Selected Health Indicators in North Dakota

1992-1996

Contents

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The North Dakota Department of Health is committed to improving the health status of North Dakota's citizens. To mark our progress, we have developed this report which addresses the question: How healthy are we? The health indicators in this report were selected because they include a broad range of conditions with numerous causes and prevention strategies. *Healthy People 2000* goals are included to compare North Dakota's progress with the rest of the nation.

We hope you are able to use the data and information in this report to improve the health of North Dakota's citizens. The North Dakota Department of Health recognizes that a joint effort between the public and private sectors is essential to accomplishing this important task. We express our appreciation to those who contribute to improving the health of North Dakota residents.

Thank you for your continued interest in a healthy North Dakota!

Sincerely,

Robert A. Barnett
Interim State Health Officer

Introduction

In 1990, the U.S. Public Health Service published a compilation of national health promotion and disease prevention goals for the year 2000 entitled *Healthy People 2000*.

This report includes information about some health indicators included in the *Healthy People 2000* report. Indicators chosen were based on two major criteria:

1. Indicators are tracked nationally and include goals established by *Healthy People 2000*.

2. A reliable surveillance system is in place to track the data.

Comparing North Dakota data to national data assesses the state's health status in relationship to the nation.

U.S. comparisons are based on five-year averages (1990-1994) using the most current data available. National diabetes comparisons are based on 1995 data. North Dakota comparisons are based on five-year averages (1992-1996) that are used to minimize the fluxuation of annual rates which may occur when small numbers are used. The charts in this publication use actual rates during specified time periods to indicate trends.

A reliable surveillance system often is taken for granted. Maintaining surveillance systems takes time, effort and money. Reliable and timely data is needed for policymaking and for allocating North Dakota's resources.

Another issue considered when choosing the health indicators in this report was whether or not intervention could positively influence future outcomes. Many chronic diseases and injuries may be prevented by a healthy lifestyle or alleviated by early detection and treatment. Some behavior choices also can be encouraged by enacting laws that support healthy behavior (e.g., use of child safety seats in automobiles).

Health care services information is included in this report because of its contribution to health status. The emphasis of health care has changed from "illness" care to "health" care and is reflected, to some degree, in the way health care services are delivered. Many *Healthy People 2000* goals encourage the use of health care services (such as mammograms and early prenatal care) to improve health outcomes.

This report examines the health of North Dakota residents and shows where the North Dakota Department of Health would like to be in the year 2000. It also indicates areas where North Dakota can improve.

Glossary

Age Adjustment
Age adjusting is done to assure comparability of data. Disease and death rates are affected by age; age-adjusting accounts for different age distributions in the population. The rates in this report (apart from infant mortality and infectious disease rates) have been age-adjusted to the 1940 U.S. population. Cancer death rates have been adjusted to the 1970 U.S. population.

Arteriosclerosis
Commonly called hardening of the arteries, arteriosclerosis includes a variety of conditions that cause artery walls to thicken and lose elasticity. The arteries carry blood from the heart to all parts of the body.

Blood Pressure
Blood pressure is a measure of the force used to circulate blood through the body. When the blood pressure is high, the heart has to work harder. Increased pressure can damage vessels which lead to vital organs such as the heart, brain and kidneys. Systolic blood pressure is a measure of the force of the contracting heart; diastolic blood pressure is a measure of the force used to move blood when the heart is at rest between beats. Blood pressure is reported as the "systolic pressure over the diastolic pressure."

High Blood Pressure
High blood pressure is a long-term increase in blood pressure above its normal range, currently defined by the National High Blood Pressure Education Program as systolic blood pressure at or above 140 mm Hg (millimeters of mercury) or diastolic blood pressure at or above 90 mm Hg. It also is called hypertension.

Cholesterol
Cholesterol is a form of fat found in the bloodstream. It is present only in foods from animal sources such as whole milk dairy products, meat, fish, poultry, animal fats and egg yolks.

High Blood Cholesterol
High blood cholesterol is currently defined as a total blood cholesterol above 240 mg/dL (milligrams per deciliter of blood) in adults and above 200 mg/dL in children. The borderline values are 200 to 240 mg/dL for adults and 170 to 200 mg/dL for children.

Health Indicators
Health indicators describe the condition or state of the population's health.

Health Outcomes
Health outcomes are used to examine the rate of death or illness (e.g., the number of lung cancer deaths per 100,000 people).

Mortality
Mortality is a measure of deaths occurring in a given population, location or other group of interest during an interval of time, usually a year.

Risk Factors
Risk factors are behavioral, genetic, socioeconomic and environmental factors that, when present, increase the likelihood a person will experience disease or injury (e.g., smoking).

Years of Potential Life Lost
The number of years between the age at death and age 65 for people who die before age 65; that is, the total number of years which are "lost" by people in the population who die prematurely of a stated cause.

Coronary Heart Disease

Year 2000 Goal:
Reduce deaths from coronary heart disease to no more than 100 per 100,000 people.

U.S. Deaths 1990-1994
115.5 per 100,000 people

North Dakota Goal:
Reduce deaths from coronary heart disease to no more than 92 per 100,000 people.

North Dakota Deaths 1992-1996:
95.8 per 100,000 people

Years of potential life lost:
On average, North Dakotans who die from coronary heart disease before age 65 lose10 years of potential life. This means that the average age at death is 55 years for a person dying from coronary heart disease before age 65.

Coronary heart disease is the leading cause of death in North Dakota and in the United States.
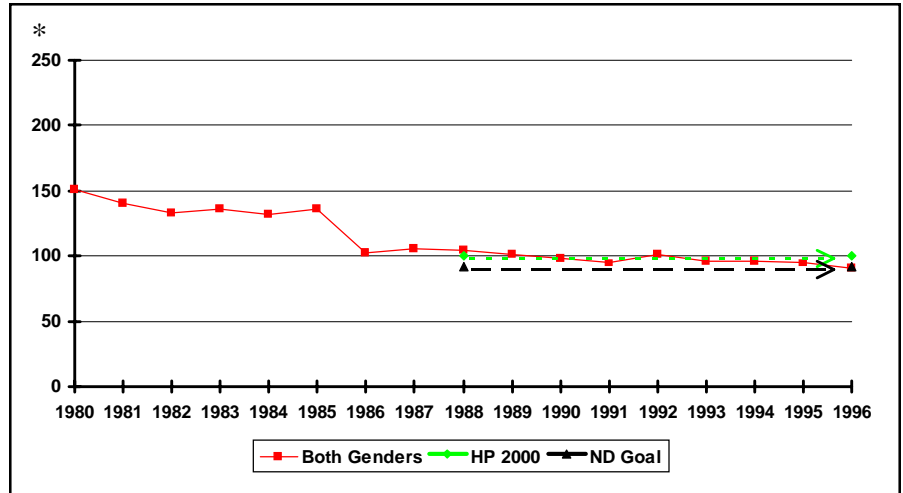
TREND - Coronary Heart Disease Death Rate
Age-adjusted death rate per 100,000 North Dakotans
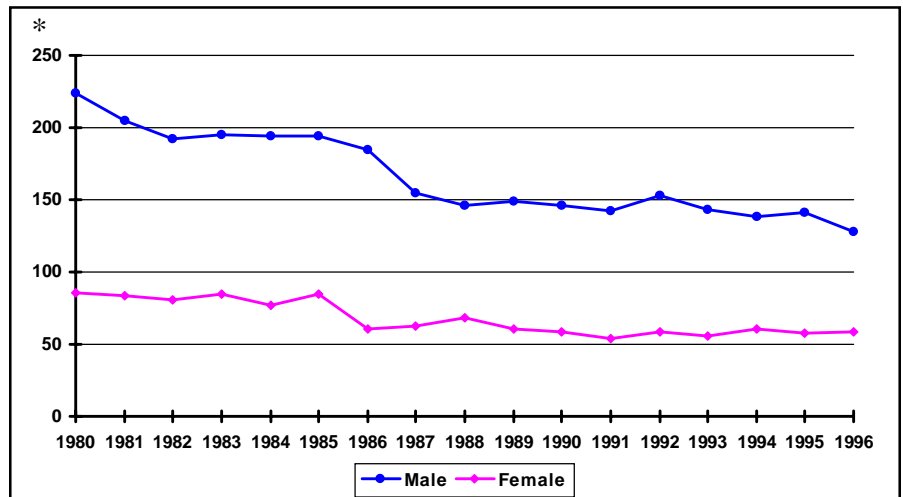
TREND - Male and Female Coronary Heart Disease Death Rates
Age-adjusted death rate per 100,000 North Dakotans

