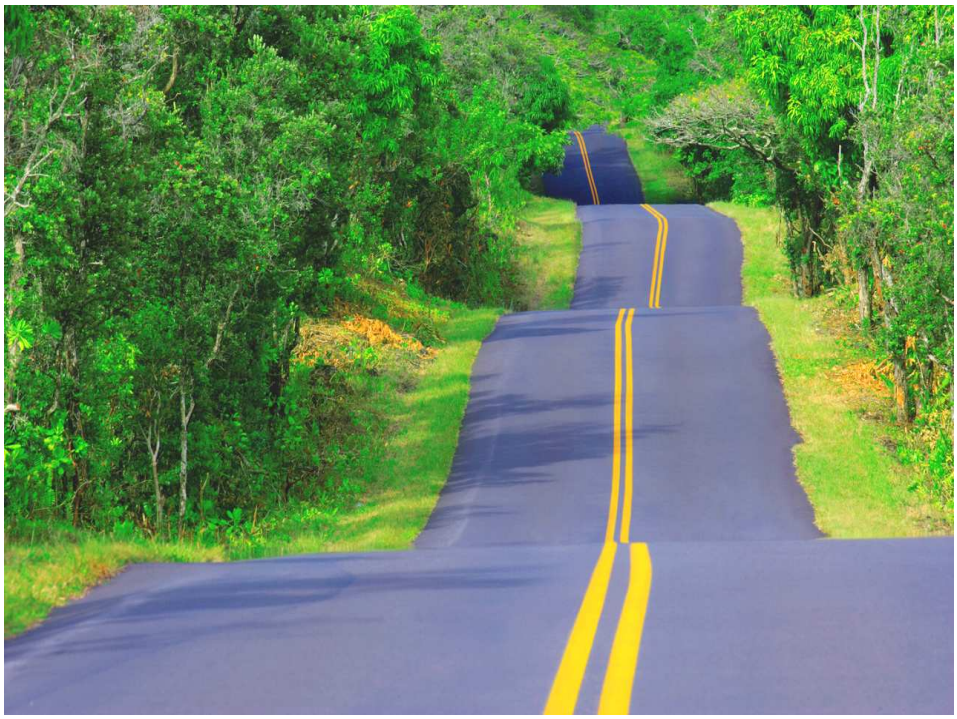

The Road to Health

A Strategic Plan for Diabetes Prevention and Control In Nebraska

2010-2014

DHHS
NEBRASKA

This document was prepared by the Nebraska Department of Health and Human Services Diabetes Prevention and Control Program (DPCP). The Nebraska DPCP was established in 1978 through funding from the Centers for Disease Control and Prevention (CDC). The DPCP is committed to improving the health of the citizens of Nebraska at risk or with diabetes by:

- *Facilitating statewide partnerships with healthcare systems communities and other partners and stakeholders.*
- *Coordinating statewide efforts to improve quality of care.*
- *Collecting and disseminating diabetes surveillance and evaluation data for program development and policy guidance.*
- *Facilitating efforts to address health disparities in high-risk populations.*
- *Developing and promoting population-based community interventions.*
- *Developing and promoting culturally appropriate health communications.*

Nebraska Diabetes State Plan 2010-2014

"Our Mission is to reduce the impact of diabetes in Nebraska by promoting and improving diabetes prevention, management, and education."

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February 2010

NEBRASKA
Diabetes Prevention and Control Program

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NEBRASKA HEALTH AND HUMAN SERVICES SYSTEM

DEPARTMENT OF SERVICES • DEPARTMENT OF REGULATION AND LICENSURE
DEPARTMENT OF FINANCE AND SUPPORT

STATE OF NEBRASKA
DAVE HEINEMAN, GOVERNOR

January 28, 2010

Dear Nebraska Citizens:

The Nebraska Diabetes Prevention and Control Plan is a comprehensive plan developed by the Nebraska Department of Health and Human Services (DHHS) to reduce the impact of diabetes and its many complications in our state during the next five years through a variety of prevention and control activities. The development of the plan was directed by the Nebraska Diabetes Prevention and Control Program, which is part of DHHS, with input and guidance from several other programs within DHHS, county/district health departments, and other organizations and agencies throughout Nebraska that are involved in the prevention and control of diabetes.

Diabetes is a serious disease, and recent estimates indicate that the number of people and the proportion of the population who have diabetes continue to increase. In Nebraska, the number of people 18 years of age or older who have been diagnosed with diabetes is now estimated at over 100,000, which is 7.8% of Nebraska's total adult population. By contrast, the number of Nebraska adults with diabetes was estimated at about 60,000 in the year 2000 and about 50,000 in 1990.

Diabetes also continues to be a leading cause of death and disability in Nebraska and throughout the United States. In recent years, diabetes has accounted for nearly two-thirds of all non-traumatic amputations performed at Nebraska hospitals, and two of every five cases of end-stage renal disease (kidney failure) in Nebraska now occur among people who have diabetes. During this decade, diabetes has killed 3,362 Nebraska residents, making it the state's seventh leading cause of death since 2000.

I hope that everyone in Nebraska who has an interest in diabetes prevention and control will use this plan as a resource to implement change within their community, worksite, or health care setting to reduce the enormous impact associated with diabetes. Your participation is vital to the success of this collaborative effort throughout Nebraska. Feel free to contact the program staff or me if you have any questions or comments. Working together, and using this plan as a guide, I believe that we can successfully prevent and control diabetes in our state.

Very truly yours,

Joann Schaefer, MD
Director, Division of Public Health and Chief Medical Officer
Nebraska Department of Health and Human Services

Foreword and Acknowledgements

The Nebraska Diabetes State Plan 2009-2014 was developed by the Nebraska Department of Health and Human Services' Diabetes Prevention and Control Program with input and guidance from many partners and stakeholders from across the state. Special recognition goes to these experts for sharing their knowledge, time and experience, and who came together to develop effective strategies for the prevention and control of diabetes in Nebraska.

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Table of Contents

Introduction

This document was prepared by the Nebraska Department of Health and Human Services Diabetes Prevention and Control Program (DPCP). The Nebraska DPCP was established in 1978 through funding from the Centers for Disease Control and Prevention (CDC). The DPCP is committed to improving the health of the citizens of Nebraska at risk or with diabetes by:

- Facilitating statewide partnerships with healthcare systems, communities and other partners and stakeholders.
- Coordinating statewide efforts to improve quality of care.
- Collecting and disseminating diabetes surveillance and evaluation data for program development and policy guidance.
- Facilitating outreach efforts to address health disparities in high-risk populations.
- Developing and promoting population-based community interventions.
- Developing and promoting culturally appropriate health communications.

NEBRASKA DIABETES PREVENTION AND CONTROL STRATEGIC PLAN LOGIC MODEL

Inputs ►	Activities (Outputs) ►	Short-term Outcomes ►	Intermediate Outcomes ►	Long-term Outcomes
• Nebraska Diabetes Prevention & Control Program (DPCP) • Nebraska Department of Health & Human Services (DHHS) • State diabetes public health system partners & stakeholders • Centers for Disease Prevention & Control (CDC)	• Patient education • Professional education • Clinical care quality improvement • Partnership development • Screenings for diabetes & pre-diabetes • Public policy development	Increases in: • % of people with diabetes who receive formal diabetes education • % of people with diabetes who receive clinical care according to recommended standards • % of people with diabetes who practice self-care according to recommended standards • % of people who are overweight or obese who are trying to lose weight or have been encouraged by a physician to do so	Decreases in: • Prevalence of risk factors for diabetes • Prevalence of risk factors for complications among people with diabetes • Racial & ethnic disparities in the prevalence of risk factors for diabetes and diabetes-related complications	Increases in: • Quality of life among people with diabetes Decreases in: • Prevalence of diabetes & pre-diabetes • Diabetes-related morbidity • Diabetes-related mortality • Racial & ethnic disparities in diabetes prevalence, morbidity, & mortality

A. The Impact of Diabetes in Nebraska

I. Prevalence

In Nebraska and throughout the United States, diabetes is becoming increasingly common. According to data collected in 2008 by the Behavioral Risk Factor Surveillance System (BRFSS), the number of Nebraska residents 18 years of age or older who have been diagnosed with diabetes is estimated at about 103,000, or 7.8% of the state's adult population *(see Figure 1)*. By contrast, the number of Nebraska adults with diabetes was estimated at about 60,000 in the year 2000 and about 50,000 in 1990. BRFSS data gathered in 2008 also indicate that there are over 63,000 adults in Nebraska who have been diagnosed with pre-diabetes. Compared to other states, the percentage of Nebraska adults who have diabetes falls slightly below the national median of 8.3%. The most recent estimate (2007) from the Centers for Disease Prevention and Control (CDC) is that there are 17.9 million adult Americans who have been diagnosed with diabetes. CDC has also prepared county-specific estimates of the number of adults who have been diagnosed with diabetes, and these numbers for Nebraska counties are presented in Figure 2.

Two trends strongly suggest that the size of Nebraska's diabetic population will not decrease any time soon. First, as is true throughout the United States, the increase in the prevalence of diabetes has been accompanied by a simultaneous increase in the prevalence of obesity and overweight. In Nebraska, the prevalence of obesity has doubled in less than two decades, and close to two-thirds of Nebraska adults are now above their healthy weight *(see Figure 4)*, putting them at increased risk for developing diabetes. Second, the risk of diabetes increases with age, and Nebraska's population is getting older. According to the 2008 BRFSS, about one of every six (17.2%) Nebraska residents 65 and older have been diagnosed with diabetes, compared to only about one in 18 (5.6%) among those under the age of 65. In addition, the US Census Bureau predicts that Nebraska's 65-and-older population will grow by more than 50% between 2010 and 2030, increasing in size from about 240,000 to 375,000.

