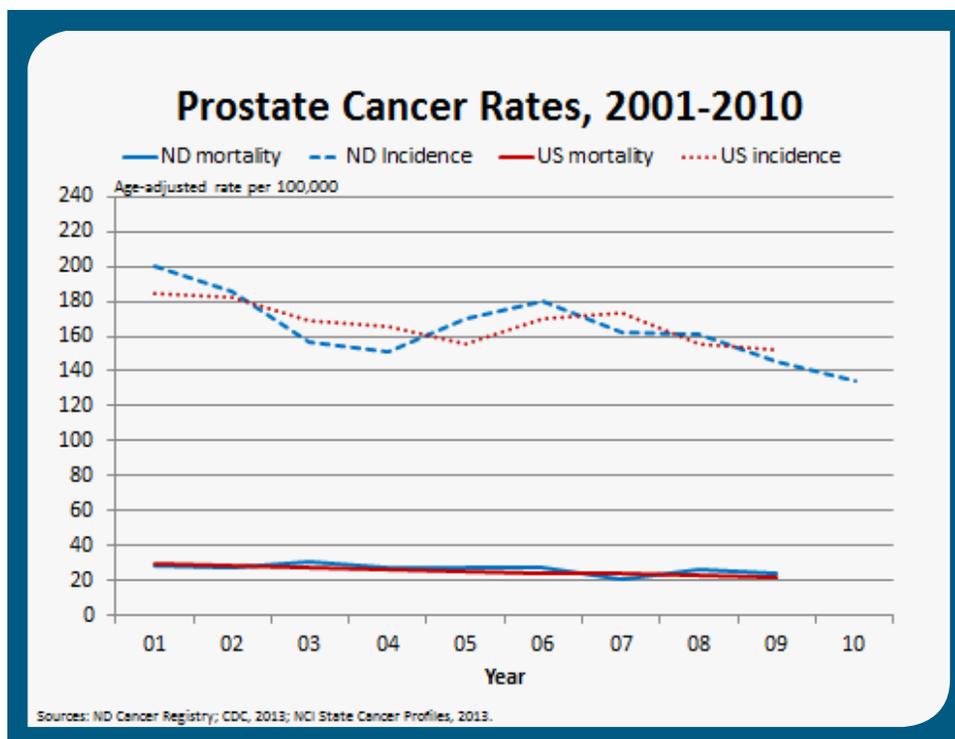
Prostate Cancer

Definition

Prostate cancer forms in tissues of the prostate (a gland in the male reproductive system found below the bladder and in front of the rectum). Prostate cancer usually occurs in older men.

Incidence and Mortality

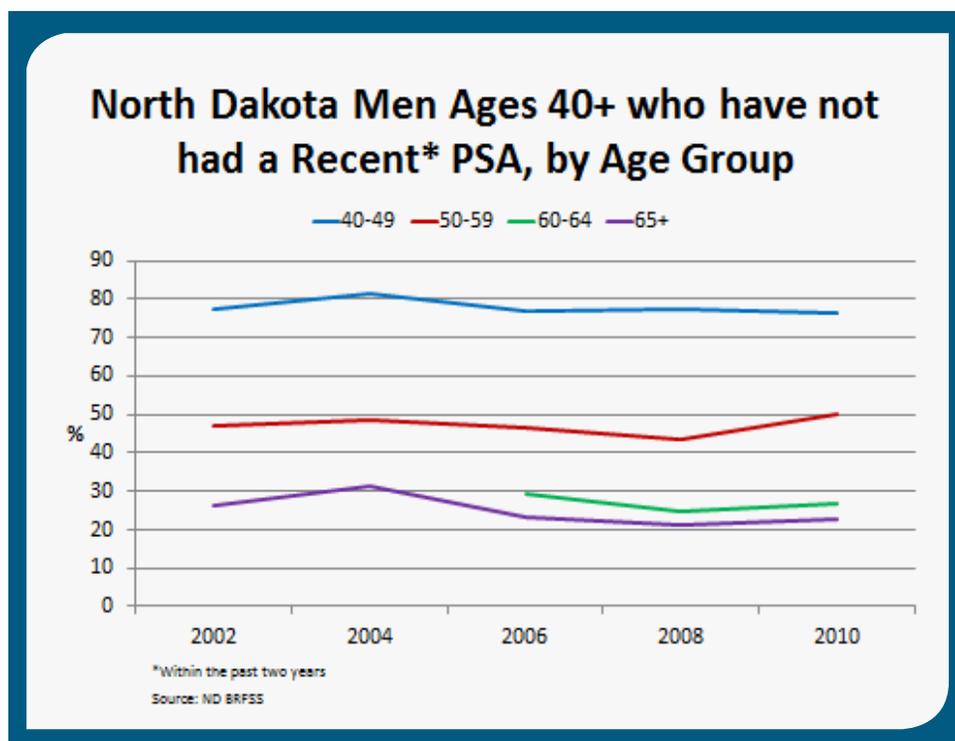
Incidence of prostate cancer has been stable and mortality has been trending down. From 2006-2010 there were 2,791 new diagnoses of prostate cancer and 398 deaths. There was an average of 558 new cases and 80 deaths per year for this period.



Screening and Early Detection

Digital rectal exam (DRE) is an exam of the rectum. The doctor or nurse inserts a lubricated, gloved finger into the lower part of the rectum to feel the prostate for lumps or anything else that seems unusual.

A prostate-specific antigen (PSA) test is a test that measures the level of PSA in the blood. PSA is a substance made mostly by the prostate that may be found in an increased amount in the blood of men who have prostate cancer. In North Dakota, over 50 percent of men age 50 and older have had a recent PSA test. Screening rates are highest for those older than 65. Currently, the U.S. Preventive Services Taskforce recommends against the PSA screening test. However, weighing the pros and cons of screening is an individual process.



Risk Factors and Prevention

Prostate cancer is rare in men younger than 50. The chance of developing prostate cancer increases as men get older. Family history also plays a role. A man whose father, brother or son has had prostate cancer has a higher-than-average risk of prostate cancer. Obese men diagnosed with prostate cancer may be more likely to have advanced disease that's more difficult to treat.

Men with a high risk of prostate cancer may consider medications or other treatments to reduce their risk in addition to healthy eating and exercise.