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Risk Factors for Coronary Heart Disease:

High Blood Pressure

Smoking

High Fat Diet

Sedentary Lifestyle

Excessive Alcohol Use

Behavioral Risk Factor Survey Findings:

High Blood Pressure: Twenty-two percent of North Dakota residents have been told their blood pressure is high.

Current Smoker: About 23 percent of North Dakota residents over age 18 smoke.

Overweight: About 31 percent of North Dakota residents are overweight.

Diet: Only 18 percent of North Dakotans ate at least five servings of fruits and vegetables per day.

Cholesterol: About 63 percent of North Dakotans said they had their blood cholesterol checked.

Sedentary Lifestyle: More than one-half of North Dakota residents did not participate in leisure time physical activity at least three times per week.

Alcohol Use: Seventeen percent of North Dakota adults reported drinking five or more drinks on one or more occasions in the past month.

Behavioral changes shown to reduce risk:
- Maintain appropriate weight
- Eat at least five servings of fruits and vegetables per day
- Limit fat intake
- Increase physical activity
- Cease smoking

Clinical services shown to reduce risk:
- Blood pressure screening and management
- Cholesterol screening and management
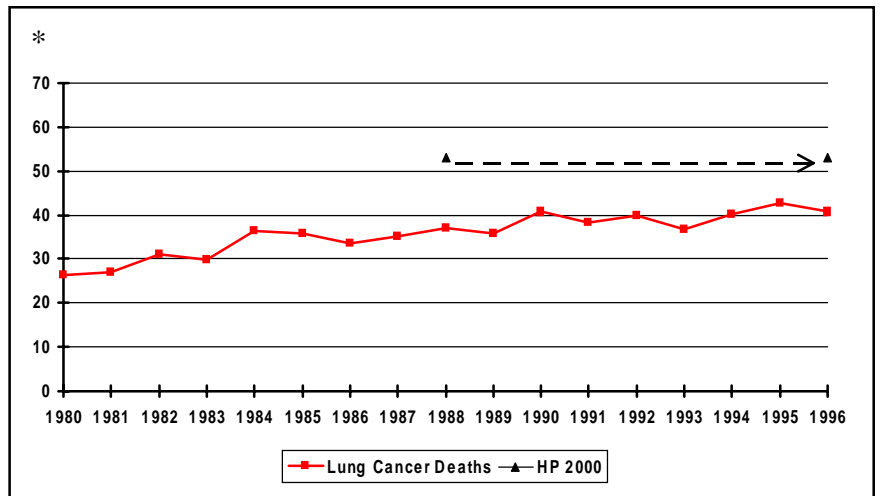
Lung Cancer

Year 2000 Goal:
Slow the rise in lung cancer deaths to no more than 53 per 100,000 people.

U.S. Deaths 1990-1994:
50.2 per 100,000 people

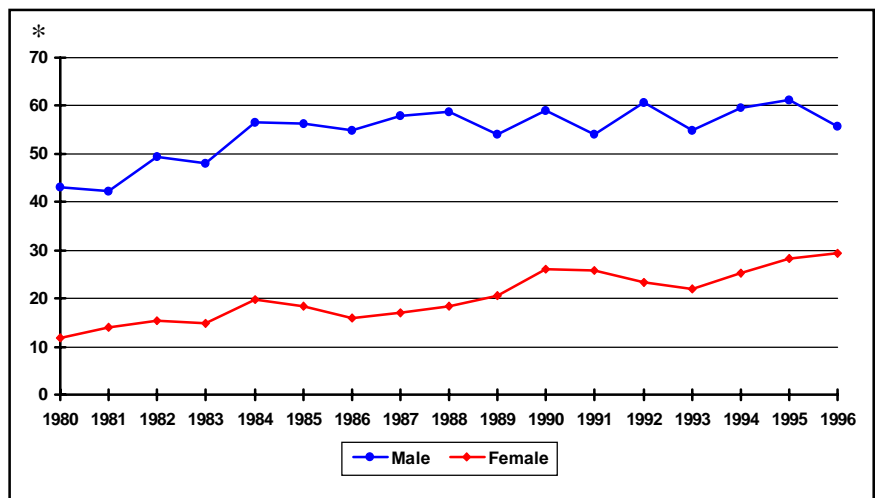North Dakota Deaths 1992-1996:
40.1 per 100,000 people

Years of potential life lost:
On average, North Dakotans who die from lung cancer before the age of 65 lose 8 years of potential life. This means that the average age at death is 57 years for a person dying from lung cancer before age 65.

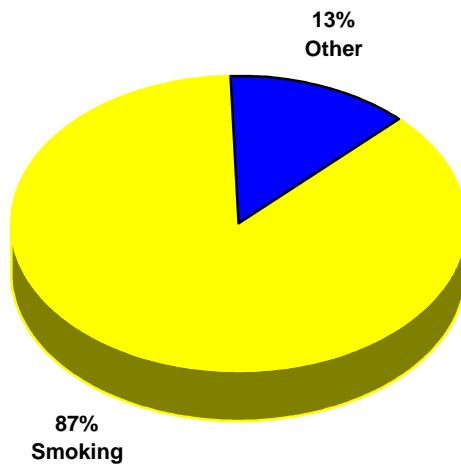TREND - Lung Cancer Death Rate
Age-adjusted death rate per 100,000 North Dakotans

TREND - Male and Female Lung Cancer Death Rates
Age-adjusted death rate per 100,000 North Dakotans

Contributing Factors to Lung Cancer

13%
Other

87%
Smoking

Risk Factors for Lung Cancer:

Smoking

Environmental tobacco smoke

Exposure to radon decay products, asbestos or ionizing radiation

Cigarette smoking contributes to about 87 percent of lung cancers. Smoking contributes to about 30 percent of all cancer deaths.