Figure 1. Percentage of Nebraska Adults with Diagnosed Diabetes, 1995-2008
(Source: Nebraska Behavioral Risk Factor Surveillance System)

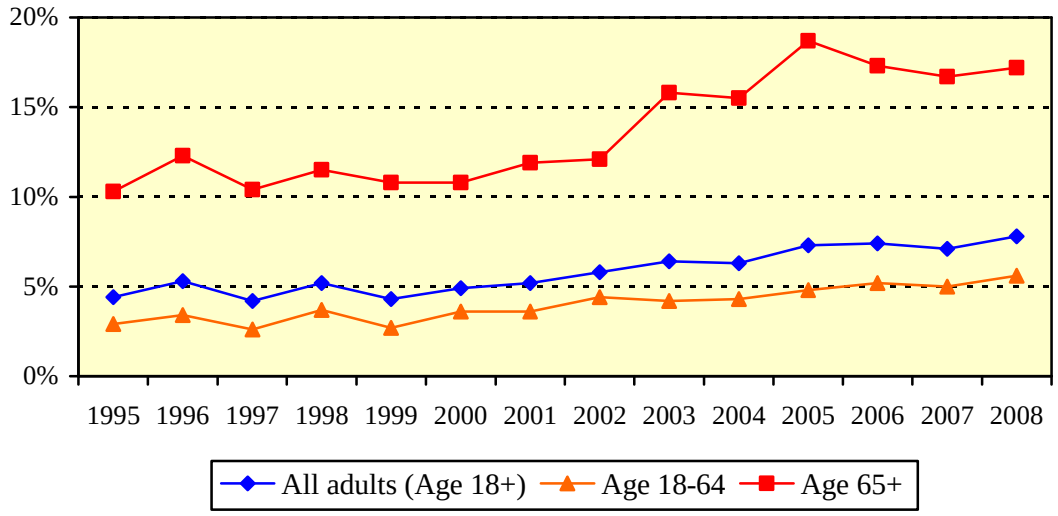
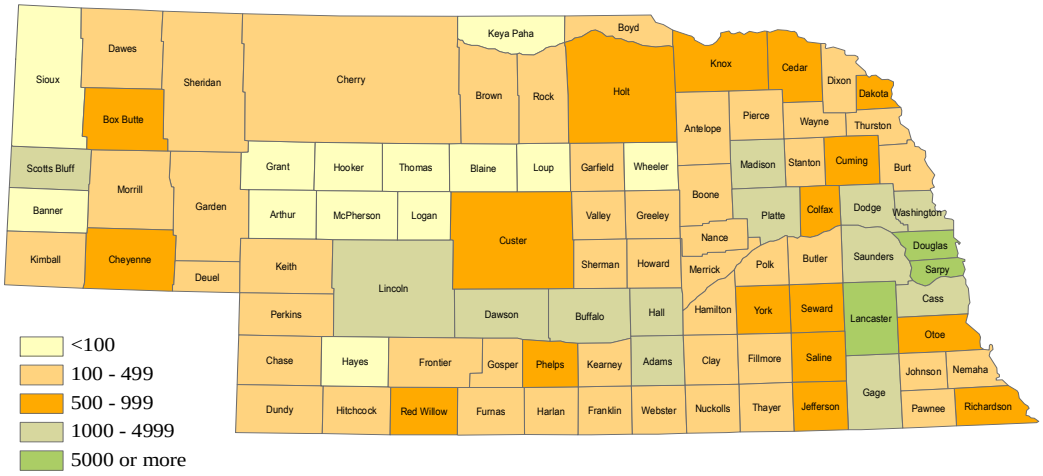


Figure 2. Number of Adults (Age 20+) with Diagnosed Diabetes, by County, Nebraska, 2005
(Source: Centers for Disease Prevention and Control)

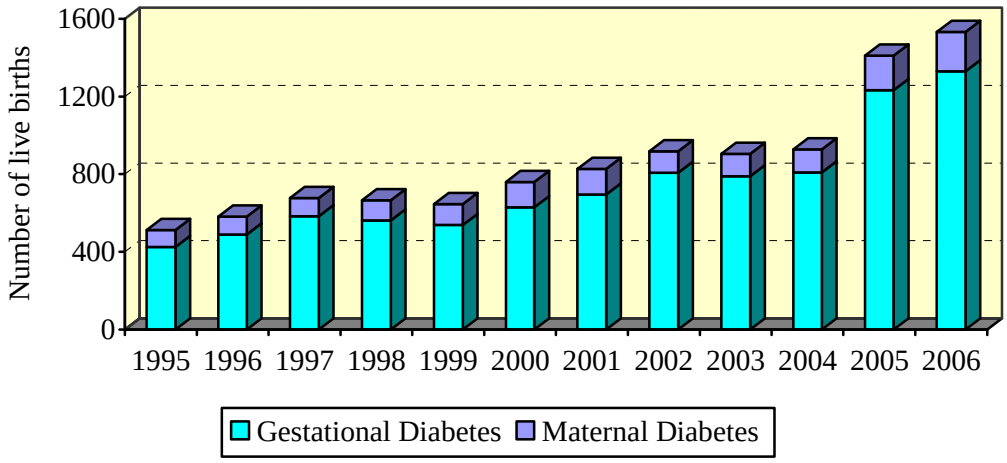


Nebraska BRFSS data also show that men are more likely to have diabetes than women, and that the percentage of adults with diabetes is greatest among those with the least education and the lowest household income. In addition, significant racial and ethnic disparities exist, with African-Americans, Native Americans, and Hispanics in Nebraska all at high risk for developing diabetes. Among adults, the percentage of African-Americans (13.3%) and Hispanics (12.6%) who have been diagnosed with diabetes is almost twice as high as the percentage for whites (7.2%), according to data (age-adjusted) from the 2007 and 2008 BRFSS. Among Nebraska's Native Americans, diabetes is even more common, with more than one in four (26.0%) adults reporting that they have it.

Both the number and rate of cases of gestational diabetes have about tripled in Nebraska during the past decade *(see Figure 3),* although revisions to the Nebraska birth certificate in 2005 may be responsible for some of this increase. The number of babies born to Nebraska women with gestational diabetes rose from 425 in 1995 to 1,329 in 2006. These figures represent 1.8% of the state's live birth total for 1995 and 5.0% for 2006. During the present decade (2000-2006), Nebraska women with gestational diabetes have given birth to 6,294 babies. Within this cohort, gestational diabetes was more common among Native Americans (6.2%), Asian/Pacific Islanders (5.8%), and Latinas (4.0%) than among either whites (3.2%) or African Americans (2.6%). Prevalence also rose with the age of the mother, with rates about three times higher for women 35 and older compared to women under the age of 25.

The number and rate of cases of maternal (i.e., pre-existing) diabetes has also increased substantially in Nebraska during the past decade *(see Figure 3)*. The number of babies born to Nebraska women with maternal diabetes rose from 88 in 1995 to 204 in 2006. These figures represent 0.38% of the state's live birth total for 1995 and 0.76% for 2006. During the present decade (2000-2006), Nebraska women with maternal diabetes have given birth to 988 babies.

Figure 3. Number of Nebraska Live Births with Gestational and Maternal Diabetes, 1995-2006
(Source: Nebraska vital statistics)



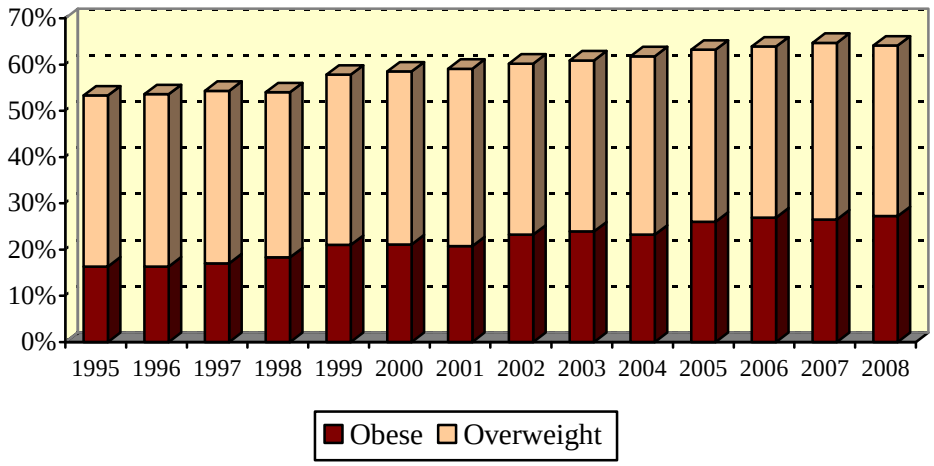
II. Risk Factors

For Type 1 diabetes, there are no known modifiable risk factors that can lower a person's chances of developing the disease. For Type 2 diabetes, however, both obesity and lack of physical activity are significant risk factors, making lifestyle changes such as better nutrition, weight control, and regular physical activity highly advisable. Some estimates suggest that the risk of developing Type 2 diabetes could be reduced by up to 75% through reductions in obesity, while increased physical activity could reduce the risk by up to 50%. For some people who have Type 2 diabetes and are obese, diabetes symptoms will disappear completely if normal weight is restored.

People who have diabetes also suffer an increased risk of developing a number of disabling and life-threatening complications, including heart disease, stroke, kidney failure, blindness, neuropathy (inflammation and degeneration of peripheral nerves), and peripheral vascular disease, which can ultimately lead to amputation of the lower extremities. In addition to obesity and lack of physical activity, high blood pressure (hypertension), cigarette smoking, and high cholesterol are known risk factors for cardiovascular disease, currently the leading cause of death in the United States. High blood pressure is also a risk factor for diabetes-related blindness, kidney disease, neuropathy, and peripheral vascular disease, and also contributes to the progress of these diseases after their onset. Cigarette smoking and high cholesterol are also risk factors for peripheral vascular disease, while smoking can hasten the decline of kidney function among people with diabetes.