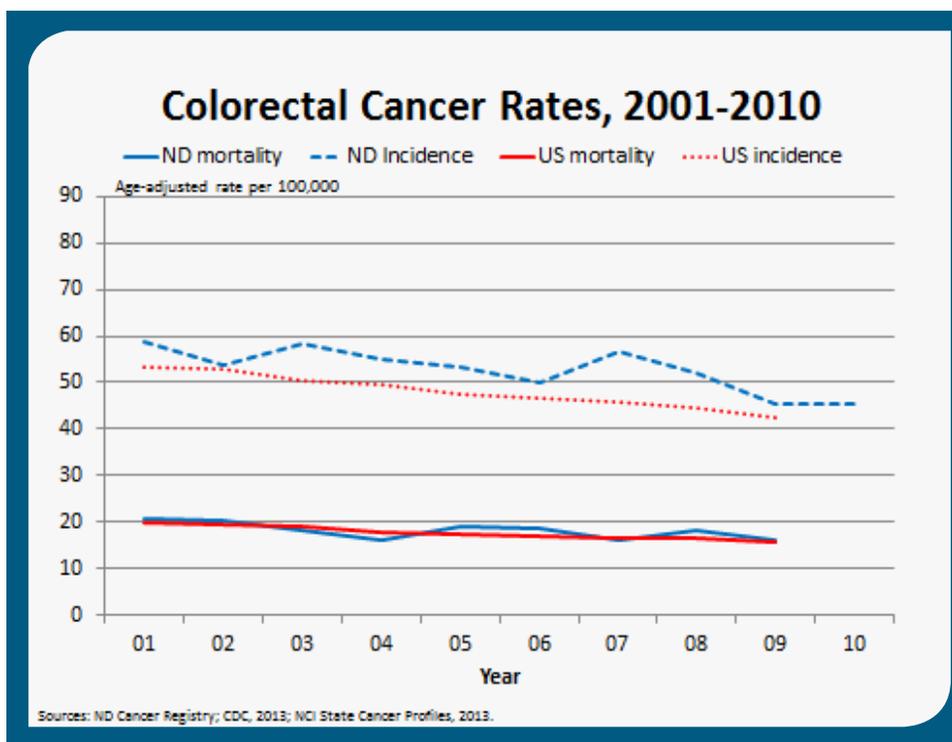
Colorectal Cancer

Definition

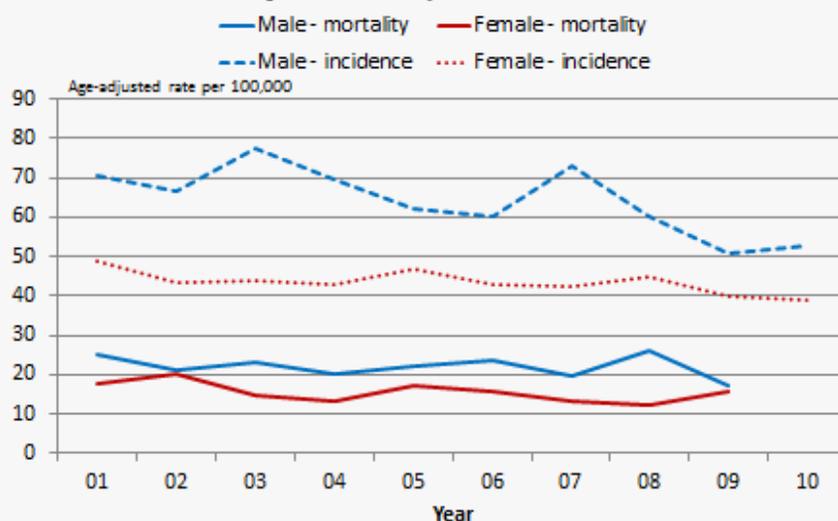
Colorectal cancer forms in the tissues of the colon (the longest part of the large intestine) and the rectum (the last several inches of the large intestine closest to the anus. Most colon cancers are adenocarcinomas (cancers that begin in cells that make and release mucus and other fluids).

Incidence and Mortality

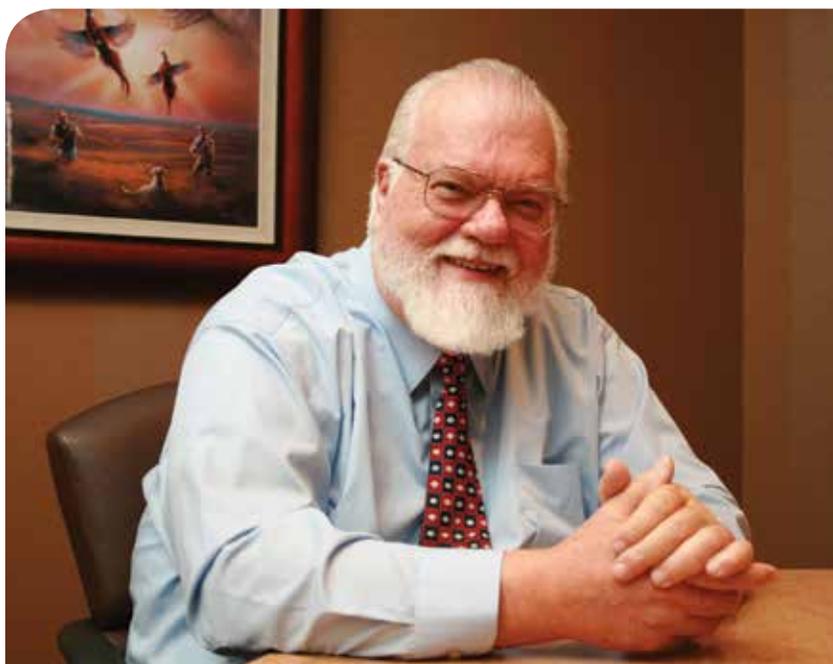
The incidence and mortality of colorectal cancer has been trending down. Total new cases for 2006-2010 were 1,934 and total deaths were 699. Per year, that is an average of 387 new diagnoses and 140 deaths. Male incidence is higher with the 2006-2010 average at 59.2 compared to 41.8 for women.



North Dakota Colorectal Cancer by Gender, 2001-2010



Sources: ND Cancer Registry; CDC, 2013; NCI State Cancer Profiles, 2013.