About 23 percent of North Dakota adults currently smoke.

About 20 percent of North Dakota students in grades 9-12 smoke regularly.

Smoking among North Dakota adults and teens has sharply increased.

Cancer is the second leading cause of death in North Dakota and in the United States.

Lung cancer is the leading cause of cancer deaths among men and the second leading cause of cancer deaths among women in North Dakota.

The top four types of cancer deaths for men:
• Lung
• Prostate
• Colorectal
• Leukemia

The top four types of cancer deaths for women:
• Breast
• Lung
• Colorectal
• Ovarian

The death rate for lung cancer among women is rising.

Year 2000 Goal:
Reduce the percentage of adults (20 years or older) who smoke to 15 percent or less.

North Dakota 1995:
23 percent

Colorectal & Prostate Cancer

Colorectal Cancer

Year 2000 Goal:
Reduce colorectal cancer deaths to no more than 18.7 per 100,000 people.
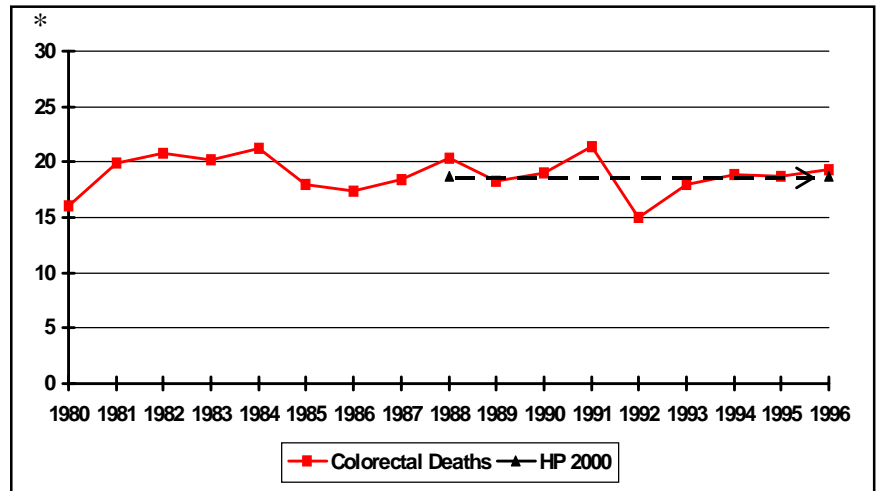
U.S. Deaths 1990-1994:
18.1 per 100,000 people

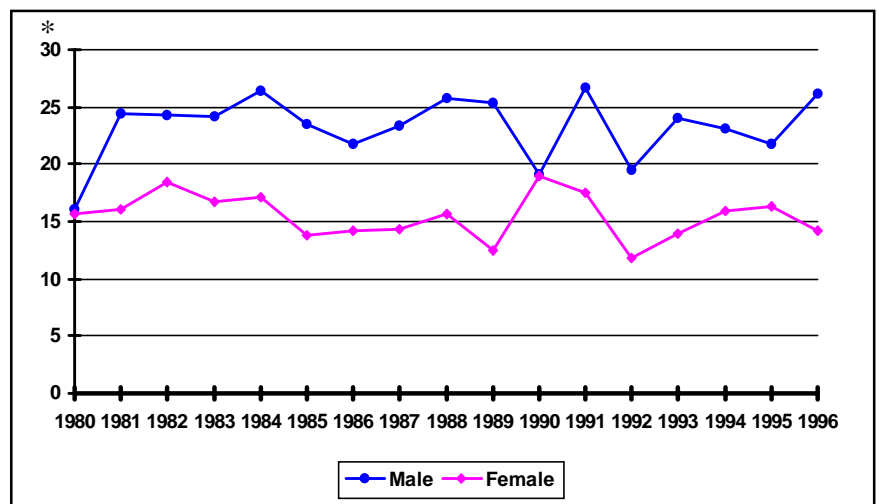North Dakota Deaths 1992-1996:
18 per 100,000 people

TREND - Colorectal Cancer Death Rate
Age-adjusted death rate per 100,000 North Dakotans

Years of potential life lost:
On average, North Dakotans who die from colorectal cancer before age 65 lose 9 years of potential life. This means that the average age at death is 56 years for a person dying from colorectal cancer before the age of 65.
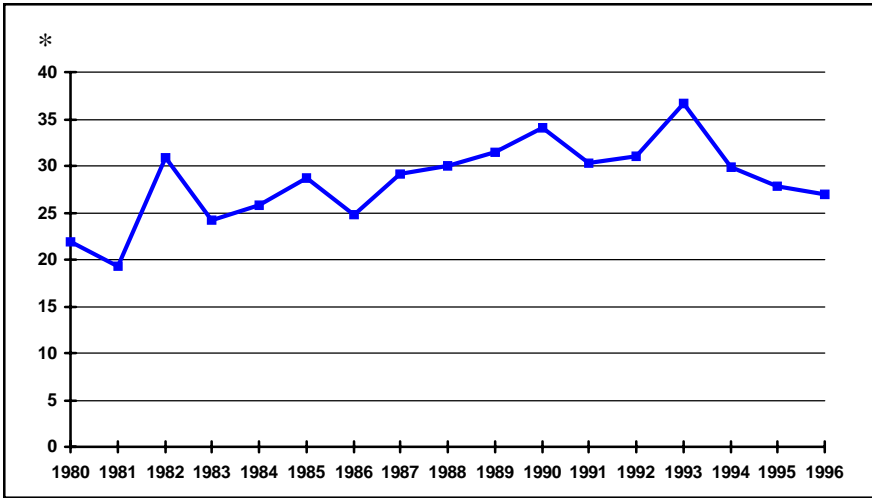

TREND - Male and Female Colorectal Cancer Death Rates
Age-adjusted death rate per 100,000 North Dakotans

TREND - Prostate Cancer Death Rate
Age-adjusted death rate per 100,000 North Dakota men

Colorectal cancer may be preventable through dietary change.
Experts have not reached consensus on prevention and early
detection methods for colorectal or prostate cancer.
Regular screening beginning at age 50 is recommended for both
diseases.

Prostate Cancer

Year 2000 Goal:
There is no Year 2000 Goal for
prostate cancer.

U.S. Deaths 1990-1994:
22.2 per 100,000 men

North Dakota Deaths 1992-1996:
30.3 per 100,000 men

Years of potential life lost:
On average, North Dakotans
who die from prostate cancer
before age 65 lose 8 years of
potential life. This means that
the average age at death is 57
years for a man dying from
prostate cancer before age 65.

Breast & Cervical Cancer

Breast Cancer

Year 2000 Goal:
Reduce the rate of death from breast cancer to no more than 25.2 per 100,000 women.

U.S. Deaths 1990-1994:
28.3 per 100,000 women

North Dakota Deaths 1992-1996:
25.7 per 100,000 women

Years of potential life lost:
On average, North Dakotans who die from breast cancer before the age of 65 lose 12 years of potential life. This means that the average age at death is 53 years for a woman dying from breast cancer before the age of 65.

Year 2000 Goal:
Increase the percentage of women age 50 and older who have had at least one clinical breast exam and mammogram within the past one to two years to at least 60 percent.

