Diabetes in North Dakota 2016

Report to the Legislative Management

North Dakota Century Code 23-01-40

Compiled by the North Dakota Diabetes Prevention and Control Program on behalf of the

North Dakota Department of Health
North Dakota Public Employee Retirement System
North Dakota Department of Human Services
North Dakota Indian Affairs Commission

Report to the Legislative Management

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This document is the second report generated to comply with the statute North Dakota Century Code 23-01-40, as established in 2013. As designated in the statute, this report provides the following information:

- The prevalence of diabetes
- Financial impact of diabetes as compared to other chronic diseases
- Status and benefits of current programs
- Funding sources for current programs
- Action plans and recommendations to improve health outcomes in North Dakota that relate to diabetes
- Collaborative efforts among agencies

Please see Appendix A on page 26 for a complete copy of Century Code 23-01-40.

Summary

This report describes the scope, cost and complications of diabetes, and how four agencies in the North Dakota government address diabetes in North Dakota. The report also presents recommendations on how to improve the health of North Dakota residents with prediabetes and diabetes. Central points from this report include:

- Diabetes prevention efforts save money and make North Dakota healthier. Guiding North Dakota residents **at risk for diabetes** to adopt healthier lifestyles can **reduce the likelihood that they will develop diabetes**, preventing unnecessary expense and preventing a diminished quality of life. North Dakota policy makers can help make the right choice the easy choice for its residents.
- Diabetes is an expensive disease costing North Dakota over $700 million in 2014, affecting those who live with diabetes as well as their families, friends and their employers.
- Optimizing care and education for those with diabetes also improves the quality of life and saves money through the prevention of diabetes complications. Making the public aware of the standards of diabetes care and education as well as opportunities to access these services is another significant role that North Dakota government can help accomplish.

Diabetes Prevalence in North Dakota

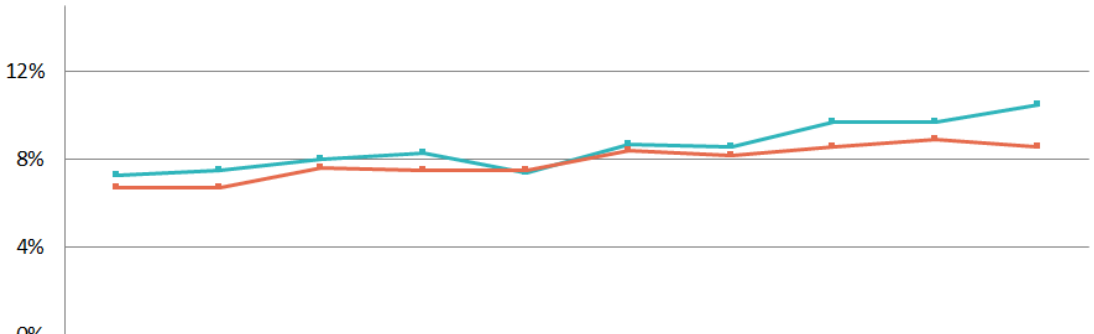
The prevalence of diagnosed diabetes among adults (18 and older) in North Dakota has increased over the past 10 years, from 5.9 percent in 2004 to 8.6 percent in 2014 as shown in Figure 1 below. North Dakota's rising prevalence has paralleled the national trend for diabetes.

In 2014

- An estimated 49,159 adults in North Dakota were living with diagnosed diabetes.
- An additional 18,961 adults had undiagnosed diabetes (5).
- An estimated thirty seven percent of the total population has prediabetes which translates to over 202,196 people in North Dakota (5).

The total North Dakota population affected by elevated glucose (diagnosed and undiagnosed diabetes + estimated prediabetes) = 270,316 people.

Prevalence of US and North Dakota Adults with Diabetes



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
United States	7.3%	7.5%	8.0%	8.3%	7.4%	8.7%	8.6%	9.7%	9.7%	10.5%
North Dakota	6.7%	6.7%	7.6%	7.5%	7.5%	8.4%	8.2%	8.6%	8.9%	8.6%

Figure 1. Percent of US and North Dakota Adults who were told they have diabetes from 2005 to 2014. Source: Behavioral Risk Factor Surveillance System, 2014

Diabetes in North Dakota American Indians

According to the Department of Health and Human Services, Indian Health Service Division of Diabetes Treatment and Prevention bulletin *Facts at a Glance*:

- American Indians have a diabetes prevalence 2.3 times higher than non-Hispanic whites.
- American Indian youths aged 10-19 are nine times more likely to be diagnosed with type 2 diabetes compared to non-Hispanic whites.
- The rate of kidney failure due to diabetes in American Indians compared with the general US population is 1.9 times higher (8).
- Fifteen percent of Native American adults in the state of North Dakota report ever having been told they have diabetes (4).