“Cancer is an experience that changed my life. As a colorectal cancer survivor, I have compassion for others going through the cancer journey. My profession allows me the opportunity to help people understand the importance of early detection and preventive measures.”

**Ken Dykes, Bismarck, N.D.
Colorectal Cancer Survivor
Executive Director,
Bismarck Cancer Center**

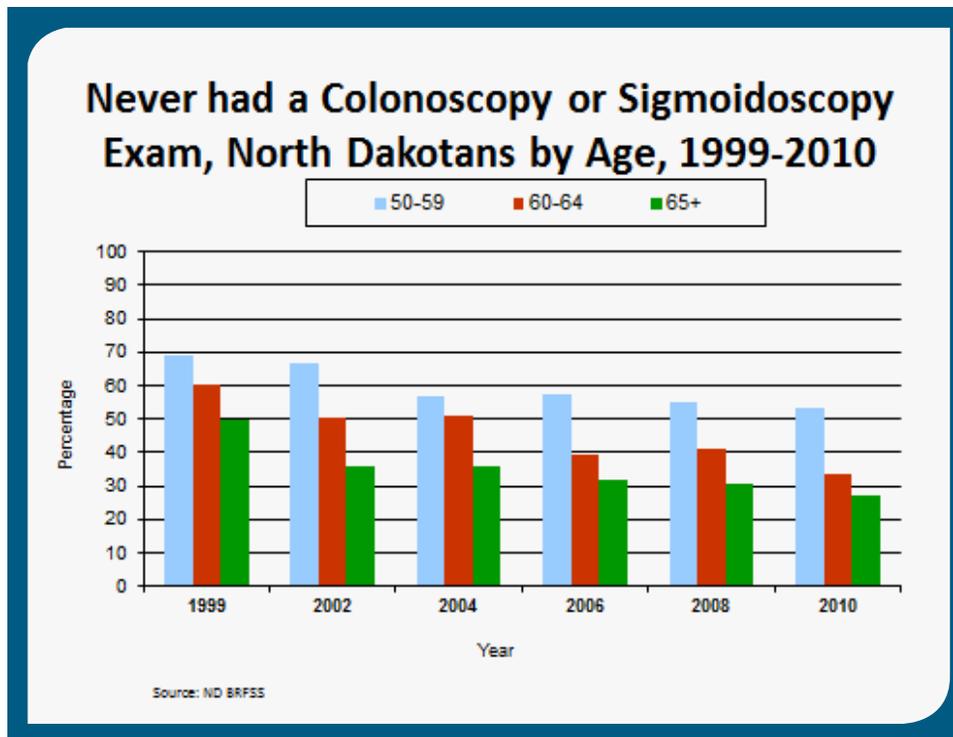
Screening and Early Detection

Three tests are used to screen for colorectal cancer:

A **fecal occult blood test (FOBT)** is a test to check stool (solid waste) for blood that can only be seen with a microscope. Small samples of stool are placed on special cards and returned to the doctor or laboratory for testing. Blood in the stool may be a sign of polyps or cancer.

A **colonoscopy** is a procedure to look inside the rectum and colon for polyps, abnormal areas or cancer using a thin, tube-like instrument with a light and lens for viewing. It may also have a tool to remove polyps or tissue samples, which are checked under a microscope for signs of cancer. Similarly, a **sigmoidoscopy** is a procedure that also looks inside the rectum, but only inspects the sigmoid (lower) colon for polyps, abnormal areas or cancer.

For those of average risk, screening for colorectal cancer is recommended starting at age 50 and continuing until age 75. According to the North Dakota Survey of Endoscopic Capacity, there are a total of 170,508 individuals of average risk ages 50 to 75 in North Dakota, of which 77,426 remain unscreened.



Risk Factors and Prevention

The risk of colorectal cancer increases after age 50. Having a parent, brother, sister or child with colorectal cancer doubles a person's risk of colorectal cancer. Having a personal history of inflammatory bowel disease also increases risk. Drinking three or more alcoholic beverages per day increases the risk of colorectal cancer. Cigarette smoking is linked to an increased risk of colorectal cancer and death from colorectal cancer. Obesity is linked to an increased risk of colorectal cancer and death from colorectal cancer.

A lifestyle that includes regular physical activity is linked to a decreased risk of colorectal cancer. Most colorectal polyps are adenomas, which may develop into cancer. Removing colorectal polyps that are larger than one centimeter (cm) may lower the risk of colorectal cancer.



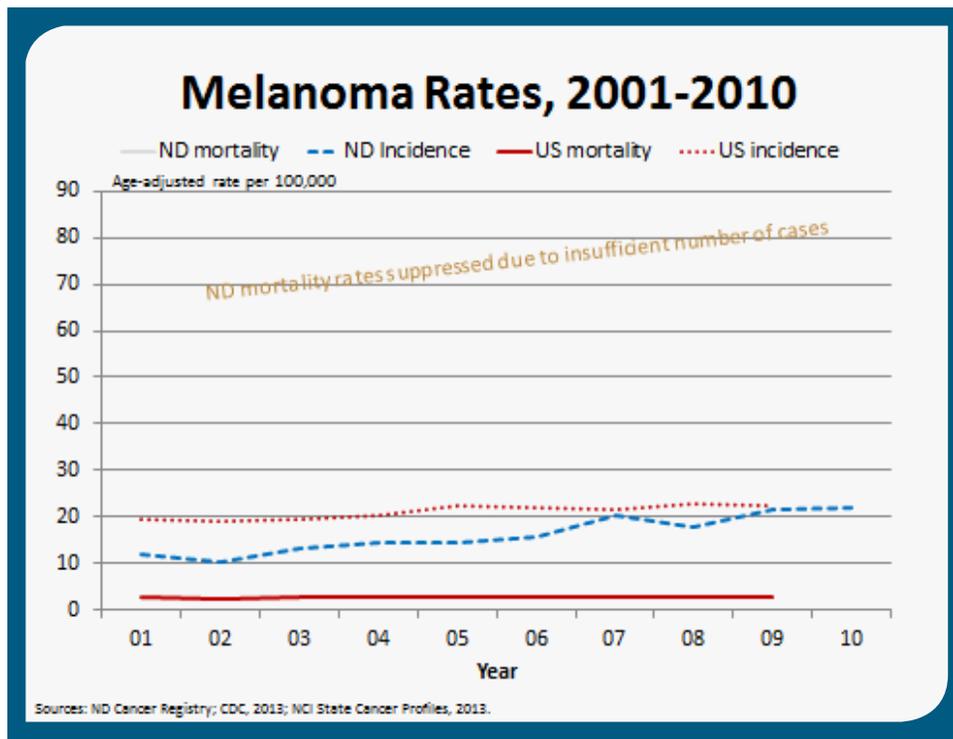
Melanoma

Definition

Melanoma is a form of 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.

