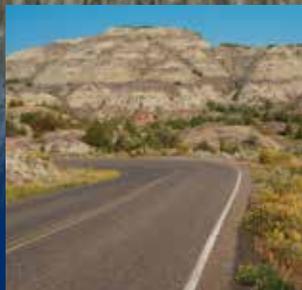
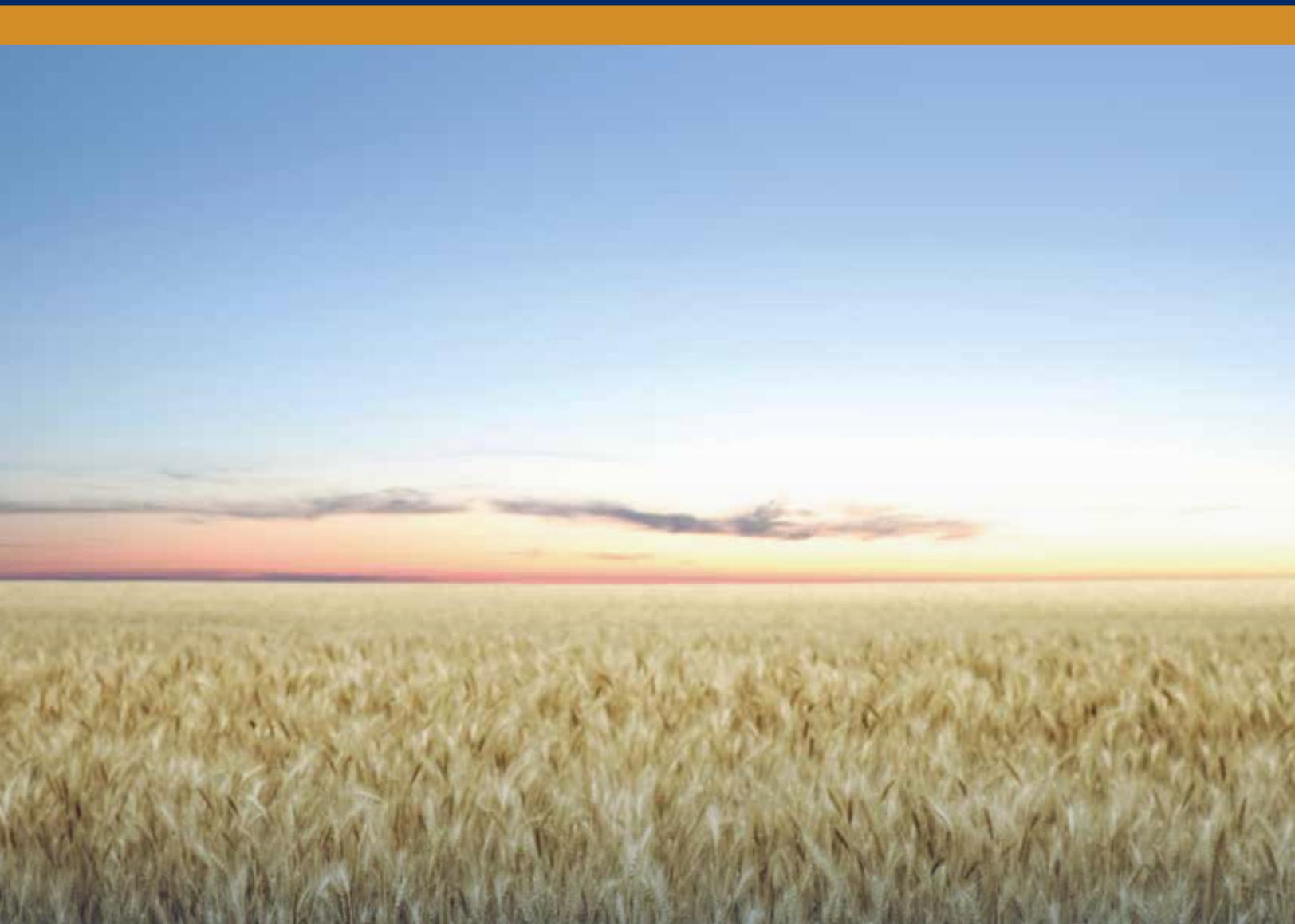


Chronic Disease in North Dakota

A Status Report for 2014



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A Status Report for 2014

Jack Dalrymple

Governor of North Dakota

Terry Dwelle, M.D., M.P.H.T.M.

State Health Officer

Krista Fremming

Director, Division of Chronic Disease



NORTH DAKOTA
DEPARTMENT *of* HEALTH

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A Tribute

This Chronic Disease Status Report is dedicated to the memory of Kathy Moum. Kathy was the Chronic Disease Epidemiologist at the North Dakota Department of Health from July 1, 2001, to September 28, 2012. (Prior to this, Kathy worked at the Department of Human Services, with a total of 25 years of state service.)

The Person Behind the Numbers A Tribute to Kathy Moum

*If you travel with us through pages of the past
You'll find reports like the one you now own.
The one in your hands still bearing fingerprints
Of our sweet epidemiologist, Kathy Moum.
She was the person behind the numbers.*

*With a gentle spirit and a calm in her voice
She told stories that numbers can say.
And she cared about those whose lives were behind
The numbers she compiled every day.
She knew people were behind the numbers.*

*Then the diagnosis came – a brain tumor, cancer
Shocking and breaking our hearts once we learned.
Kathy walked through it with her usual grace
From the moment she heard until her last page was turned.
Her story now added to the numbers.*

*Kathy was humble and worked behind the scenes
Always with excellence, the Kathy "touch."
We will continue henceforth to refer to her work
A coworker and friend – missed so much.
We still see her behind the numbers.*

*As you turn this page to the current report,
The numbers will take their places
Telling more stories that need to be told,
But the numbers do have faces.
When we look at the data may we never forget,
May our hearts never cease to see
The people behind the numbers,
The numbers of chronic disease.*



We miss you, Kathy. With love, from your North Dakota Department of Health coworkers and friends.

Helping to Control and Reduce Chronic Disease

North Dakota is a robust and growing state. Our residents enjoy outstanding career opportunities, great recreation and vibrant culture. We do face health challenges, however, and the North Dakota Department of Health (NDDoH) is working hard to address them.



Our Coordinated Chronic Disease Prevention Program (CCDPP) is a great example of people looking out for others. One of the best ways to make sure people are helped is to team up and work together to find solutions. This is exactly what the CCDPP does. The CCDPP aligns specific programs to work together in the best way to address health issues and chronic disease. Our NDDoH programs share resources and collaborate to design and promote unique and cost-effective ways to reach people with combined messages whenever possible.

Chronic diseases are defined as illnesses that last a long time, do not go away on their own, are rarely cured, and often result in disability later in life. The chronic diseases and risk factors detailed in this report include cancer, heart disease, stroke, diabetes, asthma, arthritis, Alzheimer's disease, oral disease, the effects of tobacco use and secondhand smoke, and poor lifestyle choices. These diseases and risk factors often are linked, with those suffering from one disease at higher risk for another; and those with risky lifestyles at higher risk as well.

Our collaborations have been successful. Youth tobacco use saw a sharp decline from 40.6 percent in 1999 to 19.0 percent in 2013; thousands of people have registered with NDQuits and are quitting tobacco; and fewer people are dying from heart disease and stroke.

Yet there are challenges to tackle – identifying and helping disparate populations find the help they need to deal with health issues; dealing with a rising prevalence of people who are overweight or obese and those with diabetes; creating sustainable, effective programs with limited funding; and finding the most effective ways to educate people about the consequences of unhealthy lifestyle choices in this age of new communication styles.

To build on our successes and meet our challenges, our programs will continue to use the best science and resources available to prevent, detect and treat diseases and health issues regardless of gender, disability, race, ethnicity, age or socioeconomic status. We will work to change policies and the environment to make the healthy choice the easy choice.

Many of our residents enjoy a healthy life. Some, though, face the challenges of dealing with health problems and chronic disease. The programs of the CCDPP are helping – they are facilitating ways for people to make life changes and effectively deal with chronic disease so they can live healthier. We will continue to help – ensuring fewer medical and lost productivity costs for our state and taxpayers, and most importantly, boosting the health of our citizens.

Terry Dwelle, M.D., M.P.H.T.M.
State Health Officer

Introduction

The risk factors and chronic diseases highlighted in this report are managed by four divisions within the North Dakota Department of Health (NDDoH) – the Division of Cancer Prevention and Control, the Division of Chronic Disease, the Division of Family Health and the Division of Nutrition and Physical Activity. All are part of the NDDoH Community Health Section.

The mission of the **Division of Cancer Prevention and Control** is to increase cancer prevention and awareness by engaging in partnerships, collecting and reporting data, assuring quality data, providing public and professional education, and assuring availability of quality services for screening, treatment, rehabilitation and palliative care (care that relieves the pain, suffering and stress of chronic disease).

The division accomplishes its mission through utilization of evidence-based strategies to carry out the North Dakota Cancer Control Plan, which is designed to decrease the burden of cancer in the state.

The Division of Cancer Prevention and Control programs highlighted in this report include:

- Comprehensive Cancer Control Program
- *Women's Way* (North Dakota Breast and Cervical Cancer Early Detection Program)
- North Dakota Statewide Cancer Registry
- Healthy People 2020

The mission of the **Division of Chronic Disease** is to improve the health and quality of life for North Dakotans who have chronic diseases by promoting healthy behaviors, supporting health care improvement measures, developing community policies and practices, and increasing disease risk awareness.

The division accomplishes its mission by providing grants, training, education and technical assistance to communities and health care providers.

The Division of Chronic Disease programs highlighted in this report include:

- Coordinated Chronic Disease Prevention Program
- Heart Disease and Stroke Prevention Program
- Tobacco Prevention and Control Program

The **Division of Family Health** administers state and federal programs designed to improve the health of North Dakota families.

The division accomplishes its mission by providing funding, technical assistance, training, needs assessments, educational materials and other resources to local public health units, schools and other public and private entities that offer health services in North Dakota communities.

The Division of Family Health program highlighted in this report is the Oral Health Program.

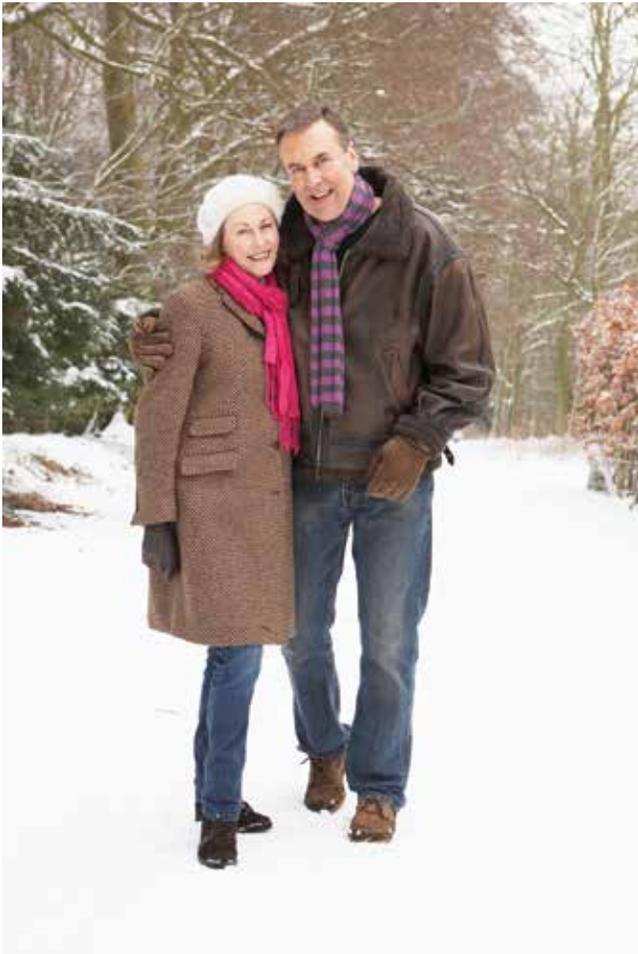
The mission of the **Division of Nutrition and Physical Activity** is to support growth and development, prevent overweight and obesity, and prevent and control diabetes through programs designed to improve healthful eating and physical activity.

The division accomplishes its goals through monitoring the nutrition and health status of North Dakotans; providing education and training; facilitating environmental changes; advocating for nutrition and physical activity issues; promoting partnerships to plan, implement and evaluate community-based interventions; providing technical assistance; and supporting Healthy North Dakota nutrition and physical activity components.

The Division of Nutrition and Physical Activity program highlighted in this report is the Diabetes Prevention and Control Program.

Three diseases that are included in this document, but that have no NDDoH-funded programs in North Dakota, are arthritis, asthma and Alzheimer's disease. Many risk factors for other diseases also are risk factors for arthritis, asthma and Alzheimer's disease. When risk factors are addressed for the other diseases, there is a benefit for these unfunded diseases as well.

This report provides information about what each division and program does for the citizens of North Dakota and presents data about the various diseases and risk factors highlighted. Data presented here is used to guide program activities and to measure progress over time.



NOTE: *Due to changes in the Behavioral Risk Factor Surveillance System (BRFSS) survey sampling methodology (the addition of cell phone-only users and a new method of weighting data), data collected prior to 2011 cannot be compared to data collected in and after 2011.*

Information in this report gathered from the BRFSS will not compare 2011 data to previous years. For comparisons of data prior to 2011, please refer to previous reports.

Executive Summary

This report provides an overview of the prevalence of chronic diseases in North Dakota, the causes of those diseases and the impact they have on people. The report highlights the work being done by the North Dakota Department of Health (NDDoH) chronic disease programs to help people overcome and avoid the health problems associated with chronic diseases.

The NDDoH chronic disease programs have been effective in educating residents about healthier lifestyles and managing diseases and conditions. Even with the successes, the programs are still faced with challenges. Challenges include continued high-budget advertising from tobacco companies, limited funding for prevention of cardiovascular risk factors, rising prevalence of diabetes, increasing numbers of people who are overweight or obese, and increasing medical costs.