Diabetes Complications are Preventable

Established care practices for people with diabetes can prevent or delay the development of serious and costly health complications, such as lower limb amputation, blindness, kidney failure, and cardiovascular disease. These care practices are defined in *The Standards of Medical Care in Diabetes 2016* (2).

"Persons with diagnosed diabetes, undiagnosed diabetes and prediabetes are at a significantly elevated risk of hospitalization compared with those without diabetes." The excess rates of hospitalizations may be preventable with improved diabetes care (13).

Diabetes Self-Management Education (DSME) as defined in the *National Standards for Diabetes Self-Management Education and Support* (9) has been shown to be cost-effective by reducing hospital admissions and re-admissions, as well as estimated lifetime health care costs related to a lower risk for complications. DSME improves hemoglobin A1C, a measure of blood glucose control, by as much as 1 percent in type 2 diabetes (12).

"Each 1% absolute reduction in mean A1c levels was associated with a 37% decrease in the risk of microvascular complications and a 21% reduction in the risk of any diabetes-related complication or death" (14).

Diabetes Mortality

Diabetes was the seventh leading cause of death in the United States in 2010 based on the 69,071 death certificates in which diabetes was listed as the underlying cause of death. In 2010, diabetes was mentioned as a cause of death in a total of 234,051 certificates.

Diabetes may be underreported as a cause of death. "Studies have found that only about 35% to 40% of people with diabetes who died had diabetes listed anywhere on the death certificate and about 10% to 15% had it listed as the underlying cause of death" (4).

In 2003–2006, after adjusting for population age differences, **rates of death from all causes were about 1.5 times higher among adults aged 18 years or older with diagnosed diabetes than among adults without diagnosed diabetes** (5). The diabetes mortality rate for Native Americans is **1.6 times higher than** the rate for non-Native Americans in North Dakota (8). Although diabetes was listed as the eighth leading cause of death in North Dakota for 2014 (11), this number is also felt to be underreported.

Risk Factors

Non-modifiable and modifiable risk factors increase an individual's likelihood of developing diabetes.

Non-modifiable	Modifiable
Age Risk increases with age	**Overweight or Obese**
Race American Indian, African American, Hispanic, Asian American or Pacific Islander descent increases risk	**Low High Density Lipoprotein (HDL)**
Family History Those with a parent or sibling with diabetes are at an increased risk	**High Blood Pressure**
	Physical Inactivity
	High Triglycerides
	Smoking