The percentage of Nebraska adults who are obese has increased significantly during the past decade *(see Figure 4)*. According to the 2008 BRFSS, 27.2% of Nebraska adults--more than one in four--are obese, compared to 16.3% in 1995, and more than one-half (52.4%) of Nebraska adults who have diabetes are obese. A person is considered obese if their Body-Mass Index (calculated by dividing a person's weight by the squared value of their height) is 30 or greater. When the data are expanded to include overweight (Body-Mass Index = 25-29, which is above healthy weight but below the obese level) as well as obese individuals, the proportion who fit into either category increases to 64.1% for the general population and to 83.7% for people who have diabetes. Regardless of age or gender, people with diabetes are more likely to be either obese or overweight than are people without it.

Figure 4. Percentage of Nebraska Adults (Age 18+) who are Obese or Overweight, 1995-2008
(Source: Nebraska Behavioral Risk Factor Surveillance System)



In contrast to obesity and overweight, measures of physical activity among Nebraska adults have shown some recent signs of improvement. BRFSS data collected in 2008 found that, although nearly one in four (24.6%) Nebraska adults are physically inactive (they reported that they had not participated in any leisure-time physical activities during the past month), this figure is down from the 31.4% recorded in 2001. Similarly, the percentage of Nebraska adults who reported that they had participated in moderate or vigorous physical activity during the past month increased from 34.1% in 2001 to 52.0% in 2007. However, among people with diabetes, there is less physical activity: Nebraska's BRFSS found that 36.2% reported that they had not participated in any leisure-time physical activities during the past month while only 35.9% had participated in moderate or vigorous physical activity. Regardless of age or gender, people with diabetes are less likely to be physically active than are people without diabetes.

Two important risk factors for diabetes complications—high cholesterol and hypertension—currently afflict more than half of all adults in Nebraska who have diabetes. According to the 2007 BRFSS, two-thirds (67.3%) of Nebraska adults with diabetes have been told that they have high blood pressure, 59.1% have been told that they have high cholesterol, and 44.9% have both conditions. Trends during the past decade show significant increases in the prevalence of both of these conditions: in 1997, these figures stood at 45.6% for high cholesterol and 48.7% for hypertension. BRFSS data also show that 13.3% of adults in Nebraska who have diabetes reported in 2008 that they smoked cigarettes. The percentage of Nebraska adults with diabetes who smoke has declined significantly during the past decade.

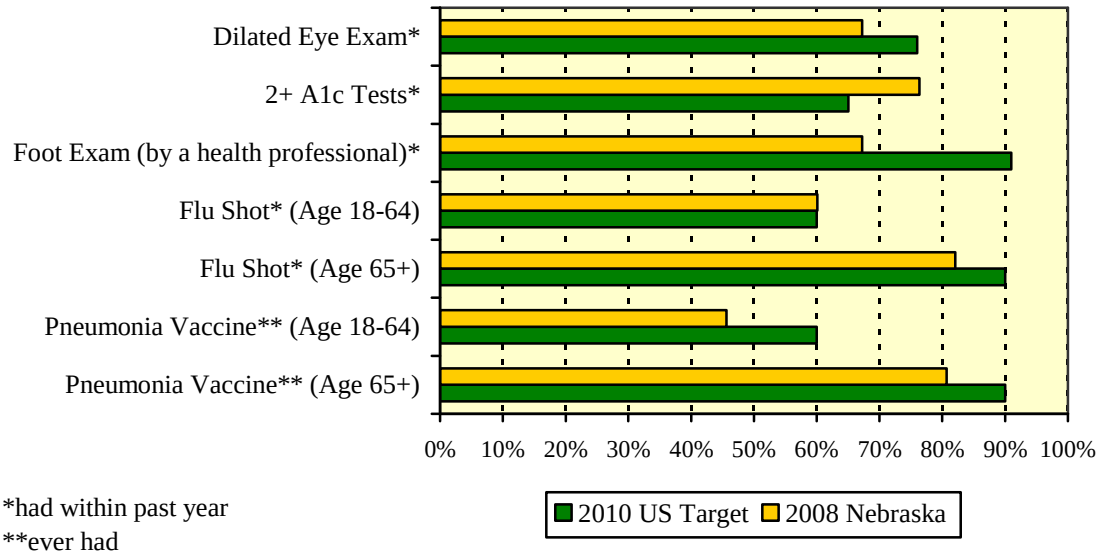
Over the past several decades, there has been a sharp increase in the proportion of U.S. children who are obese, which in turn has led to a substantial increase in the number of cases of Type 2 diabetes among children and adolescents. According to the National Health and Nutrition Examination Surveys, the prevalence of obesity among children 6-11 years of age increased from 4% in the early 1970s to 17% in 2006. For children 12-19 years of age, the prevalence rate increased from 6% to 18% during the same period. In Nebraska, data collected in 2005 by the Youth Risk Behavior Survey (YRBS) show that almost one in four (24.7%) high school students was either overweight or at risk for becoming overweight (NOTE: YRBS data use the terms "overweight" and "at risk for becoming overweight" in place of, and as synonyms for, the terms "obese" and "overweight", respectively).

III. Health Care

Proper care and management of diabetes are important for two reasons: there is at present no cure for diabetes, and many of the adverse health outcomes associated with diabetes are preventable or can be delayed or minimized with appropriate management and treatment. Most diabetes care must be individualized based on the type and severity of diabetes as well as other patient characteristics. Continuing care is crucial in the management of diabetes, and treatment must be evaluated and modified as necessary. Since the majority of diabetes care is self-care, patient education in self-management is essential. Clinical care should also include an initial evaluation, establishment of treatment goals, development of a management plan, and monitoring and treatment of cardiovascular and other complications.

To ensure quality health care for people with diabetes, the Nebraska Diabetes Prevention and Control Program has spearheaded the development of guidelines to help clinicians provide the most effective care for their patients with diabetes. These guidelines, known as the Nebraska Diabetes Consensus Guidelines, are based largely on the recommended standards of care developed by the American Diabetes Association. The Nebraska Diabetes Consensus Guidelines are presented in Appendix A of this document.

Figure 5. Percentage of Nebraska Adults (Age 18+) with Diabetes Who Have Received Preventive Care Services (2008) and US Year 2010 Targets
(Source: Nebraska Behavioral Risk Factor Surveillance System)

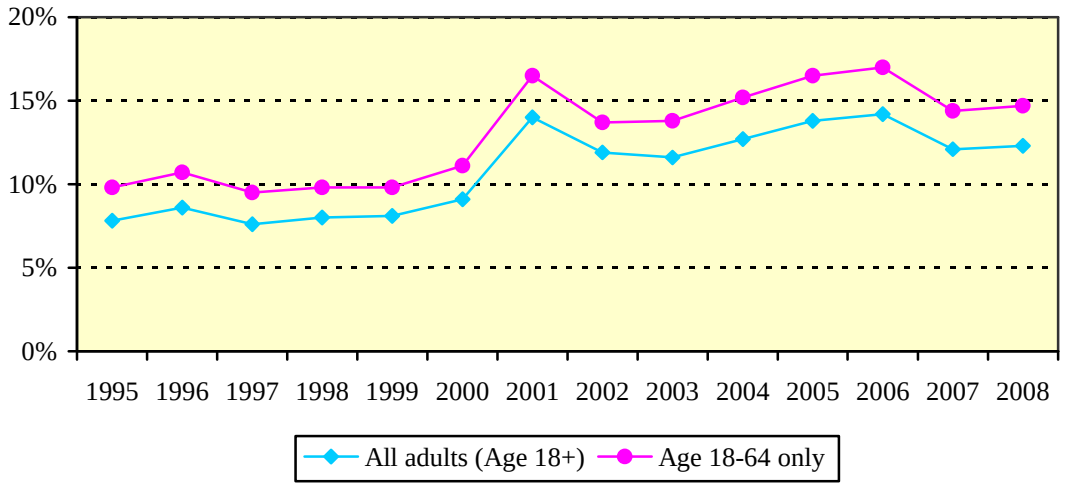


*had within past year
**ever had

In addition to the Nebraska Diabetes Consensus Guidelines, the Division of Diabetes Translation at CDC has developed a set of national objectives that address clinical care for people with diabetes. These objectives include dilated eye exams (recommended annually), A1c measurements (at least two per year), foot exams (annual), influenza vaccination (annual) and pneumococcal vaccination (once). The US Department of Health and Human Services also included these five preventive care services as part of their national objectives for the year 2010, and set specific targets for each one. Data from the 2008 BRFSS show that Nebraska has already achieved two of the Year 2010 objectives (% of adults with diabetes who have had at least two A1c tests within the past year and % of people 18-64 years old who have had a flu shot within the past year) *(see Figure 5)*. Trends in these data since 2000 suggest that it will be difficult for Nebraska to achieve any of the other national objectives by 2010.

A persistent and growing challenge to providing the recommended level of clinical care to people with diabetes is the increasing number and percentage of people who do not have health insurance. Data from the BRFSS show that, since reaching a decade-low figure of 7.6% in 1997, the proportion of Nebraska adults who do not have health insurance has increased significantly, reaching 12.3% in 2008 (*see Figure 6*). Among adults under the age of 65, the proportion of uninsured is even higher—14.7%. These same figures are 8.1% for all Nebraska adults with diabetes and 13.1% for Nebraska adults with diabetes who are under the age of 65. There are some resources for medical care and treatment that are available to the uninsured in Nebraska, but they can vary widely from place to place and may be facing an increasing struggle to keep up with increasing demand.