The NDDoH programs continue to make progress through collaboration. An example of this is the **Coordinated Chronic Disease Prevention Program**, which allows programs to combine resources and share information to better address chronic disease prevention and health promotion.

Program staff continue their efforts to engage partners, eliminate barriers to quality health care and identify local champions to assist in developing culturally competent strategies. They enable communities and organizations to find solutions to problems, monitor and evaluate the effects of the programs offered, and adjust strategies as needed to provide the most appropriate and effective services.

The **Maternal and Child Health (MCH) Program** works closely with many chronic disease programs within the NDDoH to ensure that women and children are able to address health issues that are specific to them. Development of North Dakota's MCH needs assessment for 2016-2020 is currently underway.

The **Division of Cancer Prevention and Control** increases cancer prevention awareness by engaging in partnerships, collecting and reporting quality data, providing public and professional education, and assuring availability of quality services for screening, treatment, rehabilitation and palliative care (care that relieves the pain, suffering and stress of chronic disease).

Cancer is among the leading causes of death in North Dakota. Many residents feel the impact of cancer, either personally or through loved one. The financial costs of cancer are high for the patient and for society as a whole. North Dakota spent an estimated \$274 million on cancer costs in 2010.

The **Heart Disease and Stroke Prevention Program** works to reduce the burden and eliminate disparities associated with heart disease and stroke. The program partners with health systems to identify and manage patients with hypertension (high blood pressure) and help people reduce risk factors associated with heart disease and stroke.

Nearly three-fourths (70 percent) of North Dakotans with a history of heart attack are 65 and older and 69 percent with a history of stroke are 65 and older. Stroke is the leading admission cause for long-term health care in the state. Risk factors for cardiovascular diseases in North Dakota include poor diet, inadequate physical activity, hypertension, high cholesterol and tobacco use.

The **Diabetes Prevention and Control Program** educates people at high risk for type 2 diabetes about prediabetes by increasing lifestyle intervention programs in community settings and promoting participation in diabetes organizations and educational campaigns.

Diabetes has increased more than 2.5 times in North Dakota over the past 16 years, from 3.1 percent in 1996 to 8.6 percent in 2012. According to the U.S. Centers for Disease Control and Prevention (CDC), 35 percent of the state's population has prediabetes.

The **Division of Nutrition and Physical Activity** supports growth and development of children, prevention of obesity, and healthful eating and physical activity.

In North Dakota, 76.3 percent of adults and 82.8 percent of high school students ate fewer than five servings of fruits and vegetables per day. Fifty-five percent of adults get inadequate aerobic physical activity and 67.6 percent of adults are overweight or obese.

The **Tobacco Prevention and Control Program** helps people quit using tobacco through the successful NDQuits program, as well as other programs, and implements strategies to help disparate populations reduce tobacco use.

Tobacco use causes many diseases and medical problems for adults, including heart disease, stroke, numerous cancers, gum disease and pneumonia. Children are also affected by secondhand smoke and may suffer from increased asthma attacks, ear infections, weaker lungs and sudden infant death syndrome (SIDS).

Adult smoking rates were at 21.2 percent in 2013, with nearly 60 percent of adult smokers reporting they tried to quit. Adults in North Dakota used smokeless tobacco at a rate of 7.6 percent (male smokeless tobacco use equaled 13.8 percent). Students in high school smoked at a rate of 19 percent and used smokeless tobacco at a rate of 13.8 percent in 2013 (male smokeless tobacco use equaled 22 percent).

The **Oral Health Program** works to prevent and reduce oral disease by increasing the awareness of preventive oral health care and fostering partnerships to promote oral health and access to dental care. The program facilitates school-based fluoride varnish and dental sealant programs for high-risk students and provides training for health care professionals in the area of fluoride varnish application, geriatric oral health and caries risk assessment.

Arthritis, Asthma and Alzheimer's Disease are three diseases that affect many North Dakotans. These diseases are not specifically supported by funded programs through the NDDoH, but many of the risk factors involved with these diseases are addressed through the NDDoH chronic disease programs.

Some populations of individuals in North Dakota are more susceptible to certain diseases or risk factors than others. Depending on the disease or risk factor, these disparate populations can include adults older than 65, American Indians, people with lower incomes, males, pregnant women or young adults, among others. All of the chronic disease programs of the NDDoH work to help these populations overcome the disparities that affect them.

Promoting and achieving good health for all North Dakotans is the goal of the chronic disease programs. These programs will continue to build on the progress achieved and promote education, prevention and management of chronic diseases.

Coordinating Chronic Disease Efforts

Coordinated Chronic Disease Prevention Program

The Coordinated Chronic Disease Prevention Program (CCDPP) is an effort by the NDDoH to build capacity for chronic disease prevention and health promotion in a coordinated, collaborative manner to change policies, practices and environments. This will lead to improved quality of life and health outcomes and promote education and management skills for those diagnosed with, or at risk for, chronic diseases.

This comprehensive approach to chronic disease prevention and control will:

- Address the leading causes of death and disability (heart disease and stroke, diabetes, cancer and arthritis)
- Address the major risk factors (poor nutrition, obesity, physical inactivity and tobacco use)
- Take into account health disparities in populations
- Reach the general population, as well as targeted high-risk and priority populations, where members of the communities are found
- Provide greater opportunities for state chronic disease programs and their partners to work together
- Promote collective thinking and problem solving
- Support working together in new ways so that the impact of all programming is improved

The disease programs highlighted in this report are working together to accomplish this coordinated approach. As the NDDoH works towards chronic disease program integration, the following strategies will be used:

- Strategically align chronic disease program resources to increase the effectiveness and efficiency of each program in a partnership without compromising the integrity of the disease program(s)
- Engage state health agency leadership to secure organizational endorsement and broad-based buy-in of program integration efforts
- Crosscut epidemiology and surveillance programs as a foundation on which to build the case for action and to frame problems to be addressed
- Use information technology for effective communication and data management
- Build state and local partnerships that focus on mutual benefits and coordinated approaches to planning, implementing and evaluating integration efforts
- Plan with partners for the implementation of integrated interventions that focus on benefits and results
- Evaluate chronic disease program integration initiatives

Title V Maternal and Child Health

Since its inception in 1935, the Title V Maternal and Child Health (MCH) Block Grant Program has provided a foundation for ensuring the health of the nation's mothers, children and families – including children and youth with special health care needs.

As part of the federal MCH Block Grant Program, states are required to develop a comprehensive statewide needs assessment every five years. This needs assessment requires ongoing analysis of sources of information about MCH status, risk factors, access, capacity and outcomes. A three-tiered performance measure system consisting of outcome measures, performance measures and evidenced-based or informed strategy measures are incorporated into the needs assessment process to guide program planning and development. This enables the state to target services and monitor the effectiveness of interventions that support improvements in the health, safety and well-being of the MCH population.

Development of North Dakota's MCH needs assessment for 2016-2020 is currently underway. Upon completion of the needs assessment process, 10 state priorities will be chosen on the basis of statewide stakeholder input, a thorough review of data and utilization of a prioritization tool.

Fifteen National Performance Measures have been identified to address MCH challenges and guide the selection of state priorities. These performance measures cover six population domains: Women's/Maternal Health, Perinatal/Infant's Health, Child Health, Adolescent Health, Children with Special Health Care Needs, and Cross-cutting or Life Course.

- **Well women care**
- Low risk cesarean deliveries
- Perinatal regionalization
- **Breastfeeding**
- **Safe sleep**
- **Developmental screening**
- **Injury**
- **Physical activity**
- Bullying
- **Adequate insurance coverage**
- **Medical home**
- **Transition**
- **Oral health**
- **Smoking**
- **Adolescent well visit**

The **bolded** National Performance Measures above indicate the close link between MCH and Chronic Disease and represent opportunities for the collaboration and integration of efforts and interventions. Collaboration will expand the reach, efficiency and cost effectiveness of these programs.

The selection of North Dakota's MCH priorities for 2016-2020 will be completed by July 15, 2015. The finalized list can be viewed at www.ndhealth.gov/familyhealth/, under New Publications.

Among women of reproductive age, smoking, insufficient physical activity and poor diet are common modifiable risk behaviors for chronic disease.

Examples of Linkages Between MCH and Chronic Disease

Smoking during and after pregnancy can cause:

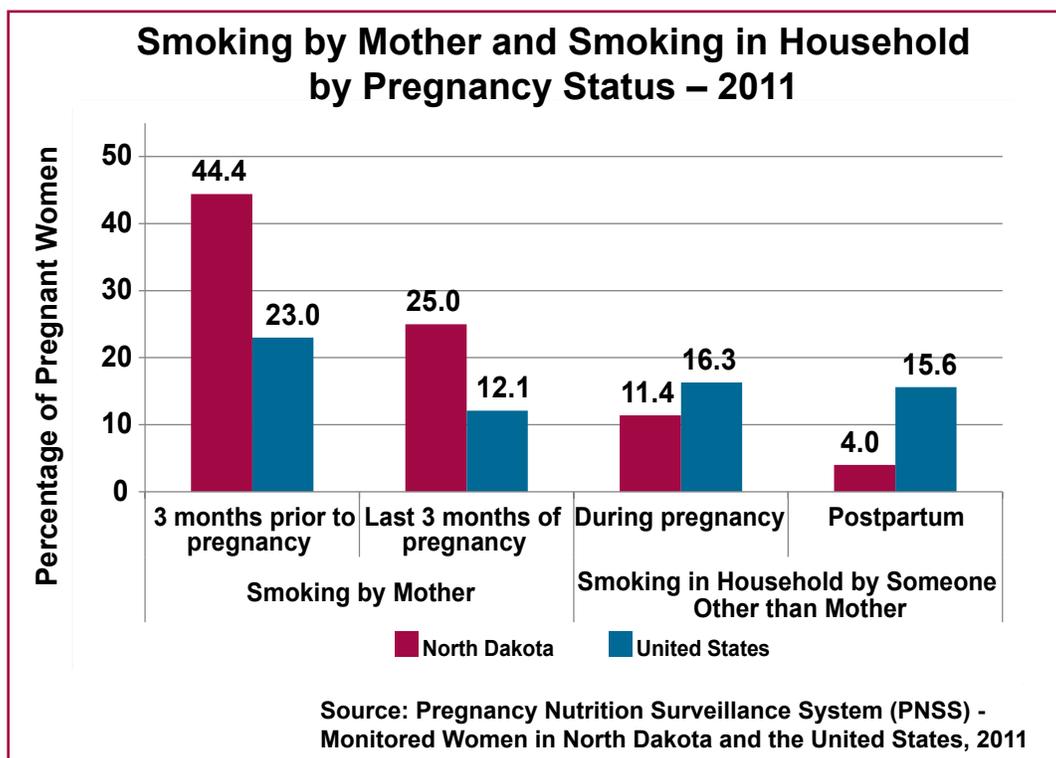
- Premature birth
- Low birth weight – making it more likely the baby will be sick and have to stay in the hospital longer
- Sudden Infant Death Syndrome (SIDS) – SIDS is an infant death for which a cause of death cannot be found
- Birth defects, like a cleft lip or cleft palate

Breastfeeding up to six months of age:

- Is associated with a reduced risk of SIDS
- Reduces a child’s risk of becoming overweight as a teen or adult
- Has been linked to decreased risk of breast and ovarian cancer

Children with special health care needs:

- Have an increased risk for chronic physical, developmental, behavioral or emotional conditions
- Who receive coordinated, ongoing, comprehensive care within a medical home are more likely to receive appropriate preventive care and immunizations, are less likely to be hospitalized for preventable conditions, and are more likely to be diagnosed early for chronic and disabling conditions



Risk Factors and Healthy People 2020

Chronic Disease Risk Factors

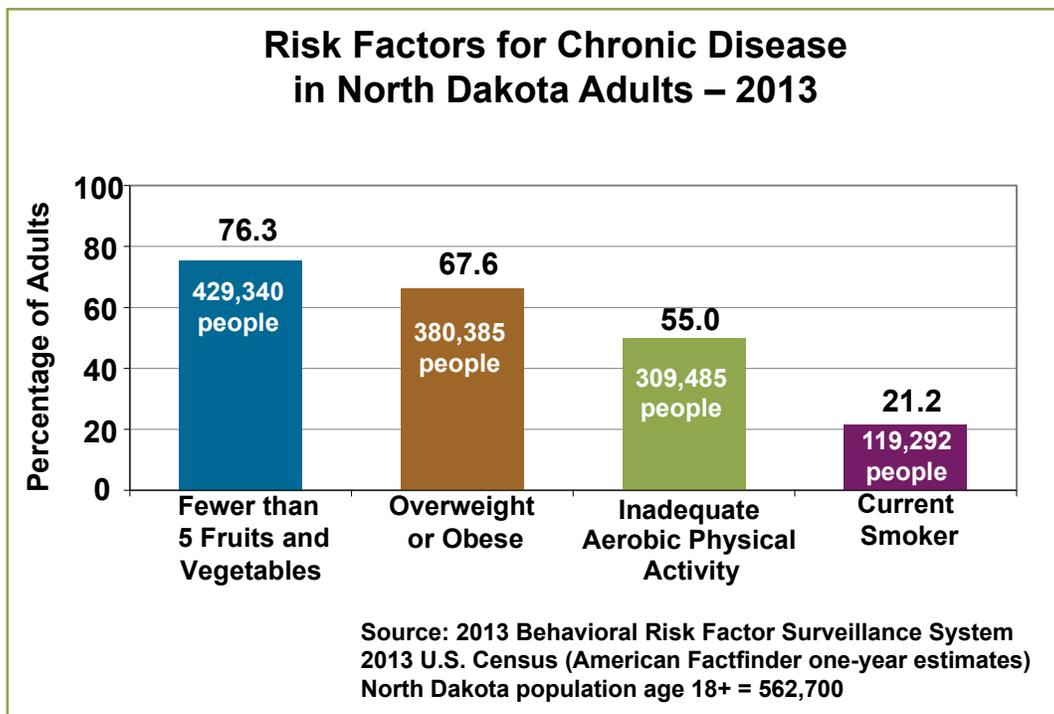
Certain health behaviors and conditions known as risk factors are associated with increased chances of developing chronic disease. “Non-modifiable” risk factors are those that people are not able to change, such as age, gender and heredity/family history.