Incidence and Mortality

The incidence of melanoma in North Dakota has risen dramatically over the past several years. The rate of incidence has risen from 15.7 per 100,000 population in 2006 to 22.0 per 100,000 population in 2010. There were a total of 695 new cases of melanoma from 2006-2010. Actual mortality rates are suppressed; however, there was an average of 16 deaths per year in North Dakota from 2005-2009.

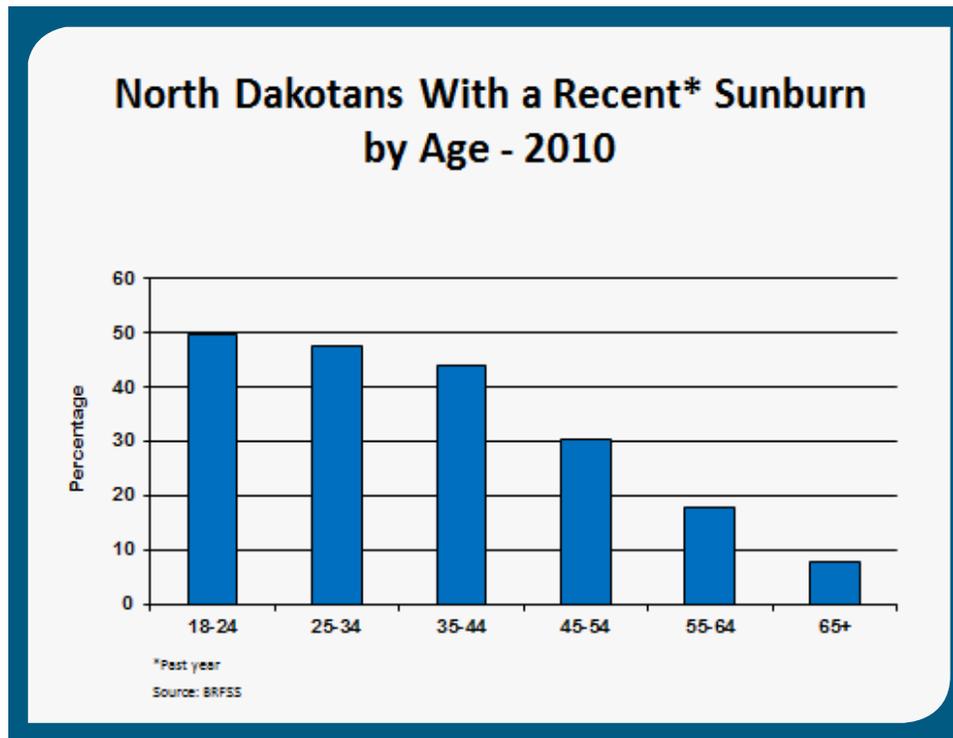


Screening and Early Detection

Regular exams of the skin by both you and your doctor increase the chance of finding skin cancer early. If an area on the skin looks abnormal, a biopsy is usually done. A pathologist then looks at the tissue under a microscope to check for cancer cells.

Risk Factors and Prevention

Having a fair complexion and/or being exposed to natural sunlight or artificial sunlight (such as from tanning beds) over long periods of time increases your risk of developing melanoma. A history of many blistering sunburns, especially as a child or teenager, is a risk factor, as well as having several large or many small moles. Having a family or personal history of melanoma also increases your risk. Limiting UV exposure is the best method of prevention. Use sunscreen that protects against UV radiation. Do not stay out in the sun for long periods of time, especially when the sun is at its strongest. Wear long sleeve shirts, long pants, sun hats and sunglasses when outdoors.