Prevalence of Obese and Overweight Adults in North Dakota and the United States

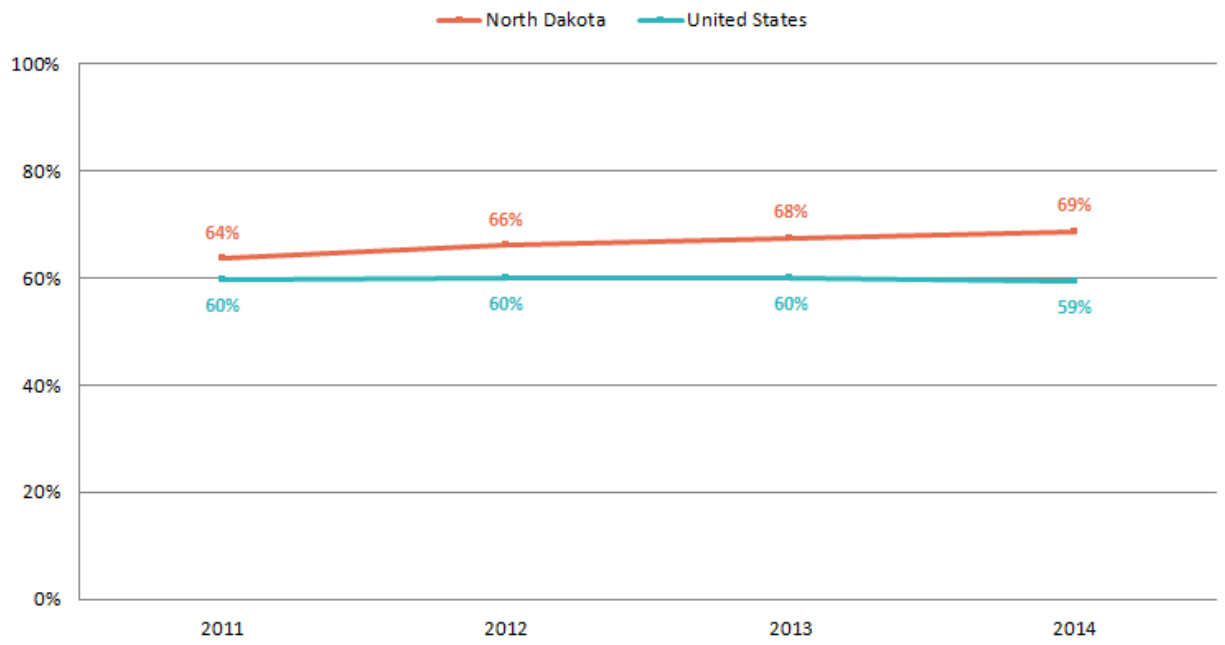


Figure 2. Percent of US and North Dakota Adults who reported being overweight and obese from 2011 to 2014. North Dakota is 10% higher than the national average.
Source: Behavioral Risk Factor Surveillance System, 2014

Modifiable Risk Factors Associated With Diabetes in North Dakota Adults

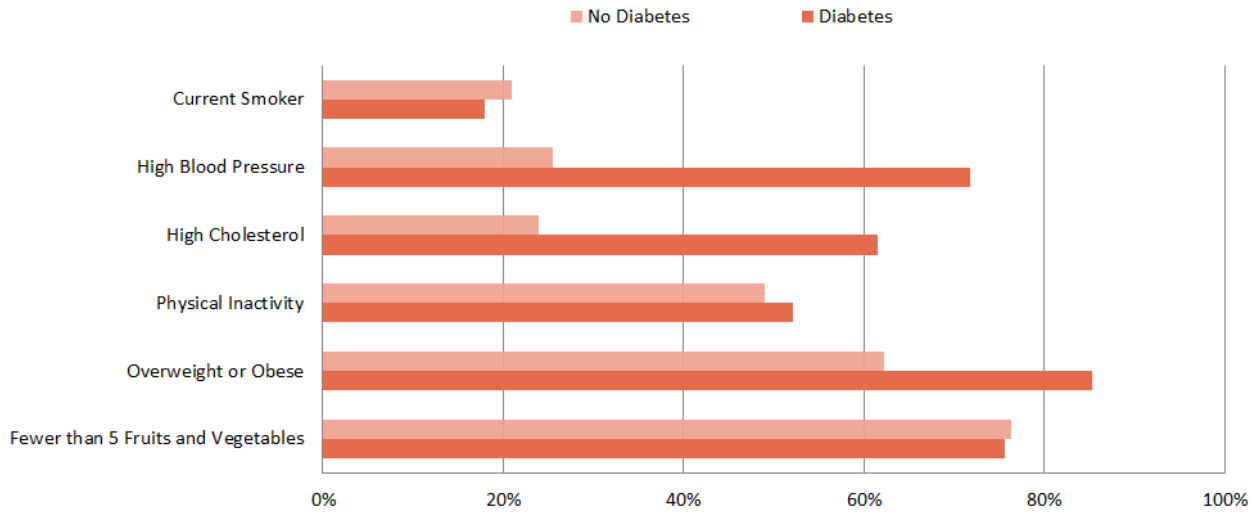


Figure 3. Percent of North Dakota adults told they have diabetes and those that don't have diabetes while reporting if they smoke, have high blood pressure, have high cholesterol, are physically inactive, are overweight or obese, and/or eating fewer than 5 fruits and vegetables.
Source: Behavioral Risk Factor Surveillance System, 2014

Prediabetes

Prediabetes is diagnosed when the blood glucose level is higher than normal, but not high enough to be classified as diabetes. The risk factors for prediabetes are the same as for type 2 diabetes. It is estimated that there are 202,196 cases of prediabetes in North Dakota (1 and 16). **Fifteen to 30 percent of people with prediabetes will develop type 2 diabetes within five years.** Some of the significant factors associated with progression of prediabetes to diabetes are being overweight and physically inactive (3).