“Modifiable” risk factors are those factors that people can modify or control through lifestyle changes. These preventable risk factors include poor dietary habits, overweight and obesity, physical inactivity and smoking/tobacco use.

Healthy People 2020

Healthy People 2020 (HP2020) is a set of health objectives that the nation and states are trying to achieve with regard to risk factors and chronic diseases. There are nearly 600 objectives in Healthy People 2020, with more than 1,300 measures. Each Healthy People 2020 objective depends upon a reliable data source for national data and includes a baseline measure and a target for specific improvements to be achieved by the year 2020.

Many programs within the North Dakota Department of Health use Healthy People 2020 to track program-specific indicators and to plan program activities. Trends in modifiable risk factors help assess the health of North Dakotans and areas where improvement is needed.



Nutrition Risk Factors

An unhealthy diet is associated with an increased risk for heart disease and stroke, type 2 diabetes, cancer, oral diseases and obesity.

Fruits and Vegetables

The number of servings of fruits and vegetables a person eats in a day is a measure of dietary habits. Compared with people who consume a diet with fewer fruits and vegetables, those who eat more are likely to have reduced risk of chronic diseases.

The percentage of those who ate fewer than five servings of fruits and vegetables per day:

- Adults = 76.3 percent (2013 BRFSS)
- High school students = 82.8 percent (2013 Youth Risk Behavior Survey [YRBS])

Sugar-Sweetened Beverages

Sugar-sweetened beverages are the largest source of added sugars in the diet of U.S. youth. Consuming these beverages increases the intake of calories, which may contribute to obesity among youth nationwide.

The percentage of high school students who drank sugar-containing beverages one or more times per day during the past seven days:

- 33.6 percent (2013 YRBS)



Breastfeeding

Research indicates that women who breastfeed may have lower rates of certain breast and ovarian cancers. The CDC advocates breastfeeding as a primary strategy to reduce childhood obesity.

The American Academy of Pediatrics (AAP) recommends exclusive breastfeeding for about the first six months of a baby's life, followed by breastfeeding in combination with the introduction of complementary foods until at least 12 months of age, and continuation of breastfeeding for as long as mutually desired by mother and baby.

- In 2013, 79.3 percent of North Dakota mothers reported that they started breastfeeding
 - By six months, 55.4 percent were still breastfeeding
 - By 12 months, 26.5 percent were still breastfeeding

Improving Nutrition and Physical Activity for North Dakotans

In schools:

- Provide a quality school meal program
- Ensure that students have only appealing, healthy food and beverage choices offered outside of the school meal program
- Assure that nutrition education is incorporated into the curricula
- Implement a comprehensive physical activity program with quality physical education as the cornerstone
- Provide a school employee wellness program that includes healthy eating and physical activity services for all school staff members
- Establish a school wellness council that includes community members
- Establish and implement strong wellness policies

In childcare:

- Ensure that regulations and policies promote healthier foods and physical activity in child care settings, including active play both inside and outside, and limits for screen time
- Allow mothers to come to child care centers to breastfeed, or provide their expressed milk for their child

In worksites:

- Make healthier food available in cafeterias, vending machines, meetings and conferences, and establish policies that support those changes
- Support breastfeeding in the workplace by implementing policies supportive of breastfeeding mothers
- Establish policies that support physical activity breaks, walking meetings and flexible scheduling to allow for physical activity during the work day

In health care settings:

- Encourage maternity care practices to support breastfeeding
- Promote and offer healthier food for staff, patients and visitors
- Expand the knowledge and skills of health care providers to conduct nutrition and physical activity screening and counseling to increase healthy eating and active living

In communities:

- Include or expand farm-to-where-you-are (such as farm-to-school) programs
- Support and promote community and home gardens
- Support community changes that encourage more walking and bicycling, and improve access to outdoor recreational facilities
- Work to increase families' access to healthy food on a consistent basis
- Establish a food policy council to make recommendations to community leaders regarding improving food access and quality for community residents



Physical Activity Risk Factors

Physical Activity

Insufficient physical activity is associated with an increased risk for heart disease and stroke, type 2 diabetes, cancer and obesity. In adults, the recommended level of physical activity is at least 150 minutes of moderate-intensity physical activity or 75 minutes of vigorous-intensity physical activity per week, as well as muscle strengthening on two or more days per week. Children and adolescents should engage in at least 60 minutes of moderate- or vigorous-intensity activity each day.

In North Dakota, 45.3 percent of adults get adequate or moderate physical activity, and only 16.4 percent of adults participate in enough aerobic and muscle strengthening exercises to meet guidelines.



Overweight and Obesity Risk Factors

Weight

Adults who are overweight or obese are at increased risk for diabetes, high blood pressure, high cholesterol, coronary heart disease, stroke and other diseases, such as osteoarthritis, sleep apnea, respiratory problems, and endometrial, breast, prostate and colon cancers.

- In North Dakota, 67.6 percent of adults are overweight or obese (2013 BRFSS). Overweight refers to those with a body mass index (BMI) greater than or equal to 25.
- In North Dakota, 31.0 percent of adults are obese (2013 BRFSS). Obese refers to those with a BMI greater than or equal to 30.

The number of obese adults, along with related disease rates and health care costs, is on course to increase dramatically in North Dakota over the next 20 years, according to *F as in Fat: How Obesity Threatens America's Future 2012*, a report by Trust for America's Health (TFAH) and the Robert Wood Johnson Foundation (RWJF).

Projected Increases in Obesity Rates

If obesity rates continue on their current trajectories, the obesity rate in North Dakota could reach 57.1 percent by 2030.

Projected Increases in Disease Rates

Over the next 20 years, obesity could contribute to 79,617 new cases of type 2 diabetes; 190,379 new cases of coronary heart disease and stroke; 170,470 new cases of hypertension; 110,099 new cases of arthritis; and 26,762 new cases of obesity-related cancer in North Dakota.

Reducing Obesity Could Lower Health Care Costs

If body mass indexes (BMIs) were lowered by 5 percent, North Dakota could save 7.2 percent in health care costs, which would equate to savings of \$1,177,000,000 by 2030.



Tobacco Risk Factors

The North Dakota Tobacco Prevention and Control Program improves and protects the health of North Dakotans by reducing the negative health and economic consequences of the state's leading cause of preventable disease and death – tobacco use.

The goal of the program is to reduce disease, disability and death related to tobacco use by:

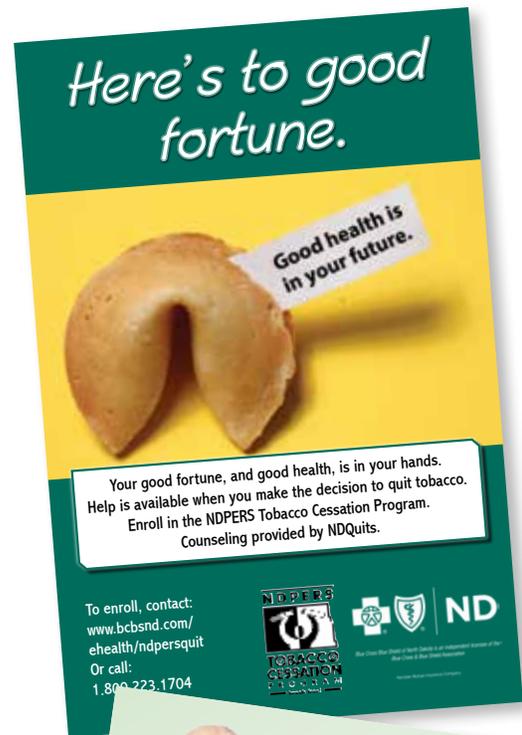
- Preventing initiation among youth and young adults
- Promoting quitting among adults and youth
- Eliminating exposure to secondhand smoke
- Identifying and eliminating tobacco-related disparities among specific population groups

Services provided by the Tobacco Prevention and Control Program include:

- **NDQuits** – This free cessation service can be accessed via telephone, Internet and mobile device.
- **NDPERS Cessation Program** – A tobacco cessation service provided to state employees and their eligible family members who are at least 18 years old. The program is a combination of counseling, a physician's office visit, nicotine replacement therapy and prescription medication.
- **City/County Cessation Programs** – A cessation service provided to city and county employees and their eligible family members. The program is a combination of counseling, nicotine replacement therapy and prescription medication.
- **Baby and Me – Tobacco Free** – A cessation program created to reduce the burden of tobacco use on pregnant woman and new mothers. See more information in the Disparities section of this report.

- **Public Health Service (PHS) Guidelines Initiative** – Technical assistance is provided to North Dakota's health care providers and health care settings to ensure they are following the PHS guidelines put in place by the U.S. Department of Health and Human Services. This program ensures that patients are asked about tobacco use, advised to quit and referred to a state or local cessation program at every health visit. This method is called Ask/Advise/Refer (AAR). The Tobacco Prevention and Control Program trains health care staff about health issues related to tobacco use and offers technical assistance so health care providers can set up their own PHS guidelines system.
- **Tribal tobacco programs** – Four tribal tobacco programs are using Tobacco Prevention and Control Program grant funds to implement their own tobacco prevention and control programs on the reservations.
- **Emerging tobacco products – monitoring and education** – Many new tobacco products are emerging, including electronic cigarettes, hookahs, dissolvable sticks, strips and orbs, and snus, among others. These products are advertised as safe alternatives to smoking, but they still contain nicotine and other chemicals that are not safe. To educate the public and partners about the dangers of these new products, new resources are being developed.

- **Food and Drug Administration Family Smoking Prevention and Tobacco Control Act** – Tobacco Prevention and Control Program staff stay attuned to new phases of the Tobacco Control Act as it evolves, and provide education to local partners, citizens and businesses throughout the state regarding the law.
- **Educational services** – The Tobacco Prevention and Control Program produces fact sheets, brochures, posters and reports about the effects of smoking, tobacco and secondhand smoke.
- **Tobacco surveillance** – Surveys measure adult and youth smoking and tobacco usage rates in North Dakota. Surveys include Behavioral Risk Factor Surveillance System (BRFSS), Adult Tobacco Survey (ATS), Youth Tobacco Survey (YTS), Youth Risk Behavior Survey (YRBS) and North Dakota Secondhand Smoke Study.
- **Million Hearts “S” (Smoking Cessation) Community Action Grant Program** – The Million Hearts “S” Grant program provides funding to the major health care systems in North Dakota to establish “cessation centers.” The cessation centers provide cessation education and counseling by certified staff to patients in the health care system. The centers incorporate Ask/Advise/Refer in the system’s electronic medical records and expand these services systemwide into rural communities.



**ND
QUITS**
www.ndhealth.gov/ndquits
1.800.QUIT.NOW

The Effects of Tobacco

The U.S. Surgeon General has consistently documented the harmful effects that smoking, tobacco use and secondhand smoke can have on the human body.

- 2004 U.S. Surgeon General's Report – *The Health Consequences of Smoking* – “Smoking harms nearly every organ in your body. The toxins from cigarette smoke go everywhere the blood flows.”
- 2006 U.S. Surgeon General's Report – *The Health Consequences of Involuntary Exposure to Tobacco Smoke* – “The scientific evidence is now indisputable: secondhand smoke is not a mere annoyance. It is a serious health hazard that can lead to disease and premature death in children and nonsmoking adults.”
- 2010 U.S. Surgeon General's Report – *How Tobacco Smoke Causes Disease: The Biology and Behavioral Basis for Smoking-Attributable Disease* – “Cigarette smoke contains more than 7,000 chemicals and compounds. Hundreds are toxic and at least 69 cause cancer. Tobacco smoke itself is a known human carcinogen.”
- 2012 U.S. Surgeon General's Report – *Preventing Tobacco Use Among Youth and Young Adults* – “Nearly all tobacco use begins during youth and young adulthood. Each day across the United States, more than 3,800 youth under age 18 smoke their first cigarette.”

Smoking and Smokeless Tobacco Can Cause:

Heart Disease
Stroke
Lung Cancer and Emphysema
Mouth and Throat Cancer
Stomach and Pancreatic Cancer
Kidney and Bladder Cancer
Cervical Cancer
Gum Disease
Cataracts
Pneumonia
Osteoporosis
Reproductive Complications

Exposure to Secondhand Smoke in Infants and Children Can Cause:

Asthma Attacks
Pneumonia
Bronchitis
Ear Infections
Weaker Lungs
SIDS

Exposure to Secondhand Smoke in Adults Can Cause:

Stroke
Heart Disease
Lung Cancer
Asthma Attacks
Nasal Irritation
Low Birthweight Babies

Smokeless tobacco is not a safe alternative to smoking.

The HP2020 goal is to reduce adult smoking rates in North Dakota to 18 percent by 2020.

Adult Tobacco Use Rates

According to the 2013 Behavioral Risk Factor Surveillance System (BRFSS):

- North Dakota adults smoke at a rate of 21.2 percent (119,292 people), the same as the national rate.
- In 2013 in North Dakota, 59.7 percent of adult smokers tried to quit.
- North Dakota adults use smokeless tobacco at a rate of 7.6 percent (42,765 people), which is more than double the national rate of 3.6 percent.
- Males use smokeless tobacco at a rate of 13.8 percent (39,600 people) in North Dakota.