North Dakota 1995:
62 percent
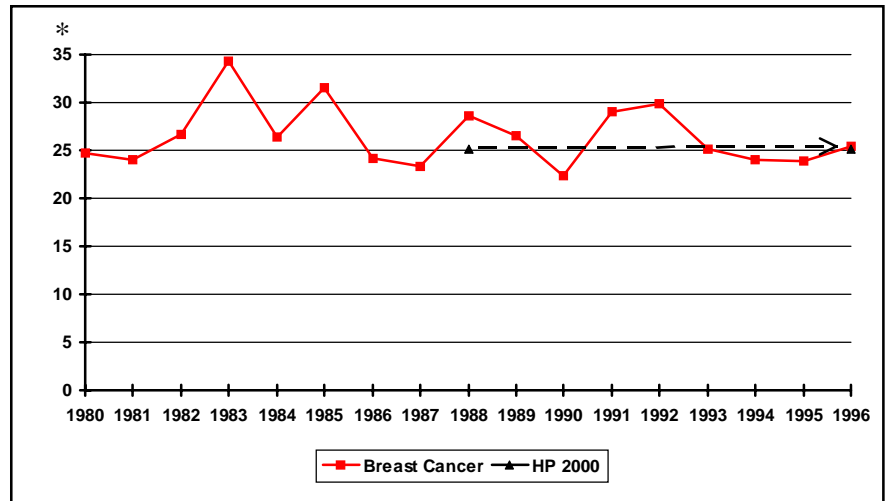
TREND - Breast Cancer Death Rate
Age-adjusted death rate per 100,000 North Dakota women

Early detection of breast cancer (through regular breast self exams, clinical breast exams and mammograms) increases the chances of long-term survival.
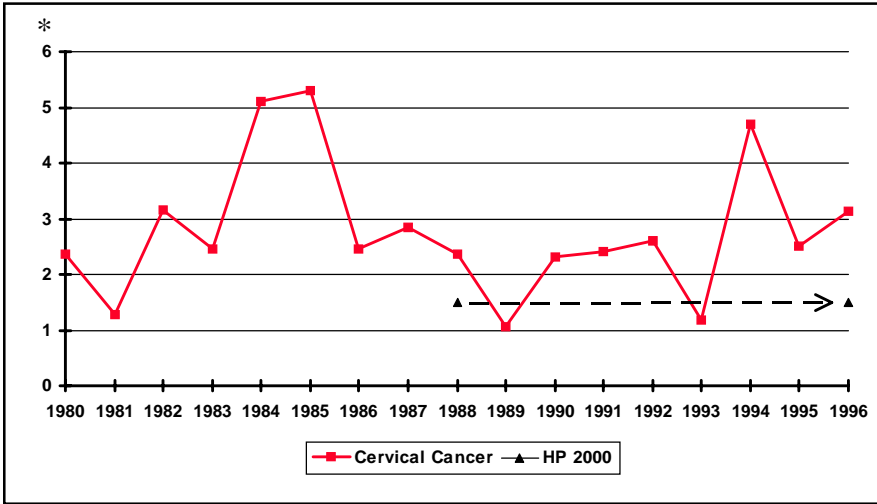
Risk Factors for Breast Cancer:

Women over age 50

Family history of breast cancer
(Mother, sister, maternal aunt and maternal grandmother)

Personal history of breast cancer

Never giving birth or giving birth after age 30

TREND - Cervical Cancer Death Rate
Age-adjusted death rate per 100,000 North Dakota women

An average of 10 women in North Dakota die from cervical cancer each year. These deaths almost always are preventable with diagnosis and treatment of precancerous lesions.

Risk Factors for Cervical Cancer:

Early age at first intercourse

Multiple sex partners

Smoking

Infection with certain types of human papillomavirus
(a virus that causes genital warts)

Cervical Cancer

Year 2000 Goal:
Reduce deaths from cervical cancer to no more than 1.5 per 100,000 women.

U.S. Deaths 1990-1994:
3.1 per 100,000 women

North Dakota Deaths 1992-1996:
2.8 per 100,000 women

Years of potential life lost:
On average, North Dakotans who die from cervical cancer before the age of 65 lose 12 years of potential life. This means that the average age at death is 53 years for a woman dying from cervical cancer before age 65.

Year 2000 Goal:
Increase to at least 85 percent the percentage of women age 18 and older who have had a Pap test within the past one to three years.

North Dakota 1995:
83 percent

Diabetes

Year 2000 Goal:
All Races - Reduce diabetes-related deaths to no more than 34 per 100,000 people.

U.S. Deaths (All Races) 1995:
40 per 100,000 people

North Dakota Deaths
(All Races) 1992-1996:
32.6 per 100,000 people

Year 2000 Goal:
Native Americans - Reduce diabetes-related deaths to no more than 48 per 100,000 people.

U.S. Deaths (Native Americans) 1995:
63 per 100,000 people

North Dakota Deaths
(Native Americans) 1992-1996:
149 per 100,000 people

Years of potential life lost:
On average, North Dakotans who die from diabetes as an underlying and contributing factor before age 65 lose 9 years of potential life. This means that the average age at death is 56 years for a person dying from diabetes before the age of 65.

Insulin-Dependent Diabetes Mellitus (Type I)
- Occurs mostly in children and teens
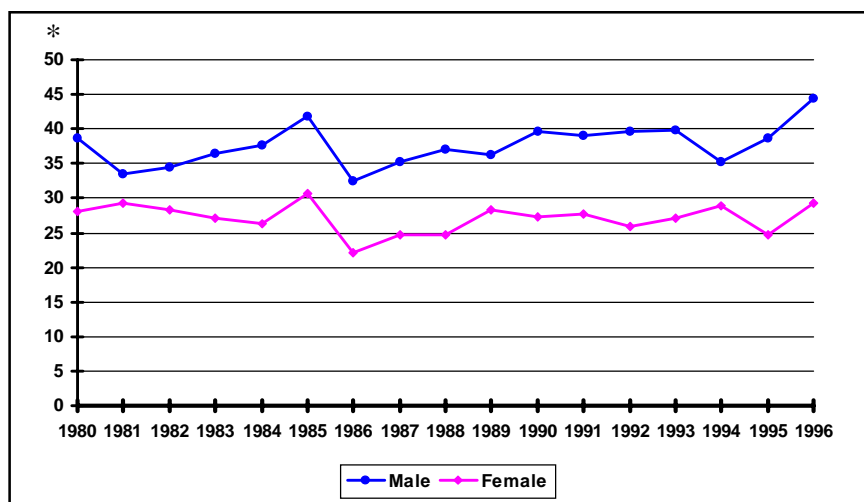- Characterized by absolute insulin deficiency