Figure 6. Percentage of Nebraska Adults without Health Insurance, 1995-2008
(Source: Nebraska Behavioral Risk Factor Surveillance System)



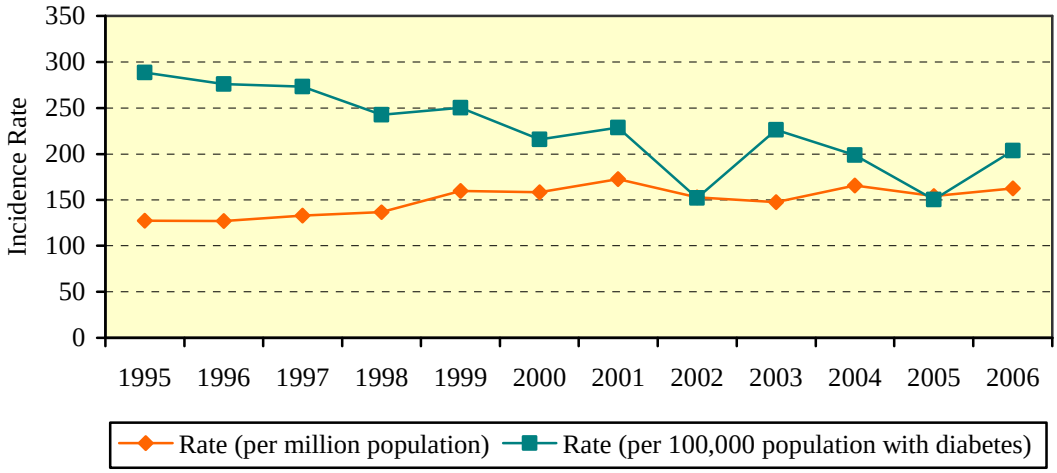
IV. Complications

People with diabetes can experience a number of complications, which can be classified as either acute, long-term, or pregnancy-related. The acute complications of diabetes can occur at any time and can usually be corrected, while the long-term complications may take decades to develop and are often irreversible. The long-term complications of diabetes include cardiovascular disease, microvascular disease, and neuropathy. Microvascular complications include diabetic retinopathy and kidney disease, which if untreated, can lead to blindness and kidney failure (also known as end-stage renal disease, or ESRD). Loss of sensation in the legs and feet due to neuropathy or impeded blood supply can result in peripheral vascular damage that can, in turn, lead to ulcers and amputations of the toes, feet, and legs. Among the acute metabolic complications of diabetes, diabetic ketoacidosis (DKA) is one of the most serious, and can be fatal. DKA is usually confined to people who have Type 1 diabetes, and is the result of insulin insufficiency. A pregnancy complicated by diabetes can have adverse health effects on both the mother and her baby.

Between 2000 and 2006, 1,571 cases of ESRD were diagnosed among Nebraska residents with diabetes. People with diabetes accounted for more than two of every five (43.5%) ESRD cases diagnosed in Nebraska during these years, and people 65 and older accounted for more than half (52.5%) of all new diabetes-related ESRD cases. The number of diabetes-related ESRD diagnoses in Nebraska increased from 162 in 1995 to 246 in 2006, and these numbers translate into incidence rates of 127.3 and 162.6 diagnoses per million population, respectively *(see Figure 7)*. However, when these rates are calculated for just the population that has diabetes, a different trend emerges: the incidence of diabetes-related

ESRD in Nebraska declined from 282.2 (diagnoses per 100,000 population with diabetes; age-adjusted to the 2000 US population) in 1995 to 203.7 in 2006 *(see Figure 7)*.

Figure 7. Incidence of Diabetes-Related End-Stage Renal Disease (ESRD) Among Nebraska Residents, 1995-2006
(Source: US Renal Data System)



A large proportion of the cost of diabetes is attributable to inpatient hospital care. During 2006 and 2007, there were 393,475 in-patient hospitalizations in Nebraska (excluding non-Nebraska residents), and 57,346 (14.6%) of them listed diabetes as one of the discharge diagnoses. The average length of stay per diabetes-related hospitalization was 5.0 days, compared to 4.2 days per non-diabetes-related hospitalization. The total length of stay for all diabetes-related hospitalizations was almost 290,000 days. The total charge for all diabetes-related hospitalizations was nearly $1.5 billion, with an average charge of over $26,000, compared to about $19,000 per non-diabetes-related hospitalization. The average cost of a diabetes-related hospitalization was more than double the amount recorded a decade earlier ($12,522, the average for the years 1996-2000), although the average charge for a non-diabetes-related hospitalization increased by a similar rate over the same period.

The number of diabetes-related hospitalizations that occurred in Nebraska during 2006 and 2007 translates into an average annual rate of 151.3 (discharges per 10,000 population; age-adjusted to the 2000 US population), which is an increase from the rate of 110.5 recorded between 1996 and 2000. However, when calculated for just the population with diabetes, these rates change to 206.1 (discharges per 1,000 population with diabetes per year; age-adjusted to the 2000 US population) for the years 1996-2000 and 217.9 for the years 2006-2007.

Over 13,000 of the diabetes-related hospitalizations that occurred in Nebraska during 2006 and 2007—nearly one in four— listed cardiovascular disease (CVD) as the primary (i.e., first-listed) discharge diagnosis. In fact, CVD (which includes both coronary heart disease and stroke) was the most frequent primary discharge diagnosis among diabetes-related hospitalizations. The hospitalization rate for CVD among Nebraska residents who have diabetes has declined in recent years, from 40.8 (discharges per 1,000 population with diabetes per year; age-adjusted to the 2000 US population) during 1996-2000 to 31.8 during 2006-2007.

DKA accounted for 1,031 of the diabetes-related hospitalizations that occurred in Nebraska during 2006 and 2007. DKA accounted for more than one of every four (27.3%) hospitalizations in which diabetes was the primary discharge diagnosis. Almost three-quarters (73.1%) of all DKA hospitalizations involved a person under the age of 45.

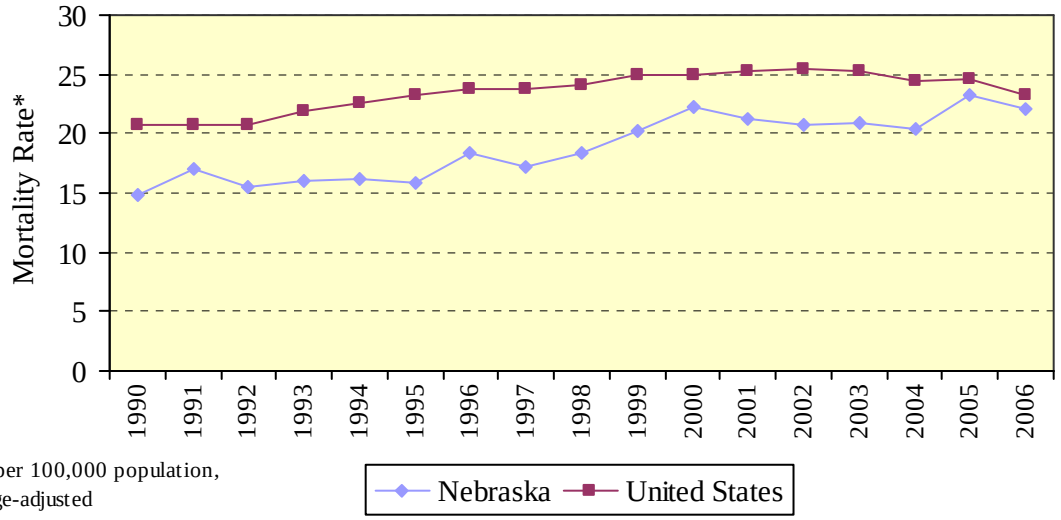
There were 671 lower-extremity amputations (LEAs) performed among Nebraska residents with diabetes during 2006 and 2007, and this number excludes amputations that were the result of trauma. People with diabetes accounted for about 60% of all LEAs that were performed at Nebraska hospitals during these years. People 65 and older accounted for more than half (52.3%) of all diabetes-related LEAs. The average charge per hospitalization that included a diabetes-related LEA was $43,992. The hospitalization rate for LEAs among Nebraska residents who have diabetes has fallen in recent years, from 2.9 (discharges per 1,000 population with diabetes per year; age-adjusted to the 2000 US population) during 1996-2000 to 2.1 during 2006-2007.

V. Mortality

Diabetes has been ranked among the top 10 leading causes of death in the United States since 1932, and it is now the nation's seventh leading cause of death. In recent years, over 70,000 deaths per year throughout the United States have been directly attributed to diabetes, and it has contributed to an additional 230,000 deaths per year. However, since diabetes is listed on the death certificate of less than half of all people who have diabetes at the time of their death, mortality statistics significantly underestimate the impact of the disease. Factors that increase the risk of death for people with diabetes include increasing age, age at onset of diabetes, duration of diabetes, and cardiovascular disease risk factors (smoking, hypertension, high cholesterol, physical inactivity, and obesity).

Between 2000 and 2006, 2,890 Nebraska residents died from diabetes (i.e., diabetes was the underlying, or primary, cause of death listed on their death certificate), making it the state's seventh leading cause of death during these years. The annual number and rate of diabetes deaths in Nebraska increased significantly during the 1990s, but appear to have stabilized during the present decade, with rates consistently lower than the U.S. *(see Figure 8)*. When these rates are calculated for just the population that has diabetes, diabetes mortality in Nebraska has actually declined during the present decade, from 279.7 (deaths per 100,000 population with diabetes; age-adjusted to the 2000 US population) in 2000 to 202.7 in 2006.