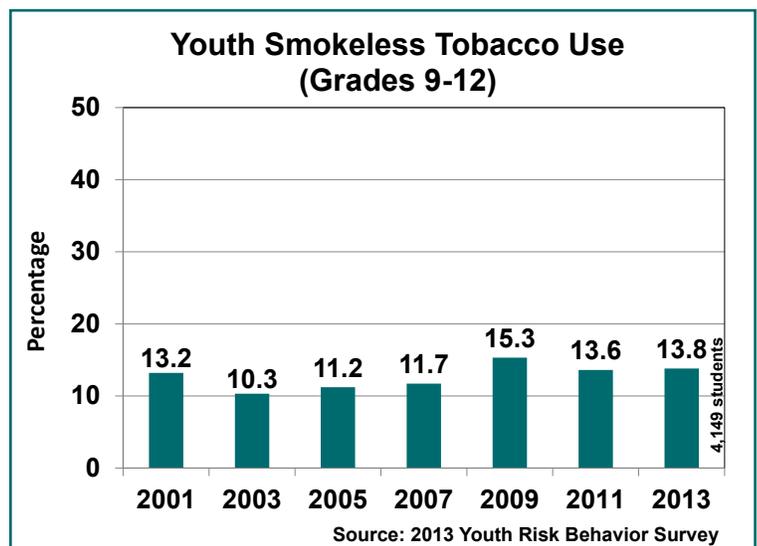
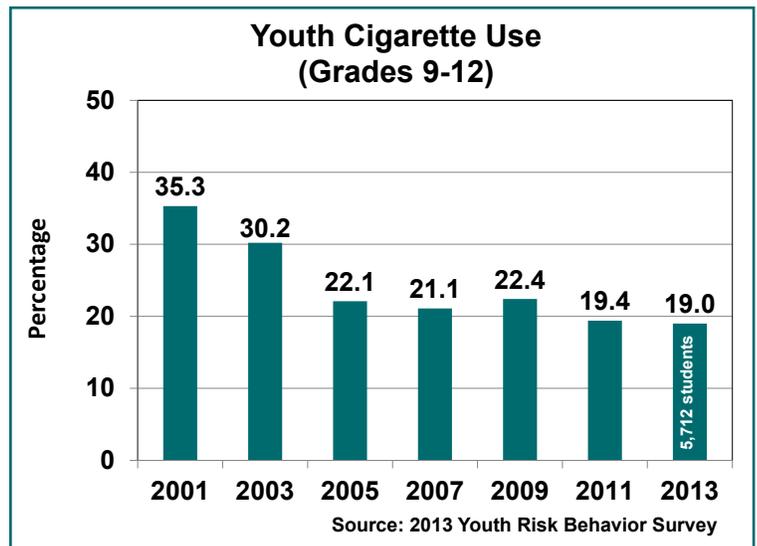
According to the CDC's Smoking Attributable Mortality, Morbidity and Economic Costs report, each year in North Dakota, 877 adults die prematurely from illnesses caused by smoking and about 110 people die from the effects of secondhand smoke.

Due to the change in BRFSS sampling methodology, data from 2011 can no longer be compared to previous years. However, North Dakota adult smoking rates have remained virtually unchanged from 2011 (21.9 percent) to 2013 (21.2 percent).

Youth Tobacco Use Rates

According to the 2013 Youth Risk Behavior Survey (YRBS):

- North Dakota youth in grades nine through 12 smoke at a rate of 19.0 percent.
- North Dakota youth in grades nine through 12 use smokeless tobacco at a rate of 13.8 percent. Males use smokeless tobacco at a rate of 22 percent.
- The rate of current cigarette smoking more than quadruples between the time students are in grades seven and eight (4.2 percent) and the time they are in grades nine through 12 (19.0 percent).



NDQUITS

FREE help for North Dakotans who want to quit tobacco

NDQuits provides free, confidential cessation assistance to any North Dakota resident interested in quitting tobacco. Help is available via telephone, online and mobile options. For more information, smokers, smokeless tobacco users, family members of tobacco users and health care professionals can visit www.ndhealth.gov/ndquits or call 1.800.QUIT.NOW (1.800.784.8669).

NDQuits, formerly know as the North Dakota Tobacco Quitline, was launched in September 2004. Online services became available in February 2010. Mobile service was added in 2012.

NDQuits users receive:

- A FREE two-month supply of nicotine patches, gum or lozenges to help with the quitting process (for eligible enrollees)
- Access to professional quit coaches
- Assistance in designing a quit plan
- Online support from other quitters 24 hours a day, seven days a week, every day of the year
- QuitTips e-mail messages that offer tips about staying quit
- Online apps that calculate how many days you've extended your life or how much money you've saved

During 2014, 3,317 users registered with NDQuits services, for an average of 276 users each month. Of these users, 2,644 used one or more services, received a text message or received nicotine replacement therapy from NDQuits.

NDQuits = Success

Six months after enrollment, 31.3 percent of former tobacco users who used phone services and 27.5 percent of those who used web services were not using tobacco.

**ND
QUITS**
www.ndhealth.gov/ndquits
1.800.QUIT.NOW

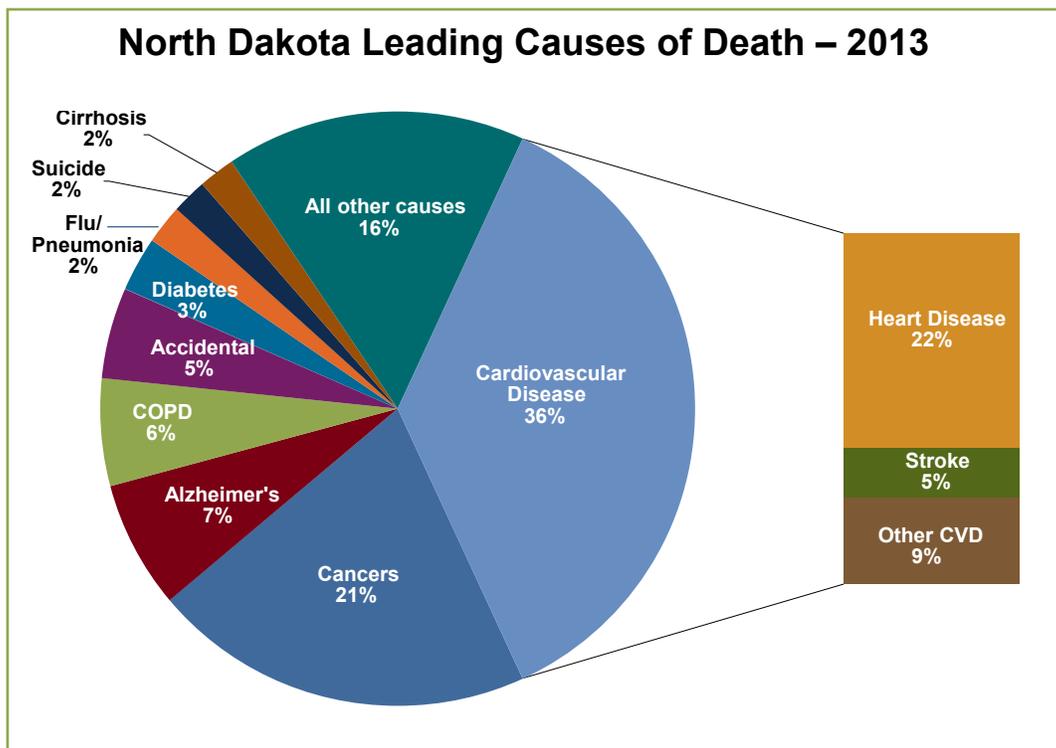


Diseases

Chronic diseases in North Dakota are affected greatly by the risk factors that have been highlighted (poor nutrition, overweight/obesity, lack of physical activity and tobacco use). Information about diseases that are caused/affected by the risk factors are detailed on the following pages. Information also is provided about the North Dakota programs that are working to help reduce and eliminate these diseases.

Diseases highlighted include:

- Cancers
- Heart disease and stroke
- Diabetes
- Oral disease
- Arthritis
- Asthma
- Alzheimer's disease



The leading causes of death in North Dakota in 2013 were cardiovascular diseases (CVD) and cancers.

Cancer

The North Dakota Division of Cancer Prevention and Control increases cancer prevention and awareness by engaging in partnerships, collecting and reporting data and assuring quality data. The Division provides public and professional education, and seeks to improve availability of quality services for screening, treatment, rehabilitation and palliative care (care that relieves the pain, suffering and stress of chronic disease).

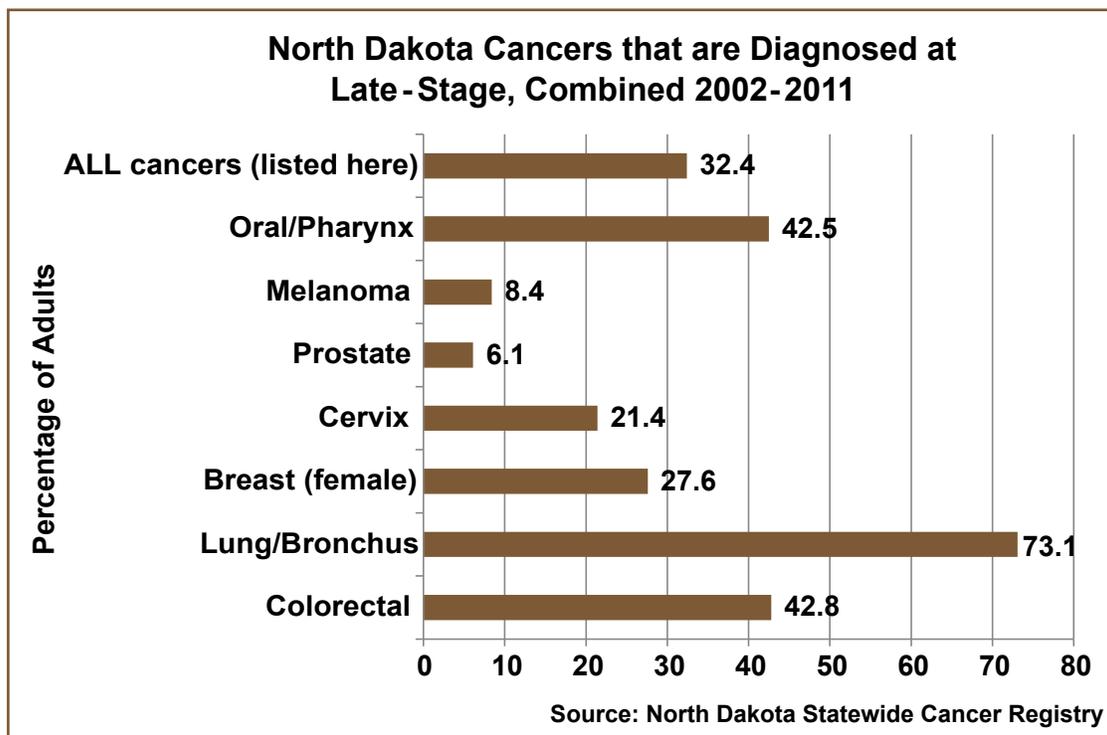
What is Cancer?

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other tissues. Cancer cells can spread to other parts of the body through the blood and lymph systems.

There are more than 100 different types of cancer. Most cancers are named for the organ or type of cell in which they start – for example, cancer that begins in the colon is called colon cancer; cancer that begins in basal cells of the skin is called basal cell carcinoma.

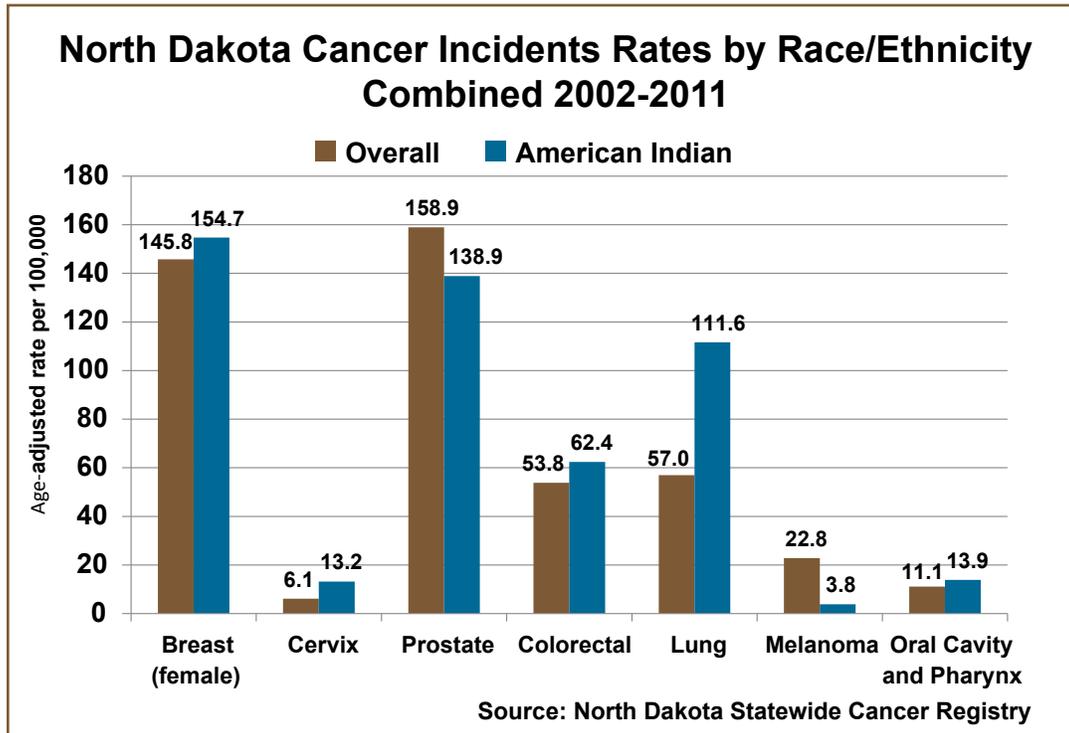
Diagnosis of Cancer in North Dakota

Cancer is among the leading causes of death in North Dakota. In 2013, 1,244 North Dakota residents died from cancer.