Non-Insulin Dependent Diabetes Mellitus (Type II)
- Occurs most often in overweight adults age 40+
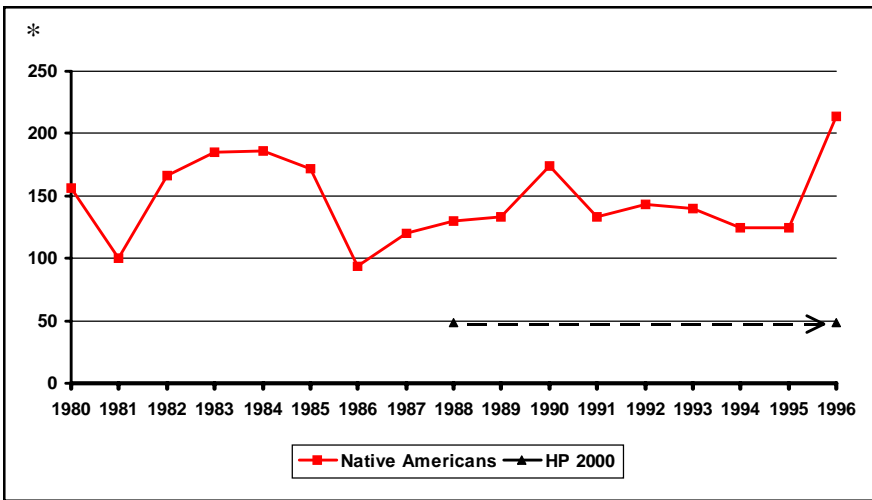- Characterized by a resistance to insulin
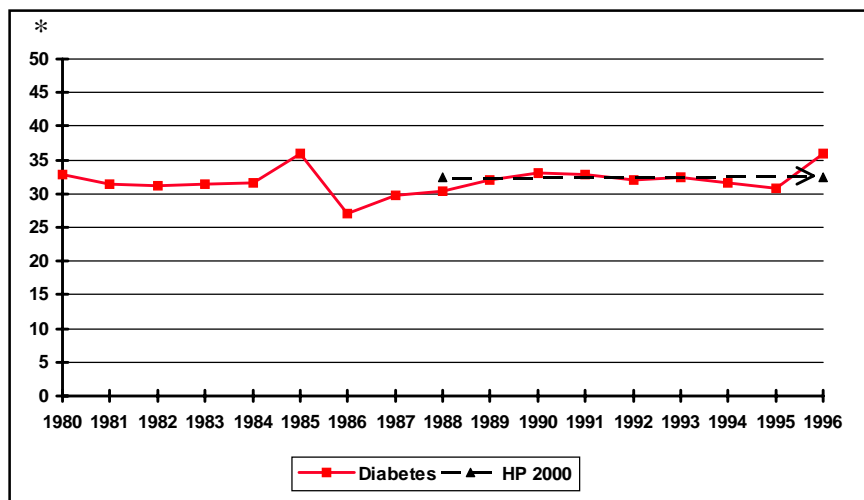
TREND - Diabetes Death Rate - All Races (Diabetes as an underlying and contributing cause)
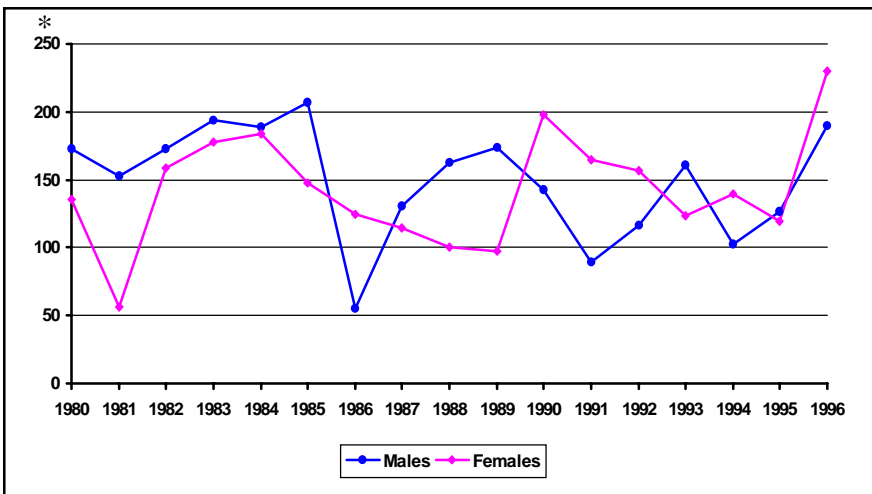*Age-adjusted death rate per 100,000 North Dakotans*

TREND - Male and Female Diabetes Death Rates - All Races (Diabetes as an underlying and contributing cause)
Age-adjusted death rate per 100,000 North Dakotans

TREND - Diabetes Death Rate - Native Americans (Diabetes as an underlying and contributing cause)
Age-adjusted death rate per 100,000 North Dakotans

TREND - Male and Female Diabetes Death Rates-Native Americans (Diabetes as an underlying and contributing cause)
Age-adjusted death rate per 100,000 North Dakotans

Risk Factors for Diabetes:

Overweight (20 percent or more above ideal weight)

Family history of diabetes

Personal history of diabetes during pregnancy

Member of an ethnic group
with high prevalence of diabetes

Complications from diabetes:
- Heart disease
- Stroke
- Kidney failure
- Infection
- Blindness
- Amputation

About half of all Type II diabetes is preventable with weight control, including diet and exercise.

Although the diabetes-related death rate for all races in North Dakota is below the Year 2000 Goal, the Native American diabetes-related death rate is almost three times the Year 2000 Goal for the Native American population.

Experts recommend screening for diabetes in individuals with certain risk factors.

Major goals of diabetes treatment are to keep blood sugar as close to the normal range as possible and to prevent or delay medical complications. This management requires close attention to diet and exercise, as well as frequent monitoring of blood glucose.
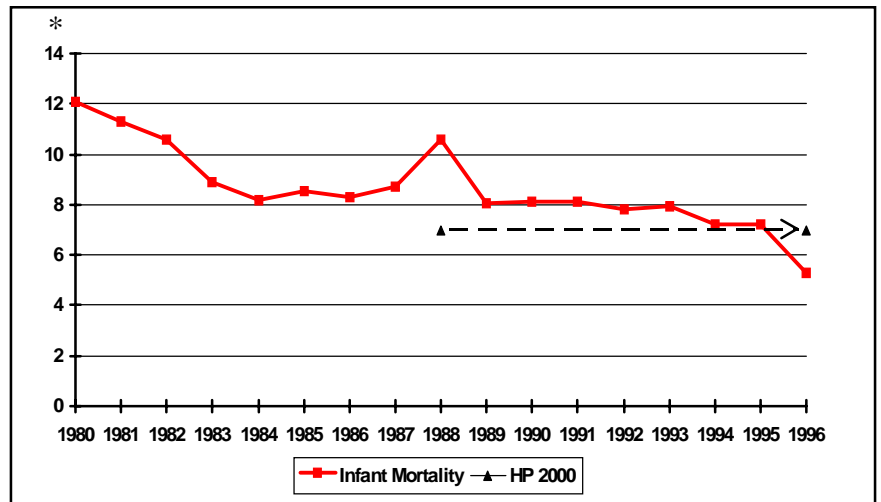
Birth and Childhood Indicators

Infant Mortality

Year 2000 Goal:
Reduce the infant mortality rate to less than 7 deaths per 1,000 live births.

North Dakota Deaths 1992-1996:
7.1 per 1,000 live births

TREND - North Dakota Infant Mortality Rate
Rate Per 1,000 Live Births

More than one-half of all infant deaths occur within the first 28 days of life.