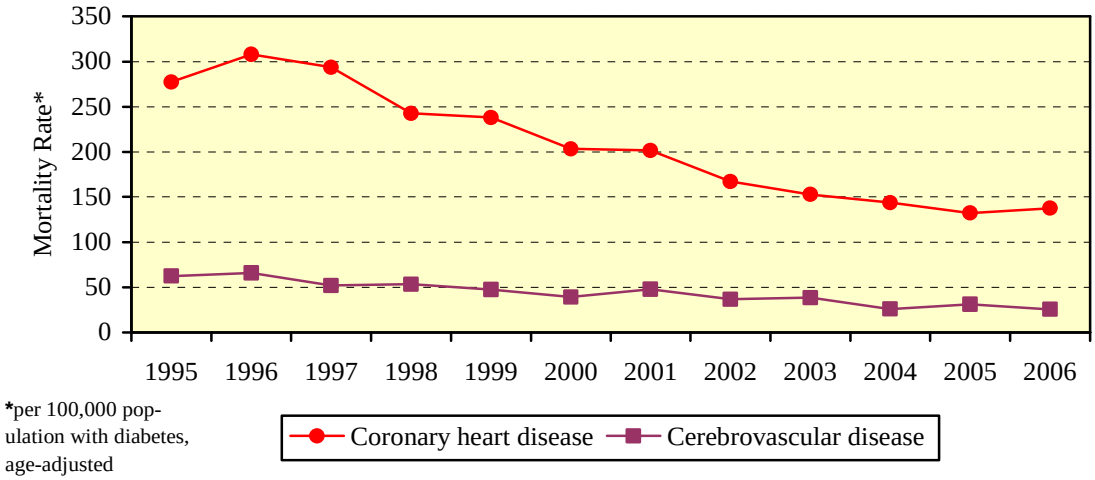
Figure 8. Diabetes Mortality in Nebraska and the United States, 1990-2006
(Source: Nebraska and U.S. vital statistics)



More than three-quarters (79.2%) of Nebraska's diabetes deaths for the years 2000-2006 involved a person 65 years of age or older. Diabetes deaths were more frequent among women than men (by a margin of 1,560 to 1,330), but the mortality risk, as represented by the diabetes mortality rate, was higher for men than for women (24.5 deaths per 100,000 population per year [age-adjusted to the 2000 US population] vs. 19.4). The diabetes mortality rate for the state's African-Americans during 2000-2006 (69.1 deaths per 100,000 population per year, age-adjusted to the 2000 US population) was over three times the rate for non-Hispanic whites (20.7), while the rate for Native Americans (94.7) was almost five times the non-Hispanic white rate. For Hispanics, the diabetes mortality rate (40.2) was almost double the non-Hispanic white rate. However, some of these differences are due to the higher prevalence of diabetes within the African-American, Native American, and Hispanic populations.

In addition to those deaths directly attributed to diabetes, diabetes has contributed to the death of an additional 7,137 Nebraska residents between 2000 and 2006, i.e., diabetes was listed on their death certificate as a contributing, but not the underlying cause of death. Deaths that list diabetes on the death certificate as either the underlying or a contributing cause of death are considered diabetes-related. The diabetes-related mortality rate in Nebraska has increased steadily during the past decade, from 64.0 (deaths per 100,000 population; age-adjusted to the 2000 US population) in 1995 to 72.3 in 2000 to 78.8 in 2006. However, when these rates are calculated for just the population that has diabetes, diabetes-related mortality in Nebraska has actually declined during the past decade, from 811.6 (per 100,000 population with diabetes; age-adjusted to the 2000 US population) in 1995 to 631.4 in 2006. During the years 2000-2006, diabetes-related mortality rates in Nebraska were also higher for African-Americans (175.6 [deaths per 100,000 population per year; age-adjusted to the 2000 US population]), Native Americans (285.4), and Hispanics (104.8) compared to non-Hispanic whites (69.5) and Asian/Pacific Islanders (61.7).

Figure 9. Coronary Heart Disease and Cerebrovascular Disease Deaths in Nebraska Among People With Diabetes, 1995-2006
(Source: Nebraska vital statistics)



*per 100,000 population with diabetes, age-adjusted

Coronary heart disease (CHD) is the leading cause of death among people with diabetes, and 2,742 of the diabetes-related deaths that occurred in Nebraska between 2000 and 2006 listed CHD on the death certificate as the underlying cause of death. During the past decade (1995-2006), annual rates of CHD mortality among Nebraska residents with diabetes have declined significantly, from 277.4 (deaths per 100,000 population with diabetes per year [age-adjusted to the 2000 US population]) in 1995 to 137.6 in 2006 (*see Figure 9*). Like CHD, cerebrovascular disease (better known as stroke) is also the result of atherosclerosis and is related to diabetes, and has also declined significantly in Nebraska during the past decade, from 62.6 (deaths per 100,000 population with diabetes per year [age-adjusted to the 2000 US population]) in 1995 to 25.6 in 2006 (*see Figure 9*). Taken together, CHD and stroke accounted for 28.7% of all diabetes-related deaths in Nebraska in 2006, compared to 46.6% in 1995.

B. Purpose of the plan

The purpose of this plan is to provide a framework to help guide diabetes prevention and control activities throughout the state of Nebraska during the next five years (2009-2014). The goals, objectives, and strategies of the plan are organized around the 10 Essential Public Health Services, which were developed during the 1990s under the auspices of the US Department of Health and Human Services. The Essential Services include the full scope of actions that are necessary to fulfill the purposes and responsibilities of public health in general, and in this plan they are focused specifically on the prevention and control of diabetes. The Essential Public Health Services are:

- **Surveillance**: Monitoring health status to identify community health problems.
- **Investigations**: Diagnosing and investigating health problems and health hazards in the community.
- **Health Education**: Informing, educating, and empowering people about health issues.
- **Partnerships**: Mobilizing community partnerships to identify and solve health problems.
- **Strategic Planning**: Developing policies and plans that support individual and community health efforts.
- **Regulatory Issues**: Enforcing laws and regulations that protect health and ensure safety.
- **Linking People to Services**: Linking people to needed personal health services and assuring the provision of health care when otherwise unavailable.
- **Professional Education**: Assuring a competent public and personal health care workforce.
- **Evaluation**: Evaluating the effectiveness, accessibility, and quality of personal and population-based health services.
- **Research**: Conducting research to acquire new insights and innovative solutions to health problems.

A key feature of this plan is that it is meant to serve not just as a guide for the Nebraska Diabetes Prevention and Control Program (DPCP), but for entire state diabetes public health system. A state diabetes public health system consists of the network of government agencies and programs, private enterprises, and voluntary organizations within a state that conduct public health activities to prevent and control diabetes. The activities that fall within the scope of a state diabetes public health system include virtually anything outside of the provision of clinical services. Obviously, the state DPCP plays a critical role in the system, but it can not provide all of the Essential Services alone. Some of the organizations and sectors that are often involved in a state diabetes public health system include other disease prevention and control programs within state government, local public health departments, community health centers, human service and charity organizations, educational institutions, and non-profit advocacy and professional organizations.

C. How the plan was developed

On May 25, 2005, the Nebraska DPCP convened a meeting at Mahoney State Park to start the process of developing a long-range strategic plan for Nebraska's diabetes public health system. Among the more than 200 invited participants were staff from other programs within the Nebraska Department of Health and Human Services, county/district public health departments, and various organizations and agencies throughout Nebraska that provide services essential to the health of the public with and at risk for diabetes. Meeting participants were provided in advance with copies of the previous statewide strategic plan for diabetes prevention and control, the Healthy People 2010 goals and objectives for diabetes, the 10 Essential Services of Public Health, the results of the 2004 performance assessment of the state diabetes public health system, and a working tool to be used along with the assessment results to help prioritize potential strategies.

The meeting focused on the goals and strategies for just four of the 10 Essential Public Health Services (Health Education, Linking People to Services, Professional Education, and Partnerships); these were selected by the performance assessment participants as the Essential Services of greatest importance for the state diabetes public health system. For these four Essential Services, participants at the planning meeting were asked to select the most preferable of the proposed strategies (most of which originated at the performance assessment meetings), and those that received the most votes are included in this plan.

The strategies for the remaining six Essential Public Health Services (Surveillance, Strategic Planning, Evaluation, Research, Investigations, and Regulatory Issues) are taken from the suggestions that were made during the performance assessment meetings of 2004. DPCP staff later reviewed all of the suggested strategies, revising and eliminating those that could probably not be accomplished within the next five years. The plan's goals and objectives were also developed by Nebraska DPCP staff, and are based directly on the 10 Essential Public Health Services. A priority ranking for each Essential Public Health Service within the state diabetes public health system is also included as part of this plan. The ranks were determined as part of the performance assessment process; participants at those meetings were asked to rank-order the Essential Services in importance as they relate to the state diabetes public health system.

D. Using the plan

The Nebraska Diabetes Prevention and Control Plan is designed with the following uses in mind:

- To increase awareness among policy-makers at the state and local levels of the problems related to diabetes prevention and control.
- To suggest strategies that state diabetes public health system partners can use to develop their own action plans.
- To provide data that describe the impact of diabetes in Nebraska, and that provide a baseline for measuring progress toward achieving the plan's objectives.
- To foster collaborative prevention and control activities within the state diabetes public health system.
- To support grant applications at the state, district, and local levels.

The strategies included in the plan do not provide a detailed description of how they should be carried out. Instead, any partner who incorporates a strategy as part of their action plan needs to decide how best it can be implemented, given their manpower, financial resources, and other relevant factors. In addition, the plan does not dictate nor even suggest which partners should adopt which strategies. Although partners are free to pursue any strategy of their choosing, they should try to select only those strategies that fit their mission and resources and that they can reasonably accomplish within the plan's timeframe, and it is the responsibility of each individual partner to decide this for themselves.

Achieving the goals and objectives of the plan will require continued collaboration between everyone who is a part of the state diabetes public health system today, as well as future expansion of the system to incorporate new partners. Working together and using this plan as a guide, we can reduce the enormous burden of diabetes in Nebraska and improve the quality of life for those people who are affected by it.

PLAN GOALS, OBJECTIVES, AND STRATEGIES

Nebraska Essential Public Health Service Priority #1: HEALTH EDUCATION	***Goal: Educate the public about diabetes risk factors, risk factors for diabetes complications, and diabetes self-management.***

Objective #1.1: Increase the number of people who are knowledgeable about the risk factors for diabetes.

Strategies:

Educate people about the potential to prevent the onset of diabetes through healthy lifestyles, with special emphasis on reaching people with pre-diabetes.