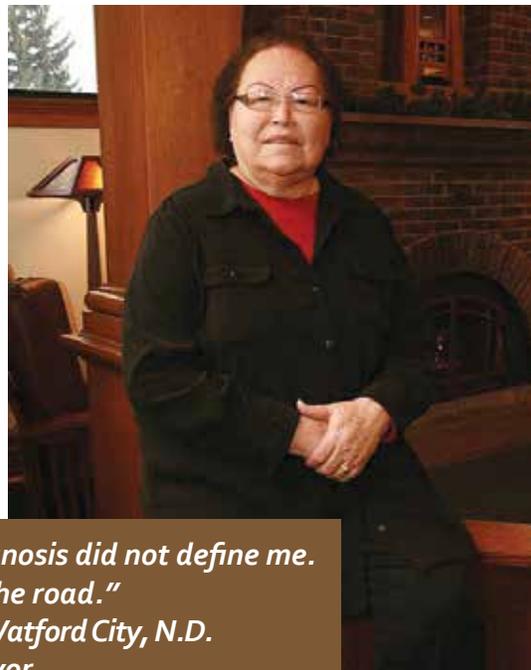
Cancer's Impact on Disparate Populations

American Indians generally have a higher incidence of cancer than whites. Refer to the Disparities section of this report to find out what efforts are being made to change this disparity.



North Dakota Cancer Survivors

As of 2014, there were an estimated 35,200 cancer survivors living in North Dakota. Improvements in the early detection and treatment of cancer have resulted in more people living longer after being diagnosed with the disease. A cancer diagnosis remains a life-changing event for individuals and their family members, friends and caregivers. People who have been diagnosed with cancer are faced with a host of short- and long-term issues affecting their quality of life.



*"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*

Economic Costs of Cancer

The financial costs of cancer are high for both the person with cancer and for society as a whole. One of the major costs of cancer is treatment. Lack of health insurance and other barriers prevent many Americans from getting good, basic cancer treatment. According to the American Cancer Society's Cancer Facts & Figures 2012, "Uninsured patients and those from ethnic minorities are substantially more likely to be diagnosed with cancer at a later stage, when treatment can be more extensive and more costly." This leads not only to higher medical costs, but also poorer outcomes and higher cancer death rates.

Cancer is the leading cause of death for people ages 20 to 65, the prime working ages. Not surprisingly, medical expenditures for people with cancer are high on an individual and aggregate basis. Employers bear additional costs through lost productivity, short- and long-term disability and life insurance. It makes financial sense for employers to invest in prevention and early detection benefits for their employees.

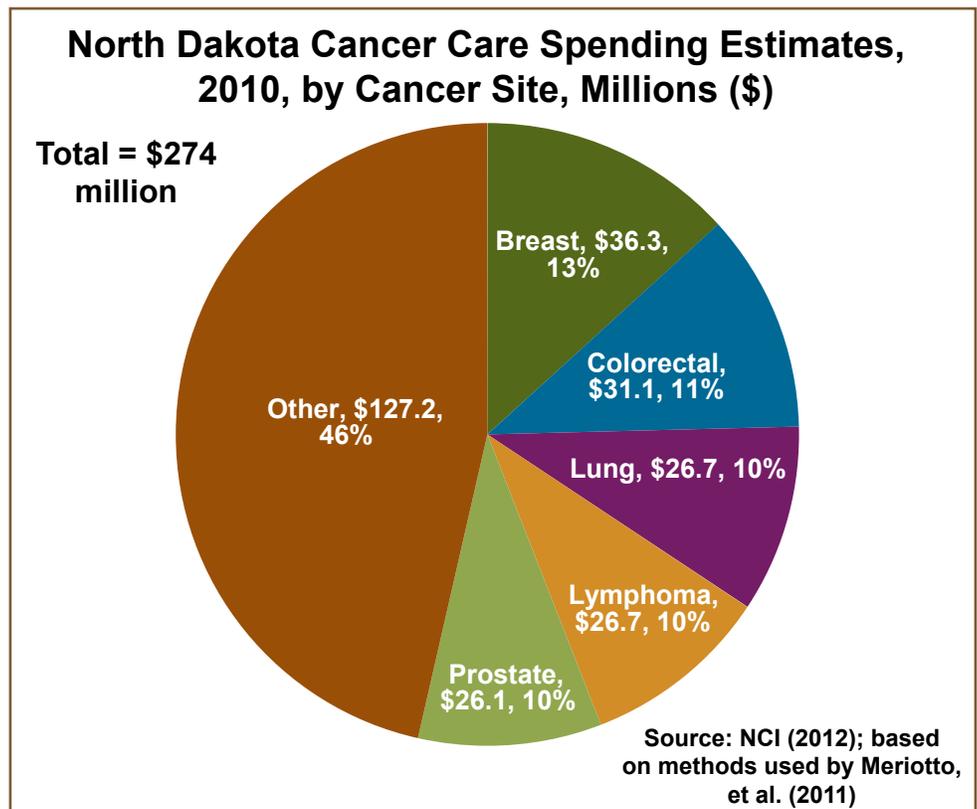
Cancer not only has high financial costs, it also costs us the people we love. Reducing barriers to cancer care is critical in the fight to reduce or eliminate suffering and death due to cancer.

Risk Factors for Cancer

Doctors often cannot explain why one person develops cancer and another does not. Research shows that certain risk factors increase the chance that a person will develop cancer. The most common risk factors for cancer include:

- Growing older
- Tobacco use
- Ultraviolet exposure (both from sunlight and indoor tanning beds)
- Some viruses (Hepatitis B and Human Papillomavirus [HPV])
- Family history of cancer
- Alcohol abuse
- Poor diet, lack of physical activity or being overweight

Many of these risk factors can be avoided. Others, such as family history, cannot be avoided. The NDDoH encourages early screening and behavioral changes to reduce risks factors.



Working to Reduce the Burden

Programs provided by the Division of Cancer Prevention and Control include:

- **Comprehensive Cancer Control Program** works with the North Dakota Cancer Coalition to reduce the incidence and impact of cancer for all North Dakotans using the North Dakota Cancer Control Plan as a guide. Areas addressed include preventing cancer (by implementing strategies that encourage healthy behaviors), increasing cancer screening, addressing needs for access to cancer treatment and improving quality of life for cancer survivors.



- **Women's Way** (North Dakota Breast and Cervical Cancer Early Detection Program) provides breast and cervical cancer screening services to North Dakota program-eligible women. The program supports collaborations with community-based organizations, including health care providers and public health, to increase public and health care provider education and access to care and screening services. Since the program's inception in 1997, 13,680 women have been screened, 275 women have been diagnosed with breast cancer, and 329 women have been diagnosed with cervical dysplasias and cancer.
Women's Way Treatment Program – In 2001, the North Dakota legislature passed legislation allowing uninsured *Women's Way* clients who are diagnosed with breast or cervical cancer to access treatment coverage through Medicaid. Since its inception, 299 women have been served by this treatment program.



- **North Dakota Statewide Cancer Registry (NDSCR)** – The NDSCR is a collaborative partnership between the NDDoH and the University of North Dakota (UND). Data provided by NDSCR is used to guide decisions for the NDDoH cancer programs. NDSCR is housed within the Department of Pathology in the School of Medicine and Health Sciences at UND. The purpose of the NDSCR, established in 1997, is to collect cancer incidence, survival and mortality data.

Take Action Against Cancer

- *Know your risk factors*
- *Reduce the risks you can control*
- *Get tested for the screenable cancers (breast, colorectal, cervical and skin)*

Heart Disease and Stroke

The North Dakota Heart Disease and Stroke Prevention Program provides public health leadership to improve cardiovascular health, reduce the burden and eliminate disparities associated with heart disease and stroke. It seeks to improve cardiovascular health of North Dakotans by facilitating partnerships and coordination among concerned parties, monitoring critical aspects of cardiovascular disease (CVD) and developing effective strategies to reduce CVD and related risk factors. The overarching statewide emphasis is on education, and environmental and systems change.

The goal of the program is to reduce disease, disability and death related to heart disease, stroke and related risk factors by:

- Increasing public awareness of the preventability of heart disease and stroke risk factors
- Preventing risk factors for heart disease and stroke
- Increasing detection and treatment of risk factors
- Increasing early detection and treatment of heart disease and stroke
- Increasing awareness of the signs and symptoms for heart attacks and strokes and the urgency to seek immediate medical care by calling 9-1-1
- Decreasing recurrences of heart attacks and strokes
- Identifying and eliminating cardiovascular-related disparities among specific population groups

Core functions of the Heart Disease and Stroke Prevention Program are:

- **Programs** – Funding, technical support and resources are provided to local health systems, local public health departments, tribes, communities, work places and other partners to increase their capacity to eliminate health disparities and prevent heart disease and stroke throughout the lifespan.
- **Partnerships** – Partnerships are formed with government agencies and public and private organizations to allow for maximization of resources in promoting heart-healthy communities.
- **Resources** – Educational materials, fact sheets, brochures and posters about heart disease, stroke, related risk factors and signs and symptoms of heart attack and stroke, and the need to take immediate action, are produced and disseminated.
- **Surveillance** – Trends in cardiovascular risk factors and diseases are tracked. Differences in their distribution by age, gender, race/ethnicity, socioeconomic status and geographic location are documented. Data patterns are analyzed to identify groups of people most at risk of cardiovascular disease and those findings are shared with partners.
- **Evaluation** – Programs, policies and interventions are evaluated regularly to ensure they are working as planned and producing the intended results.

What is Cardiovascular Disease?

Cardiovascular disease (CVD) is any abnormal condition of the heart or blood vessels.

CVD includes coronary heart disease, stroke, congestive heart failure, peripheral vascular disease, congenital heart disease, endocarditis and many other conditions.

- **Atherosclerosis** is a complex process of thickening and narrowing of the arterial walls caused by the accumulation of lipids, primarily cholesterol, in the inner layer of an artery. With the addition of other debris and connective tissue, blood flow is restricted and can lead to a heart attack or a stroke.
- **Congenital Heart Defects (CHD)** are defects in the structure of the heart and great vessels which are present at birth. Many types of heart defects exist, most of which either obstruct blood flow in the heart or vessels near it, or cause blood to flow through the heart in an abnormal pattern. Other defects affect the heart's rhythm. Heart defects are among the most common birth defects and are the leading cause of birth defect-related deaths.
- **Congestive Heart Failure (CHF)** is the inability of the heart to deliver an adequate blood flow due to heart disease or hypertension. CHF is associated with breathlessness, salt and water retention, and edema.
- **Coronary Heart Disease** is the most common form of heart disease, and involves a reduction in the blood supply to the heart muscle by narrowing or blockage of the coronary arteries. It is often characterized by chest pain (angina pectoris), heart attack (myocardial infarction) and atherosclerosis in the coronary arteries.
- **Endocarditis** is an inflammation of the inner layer of the heart, the endocardium. It usually involves the heart valves.
- **Heart Attack** refers to death of, or death to, part of the heart muscle (myocardium) due to an insufficient blood supply, caused by blockage of one or more of the coronary arteries (infarction).
- **Heart Disease** refers to any disease or condition of the heart, including coronary heart disease, heart failure, hypertensive heart disease, congenital heart disease, disorders of the heart valves, infections of the heart, cardiomyopathy, conduction disorders and rhythm disorders.
- **Peripheral Arterial Disease (PAD)** is a condition that causes poor circulation in the legs. PAD affects millions of people in the U.S., most of whom are not aware that they have the disease. Left untreated, PAD increases the risk of heart attack, stroke, amputation or death. PAD is characterized by pain, aching or fatigue in the leg muscles.
- **Stroke (brain attack)** refers to loss of muscle function, vision, sensation or speech resulting from brain cell damage caused by either an insufficient supply of blood to part of the brain (often due to blockage or narrowing of the arteries supplying blood to the brain), or a hemorrhage. The hemorrhage may involve bleeding into the brain itself or the space around the brain.



Prevalence of Cardiovascular Disease in North Dakota

In 2013, the prevalence of cardiovascular disease among North Dakota adults ages 18 and older was 7.7 percent. Cardiovascular disease prevalence reflects the percentage of adults who responded yes to at least one of three questions in the Behavioral Risk Factor Surveillance Survey (BRFSS) regarding a history of heart attack, angina or coronary heart disease, or stroke.

Sixty-nine percent of North Dakotans with a history of stroke are 65 and older (2013), with stroke being the leading admission cause for long term health care. Nearly three-fourths (70.0 percent) of North Dakotans with a history of heart attack are 65 and older.

Economic Costs of Cardiovascular Disease

- According to the American Heart Association, cardiovascular diseases cost North Dakota \$1.1 billion in 2010. This includes the cost of health expenditures (physicians and other professionals, hospital and nursing home services, medications, home health care and other medical items) and lost productivity.
- In 2008, North Dakota Medicare (ages 65 and older) charges reached \$167 million for heart disease and stroke hospital discharges, equaling more than \$22,000 per hospitalization.
- As the state's population ages, the economic impact of cardiovascular diseases on North Dakota's health care system will likely become even greater.