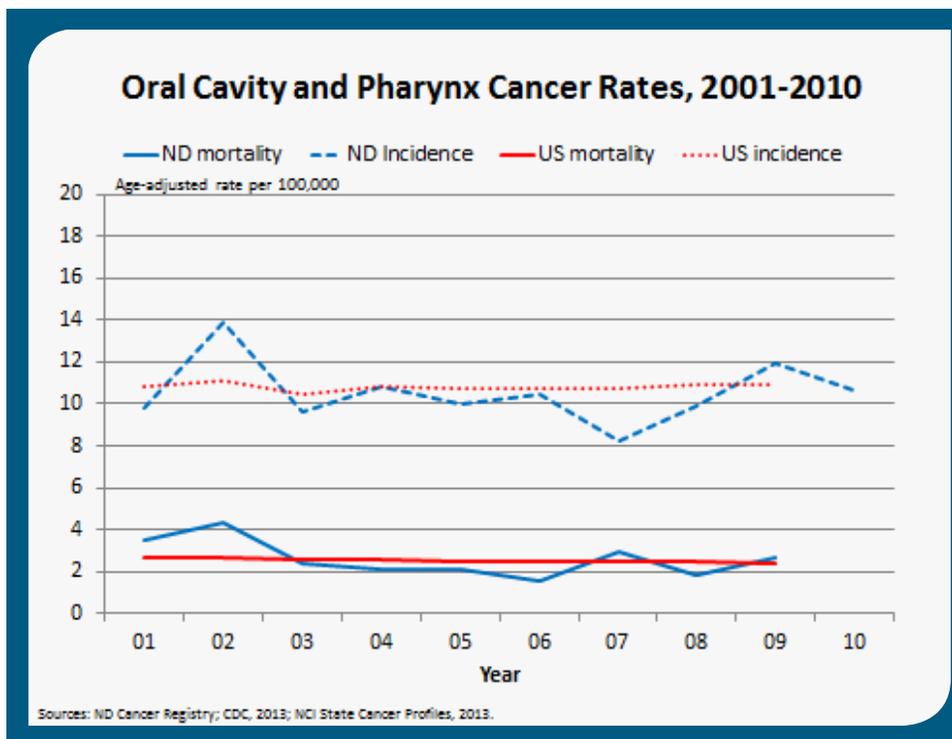
Oral-Pharyngeal Cancer

Definition

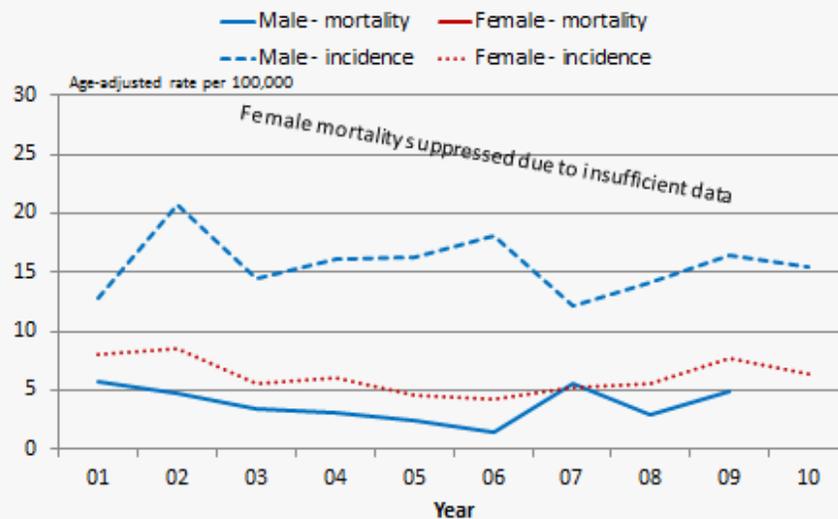
Oral-pharyngeal cancer forms in tissues of the oral cavity (the mouth) or the oropharynx (the part of the throat at the back of the mouth).

Incidence and Mortality

From 2006-2010 there were a total of 385 new cases of oral-pharyngeal cancer. This represents an average of 77 new cases per year. In the same time period, there were a total of 90 deaths due to oral-pharyngeal cancer. Male incidence is significantly higher with a 2006-2010 average rate of 15.3 as compared to 5.8 for women.



North Dakota Oral Cavity and Pharynx Cancer by Gender, 2001-2010



Sources: ND Cancer Registry; CDC, 2013; NCI State Cancer Profiles, 2013.

Screening and Early Detection

There is no standard or routine screening test for oral cancer. Screening for oral cancer may be done during a routine check-up by a dentist or doctor. The exam will include looking for lesions, including areas of leukoplakia (an abnormal white patch of cells) and erythroplakia (an abnormal red patch of cells). Leukoplakia and erythroplakia lesions on the mucous membranes may become cancerous.

Risk Factors and Prevention

Alcohol and tobacco use (including smokeless tobacco) are the two most important risk factors for head and neck cancers, especially cancers of the oral cavity, oropharynx, hypopharynx and larynx. At least 75 percent of head and neck cancers are caused by tobacco and alcohol use.¹ People who use both tobacco and alcohol are at greater risk of developing these cancers than people who use either tobacco or alcohol alone.

Infection with cancer-causing types of HPV is a risk factor for some types of head and neck cancers, particularly oropharyngeal cancers that involve the tonsils or the base of the tongue.

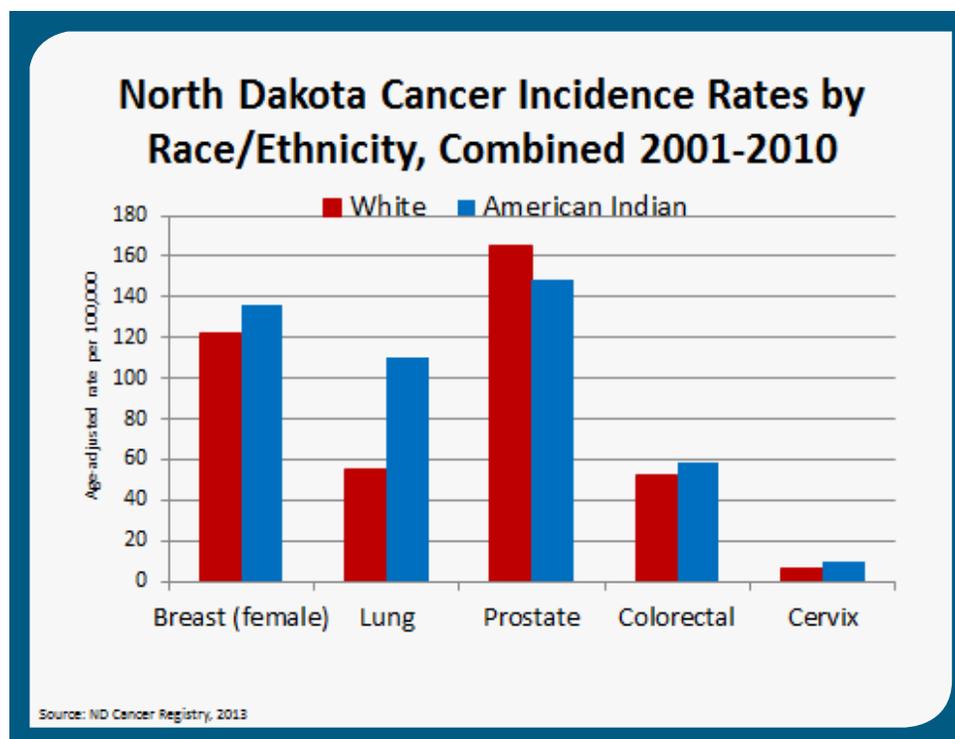
Avoiding oral HPV infection may reduce the risk of HPV-associated head and neck cancers. Completion of the HPV vaccination series for males and females ages 9 to 26 can prevent infection with the HPV virus.