Promote accessible and affordable opportunities for people to adopt healthy lifestyles, particularly making healthy food choices and increasing physical activity.

Promote accessible and affordable opportunities for people to adopt healthy lifestyles, particularly making healthy food choices and increasing physical activity.

Educate people about the differences between Type 1 and Type 2 diabetes, and increase awareness of Type 1 diabetes as a disease unrelated to lifestyle.

Educate minority populations about diabetes risk factors using consistent, user-friendly, and culturally and age-appropriate educational information.

Objective #1.2: Increase the number of people with diabetes who are knowledgeable about the risk factors for complications and about diabetes self-management.

Strategies:

Improve access to educational information for people with diabetes, using a variety of media and distribution sites (e.g., physician offices, county/district health departments, social service centers, health fairs, worksites, schools, libraries, grocery stores, pharmacies, etc., including the Nebraska Diabetes Prevention and Control Program DPCP) website.

Educate minority populations with diabetes using consistent, user-friendly, and culturally and age-appropriate educational information.

Encourage health care providers to refer their patients with diabetes to recognized diabetes educators and dietitians.

Encourage the use of telehealth to access diabetes educators.

Who Is At Risk For Diabetes?

ANYONE! It is most common in people who:

- Are related to a person with diabetes
- Are over forty-five years of age
- Are overweight
- Are mothers of babies that weighed over 9 lbs. at birth or have had gestational diabetes
- Are a member of an ethnic group or race with high prevalence of diabetes (American Indian African American, Hispanic, American Asian and Pacific Islanders)
- Have high blood pressure
- Have high triglycerides or cholesterol levels that are not normal

Nebraska Essential Public Health Service Priority #2: LINKING PEOPLE TO SERVICES	*Goal: Improve access to clinical health care services for people with diabetes and pre-diabetes.*

Objective #2.1: Increase the number of people with diabetes and pre-diabetes who receive recommended levels of clinical care, management, and treatment.

Strategies:

Develop a statewide directory of clinical services and resources that are available to people with diabetes and pre-diabetes, and make it available on the DPCP website.

Distribute information about locally-available clinical services and resources to county/district public health departments and/or community organizations and schools, and encourage them to use this information to connect people with diabetes and pre-diabetes who need care to clinical services in their community.

Identify the barriers that prevent people with diabetes and pre-diabetes from seeking and/or obtaining recommended care, and develop strategies to reduce or eliminate these barriers.

Improve access to education in rural areas by use of telehealth.

Encourage use of Planned Care Model among clinical settings.

Nebraska Essential Public Health Service Priority #3: PROFESSIONAL EDUCATION	*Goal: Educate health care professionals about evidence-based methods for the prevention, management, and treatment of diabetes and its complications.*

Objective #3.1: Increase the number of opportunities for diabetes education for health care professionals.

Strategies:

Organize, promote, and support educational conferences, seminars, and training for health care professionals.

Offer educational programs in all regions of the state, in a variety of settings, and accessible via telephone and video conferencing, to make these programs available to as large an audience as possible.

Establish the Nebraska DPCP as a clearinghouse for information about educational conferences, seminars, and training, using the DPCP website and mailing list of health care professionals.

Objective #3.2: Increase the availability of state-of-the-art diabetes educational materials and resources for health care professionals.

Strategies:

Establish a clearinghouse of culturally and age-appropriate educational materials on the Nebraska DPCP website.

Include links on the Nebraska DPCP website to other sources of educational materials for health care professionals.

Maintain a current statewide roster of recognized diabetes education programs and diabetes educators.

Periodically update and distribute the Nebraska Diabetes Consensus Guidelines (a set of evidence-based clinical care guidelines developed under the auspices of the Nebraska DPCP), and make them available on the DPCP website.

Objective #3.3: Increase efforts to develop a culturally diverse and culturally competent health care workforce that is knowledgeable about diabetes.

Strategies:

Support existing cultural competency training courses.

Establish partnerships with academic institutions to recruit and train culturally diverse and culturally competent students.

Establish partnerships with health care employers to hire culturally diverse and culturally competent workers.

Nebraska Essential Public Health Service Priority #4: PARTNERSHIPS	***Goal: Develop community partnerships throughout the state to conduct diabetes prevention and control activities. (NOTE: In this plan, any organization, agency, or program that is actively involved in diabetes prevention and control activities is considered a "partner" in the state diabetes public health system; those that are not involved in such activities but have an interest in diabetes prevention and control are considered "stakeholders.")***

Objective #4.1: Increase the number of partners within the state diabetes public health system.

Strategies:

Consult with the Nebraska DPCP Advisory Committee at least annually to identify and recruit new partners (and stakeholders).

Encourage existing stakeholders in the state diabetes public health system to become partners.

Identify and recruit new partners and stakeholders, including Departments of Roads, Planning, Development and others outside the conventional public health arena.

Objective #4.2: Increase the number of diabetes prevention and control activities conducted by system partners.

Strategies:

Maintain a complete list of system partners on the Nebraska DPCP website, accessible to all partners, to encourage contact and cooperative efforts.

Increase collaboration between the Nebraska DPCP and other programs within the Nebraska Department of Health and Human Services (DHHS), to integrate activities and achieve common objectives.

Periodically compile a list of the assets and resources that partners and stakeholders can contribute to the state diabetes public health system, using this information to identify opportunities for new activities.

Convene regional conferences throughout the state to facilitate collaboration among partners.

Advocate for initiatives and policies that support diabetes self-management.

Objective #4.3: Advocate for initiatives and policies that support diabetes prevention and control activities.

Strategies:

Work with partners to raise awareness and educate decision makers about diabetes prevention and control policies and resources needed.

Work with partners to support legislation that increases diabetes prevention and control activities.

Work with state legislators, advocacy groups and local policy makers to enhance advocacy for policy changes that support diabetes prevention and control activities.

Identify strategies to work with insurance regulators and insurance companies to enhance advocacy for initiatives and policies that support diabetes prevention and control activities.

Nebraska Essential Public Health Service Priority #5: SURVEILLANCE	*Goal: Utilize population-based data to monitor the burden of diabetes in Nebraska.*

Objective #5.1: Maintain the current system of collecting and analyzing data that describe the burden of diabetes in Nebraska. (NOTE: These data include the Nebraska Behavioral Risk Factor Surveillance System, Nebraska vital statistics, the Nebraska Youth Risk Behavior Survey, and the United States Renal Disease System.)

Strategies:

Periodically update the "Burden of Diabetes in Nebraska" report.

Distribute the most current "Burden of Diabetes in Nebraska" report to all system partners and stakeholders, and make it available on the Nebraska DPCP website.

Apply surveillance findings to modify existing and add new diabetes prevention and control activities, if indicated.

Objective #5.2: Identify surveillance data needs and potential data sources.

Strategies:

Support efforts to obtain data on diabetes in children.

Support efforts to improve the quality and accessibility of hospital discharge and Medicaid data.

Nebraska Essential Public Health Service Priority #6: STRATEGIC PLANNING	Objective #6.1: Develop and utilize a long-range strategic plan to guide diabetes prevention and control activities throughout the state diabetes public health system.

Objective #6.1: Increase the number of activities that the Nebraska DPCP conducts that are consistent with the goals and objectives of the strategic plan.

Strategies:

Annually review all current and planned DPCP activities, to assess their consistency with the strategic plan and to identify and address gaps.

Identify common objectives with other Nebraska DHHS strategic plans (e.g., cardiovascular disease, physical activity and nutrition, minority health, women's health, comprehensive cancer, and tobacco use prevention and cessation) to pool resources and coordinate activities.

Objective #6.2: Increase the number of activities that system partners conduct that are consistent with the goals and objectives of the strategic plan.

Strategies:

Distribute the strategic plan to all system partners and stakeholders, and make it available on the Nebraska DPCP website.

Annually conduct an inventory of diabetes prevention and control activities conducted by system partners throughout the state, to assess their consistency with the strategic plan and to identify and address gaps.

Nebraska Essential Public Health Service Priority #7: EVALUATION	*Goal: Evaluate the performance of diabetes prevention and control activities and the state diabetes public health system's progress toward achieving the goals and objectives of the strategic plan.*

Objective #7.1: Increase the number of diabetes prevention and control activities that include a formal evaluation component.

Strategies:

Provide technical assistance to system partners to encourage them to include an evaluation component in as many of their activities as possible.

Evaluate quality of care through chart audits or electronic patient registries.

Apply evaluation results to modify and improve activities and to eliminate duplication and/or ineffective efforts.

Objective #7.2: Periodically evaluate the strategic plan.

Strategies:

Establish a formal evaluation plan for the strategic plan with established timelines, measures, and accountabilities.

Apply evaluation results to revise (if indicated) the goals and objectives of the strategic plan.

Nebraska Essential Public Health Service Priority #8: RESEARCH	*Goal: Know the results of innovative clinical and epidemiologic research studies conducted in Nebraska and elsewhere, using them to improve diabetes prevention and control efforts.*

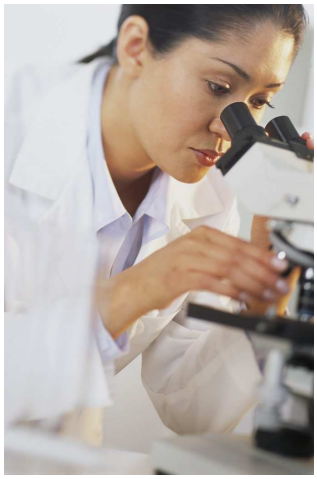
Objective #8.1: Increase efforts to disseminate research results and apply them to diabetes prevention and control activities throughout the state diabetes public health system.

Strategies:

Include links on the Nebraska DPCP website to sources of information about current diabetes research.

Include faculty from at least one of the state's two biomedical research centers (University of Nebraska Medical Center and Creighton University School of Medicine) as members of the Nebraska DPCP Advisory Committee.