Risk Factors for Cardiovascular Disease

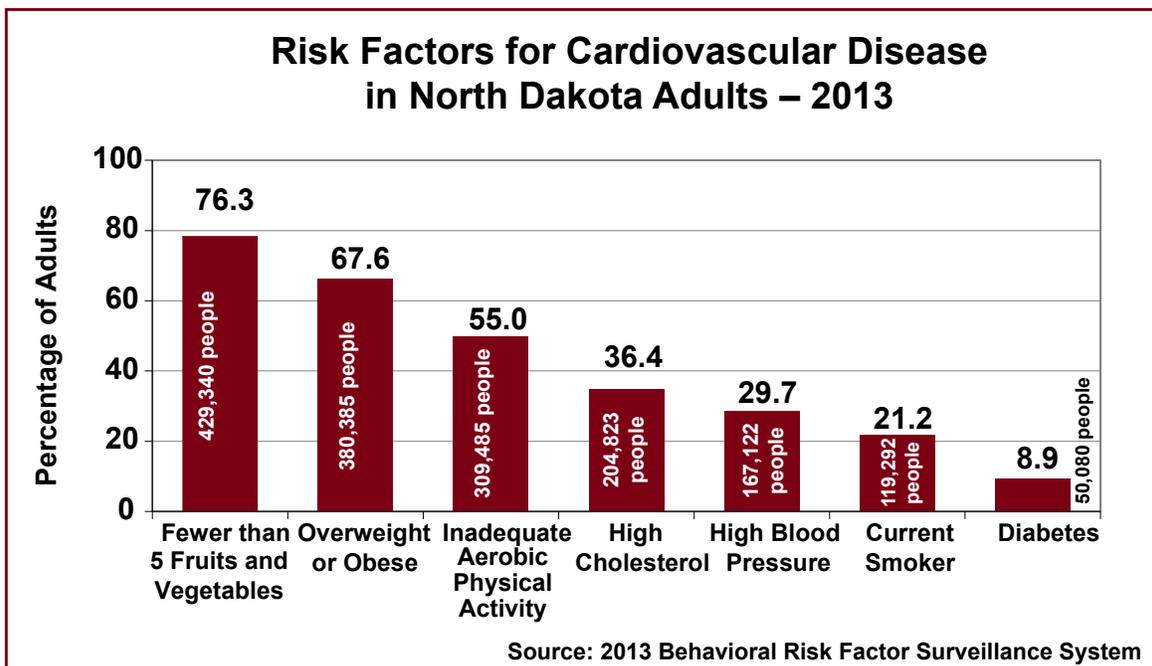
More than 96 percent of North Dakotans report having at least one major risk factor or related condition (according to the 2013 BRFSS) for cardiovascular disease. In addition, more than half of adults in North Dakota (56 percent) are living with three or more of the seven primary risk factors for cardiovascular disease.

The presence of more than one risk factor can speed up the progression of heart disease and the more risk factors a person has, the higher his or her chance of having a major heart event such as a heart attack or stroke.

Risk factors affecting the development of cardiovascular disease:

- **High blood pressure** is a major risk factor for both heart disease and stroke. Currently, about one out of every four adults in North Dakota has been told by a health care professional that they have high blood pressure. Normal blood pressure is less than 120 mm Hg systolic and less than 80 mm Hg diastolic.
- **High blood cholesterol** contributes to atherosclerosis (hardening of the arteries), the gradual buildup of fatty deposits in the arteries that may lead to heart attack and stroke. One in three North Dakota adults has been told by a health professional that they have high cholesterol.

- **Diabetes** seriously increases the risk of developing cardiovascular disease. The percentage of people with diabetes in North Dakota nearly doubled from 1998, when 4.2 percent of the adult population reported being diagnosed with diabetes, until 2010, when 7.4 percent reported this diagnosis. The current rate stands at 8.9 percent, according to the 2013 BRFSS.
- **Tobacco Use** – Cigarette smoking is the biggest risk factor for sudden cardiac arrest. Research shows that people who quit smoking before age 50 have half the risk of dying in the next 15 years compared to those who continue to smoke.
- **Obesity and Overweight** – North Dakota has seen the rates for obesity more than double between 1990 (12 percent) to 2009 (28 percent). The rate of obesity combined with the rate of people who are overweight was 67.6 percent in 2013.
- **Physical Inactivity** – In North Dakota, 55 percent of adults do not participate in enough aerobic exercise to meet the physical activity guidelines.
- **Inadequate Fruits and Vegetables** – Compared with people who consume a diet with only small amounts of fruits and vegetables, those who eat more generous amounts as part of a healthful diet are likely to have reduced risk of chronic diseases, including stroke and other cardiovascular diseases.



Signs and Symptoms of Heart Attack and Stroke

Education efforts to increase public recognition of heart attack and stroke warning signs are important. Prompt treatment greatly increases survival rates for heart attack or stroke.

Most heart attack deaths happen within the first two hours after symptoms begin. Recognizing and responding promptly to heart attack symptoms and receiving the appropriate artery opening treatment within one hour of symptom onset can prevent or limit heart damage.

Substantial advances have been made in the diagnosis and treatment of ischemic stroke during the 1990s. However, nearly half of all stroke deaths occur before patients are transported to hospitals. Knowledge of stroke symptoms can reduce delays in arriving at an emergency department and save lives.

Know the Warning Signs of Stroke

Stroke is highly treatable in the first 3 to 4½ hours. Every second counts. Every minute matters.

If you suspect a stroke, think F-A-S-T.

F is for Facial Weakness.

A is for Arm and Leg Weakness.

S is for Speech Problems.

T is for Time. Call 9-1-1 immediately!

Know the Warning Signs of a Heart Attack

- **Chest discomfort** – Most heart attacks involve discomfort in the center of the chest that lasts more than a few minutes, or that goes away and comes back. It can feel like uncomfortable pressure, squeezing, fullness or pain.
- **Discomfort in other areas of the upper body** – Symptoms can include pain or discomfort in one or both arms, the back, neck, jaw or stomach.
- **Shortness of breath** – This feeling often comes along with chest discomfort, but it can occur before the chest discomfort.
- **Other signs** – These may include breaking out in a cold sweat, nausea or lightheadedness.

Working to Reduce the Burden

Services provided by the Heart Disease and Stroke Prevention Program include:

- **Administration and Management of the National Heart Disease & Stroke Prevention Grant from the CDC**
- **Heart Disease and Stroke Prevention Program** – Maintains and manages the infrastructure for a state-level program; provides leadership in cardiovascular health promotion and cardiovascular disease prevention and control
- **MediQHome** – Collaborates with other state programs and private partners to implement a large-scale primary care intervention to address the detection, treatment and management of cardiovascular risk factors such as high blood pressure, high blood cholesterol and diabetes
- **Million Hearts™ Community Grant Program** – Provides funding to local communities to address hypertension and reduce sodium intake within a variety of settings through policy, systems and environmental supports
- **Technical support and resources** – Disseminates information to grantees, local agencies and organizations, partners and the general public relating to heart disease, stroke, related risk factors and signs and symptoms of heart disease, heart attack and stroke

Services provided by the Cardiac and Stroke Systems programs in the NDDoH Division of Emergency Medical Services and Trauma include:

- **North Dakota Stroke System of Care**
 - Provides grants to local hospitals to improve acute stroke care through adherence to evidence-based guidelines, quality improvement activities, training, technical assistance and community education/awareness
 - Designates hospitals as Primary Stroke Centers
 - Implements a statewide health communication program to increase the awareness of the signs and symptoms of stroke and urgency to seek immediate medical care by calling 9-1-1
 - Provides training and technical assistance to local hospitals, health care providers and pre-hospital personnel on acute stroke care
- **System of Care Task Force**
 - Facilitates the sharing of best and promising practices to reduce duplication, identify gaps and advocate for positive environmental and systems change; provides leadership for the development of a statewide stroke system of care; and serves on the task force as the state health officer designee
 - Works closely with the STEMI (ST-Elevation Myocardial Infarction) project (ND Mission: Lifeline) to assure coordination of system implementation and pre-hospital/hospital personnel training

Diabetes Prevention and Control Program

Starting July 1, 2013, the U.S. Centers for Disease Control and Prevention (CDC) consolidated diabetes funding into a grant that focuses on integrated activities for heart disease and stroke, diabetes, obesity and school health. The current focus areas for the North Dakota Diabetes Prevention and Control Program are:

- Promote awareness of prediabetes among people at high risk for type 2 diabetes
- Increase use of lifestyle intervention programs in community settings for primary prevention of type 2 diabetes
- Promote participation in American Diabetes Association (ADA)-recognized, American Association of Diabetes Educators (AADE)-accredited, state accredited/certified, and/or Stanford-licensed Diabetes Self-Management Education (DSME) programs
- Increase use of DSME programs in community settings

What is Diabetes?

Insulin is needed to move sugar from our blood to our cells. People with diabetes either do not produce insulin or their bodies cannot effectively use insulin. In both cases, sugar builds up in the blood and if not managed, can cause major complications that can greatly reduce the quality of life.

What is Prediabetes?

Prediabetes is a condition where a person's blood sugar level is higher than normal, but not high enough to be diagnosed as type 2 diabetes. Losing weight by eating healthy and being more active can cut the risk of getting type 2 diabetes in half. Without weight loss and moderate physical activity, 15 to 30 percent of people with prediabetes will develop type 2 diabetes within five years.

Economic Costs of Diabetes

Diabetes is an expensive disease. According to the CDC, in 2012, diabetes cost the nation \$245 billion dollars in direct medical costs (\$176 billion) and reduced productivity (\$69 billion). This is an 87 percent increase since 2002. This amount does not account for those who have not been diagnosed with type 2 diabetes, or the 35 percent who have prediabetes and may soon have diabetes if changes are not made.

In 2007, diabetes cost North Dakota more than \$400 million dollars. If North Dakota follows the national trend, in 2012 diabetes could cost North Dakota \$560 million (\$403 million for direct costs and \$157 million for indirect costs). Not only does diabetes affect North Dakota's pocketbook, it also affects the quality of life for those living with diabetes, their families and friends and their employers.

Diabetes and Our Children

According to former Surgeon General Richard H. Carmona, “Today pediatricians are diagnosing an increasing number of children with type 2 diabetes – which used to be known as adult-onset diabetes. Research indicates that one-third of all children born in 2000 will develop type 2 diabetes during their lifetime. Tragically, people with type 2 diabetes are at increased risk of developing heart disease, stroke, kidney disease and blindness. These complications are likely to appear much earlier in life for those who develop type 2 diabetes in childhood or adolescence. Because of the increasing rates of obesity, unhealthy eating habits, and physical inactivity, we may see the first generation that will be less healthy and have a shorter life expectancy than their parents.”



National Security

A growing prevalence of diabetes and obesity in young adults has caused concerns for national security. According to a group of senior military leaders, currently one in three recruits are turned away because they are “too fat to fight.” The obesity and diabetes trends directly affect the military in terms of recruitment, retention and military readiness. Diabetes of any type is cause for rejection into military service, in accordance with a Department of Defense directive (DoD instruction no. 6130.3, Physical Standards for Appointment, Enlistment, and Induction, 2 May 1994). Members of the military who develop diabetes during active duty are referred for possible medical discharge or retirement.

Workforce Capacity

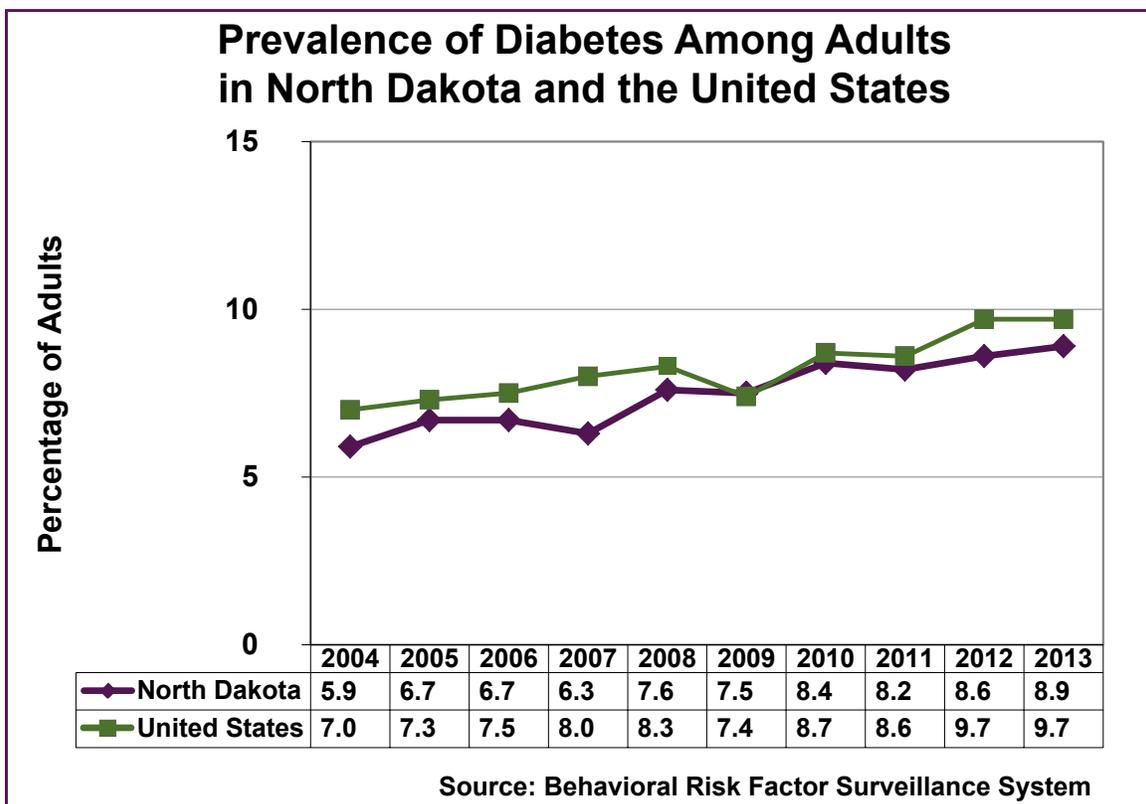
Diabetes can and does affect the workforce. For example, people diagnosed with type 2 diabetes have more stringent requirements to obtain commercial driver’s licenses (CDL) than those who do not have diabetes, making them less likely to obtain jobs requiring a CDL. In addition, those with type 2 diabetes may be at increased risk for heart disease and stroke, which would affect their employers and coworkers.