Infant mortality rates are highest among low birth weight babies.

Low Birth Weight

Year 2000 Goal:
Reduce the percentage of low birth weight infants (less than 5.5 pounds) to no more than 5.0 percent.

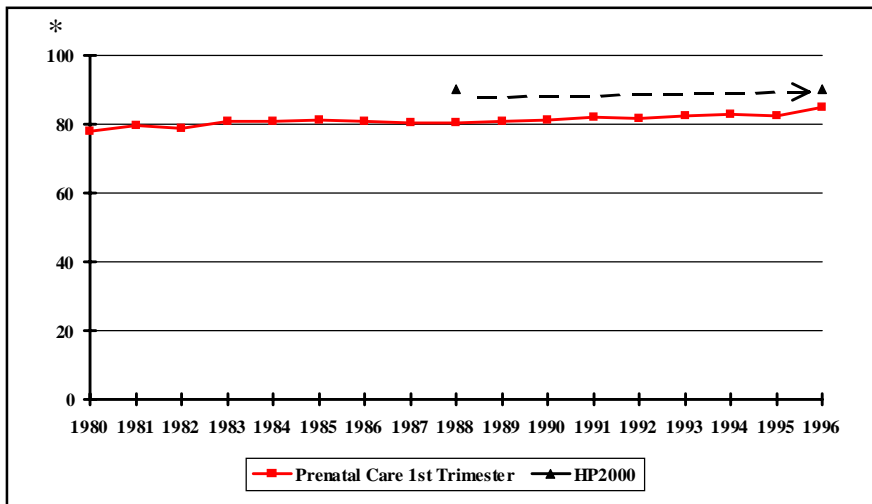North Dakota 1992-1996:
5.4 percent

Risk Factors for Low Birth Weight:

Smoking
Substance abuse
Late prenatal care
Younger and older maternal age
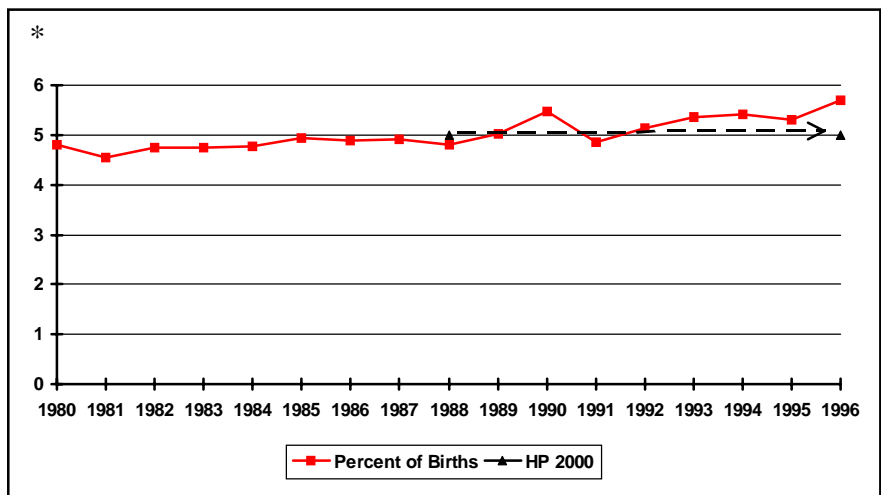
TREND - Percentage of North Dakota Infants Who are Born at Low Birth Weight
Percent of live births

TREND - Percentage of North Dakota Mothers Who Begin Prenatal Care During First Trimester
Per 10,000 Population

First Trimester Prenatal Care

Year 2000 Goal:
Increase the percentage of women who begin prenatal care during their first trimester to at least 90 percent.

North Dakota 1992-1996:
82.9 percent

Teens are least likely to seek early prenatal care.
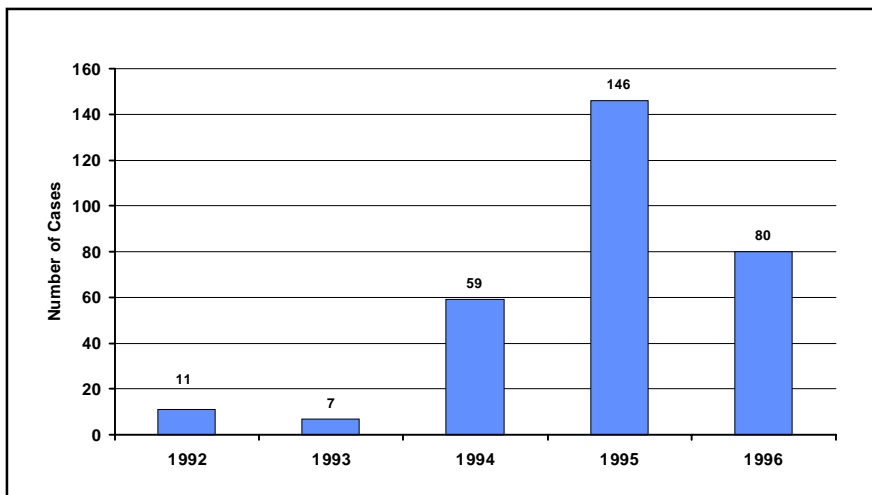
TREND - Number of North Dakota Shigellosis Cases Per Year

Shigellosis

Shigella is a group of bacteria that causes gastrointestinal illnesses. Symptoms include fever, abdominal pain and diarrhea. This illness most often occurs among children.

Affected Populations
- Infants and toddlers
- The elderly
- Hospital and nursing home patients

Shigellosis can be spread by person-to-person contact or by an infected person who handles raw food. Careful hand washing will prevent this illness.

Infectious Diseases

Year 2000 Goal:
Reduce the incidence rate of Chlamydia Trachomatis infections to 170 per 100,000 people.

North Dakota Goal:
Reduce the incidence rate of Chlamydia Trachomatis infections to 120 per 100,000 people.

North Dakota 1992-1996:
167.4 per 100,000 people

Chlamydia Trachomatis
1992 - 1996
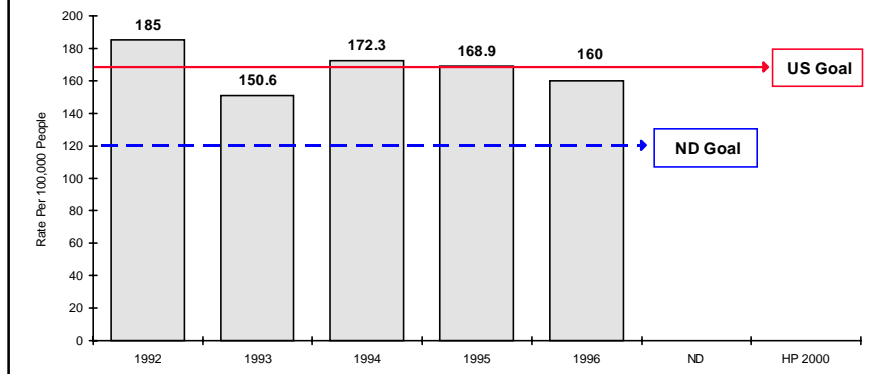
Chlamydia is the most commonly transmitted bacterial pathogen in the United States.