Working Toward Health Equity

Differences in the incidence and prevalence of health conditions and health status between groups are commonly referred to as health disparities. Most health disparities affect groups marginalized because of socioeconomic status, race/ethnicity, sexual orientation, gender, disability status, geographic location, or some combination of these. People in such groups not only experience worse health, but also tend to have less access to the social determinants or conditions (e.g., healthy food, good housing, good education, safe neighborhoods, freedom from racism and other forms of discrimination) that support health. Health disparities are referred to as health inequities when they are the result of the systematic and unjust distribution of these critical conditions. Health equity, then as understood in public health literature and practice, is when everyone has the opportunity to “attain their full health potential” and no one is “disadvantaged from achieving this potential because of their social position or other socially determined circumstance.”⁴

It has been well documented that health disparities exist for groups within given populations. Cancer incidence, mortality and survivorship are affected by many factors such as socioeconomic status, access to health-care services, health behaviors, and our social and built environments. Data indicates that those affected by health inequity tend to be less likely than others to receive needed cancer care.

American Indians are the largest racial minority group in North Dakota, comprising of just over 5 percent of the population. American Indians are at higher risk than other races in North Dakota to be diagnosed with breast, lung, colorectal and cervical cancer.⁵



Factors that Contribute to Health Disparities in Cancer ⁶

Socioeconomic Status (SES)

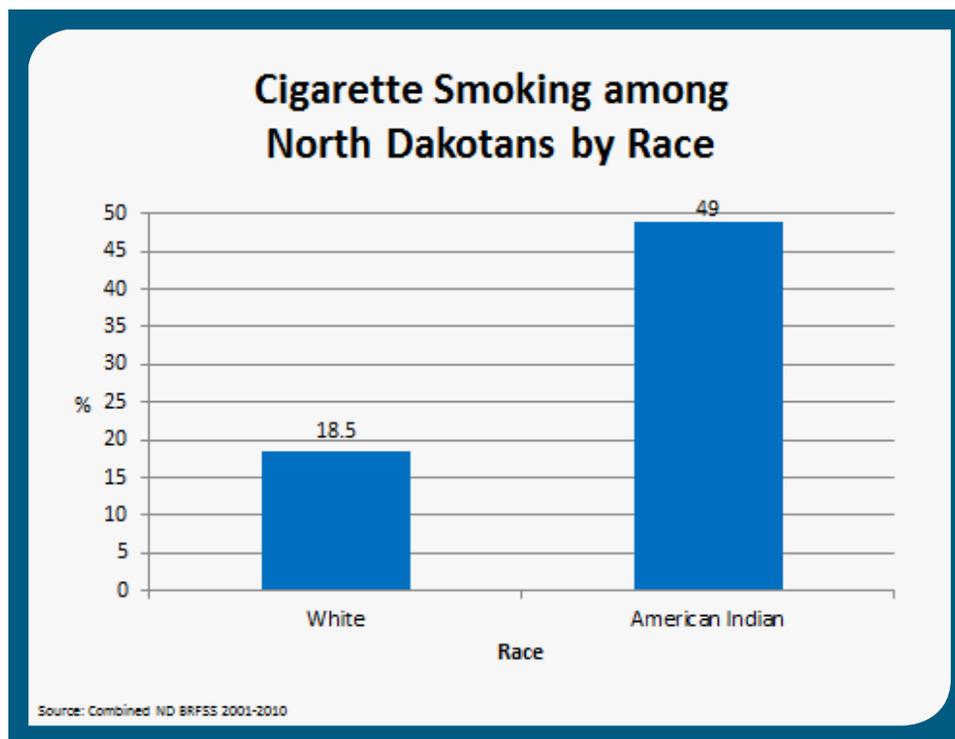
Socioeconomic status (SES) measures a person's social (number of years a person spent in school), economic (how much money a person earns each year), and work status (measured by a person's job). A person's SES affects his or her ability to get health care, to get tests that can find cancer early, and get the right treatment if cancer is found. As a result, people with a higher SES often have higher cancer survival rates. People with a low SES are less likely to get cancer screening tests, so their cancer is often found at a later stage when it causes symptoms. Even if their cancer is treated, patients are less likely to survive cancer that's found after it has advanced.

Access to Health-Care Services

Racial and ethnic minorities are less likely to have health insurance, so they may not see a doctor regularly. People who see a doctor regularly are more likely to get cancer screening tests. When doctors advise a patient to get a screening test, the patient usually gets the test.

Behaviors

People with a low income are more likely to do things that give them a higher risk of getting cancer like smoking cigarettes, eating unhealthy food, not getting enough physical activity, and engaging in risky sexual activity. Smoking cigarettes increases the risk for many kinds of cancer including cancers of the lip, mouth, throat, pancreas, larynx (voice box), lung, uterine cervix, urinary bladder and kidney.



Eating unhealthy food and not getting enough physical activity can cause a person to become overweight or obese. Obesity increases the risk for breast cancer after menopause, colorectal cancer, endometrial cancer, esophageal adenocarcinoma, and cancers of the kidney and pancreas.

Risky sexual activities like unprotected sex and sex with multiple partners can make a person more likely to get human papillomavirus (HPV), the most common cause of cervical cancer.

Social and Built Environments

The social environment describes the social conditions in which people work and live. A good social environment helps a person make good decisions, like living a healthy lifestyle.

The built environment refers to physical objects like buildings, neighborhoods, cities, and roads. A good built environment has a lot of parks, playgrounds and sidewalks that make it easy to get exercise. A good built environment also provides transportation that makes it easy for people to go to good jobs and schools, doctors and stores that sell healthy food.

Exposure to Carcinogens

A carcinogen is a substance that causes cancer. People have a higher risk of getting cancer if they live near places where carcinogens are made like smelters, foundries, chemical factories and coal mines. Members of racial and ethnic minorities are more likely to live near such places.

Treatment

Generally, patients get better cancer treatment at a hospital that sees a lot of cancer patients, or by a doctor who does a lot of cancer surgeries (called high-volume surgeons or hospitals). Patients treated in low-volume hospitals are more likely to be members of racial or ethnic minorities, live in rural areas, have a low SES, and live far away from a high-volume hospital.