People with type 2 diabetes have higher rates of absenteeism (number of workdays missed due to poor health) and presenteeism (reduced productivity while at work). By decreasing diabetes prevalence, North Dakota can improve the health of our workforce and increase worker productivity and quality of life.

Diabetes Burden in North Dakota

Diabetes is a major health problem in North Dakota, affecting all population groups. The prevalence of diagnosed diabetes among adults (18 and older) in North Dakota has increased more than 2.5 times over the past 16 years, from 3.1 percent in 1996 to 8.6 percent in 2012.

In 2012, an estimated 45,232 adults in North Dakota were living with diagnosed diabetes, and an additional 13,149 adults had undiagnosed diabetes. According to CDC, 35 percent of the population has prediabetes, which translates to more than 184,000 North Dakotans.



The North Dakota Oral Health Program improves the oral health, along with the overall health, of North Dakotans through prevention and education. The program works in conjunction with other NDDoH programs, external partners, grantors, individuals and organizations to accomplish its goals.

This goal of the program is to prevent and reduce oral diseases by:

- Promoting the use of innovative and cost-effective approaches to oral health promotion and disease prevention
- Fostering community and statewide partnerships to promote oral health and improve access to dental care
- Increasing awareness of the importance of preventive oral health care
- Identifying and reducing oral health disparities among specific population groups
- Facilitating the transfer of new research into practice



It's **All Connected!**

Oral Health Mirrors Overall Health

Good oral health is a part of overall health. Oral diseases such as tooth decay and periodontitis (gum disease) affect North Dakotans of all backgrounds. These diseases are associated with many serious chronic health problems, including diabetes, heart disease, strokes and premature or low-birthweight infants. Changes in the mouth often are the first signs of problems elsewhere in the body, such as infectious diseases, immune disorders, nutritional deficiencies and cancer. Oral health influences a person's physical, mental and social health.

Working to Reduce the Burden

Services provided by the Oral Health Program include:

- **Seal! ND Dental Sealant Program** – NDDoH public health hygienists visit qualifying schools to perform dental screenings, apply dental sealants and fluoride varnish to children's teeth as needed in pre-kindergarten through sixth grade in an effort to prevent cavities in molars.
- **Varnish! ND - It's All Connected** – Free online training through Smiles for Life provides the necessary education and training for health care professionals who desire to apply fluoride varnish. Smiles for Life offers eight training and education modules. Health care professionals must complete Module 6 (Fluoride Varnish) in order for their staff and facility to provide and apply fluoride varnish through the program.
- **Education** – The Oral Health Program educates people about the reasons for good oral health, the importance of brushing and flossing, and the connection between oral health and overall health.



The NDDOH does not have a specifically-funded program to address arthritis. Arthritis risk factors are addressed by other NDDoH programs through the Coordinated Chronic Disease Prevention Program. North Dakota also partners with the Arthritis Foundation, Upper Midwest Region, to provide arthritis education.

What is Arthritis?

Arthritis means joint inflammation, but the term is often used to refer to any of the more than 100 diseases that affect the joints – where two or more bones meet to allow movement. The most common types of arthritis are:

- **Osteoarthritis (OA)** – a condition in which the joint cartilage – the tough, smooth shock-absorbing tissue that covers the ends of the bones where they meet – breaks down, causing pain and stiffness. Osteoarthritis pain, stiffness or inflammation most frequently appears in the hips, knees and hands.
- **Rheumatoid arthritis (RA)** – a condition in which the body’s immune system attacks the thin membrane (synovium) that lines the joints, causing pain, swelling, inflammation, redness, heat and, if not alleviated, joint destruction. Rheumatoid arthritis commonly affects the hands and wrists, but can also affect areas of the body other than the joints.

Arthritis can affect people differently. It is common in adults 65 and older, but it can affect people of all ages, races and ethnic groups. In fact, one out of every five adults in the United States – more than 50 million people – has reported being diagnosed with some form of arthritis.

The Connection With Other Diseases

- **Arthritis and Heart Disease** – Arthritis and heart diseases often occur simultaneously. A recent study found that nearly one in four adults with arthritis (24 percent) also had heart disease. Maintaining a healthy lifestyle is important for people with arthritis and heart disease. In particular, physical activity is recommended for people with both diseases. Being overweight and obese are major risk factors for hip and knee osteoarthritis and heart disease.
- **Arthritis and Diabetes** – Arthritis and diabetes are not directly related, but the diseases often overlap. Recent reports from the CDC found that 16 percent (7.3 million) of people with diabetes also have arthritis. Type 1 diabetes is an autoimmune disease, as is RA. In people with type 1 diabetes, the body’s immune system attacks the pancreas, the organ where insulin is made, much in the same way it attacks the synovial lining of the joints in RA. OA and type 2 diabetes are likely to occur together by coincidence. The two diseases share at least two major risk factors: age and weight.

Why is Arthritis a Public Health Problem?

- **High prevalence** – An estimated 52.5 million U.S. adults (about one in five) report having doctor-diagnosed arthritis. As the U.S. population ages, the number of adults with arthritis is expected to increase sharply to 67 million by 2030.
- **High lifetime risk** – The CDC-funded Johnston County Osteoarthritis Project in North Carolina estimates that the lifetime risk of developing knee osteoarthritis that causes pain is 45 percent. Among those who have had a knee injury, an estimated 57 percent will develop osteoarthritis; an estimated 60 percent of people who are obese will develop osteoarthritis.
- **Common disability** – Arthritis is the nation's most common cause of disability. It limits the activities of 22.7 million Americans. For one in three adults of working age (18 to 65 years) with arthritis, it can limit the type or amount of work they do or whether they can work at all.
- **Occurs with other chronic conditions** – Among U.S. adults with arthritis, nearly half (47 percent) have at least one other disease or condition. In addition, 49 percent of adults with heart disease, 47 percent of those with diabetes, 44 percent of those with high blood pressure, and 31 percent of those who are obese also have arthritis.
- **Discourages physical activity** – Research has shown that people with arthritis are less likely to be physically active. Some people believe that being active will cause pain, make their symptoms worse or damage their joints. Others don't know how to exercise safely. Nearly 44 percent of adults with arthritis report no leisure-time physical activity (compared with about 36 percent of those without arthritis). Not being physically active is a risk factor for other chronic diseases (e.g., heart disease, diabetes, obesity) and makes it harder to manage these conditions.



North Dakota adults diagnosed with some form of arthritis, rheumatoid arthritis, gout, lupus or fibromyalgia = 26.1 percent (2013 BRFSS).

Asthma

The NDDoH does not have a specifically-funded program to address asthma. Asthma risk factors are addressed by other NDDoH programs through the Coordinated Chronic Disease Prevention Program.

What is Asthma?

Asthma is a disease that affects the lungs. It is one of the most common long-term diseases of children, but adults also can have asthma. Asthma causes wheezing, breathlessness, chest tightness and coughing, especially at night or early in the morning. If a person has asthma, they have it all the time, but will have asthma attacks only when something irritates their lungs.

What are Asthma Triggers?

Triggers are things that cause an asthma attack. Some common triggers are tobacco smoke, dust mites, outdoor air pollution, pets, mold and smoke from burning wood or grass. Other triggers include the flu, colds, respiratory viruses, sinus infections, allergies, breathing in certain chemicals, breathing in cold air, high humidity, certain foods or food additives, and certain fragrances.

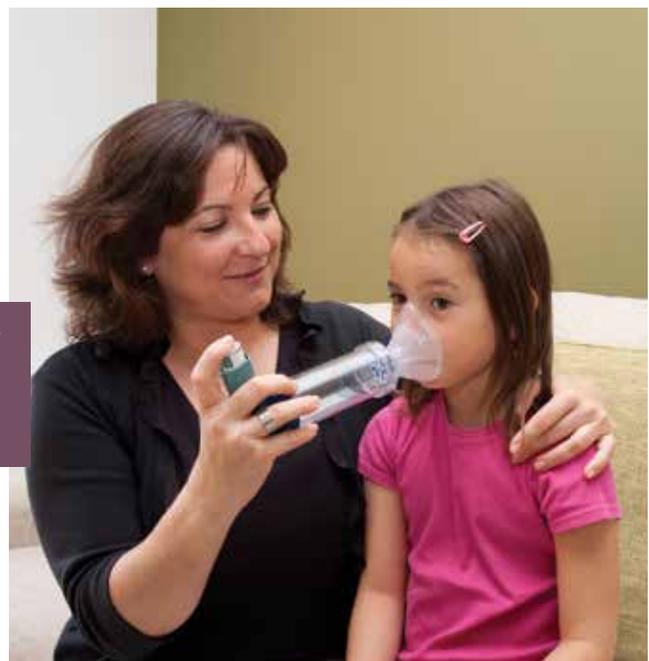
North Dakota adults who have ever been told they have asthma = 12.3 percent (2013 BRFSS).

How is Asthma Controlled?

A person can control his or her asthma by taking medications exactly as directed by a health care provider, by knowing the warning signs and by avoiding triggers. Everyone with asthma does not take the same medicine. Some medicines can be breathed in, and some can be taken as a pill. Asthma medicines come in two types – quick-relief and long-term control. Quick-relief medicines control the symptoms of an asthma attack. Long-term control medicines help asthma sufferers have fewer and milder attacks, but they do not help a person while having an asthma attack.

Asthma in North Dakota Schools

North Dakota law allows students to possess and self-administer their own emergency asthma inhalers and medication. Schools work with students, parents and health care providers to create action plans for students with asthma.



Alzheimer's Disease

The NDDoH does not have a specifically-funded program to address Alzheimer's disease. Alzheimer's risk factors are addressed by other NDDoH programs through the Coordinated Chronic Disease Prevention Program. The NDDoH also partners with the Alzheimer's Association's Minnesota-North Dakota Chapter.

What is Dementia?

Dementia is not a specific disease. It's an overall term that describes a wide range of symptoms associated with a decline in memory or other thinking skills severe enough to reduce a person's ability to perform everyday activities. Alzheimer's disease accounts for 60 to 80 percent of dementia cases. Vascular dementia, which occurs after a stroke, is the second most common dementia type. Many other conditions can cause symptoms of dementia, including some that are reversible, such as thyroid problems and vitamin deficiencies.

What is Alzheimer's Disease?

Alzheimer's is a type of dementia that causes problems with memory, thinking and behavior. Symptoms usually develop slowly and get worse over time, becoming severe enough to interfere with daily tasks.

Alzheimer's is a progressive disease, where symptoms gradually worsen over a number of years. In its early stages, memory loss is mild, but with late-stage Alzheimer's, individuals may lose the ability to carry on a conversation and respond to their environment. Alzheimer's is the sixth leading cause of death in the United States. Those with Alzheimer's live an average of eight years after their symptoms become noticeable to others, but survival can range from four to 20 years, depending on age and other health conditions.

Alzheimer's is not a normal part of aging, although the greatest known risk factor is increasing age, and the majority of people with Alzheimer's are 65 and older. However, Alzheimer's is not just a disease of old age. Up to 5 percent of people with the disease have early onset Alzheimer's (also known as younger-onset), which can appear when someone is in their 40s or 50s.

Ten Warning Signs of Alzheimer's Disease

1. ***Memory loss that disrupts daily life***
2. ***Challenges in planning or solving problems***
3. ***Difficulty completing familiar tasks at home, at work or at leisure***
4. ***Confusion with time or place***
5. ***Trouble understanding visual images and spatial relationships***
6. ***New problems with words in speaking or writing***
7. ***Misplacing things and losing the ability to retrace steps***
8. ***Decreased or poor judgment***
9. ***Withdrawal from work or social activities***
10. ***Changes in mood and personality***

Screening, Diagnosis and Treatment

There is no single test that can show whether a person has Alzheimer's. While physicians can almost always determine if a person has dementia, it may be difficult to determine the exact cause. Diagnosing Alzheimer's requires careful medical evaluation, including:

- A thorough medical history
- Mental status testing
- A physical and neurological exam
- Tests (such as blood tests and brain imaging) to rule out other causes of dementia-like symptoms

Experts estimate a skilled physician can diagnose Alzheimer's with more than 90 percent accuracy. Many people contact their regular primary care physician or internist about their concerns regarding memory loss. Primary care doctors often oversee the diagnostic process themselves. The primary care doctor may refer patients to a physician who specializes in the diagnosis and treatment of Alzheimer's disease and related dementias.

Specialists include:

- Neurologists, who specialize in diseases of the brain and nervous system
- Psychiatrists, who specialize in disorders that affect mood or the way the mind works
- Psychologists with special training in testing memory and other mental functions

Importance of Early Diagnosis

Although the onset of Alzheimer's disease cannot yet be stopped or reversed, an early diagnosis allows people with dementia and their families:

- A better chance of benefiting from treatment
- More time to plan for the future
- Lessened anxieties about unknown problems
- Increased chances of participating in clinical drug trials, which may advance research
- An opportunity to participate in decisions about care, transportation, living options, financial and legal matters
- Time to develop a relationship with doctors and care partners
- Benefit from care and support services, making it easier to manage the disease

Currently, there is no cure for Alzheimer's, but drug and non-drug treatments may help with both cognitive and behavioral symptoms.

The FDA has approved two types of medications – cholinesterase inhibitors (Aricept, Exelon, Razadyne, Cognex) and memantine (Namenda) – to treat the cognitive symptoms (memory loss, confusion, and problems with thinking and reasoning) of Alzheimer's disease.

As Alzheimer's progresses, brain cells die and connections between cells are lost, causing cognitive symptoms to worsen. While current medications cannot stop the damage Alzheimer's causes to brain cells, they may help lessen or stabilize symptoms for a limited time by affecting certain chemicals involved in carrying messages among the brain's nerve cells.

Risk Factors

Scientists have identified factors that increase the risk of Alzheimer's. The most important risk factors – age, family history and heredity – can't be changed, but emerging evidence suggests there may be other factors we can influence.