Risk Factors:

Sexually active people less than 20 years old

People age 20 or older who have had:
- A new sex partner in the last 60 days
- More than one sex partner in the last 60 days

Food-Related Diseases
Risk Factors:
- Inadequate cooking of meat, particularly poultry
- Cross-contamination of foods
- Person-to-person contact
- Raw or unrefrigerated eggs

Reduce the risk of infection by:
- Washing hands carefully
- Handling and storing foods safely
- Cooking food thoroughly
- Observing standing times when cooking in a microwave
- Cleaning bathrooms and toilets
- Boiling water from untreated sources

Food-Related Diseases
1992 - 1996

Immunization Survey
1996
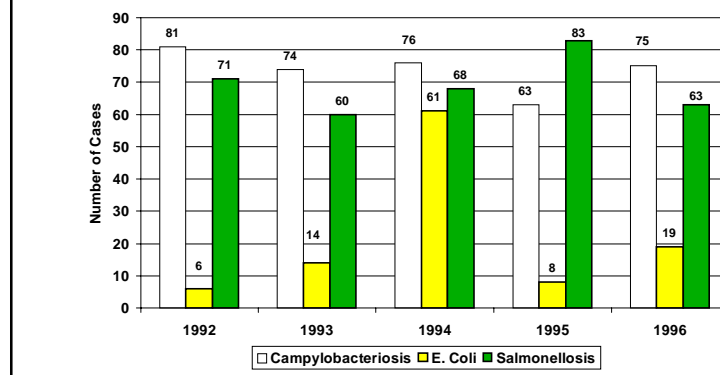
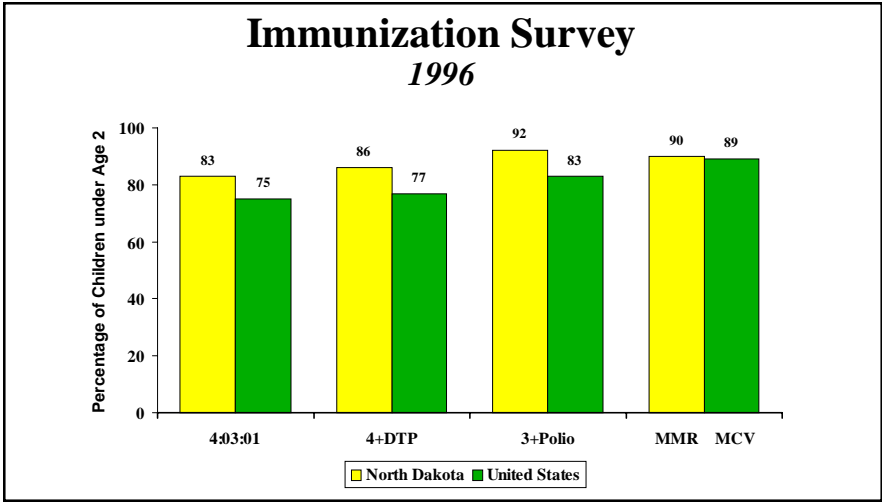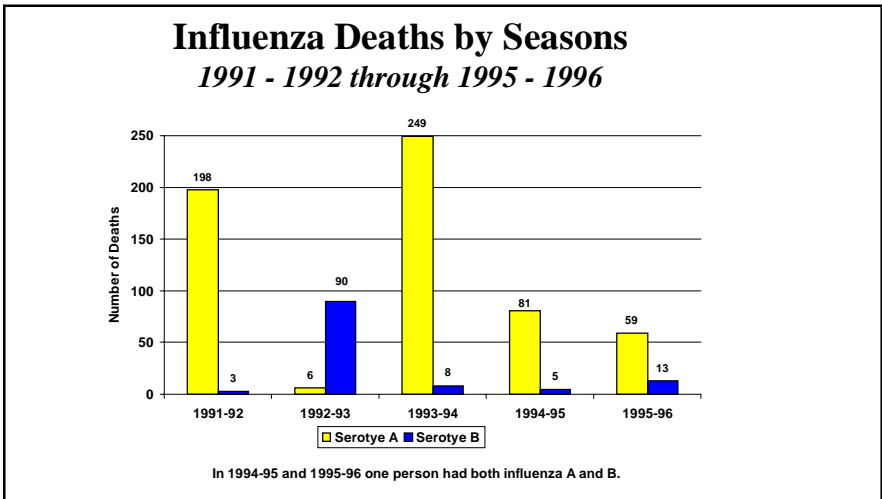Eighty-three percent of North Dakota children are appropriately immunized because they have had the following immunizations before their second birthdays: 4 DTPs, 3 Polio, 1 MMR.

Diseases that are preventable by vaccination include: Diphtheria, Tetanus, Pertussis (DTP); Measles, Mumps, Rubella (MMR); Polio; *Haemophilus Influenza* type B; and Hepatitis B (HBV). Yet, for vaccinations to be most effective in preventing these diseases, they must be administered during a child's first 24 months.

Influenza Deaths by Seasons
1991 - 1992 through 1995 - 1996

In 1994-95 and 1995-96 one person had both influenza A and B.

Immunizations

CDC Goals: Percentage of children immunized by age 24 months

    3 DTP = 87 percent
    3 Polio = 85 percent
    1 MMR = 90 percent
    3 to 4 Hib = 85 percent
    3 HBV = 50 percent

North Dakota 1996: Percentage of children immunized by age 24 months

    4 DTP = 86 percent
    3 DTP = 96 percent
    3 Polio = 92 percent
    1 MMR = 90 percent
    3 Hib = 93 percent
    3 HBV = 85 percent

Influenza and Pneumonia

Influenza and pneumococcal pneumonia immunizations are effective in preventing these diseases. People over age 64 and the institutionalized chronically ill, such as nursing home residents, are encouraged to be immunized.

Year 2000 Goal:

Increase pneumococcal pneumonia and influenza immunizations among the elderly and the institutionalized chronically ill to at least 60 percent.

U.S. Influenza Immunizations:
    1996 - 43 percent
    1995 - 41 percent

North Dakota Influenza Immunizations:
    1996 - 52 percent
    1995 - 50 percent
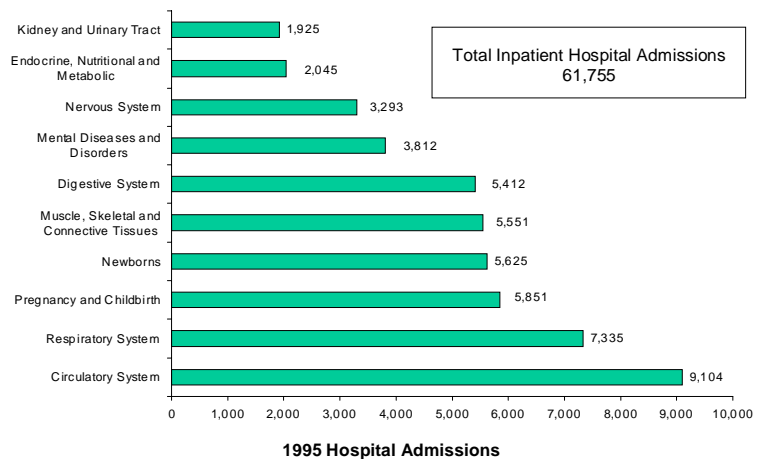
Inpatient Hospital Admissions
Based on data collected by the North Dakota Department of Health, there were 61,755 inpatient hospital admissions among North Dakota residents in 1995. Almost one-half of these admissions (46%) were people over age 64; this group represents about 14 percent of the state's population. People over age 64 often have multiple health conditions which require inpatient hospitalizations, such as coronary heart disease and diabetes.