Early Detection and Treatment of Prediabetes Prevents Diabetes

Research for the National Diabetes Prevention Program (NDPP) found that small steps produced big rewards. Moderate weight loss (seven percent of body weight) and increased physical activity (30 minutes five times per week):

- Reduced the incidence of type 2 diabetes by 58% during a three-year period.
- Reduced the incidence of type 2 diabetes by 71% among older subjects (those age 60+) (3).

Example: For a 225 pound person, this would mean losing and maintaining an approximate 16 pound weight loss.

Improving nutrition choices and physical activity habits among North Dakota residents helps prevent and manage prediabetes and type 2 diabetes.

Infographic

The *Diabetes in North Dakota* infographic shown on pages seven through eight describes data and information related to diabetes in a visual format using images and charts.

Diabetes in North Dakota

NORTH DAKOTA DEPARTMENT of HEALTH

DIABETES

49 THOUSAND

49 thousand North Dakota adults have diabetes

Thats about 1 out of every 11 people

About 19 thousand adults with diabetes are undiagnosed, thats

1 OUT OF 4

never having been told they have diabetes

PREDIABETES

202 THOUSAND

202 thousand North Dakota adults 20 years and older - about 4 out of 10 - have prediabetes

ONLY 1 OUT OF 10 → North Dakota adults 20 years and older with prediabetes have been told they have it

Without weight loss and moderate physical activity

15-30% OF PEOPLE WITH PREDIABETES will develop type 2 diabetes within 5 years. *

U.S COST*

$284 MILLION

Risk of death for adults with diabetes is **50% HIGHER** than for adults without diabetes

$$ → $

Medical costs for people with diabetes are TWICE AS HIGH as for people without diabetes

People who have diabetes are at higher risk of serious health complications:

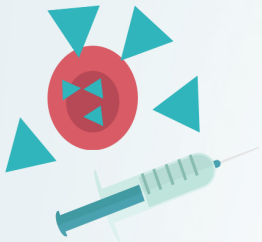
- BLINDNESS
- KIDNEY
- HEART DISEASE
- STROKE
- LOSS OF TOES, FEET, OR LEGS

*U.S National Data/Statistics was used to present this information

The Information Presented Below is Based on **U.S National Data/Statistics**

TYPES OF DIABETES

TYPE 1



BODY DOES NOT MAKE ENOUGH INSULIN

- Can develop at any age
- No known way to prevent it

MORE THAN 18,000 YOUTH DIAGNOSED each year in 2008 and 2009

In adults, type 1 diabetes accounts for approximately

5%

OF ALL DIAGNOSED CASES OF DIABETES

TYPE 2

BODY DOES NOT USE INSULIN PROPERLY OR IS PRODUCING INSUFFICIENT LEVELS OF INSULIN

- Can develop at any age

Currently, at least 1 out of 3 people will develop the disease in their lifetime

More than 5,000 youth diagnosed each year in 2008 and 2009

RISK FACTORS FOR TYPE 2 DIABETES

BEING OVERWEIGHT

HAVING A FAMILY HISTORY

HAVING DIABETES WHILE PREGNANT (Gestational Diabetes)

=

TAKE THE TEST: https://doihaveprediabetes.org/prediabetes-risk-test.html

WHAT CAN YOU DO?

You can PREVENT or DELAY type 2 diabetes

LOSE WEIGHT

EAT HEALTHY

BE MORE ACTIVE

You can MANAGE diabetes

WORK WITH A HEALTH CARE PROFESSIONAL

EAT HEALTHY

STAY ACTIVE

REFERENCES
Centers for Disease Control and Prevention. (2015, April 10). [A Snapshot: Diabetes in the United States] [Infographic] Retrieved from http://www.cdc.gov/diabetes/library/socialmedia/infographics.html
Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. (2014) North Dakota Core Questions Data Report, Section 6: chronic Health Conditions [Data File]. Retrieved from http://ndhealth.gov/brfss/image/cache/2014_Core_FullReport.pdf
American Diabetes Association. (2015, December). [Fast Facts Data and Statistics About Diabetes] [Fact Sheet] Retrieved from http://professional.diabetes.org/content/fast-facts-data-and-statistics-about-diabetes/?loc=dorg_statistics
U.S. Census Bureau, 2014 American Community Survey 1-Year Estimates

Economic Impact of Diabetes

Diabetes is Costly

Estimates of the cost of diabetes have been studied by the American Diabetes Association in 2002, 2007 and 2012, using consistent methodology, as reported in *Economic Costs of Diabetes in the U.S. in 2012* (18).