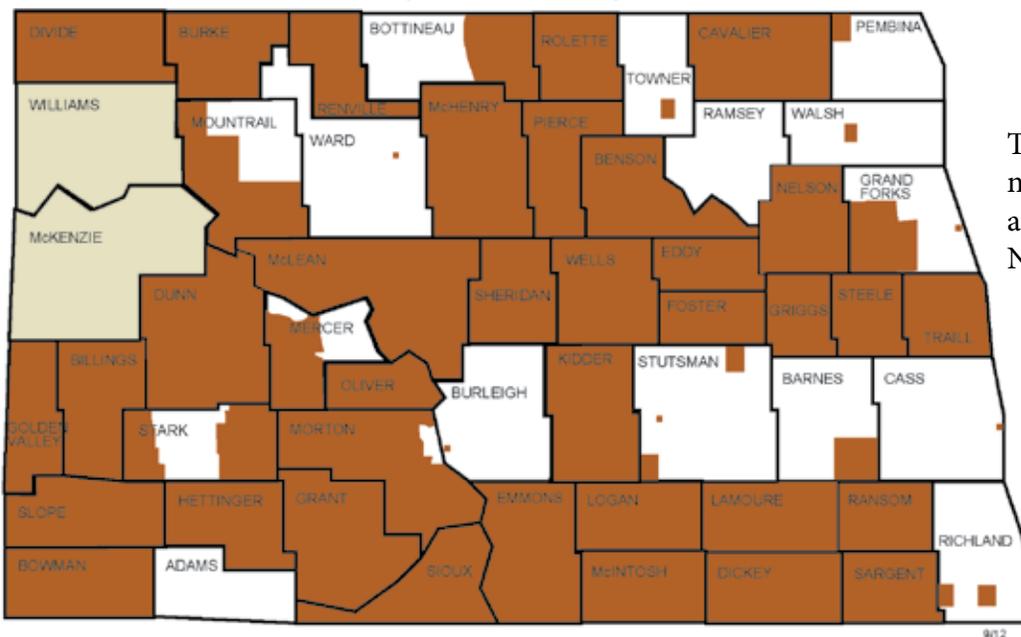
Reducing Health Disparities in Cancer ⁶

Public health agencies, health-care providers and communities of all racial and ethnic groups must become partners in an effort to:

- Improve early detection of cancer through routine mammography, Pap tests and colorectal cancer screening.
- Implement evidence-based community interventions to increase screening and modify risk behaviors.
- Develop research projects that will encourage minority groups to participate in clinical trials for cancer prevention to ensure that significant differences between minority and ethnic groups are identified.
- Undertake research that will inform decisions about interventions to reduce cancer disparities and improve health. There is a growing need for interventions that are available to people regardless of socioeconomic status or lifestyle behaviors that also addresses the social environment.
- Use a variety of media and channels to market cancer information to diverse populations in a variety of settings.

Access to quality cancer care and clinical trials needs to be expanded to ensure that minority groups are provided the same care and access to state-of-the-art technology that patients in major care centers receive.

Fear of cancer, perceived cost of care, and lack of physician referral are common barriers to cancer screening and other preventive services. Health-care providers play a critical role in recommending and increasing use of preventive services. Research shows that physician recommendation is a major predictor of receipt of screening.



To the left is a map of medically underserved areas/populations in North Dakota.

Cancer Survivorship

Who are Cancer Survivors?

A cancer survivor is any person who has been diagnosed with cancer, from the time of diagnosis through the balance of their life. There are at least three distinct phases associated with cancer survival, including the time from diagnosis to the end of initial treatment, the transition from treatment to extended survival, and long-term survival.⁷ In practice, however, the concept of survivorship is often associated with the period after active treatment ends.

The National Cancer Institute recently estimated that 13.7 million people with a previous cancer diagnosis are living in the United States. Using the proportion of the 2010 U.S. Census population that resides in North Dakota, the approximate number of cancer survivors in North Dakota would be 30,140.

Survivorship Challenges

Cancer survivors often face physical, emotional, psychosocial, spiritual and financial challenges as a result of their cancer diagnosis and treatment.⁸ Public health professionals strive to address survivorship and quality of life issues such as the coordination of care, patient-provider communication, health promotion, support services and fertility preservation through research and collaboration with public, non-profit and private organizations. In light of these concerns, public health initiatives created to understand and prevent secondary disease, recurrence and long-term effects of treatment are essential.



"It is important for everyone, especially young people, to understand that what you do today can affect you in the long run."

Ashley Johnson, Grand Forks, N.D.
Melanoma Skin Cancer Survivor

Promoting Health after a Cancer Diagnosis

Cancer survivors are at greater risk for recurrence and for developing second cancers due to the effects of treatment, unhealthy lifestyle behaviors, underlying genetics or risk factors that contributed to the first cancer. The factors such as quitting tobacco use, being physically active, and maintaining a healthy body weight can help maintain health and improve survival and quality of life after a cancer diagnosis.⁸

Cancer Survivorship Plans

Another measure to aid cancer survivors as they complete treatment and move into the next stage of survivorship is a cancer survivorship plan.

A Survivorship Care Plan is a coordinated, post-treatment plan for the survivor and their entire health-care team, including the oncology practice, primary care physician and other care providers. This comprehensive medical summary, given to the survivor and their primary care physician, helps support better survivorship care.⁹ The plan includes important information on monitoring for possible secondary cancers and late- or long-term effects of cancer treatment. A Care Plan also relieves a survivor from having to recall all the details of treatment and ensures all future health-care providers are working as a team for the survivor's care. A Survivorship Care Plan is usually created by the survivor's oncologist or oncology nurse and includes the following components:

1. Patient diagnosis and treatment summary
2. Best schedule for follow-up tests
3. Information on late- and long-term effects of cancer treatment
4. Psycho-social assessment and recommended interventions
5. List of symptoms to watch for
6. List of support resources



Resources

Support for Cancer Survivors

There are resources to assist patients, families and others with the physical, emotional, psychosocial, spiritual and financial challenges of cancer.

- The North Dakota American Cancer Society provides information about cancer support resources available in the state.
www.cancer.org/treatment/supportprogramsservices/index
- Cancer support services may also be available from a number of North Dakota health-care facilities. A good place to start to determine what is available locally is with the health-care facility social services office.