- The greatest known risk factor for Alzheimer's is advancing age. Most individuals with the disease are age 65 or older. The likelihood of developing Alzheimer's doubles about every five years after age 65. After age 85, the risk reaches nearly 50 percent. One of the greatest mysteries of Alzheimer's disease is why risk rises so dramatically as we grow older.
- Another strong risk factor is family history. Those who have a parent, brother, sister or child with Alzheimer's are more likely to develop the disease. The risk increases if more than one family member has the illness. When diseases tend to run in families, either heredity (genetics) or environmental factors, or both, may play a role.
- Scientists know genes are involved in Alzheimer's. There are two types of genes that can play a role in affecting whether a person develops a disease – risk genes and deterministic genes. Alzheimer's genes have been found in both categories.

Factors you may be able to influence:

Most experts believe that the majority of Alzheimer's disease occurs as a result of complex interactions among genes and other risk factors. Age, family history and heredity are all risk factors we can't change. Now, research is beginning to reveal clues about other risk factors we may be able to influence through general lifestyle and wellness choices and effective management of other health conditions.

- **Head trauma:** There may be a strong link between serious head injury and future risk of Alzheimer's, especially when trauma occurs repeatedly or involves loss of consciousness.
- **Heart-head connection:** Growing evidence links brain health to heart health. Your brain is nourished by one of your body's richest networks of blood vessels. Every heartbeat pumps about 20 to 25 percent of your blood to your head, where brain cells use at least 20 percent of the food and oxygen your blood carries.
- **Heart/blood vessel connection:** The risk of developing Alzheimer's or vascular dementia appears to be increased by many conditions that damage the heart or blood vessels. These include high blood pressure, heart disease, stroke, diabetes and high cholesterol.
- **General healthy aging:** Other lines of evidence suggest that strategies for overall healthy aging may help keep your brain as well as your body fit. These strategies may even offer some protection against developing Alzheimer's or related disorders.

Prevalence

- North Dakota projected number of people with Alzheimer's:
2014: 14,000
2025: 16,000
(a 14.3 percent increase)
- Number of reported deaths due to Alzheimer's disease in North Dakota:
2010: 361
- North Dakota Alzheimer's caregivers:
2013: 29,000 (33 million hours of unpaid care provided valued at \$415 million)

Services Available for People with Dementias, Their Families and Professional Care Partners

North Dakota Dementia Care Services Program is provided by the Alzheimer's Association Minnesota-North Dakota with funding granted through the North Dakota Department of Human Services, Aging Services Division. Services are available in all 53 counties of North Dakota, at no cost to clients. Services offered are:

- **Care Consultation:** individualized assistance, problem solving and identification of resources through one-on-one assistance. Care consultations can be provided in the location most convenient for the people accessing the service.
- **Education:** workshops on disease-related topics are available for the general public, professional and family caregivers, medical professionals and law enforcement.

The Alzheimer's Association also provides:

- **24/7 Helpline:** toll-free 24/7, interpreters available at 1.800.272.3900
- **MedicAlert(R)+Safe Return(R):** Nationwide 24-hour emergency response service for individuals with Alzheimer's or people with dementia who wander or have a medical emergency
- **Support Groups:** Groups provide an opportunity for care partners of people with dementia to interact, offer mutual support and learn more about Alzheimer's disease and related dementias and caregiving. Groups are listed at www.alz.org.



Disparities

The chronic diseases and health conditions highlighted in this report affect many North Dakotans, but some population groups are more susceptible to certain diseases or risk factors and/or have a harder time finding help to overcome their illnesses or risk factors. These high-risk groups are said to have a health disparity. These disparities often occur within racial, ethnic, sexual orientation and socioeconomic groups.

Some disparities affecting North Dakotans:

Cancer

- **American Indians** in the Northern Plains region, which includes North Dakota, experience one of the highest incidence and mortality rates within the Alaska Native/American Indian population. Northern Plains American Indians are at a higher risk of developing certain diseases such as lung, cervical, colorectal and liver cancers compared to whites in the same region.
- **Age** – Three out of four cancers occur in people 55 and older.
- **Males** – In the U.S., males have a one in two lifetime chance of developing cancer; for females it is a one in three chance.
- **Rural residence** – North Dakotans living in rural areas experience barriers to accessing cancer screening and treatment services due to travel time and cost.

Heart Disease and Stroke

- **Adults older than 45 with cardiovascular risk factors**
- **Adults older than 65** are more likely to experience a heart attack or stroke than young or middle-aged adults.
- **American Indians** living in North Dakota experience death due to cardiovascular disease at twice the rate of whites.
- **Lower education status** – North Dakotans with less than a high school education are almost three times more likely to experience cardiovascular disease than individuals who have some post high school and/or are a college graduate.

- **Lower economic earnings** – Those earning less than \$25,000 a year have a prevalence rate of CVD that is at least one-and-a-half times higher than those earning between \$25,000 and \$49,000 and three times greater than those earning \$50,000 or more.

Diabetes

- **American Indians** are nearly twice as likely to get diabetes as the general population.
- **Adults older than 65** have a diabetes prevalence rate of 20 percent, more than twice the rate of the general population.
- **Youth** – The increase in youth suffering from type 2 diabetes is linked to overweight children who lack appropriate amounts of exercise and have unhealthy eating habits.
- **Pregnant women** – Women with gestational diabetes have a 20 to 50 percent chance of developing type 2 diabetes within five to 10 years after giving birth.

Nutrition and Physical Activity

- **American Indians** – According to the 2012 BRFSS, 79 percent of American Indians were overweight or obese, compared to 66 percent of total North Dakota adults.

Tobacco Use

- **American Indians** – Tobacco use is more than twice as high as the general population rate, at 44 percent.
- **18- to 24-year-old adults** smoke at a higher rate than the general adult population (21.2 percent), at 27.3 percent.
- **Pregnant women** in North Dakota smoke at a rate of 15.1 percent; the national rate is 10.7 percent.
- **Lower education status**
- **Lower economic earnings**
- **Other groups** – Members of the military; members of the lesbian/gay/bisexual/transgender (LGBT) communities; homeless people; bar and casino workers; new Americans (i.e., refugees, immigrants); rural residents; people who work in certain industries, such as oil extraction; and people with mental or physical disabilities.

Working to Solve Health Disparities

In an effort to ease chronic disease health disparities in North Dakota, the following steps are being taken.

Cancer

- **North Dakota Cancer Coalition (NDCC)**
All North Dakota tribes have representatives actively engaged in comprehensive cancer control interventions, such as facilitating cancer screening, increasing access to physical activity and healthy foods, working on cultural competency with health care providers, promoting tobacco prevention and cessation, increasing HPV vaccination rates and implementing UV protection measures.
- **Cancer care for American Indians**
The Comprehensive Cancer Control Program works with health care professionals from tribal communities and cancer centers to improve cancer care for North Dakota American Indians.
- **North Dakota Comprehensive Cancer Control Program Sub-Contracts**
Since the program's inception in 2007, each year one or more of the sub-contracts has been awarded to cancer prevention and control efforts for American Indians.
- **Women's Way**
North Dakota's Breast and Cervical Cancer Early Detection Program focuses on targeted outreach to inform and recruit more American Indian women.
- **Colorectal Cancer Screening Initiative**
Funded by the North Dakota legislature since 2007, the program is available to provide colorectal cancer screening services to eligible men and women, including American Indians.
- **Great Plains Tribal Chairman's Health Board and the Northern Plains Comprehensive Cancer Control Program**
Cancer prevention and early detection messages have been developed and tailored to better reach American Indians.

Heart Disease and Stroke

- **Blood pressure management and reduction of sodium consumption**
 - Exploring population-based strategies that can reach large numbers of people and improve the well-being of entire communities, such as sodium reduction, within the state procurement process
 - Exploring the use of community paramedics to improve management of blood pressure
 - Improving health care provider adherence to high blood pressure treatment guidelines
 - Assessing public knowledge and understanding of blood pressure, including prevention and management
 - Working with health systems to identify people who have undiagnosed hypertension

Diabetes

- **Dakota Diabetes Coalition (DDC)**
The DDC is a statewide organization working in partnership with the North Dakota Department of Health Diabetes Prevention and Control Program. DDC members share resources and tools proven to be effective. Most importantly, members share time and ideas. The DDC is working to increase tribal membership to identify ways to partner and further its reach.
- **Diabetes resources**
The North Dakota Diabetes Prevention and Control Program (NDDPCP) identifies and/or develops resources that resonate with target populations, including culturally designed resources from the National Diabetes Education Program.
- **Diabetes health communication**
The program continues to explore methods to best engage targeted populations. Both the NDDPCP and the DDC websites have been redesigned to make them more user-friendly and make information more readily available for all consumers.

Nutrition and Physical Activity

- **North Dakota Comprehensive Cancer Control Program Sub-Contracts**

Since the grant program's inception in 2007, each year one or more of the grants has been dedicated to activities that support increasing physical activity and improving nutrition.

- **Tribal Walking Program**

The Comprehensive Cancer Control Program, in collaboration with the Heart Disease and Stroke Prevention Program, has developed a walking program tool kit that is available to local communities and worksites. This tool kit provides information about what steps to take to implement a walking program, and how to recruit and engage participants, track steps and evaluate program effectiveness.

Tobacco Use

- **Baby and Me – Tobacco Free**

This is a tobacco cessation program created to reduce the burden of tobacco use on pregnant women and new moms. Women who quit tobacco are less likely to have low-birth-weight babies and can reduce the damaging effects of secondhand smoke on their children, including a higher risk of SIDS. The program combines cessation support specific to pregnant women, offers practical incentives, targets low-income women (the largest group of tobacco users during pregnancy), and monitors success. The program collaborates with local agencies that already provide prenatal services. Each participant receives at least four sessions of cessation counseling, support and carbon monoxide (CO) monitoring, usually during a regular prenatal visit. After the birth of the baby, the mother returns monthly to continue CO monitoring and, if tobacco-free, she receives a \$30 voucher for diapers each month for up to 12 months after delivery.

- **Tribal tobacco programs**

Tribal tobacco programs are grant programs that provide funds, along with guidance and technical assistance. The grant funds a local Tribal Tobacco Prevention Coordinator on each reservation to implement a tribal tobacco prevention and control program.

- **GoodHealthTV**

Ads targeted specifically to American Indians were created to promote NDQuits cessation services. The ads are played on large screen monitors placed in hospital and clinic waiting areas and community commons on the reservations.

- **Lesbian/Gay/Bisexual/Transgender (LGBT)**

Outreach and information is provided about disparate tobacco use among LGBT populations and about quitting tobacco use through NDQuits.

Acknowledgments

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Division of Cancer Prevention and Control

Susan Mormann, Division Director
Janna Pastir, Comprehensive Cancer Control Program Director
Alice Musumba, BRFSS Program Director
Joyce Saylor, Community Partnership Coordinator
Jesse Tran, Cancer Program Evaluator

Division of Chronic Disease

Krista Fremming, Division Director
Clint Boots, Epidemiologist
Neil Charvat, Tobacco Prevention and Control Program Director
Mylynn Dumlao, CDC Public Health Advisor
Diana Greff, Administrative Assistant
Kara Hickel, Communications and Disparities Coordinator
Cheri Kiefer, Hypertension Management Coordinator

Division of Family Health

Kim Mertz, Division Director
Grace Mjau, Oral Health Epidemiologist
Kimberlie Yineman, Oral Health Program Director

Division of Nutrition and Physical Activity

Colleen Pearce, Division Director
Deanna Askew, Prevention Strategy Specialist
Jane Myers, Diabetes Self-Management Education Coordinator
Tera Miller, Diabetes Prevention and Control Program Director
BriAnna Wanner, Maternal and Child Health Nutrition Services Director

Thank you to all of our state and national partners who help us create successful strategies, overcome challenges and provide services to the citizens of North Dakota.



NORTH DAKOTA
DEPARTMENT *of* HEALTH

Behavioral Risk Factor Surveillance System (BRFSS)

The Behavioral Risk Factor Surveillance System (BRFSS) is the world's largest telephone survey. The BRFSS is a state-based, random-digit-dialed telephone survey of the noninstitutionalized civilian population 18 and older. It is designed to monitor the prevalence of the major behavioral risks among adults associated with premature morbidity and mortality. Information from the survey is used to improve the health of the American people.

North Dakota Department of Health, Division of Vital Records

The Division of Vital Records provides information about vital events that occur in North Dakota, including births. Statistics about pregnant women who smoke are based on information provided by the mother during recording of the birth.

North Dakota Statewide Cancer Registry (NDSCR)

The NDSCR is a collaborative partnership between the North Dakota Department of Health and the University of North Dakota. The purpose of the NDSCR, established in 1997, is to collect cancer incidence, survival and mortality data to monitor cancer trends, promote research, increase survival, develop cancer education, guide policy planning for cancer prevention and screening programs and respond to cancer concerns from patients or the public.

NDQuits Services Reports

The NDQuits vendor regularly provides reports detailing the number of people using NDQuits, how they found out about the service, and information about quit rates and satisfaction rates.

Smoking-Attributable Mortality, Morbidity and Economic Costs (SAMMEC)

SAMMEC provides an online database that allows users to estimate the adverse health outcomes and disease impact of smoking on adults and children. The adult SAMMEC application provides users the ability to estimate the number of annual deaths, years of potential life lost, medical expenditures and productivity losses among adults due to smoking.

Youth Risk Behavior Survey (YRBS)

The YRBS, developed in 1990, monitors priority health risk behaviors that contribute markedly to the leading causes of death, disability and social problems among youth and adults in the United States. The survey is administered to students in grades seven through 12 every other year in a random sample of North Dakota schools. Statistics used in this report are based on survey results from grades nine through 12.



For more information, contact:

Division of Chronic Disease
North Dakota Department of Health
600 E. Boulevard Ave., Dept. 301
Bismarck, N.D. 58505-0200
www.ndhealth.gov/chronicdisease
701.328.2367
800.280.5512 (toll-free in North Dakota)