Apply research results to revise, add, or delete objectives from the strategic plan, if indicated.



Nebraska Essential Public Health Service Priority #9: INVESTIGATIONS	*Goal: Conduct screenings for diabetes and pre-diabetes in high-risk populations for the purposes of diagnosis and intervention.*

Objective #9.1: Increase the number of screenings in high-risk populations.

Strategies:

Increase health care providers' knowledge of high-risk populations and encourage providers to offer screenings.

Increase health care providers' knowledge of best-practice screening methods.

Increase collaboration between the Nebraska DPCP and other Nebraska DHHS programs to offer screenings in conjunction with other disease prevention and control activities.

Warning Signs of Diabetes

- Increased or frequent urination
- Increased or excessive thirst
- Increased hunger
- Unexplained weight loss
- Fatigue
- Irritability and mood changes
- Nausea and vomiting
- Very dry skin
- Sudden changes in vision or blurred vision
- Tingling or numbness in hands or feet
- Skin infections and sores that are slow to heal
- High amounts of sugar in the urine and/or blood

Nebraska Essential Public Health Service Priority #10: REGULATORY ISSUES	*Goal: Monitor regulations and legislation that affect diabetes prevention, care, and treatment.*

Objective #10.1: Increase awareness among system partners and stakeholders of existing and pending laws and regulations that affect diabetes.

Strategies:

Monitor legislative efforts to expand health insurance coverage to include diabetes education and supplies.

Monitor legislative efforts to expand the options for obtaining health care for people who are uninsured or underinsured.

Maintain a clearinghouse of information about existing laws and regulations that affects diabetes prevention, care, and treatment.

E. Evaluating the Plan

Short-term indicators

Indicator	*Data Source*	*Baseline*		*Target (2014)*
		Value	*Year*	
Increase the % of Nebraska adults with diabetes who have ever attended a diabetes self-management class	NE BRFSS	61.1%	2008	75%
Increase the % of Nebraska adults with diabetes who have had two or more A1c tests within the past year	NE BRFSS	76.5%	2008	90%
Increase the % of Nebraska adults with diabetes who have had a dilated eye exam within the past year	NE BRFSS	67.2%	2008	80%
Increase the % of Nebraska adults with diabetes who have had a foot exam by a health professional within the past year	NE BRFSS	67.2%	2008	91%
Increase the % of Nebraska adults with diabetes who have received an influenza vaccination within the past year	NE BRFSS	18-64: 60.1% 65+: 82.1%	2008	18-64: 65% 65+: 90%
Increase the % of Nebraska adults with diabetes who have ever received a pneumococcal vaccination	NE BRFSS	18-64: 45.6% 65+: 80.7%	2008	18-64: 65% 65+: 90%
Increase the % of Nebraska adults with diabetes who have had their blood cholesterol checked within the past five years	NE BRFSS	94.0%	2007	95%
Increase the % of Nebraska adults with diabetes who have seen a health professional for their diabetes within the past year	NE BRFSS	86.3%	2008	95%
Increase the % of Nebraska adults with diabetes who perform self-blood glucose monitoring daily	NE BRFSS	58.7%	2008	65%
Increase the % of Nebraska adults with diabetes who perform self-foot exam daily	NE BRFSS	61.8%	2008	70%
Increase the % of Nebraska adults who are currently trying to lose weight	NE BRFSS	40.6%	2003	50%
Increase the % of Nebraska adults who have been advised by a health professional to lose weight within the past year	NE BRFSS	9.2%	2003	20%

NOTE: BRFSS percentages are weighted by age and gender to reflect Nebraska's estimated population, and BRFSS participants are 18 years of age or older
Abbreviation: NE BRFSS, Nebraska Behavioral Risk Factor Surveillance System

Intermediate indicators

Indicator	*Data Source*	*Baseline*		*Target (2014)*
		Value	*Year*	
Decrease the % of Nebraska adults who are obese (i.e., BMI at or above 30.0)	NE BRFSS	27.2%	2008	15%
Decrease the % of Nebraska adolescents (grades 9-12) who are overweight (i.e., at or above the 95th percentile of BMI, by age and gender)	NE YRBS	11.0%	2005	3%
Decrease the % of Nebraska adolescents (grades 9-12) who are at risk of becoming overweight (i.e., between the 85th and 95th percentile of BMI, by age and gender)	NE YRBS	14.7%	2005	3%
Decrease the % of Nebraska adults who have not participated in any physical activity outside of their job during the past 30 days	NE BRFSS	24.6%	2008	15%
Increase the % of Nebraska adults who meet the recommendations for regular physical activity*	NE BRFSS	52.0%	2007	65%
Decrease the % of Nebraska adolescents (grades 9-12) who have not participated in either a vigorous or moderate level of physical activity during the past seven days	NE YRBS	28.3%	2005	35%
Decrease the % of Nebraska adults with diabetes who are obese (i.e., BMI at or above 30.0)	NE BRFSS	52.4%	2008	15%
Decrease the % of Nebraska adults with diabetes who have not participated in any physical activity outside of their job during the past 30 days	NE BRFSS	36.2%	2008	15%
Increase the % of Nebraska adults with diabetes who meet the recommendations for regular physical activity*	NE BRFSS	35.9%	2007	50%
Decrease the % of Nebraska adults with diabetes who currently smoke cigarettes	NE BRFSS	13.3%	2008	7.5%
Decrease the % of Nebraska adults with diabetes who have high cholesterol	NE BRFSS	59.1%	2007	30%
Decrease the % of Nebraska adults with diabetes who have hypertension	NE BRFSS	67.3%	2007	30%

NOTE: BRFSS percentages are weighted by age and gender to reflect Nebraska's estimated population, and BRFSS participants are 18 years of age or older
Abbreviations: NE BRFSS, Nebraska Behavioral Risk Factor Surveillance System; NE YRBS, Nebraska Youth Risk Behavior Survey; BMI, Body-Mass Index
*Regular physical activity is defined as five or more days of moderate physical activity performed for 30 minutes each day or three or more days of vigorous activity performed for 20 minutes each day.

Long-term indicators

Indicator	*Data Source*	*Baseline*		*Target (2014)*
		Value	*Year*	
Decrease the % of Nebraska adults with diabetes who report having 15 or more unhealthy days during the past month	NE BRFSS	29.8%	2008	20%
Decrease the prevalence of diagnosed diabetes among Nebraska adults	NE BRFSS	7.8%	2008	2.5%
Decrease the prevalence of pre-diabetes among Nebraska adults	NE BRFSS	5.1%	2008	2.5%
Decrease the prevalence of retinopathy among Nebraska adults with diabetes	NE BRFSS	16.4%	2008	10%
Decrease the incidence of diabetes-related end-stage renal disease among Nebraska residents	US Renal Disease System	162.9‡	2006	90.0
Decrease the prevalence of foot ulcers among Nebraska adults with diabetes	NE BRFSS	10.7%	2007	5%
Decrease the incidence of gestational diabetes among pregnant women in Nebraska	NE birth certificates	5.0%	2006	2.5%
Decrease the rate of lower extremity amputations among Nebraska residents with diabetes	NE hospital discharge data	2.1#	2006-2007	1.5
Decrease the diabetes mortality rate* among Nebraska residents	NE death certificates	22.1	2006	15.0
Decrease the diabetes-related mortality rate§ among Nebraska residents	NE death certificates	78.8	2006	46.0
Decrease the diabetes-related mortality rate§ among Nebraska residents with diabetes	NE death certificates	631.4	2006	350.0
Decrease the cardiovascular disease mortality rate¶ among Nebraska residents with diabetes	NE death certificates	174.0	2006	100.0

NOTES: BRFSS percentages are weighted by age and gender to reflect Nebraska's estimated population, and BRFSS participants are 18 years of age or older; mortality rates are age-adjusted to the 2000 US population and are expressed per 100,000 population (total or with diabetes)
Abbreviation: NE BRFSS, Nebraska Behavioral Risk Factor Surveillance System
*Includes any death in which diabetes (ICD-10 = E10-E14) is listed on the death certificate as the underlying (i.e., primary) cause of death
§Includes any death in which diabetes is listed on the death certificate as either an underlying or contributing cause of death
¶Includes any death in which cardiovascular disease (ICD-10 = I00-I78) is listed on the death certificate as the underlying cause of death and diabetes is listed as a contributing cause of death

‡per 1,000,000 total population
#per 1,000 population with diabetes per year

Racial and ethnic disparities

Indicator	*Data Source*	*Baseline*		*Target (2014)*
		Value	*Year*	
Increase the % of Nebraska adults (age 18+) with diabetes who have had two or more A1c tests within the past year	NE BRFSS (regular & minority oversample)	a) 72% b) 75% c) 93% d) NA e) 56%	2001-2005	a) 90% b) 90% c) 95% d) 90% e) 90%
Increase the % of Nebraska adults (age 18+) with diabetes who have had a dilated eye exam within the past year	NE BRFSS (regular & minority oversample)	a) 75% b) 79% c) 82% d) NA e) 68%	2001-2005	a) 80% b) 85% c) 85% d) 80% e) 80%
Increase the % of Nebraska adults (age 18+) with diabetes who have had a foot exam by a health professional within the past year	NE BRFSS (regular & minority oversample)	a) 70% b) 84% c) 84% d) NA e) 67%	2001-2005	a) 91% b) 91% c) 91% d) 91% e) 91%
Decrease the % of Nebraska adults (age 18+) who are obese (i.e., BMI at or above 30)	NE BRFSS (regular & minority oversample)	a) 31.1% b) 44.2% c) 42.2% d) 7.7% e) 41.4%	2007-2008	a) 15% b) 15% c) 15% d) 5% e) 15%
Decrease the % of Nebraska adults (age 18+) who have not participated in any physical activity outside of their job during the past 30 days	NE BRFSS (regular & minority oversample)	a) 27.0% b) 35.4% c) 29.9% d) 23.7% e) 37.1%	2007-2008	a) 15% b) 15% c) 15% d) 15% e) 15%