Online support services

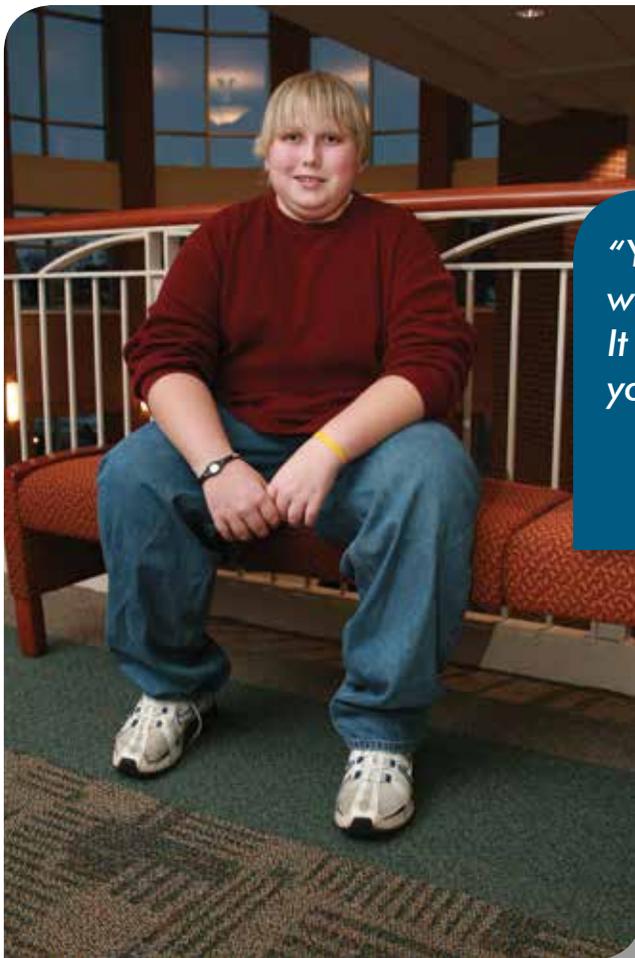
- The Centers for Disease Control and Prevention (CDC) link provides a listing of nationally recognized organizations that provide a variety of support and education to survivors, caregivers and health-care professionals.
www.cdc.gov/cancer/survivorship/links.htm
- The National Coalition for Cancer Survivorship (NCCS) advocates for quality cancer care for all people touched by cancer and provides tools that empower people to advocate for themselves. Founded by and for cancer survivors.
www.canceradvocacy.org
- The American Society of Clinical Oncology provides a wide variety of information on cancer survivorship for patients, families, caregivers and others.
www.cancer.net
- The Livestrong Foundation addresses insurance challenges, treatment concerns, emotional support, fertility preservation and clinical trials.
www.livestrong.org

Survivorship Plans

- Livestrong Foundation
www.livestrongcareplan.org
- National Coalition for Cancer Survivorship
www.canceradvocacy.org/resources/planning-your-care/care-planning-templates
- American Society of Clinical Oncology
www.cancer.net/survivorship/asco-cancer-treatment-summaries

Organizations Focused on Children

- The Super Sibs organization focuses on children with cancer and their siblings. Information is available for parents, teachers and others that work with and care for children and their siblings.
www.supersibs.org
- Kamp Kace is an organization that provides a camping experience for children with cancer and their siblings. Oncology focused professionals are on staff at the camp to ensure ongoing health care. Kamp Kace is available for North Dakota children.
www.kampkace.org



“Your cancer journey does not end when you hear the words ‘cancer free.’ It is an experience that is carried with you for a lifetime.”

Jake Ferguson, Hillsboro, N.D.
Leukemia Cancer Survivor

Breast Cancer

- The Young Survival Coalition focuses on young women diagnosed with breast cancer and support they can receive from others.
www.youngsurvival.org
- Living Beyond Breast Cancer empowers women affected by breast cancer to live as long as possible with the best quality of life.
www.lbbc.org

Organizations Focused on End-of-Life Care

- The North Dakota Hospice Organization provides information about local hospice programs across North Dakota and contact information.
www.ndhospice.com
- The National Hospice and Palliative Care Organization provides regulatory, advocacy, quality care information, resources and education for survivors, families and health-care professionals.
www.nhpco.org

Cancer Statistics

- The North Dakota Statewide Cancer Registry provides county statewide and county level incidence and mortality data.
www.ndhealth.gov/cancerregistry
- The Centers for Disease Control and Prevention provides national level cancer statistics.
www.cdc.gov/cancer/dcpc/data/state.htm
- National Cancer Institute provides state level comparisons to U.S. averages by cancer site.
statecancerprofiles.cancer.gov
- The American Cancer Society provides detailed cancer information on cancer statistics with the annual American Cancer Society Facts and Figures.
www.cancer.org/research

References

1. National Cancer Institute (NCI). <http://www.cancer.gov>.
2. North Dakota Department of Health, Division of Vital Records. North Dakota Fast Facts 2010. <http://www.ndhealth.gov/vital/pubs/ff2010.pdf>.
3. Yabroff KR, Lawrence WF, Clauser S, Davis WW, Brown ML. Burden of illness in cancer survivors: findings from a population-based national sample. *Journal of the National Cancer Institute*. 2004;96(17):1322-1330.
4. Brennan Ramirez LK, Baker EA, Metzler M. Promoting Health Equity: A Resource to Help Communities Address Social Determinants of Health. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2008.
5. North Dakota Cancer Coalition. North Dakota's Cancer Control Plan 2011-2016. 2011.
6. Centers for Disease Control and Prevention. Basic Information About Health Disparities in Cancer. http://www.cdc.gov/cancer/healthdisparities/basic_info/index.htm.
7. American Cancer Society. Cancer Treatment and Survivorship Facts and Figures 2012-2013. <http://www.cancer.org/acs/groups/content/@epidemiologysurveillance/documents/document/acspc-033876.pdf>
8. Centers for Disease Control and Prevention (CDC). Basic Information about Cancer Survivorship. http://www.cdc.gov/cancer/survivorship/basic_info/index.htm.
9. Journey Forward. About Survivorship Care Planning. <http://www.journeyforward.org/about-survivorship-care>

Acknowledgements

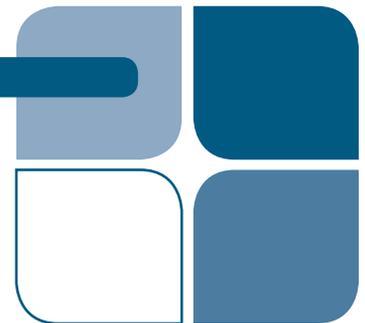
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DEPARTMENT *of* HEALTH

**North Dakota
Cancer Coalition**

Planning for a cancer-free future.