Overall, the number of inpatient hospital days has been decreasing since 1980. Many treatments that previously required inpatient care now are delivered in an outpatient setting.

Length of Stay
North Dakota residents were hospitalized for an average of six days per admission in 1995.

Top 10 Reasons for Hospital Admissions

	1995 Hospital Admissions
Kidney and Urinary Tract	1,925
Endocrine, Nutritional and Metabolic	2,045
Nervous System	3,293
Mental Diseases and Disorders	3,812
Digestive System	5,412
Muscle, Skeletal and Connective Tissues	5,551
Newborns	5,625
Pregnancy and Childbirth	5,851
Respiratory System	7,335
Circulatory System	9,104

Total Inpatient Hospital Admissions
61,755

Circulatory system conditions including coronary heart disease were the most frequent cause of hospitalization among North Dakota residents in 1995. Coronary heart disease was the leading cause of death for North Dakota residents in 1995.

Average Length of Stay per Admission

	1995 Average Number of Days per Hospitalization
Pregnancy and Childbirth	3
Endocrine, Nutritional and Metabolic	4
Newborns	4
Kidney and Urinary Tract	5
Digestive System	5
Muscle, Skeletal and Connective Tissues	5
Respiratory System	5
Circulatory System	6
Nervous System	7
Mental Diseases and Disorders	14
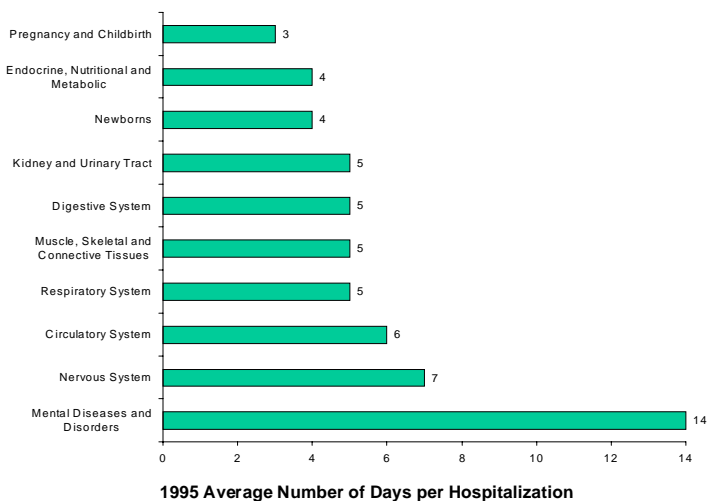
Top 10 Reasons for Outpatient Hospital Visits

Reason	1995 Outpatient Hospital Visits
Mental Diseases and Disorders	6,301
Eyes	7,779
Circulatory System	10,670
Nervous System	12,308
Respiratory System	13,348
Digestive System	18,614
Skin, Breast and Other Tissues	19,869
Health Status	30,991
Ear, Nose and Throat	32,697
Muscle, Skeleton and Connective Tissues	36,267

Total Outpatient Hospital Visits
229,265

1995 Outpatient Hospital Visits

Many factors have contributed to a decrease in hospital admissions and a shift to outpatient care, including advances in technology and surgical techniques, improved anesthesia methods and changes in reimbursement for inpatient care.

Outpatient Hospital Visits
North Dakota residents made 229,265 outpatient hospital visits in 1995, according to data collected by the North Dakota Department of Health. Outpatient hospital visits include ambulatory surgical center visits; many procedures that once required hospital stays now are performed on an outpatient basis. These outpatient hospital visits do not include physician office visits which are estimated at about 1 million visits per year.

Years of Potential Life Lost

Year 2000 Goal:
There is no Year 2000 Goal for Years of Potential Life Lost.

U.S. 1989-1993:
5,554.8 years lost before age 65 per 100,000 people under age 65.

N.D. 1992-1996:
3,880 years lost before age 65 per 100,000 people under age 65.

Years of Potential Life Lost (YPLL) is a measure of premature death which has been defined as the number of years between the age of death (for those who die before age 65) and age 65.

Example:
A 16-year-old dies from injuries sustained in an automobile accident. This death represents 49 years of potential life lost.

Years of Potential Life Lost
All Populations ~ 1992 - 1996
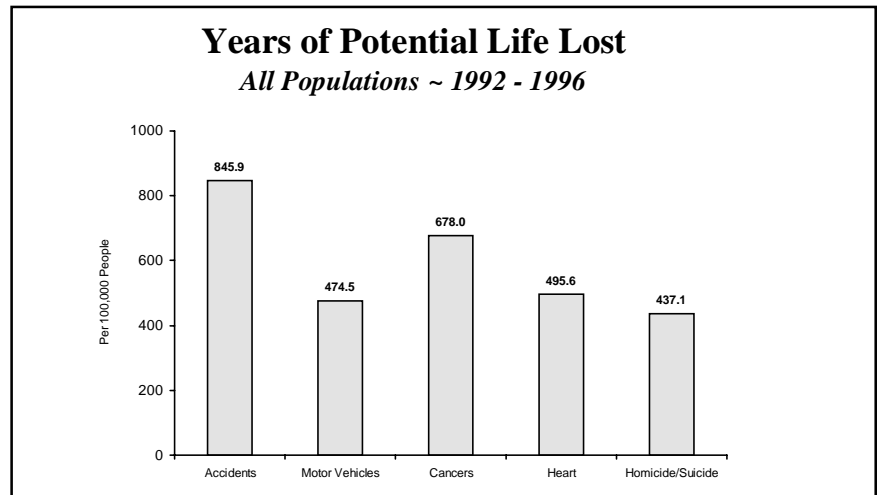
The overall Years of Potential Life Lost rate for North Dakota is lower than the national Years of Potential Life Lost rate.

Accidents include all poisonings and injuries not related to motor vehicles.

Data Sources:

- North Dakota Department of Health
  Administrative Services Section
  - Health Information Systems Division
  - Vital Records Division

  Preventive Health Section
  - Disease Control
  - Health Promotion and Education
    Behavioral Risk Factor Survey (1994 and 1995)
    Youth Risk Behavior Survey (1995)

- Healthy People 2000

- American Cancer Society

- The Health Status of Vermonters 1988-1993

- National Immunization Study - Centers for Disease Control and Prevention

- Health Care Financing Administration
  - Office of National Health Statistics
  - Office of Actuary

- Washington Heart Disease and Stroke Prevention Plan - 1995

- Vital Signs Hawaii: Key Indicators of Health Status in Hawaii

- Medicare and the American Health Systems: Report to Congress - June 1995, Prospective Payment Assessment Commission