Racial and ethnic disparities (continued)

Indicator	*Data Source*	*Baseline*		*Target (2014)*
		Value	*Year*	
Decrease the prevalence of diagnosed diabetes among Nebraska adults (age 18+)	NE BRFSS (regular & minority oversample)	a) 7.2% b) 13.3% c) 26.0% d) 3.5% e) 12.6%	2007-2008	a) 2.5% b) 2.5% c) 2.5% d) 2.5% e) 2.5%
Decrease the diabetes-related mortality rate* among Nebraska residents	NE death certificates	a) 70.3 b) 186.8 c) 314.4 d) 89.8 e) 62.5	2004-2006	a) 46.0 b) 46.0 c) 46.0 d) 46.0 e) 46.0

NOTES: NE BRFSS (regular & minority oversample) percentages are weighted by age and gender to reflect Nebraska's estimated population, and are age-adjusted to the 2000 US population; BRFSS participants are 18 years of age or older

Key to baseline and target values: a) white; b) African-American; c) Native American; d) Asian/Pacific Islander; e) Hispanic (any race)

*Diabetes-related mortality rates include any death in which diabetes (ICD-10 = E10-E14) is listed on the death certificate as either an underlying or contributing cause of death; these rates are age-adjusted to the 2000 US population and are expressed per 100,000 population

Abbreviations: NE BRFSS, Nebraska Behavioral Risk Factor Surveillance System; NA, not available (insufficient sample size)

Nebraska Diabetes Consensus Guidelines	
Type of Care	***Frequency***
Weight or BMI Percentage	Every Visit
Blood Pressure	Every Visit
Foot Exam/Pulses	Every Visit
Skin/injection Sites	Every Visit
Blood Glucose	Every Visit
Review of Self-Blood Glucose Monitoring Record	Every Visit
Discuss Lifestyle Management - Tobacco Use Status Using/Doesn't Use (Cessation if using) - Physical Activity - Assess	Every Visit
Review/Update Current Meds	Every Visit
Consider daily aspirin use	Every Visit
Consider Ace Inhibitors	Every Visit
Consider Statins	Every Visit
A1C (Hemoglobin A1C)	-insulin treated Quarterly -non-insulin treated 2-4 times/yr or as needed
Referred for Dental Exam	Bi-annual Exam
Annual Exam/History Update	Yearly
Abdominal Exam	Yearly
Neurological Exam/Depression Screening	Yearly
Cardiac Assessment/Pulses	Yearly
Thyroid Assessment	Yearly
Referred for Dilated Eye Exam	Yearly Exam
Total Cholesterol, Triglycerides, LDL	Yearly
Random spot urine for albumin/creatinine ratio	Yearly
Annual Renal Screen to include serum creatinine	Yearly
Influenza Vaccine	Yearly
Pneumococcal Vaccination	Once and repeat after age 65 if greater than 5 years after last vaccination

REFERENCES

Beckles GLA and Thompson-Reid PE (eds.). Diabetes and Women's Health Across the Life Stages: A Public Health Perspective. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation, 2001.

Centers for Disease Control and Prevention. Diabetes Data and Statistics. Available from: URL: http://apps.nccd.cdc.gov/ddtstrs/

Diabetes Prevention and Control Program. Washington State Diabetes Plan. Olympia, WA: Washington State Department of Health, March 2005.

Nebraska Cardiovascular Health Program. Nebraska Heart Disease and Stroke State Plan 2007-2012. Lincoln, NE: Nebraska Department of Health and Human Services, Division of Public Health, August 2007.

Nebraska Department of Health and Human Services. Nebraska 2010 Health Goals and Objectives: A Mid-Course Review. Lincoln, NE: Nebraska Department of Health and Human Services, Division of Public Health, December 2007.

Nebraska Diabetes Prevention and Control Program. The Burden of Diabetes in Nebraska. Lincoln, NE: Nebraska Health and Human Services System, Office of Disease Prevention and Health Promotion, May 2003.

Nebraska Health and Human Services System. Nebraska Physical Activity and Nutrition State Plan 2005-2010. Lincoln, NE: Nebraska Health and Human Services System, Department of Health and Human Services, 2005.

US Renal Disease System. USRDS 2008 Annual Report: Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States. Bethesda, MD: National Institutes of Health, National Institutes of Diabetes and Digestive and Kidney Diseases, 2008.

PARTNERS

Health Profession Organizations/Associations – National and State: Eye Physicians & Surgeons, Family Practice Physicians, Optometrists, Podiatrists, Physicians' Assistants, Dentists, Certified Diabetes Educators, HADE, Pharmacists, Independent Physicians, Nurses, School Nurses, State Medical Association, Primary Care Association, American Heart Association, American Dietetic Association, American Stroke Association, National Stroke Association

Other Organizations/Associations in Nebraska: Emergency Medical Services, Farm Workers, Home & Community Health Agencies, Retail Grocers, Translators and Interpreters, Beef, Dairy & Pork Councils, Minority Public Health, Restaurant, Public Health Association of Nebraska, Assisted Living, Rural Health, JDRF, American Diabetes Association

Local Associations: Neighborhood, Youth, Parks & Recreation, Workplace Wellness, Civic Clubs, Health Centers

Community Organizations: Community Action Agencies, Lions Club, Prevent Blindness, Women's Health Advisory Council, South East Rural Physicians Association., Rural Health & Safety Coalition, Urban League, YMCA/YWCA, Local Medical Societies, Public Libraries, Local Business Associations, PTAs

Related Industries: Fitness, Pharmaceutical, Media, Wellness, Advertising, Information Technology Companies, Orthopedic Companies, Medical Devices

Federally Qualified Health Centers, Certified Rural Health Clinics, Urban & Rural Clinics That Serve Indigent & Migrant Populations

County, District and Local Health Departments

Health Education Centers/Diabetes Education Centers

Hospitals, Assisted Living, Independent Living, Skilled Nursing Facilities

Schools, Colleges and Universities: Association of School Boards, Community College Association, Independent College Foundation, State College System, Universities and Colleges, Local School Boards, Medical and Nursing Schools, Cooperative Extension Service

Indian Health Centers and Tribes: Urban Indian Health Coalition, Indian Health Services, Intertribal Health Coalition

Faith-Based & Community Initiatives: Faith Based Health Ministries, Sisters Together, Body & Soul

Hospitals: State Hospital Association, Association of Hospitals & Health Systems

Department of Health and Human Services: Aging, Cardiovascular Health, DPCP, Medicaid, LifeSpan Health (Men's & Women's Health, Every Woman Matters, School Nurse, Child & Adolescent) , Office of Minority Health & Health Equity, Tobacco Free Nebraska, Regulation and Licensure, Comprehensive Cancer Control, BRFSS, Community Health Development, Statewide DHHS Offices

Other State Government Agencies: Correctional Services, Education, Library Commission, Roads, Agriculture, Unicameral, Agriculture, Commission On Indian Affairs, Mexican American Commission, Commission for the Blind & Visually Impaired, Nutrition Services, Insurance, Public Advocacy, Rural Development, College System, Community College System

Federal Agencies: Centers for Disease Control & Prevention, Medicare, QIO

Public

Primary Health Care Providers: Dentists, Hygienists, Nurses, Occupational and Physical Therapists, Ophthalmologists & Optometrists, Physicians

Private Foundations/Corporate Foundations

Health Insurance Providers

DIABETES INTERNET RESOURCES

Nebraska Diabetes Control Program
http://www.dhhs.ne.gov/dpc/ndcp.htm

CDC Division of Diabetes Translation
http://www.cdc.gov/diabetes

Administration on Aging
http://www.aoa.gov

American Association of Diabetes Educators (AADE)
http://www.diabeteseducator.org

American Diabetes Association (ADA)
http://www.diabetes.org

American Dietetic Association (ADA)
http://www.eatright.org

American Heart Association
http://www.americanheart.org

CDC Division of Nutrition and Physical Activity
http://www.cdc.gov/nccdphp/dnpa

Centers for Medicare & Medicaid Services
http://cms.hhs.gov **or** http://www.medicare.gov

CIMRO of Nebraska
http://cimronebraska.org

U.S. HHSS, Dept of Veterans Affairs
http://www.va.gov/health/diabetes

U.S. HHSS, Indian Health Service (IHS)
http://www.ihs.gov/

International Diabetes Exercise & Sports Association (DESA)
http://www.diabetes-exercise.org

International Diabetes Federation (IDF)
http://www.idf.org

Joslin Diabetes Center
http://www.joslin.harvard.edu/

Juvenile Diabetes Research Foundation International (JDRF) http://www.jdrf.org

The National Center for Health Statistics (NCHS) http://www.cdc.gov/nchs

National Certification Board for Diabetes Educators http://www.ncbde.org

National Diabetes Education Program (NDEP)
http://ndep.nih.gov
http://www.cdc.gov/team-ndep
http://betterdiabetescare.nih.gov
http://www.YourDiabetesInfo.org
http://www.diabetesinformation.org
http://www.diabetesinformacion.org (for Spanish-language materials)

The National Eye Institute
http://www.nei.nih.gov

National Health Information Center
http://www.health.gov/nhic

National Institute of Dental & Cranofacial Research (NIDCR) http://www.nidcr.nih.gov

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Diabetes Home Page
www2.iddk.nih.gov

National Diabetes Information Clearing House (NDIC)
http://www.diabetes.niddk.nih.gov/

National Library Service for the Blind and Physically Handicapped (NLS)
http://www.loc.gov/nls

Nebraska Library Commission
http://www.nlc.state.ne.us

The National Women's Health Information Center http://www.womenshealth.gov

U.S. Food and Drug Administration
http://www.fda.gov

FDA Diabetes Site
http://www.fda.gov/diabetes

US HHSS Office of Minority Health
http://www.omhrc.gov