The total estimated cost of diagnosed diabetes in 2012 in the U.S. is $245 billion, including $176 billion in direct medical costs and $69 billion in reduced productivity. The largest components of medical expenditures are:

- Hospital inpatient care (43% of total medical cost)
- Prescription medications to treat the complications of diabetes (18%)
- Antidiabetic agents and diabetes supplies (12%)
- Physician office visits (9%)
- Nursing/residential facility stays (8%)

People with diagnosed diabetes:

- Incur average medical expenditures of approximately $13,700 per year
- On average have medical expenditures approximately 2.3 times higher than what expenditures would be in the absence of diabetes.

Care for people with diagnosed diabetes accounts for more than
1 in 5 health care dollars in the US.

Using North Dakota numbers, an estimate of the annual cost of diabetes in our state for 2014 was a minimum of approximately $700 million:
49,159 (ND residents diagnosed with diabetes in 2014) x $13,700 = $673,478,300

Diabetes imposes a significant cost to society. Intangibles from pain and suffering, resources from care provided by nonpaid caregivers, and the burden associated with undiagnosed diabetes are not included in the estimate above. The number of undiagnosed people with diabetes in North Dakota has been estimated at 18,961 (1 and 16).

Diabetes Among North Dakota Public Employees Retirement System Members

North Dakota Public Employee Retirement System

Prevalence

In 2013 seven percent or 4,859 NDPERS members had a diagnosis of diabetes based on claims filed. For the reporting period of July 1, 2015 – November 30, 2015 the number of members with diabetes claims was 1,564 (2.3% of NDPERS total membership) as shown on page 11 in Figure 4. Due to the change in the administration of the insurance plan from Blue Cross Blue Shield Company to Sanford Health Plan, limited claims data is available with which to generate this report. The information provided in this report is based on four months of complete paid claims data (November is not considered complete).

Cost

- The costs of all NDPERS members with diabetes in 2013 was close to $45 million.
- The NDPERS members identified with diabetes incurred a total of $18 million in paid medical expenses for a 4 month period. This amount includes all medical claims paid for these members, whether or not related to diabetes. $2.1 million was paid for claims with diabetes as the primary diagnosis.
- Members with diabetes claims had the **fourth** highest cost during this four month period as shown on page 11 in Figure 4.
- These numbers do not include costs that may be related to diabetes, yet are not directly coded as diabetes-related, such as hypertension, heart disease, kidney disease, influenza, and others may be made worse by diabetes, and may in turn make diabetes more difficult (and more expensive) to manage.

Cost of Claims by Disease State in Descending Order

Disease	Total Members	Total Paid	Average Paid Member
Back Pain	7,893	$31,492,444	$3,990
Hypertension	2,071	$27,136,831	$13,103
Cancer	740	$18,225,117	$24,629
Diabetes	1,564	$18,034,851	$11,531
Neck Pain	5,091	$17,619,839	$3,461
Hyperlipidemia	1,721	$16,985,794	$9,870
Congenital Anomalies	469	$10,718,409	$22,854
Coronary Artery Disease	364	$9,747,677	$26,779
Osteoarthritis	695	$9,672,672	$13,918
Headache	1,250	$8,056,467	$6,445

Figure 4. Cost of claims filed among NDPERS members by disease diagnosis. Above shows total number of members and their total payment in comparison to the average paid member.
Source: Centers for Disease Control and Prevention, National Diabetes Statistics Report, 2014.

Among NDPERS members, diabetes has moved from the fifth to the fourth most costly illness or disease.

Diabetes in Youth

According to the American Diabetes Association (ADA), there are 208,000 (or 0.25%) Americans under the age of 20 with a diabetes diagnosis (1). In comparison, based on December 2015 data, there are 65 NDPERS members with diabetes claims. This represents 0.39% of the NDPERS population under the age of 20, which in total is 16,374 members.

Number of NDPERS Youth with Diabetes Episode by Gender and Age*

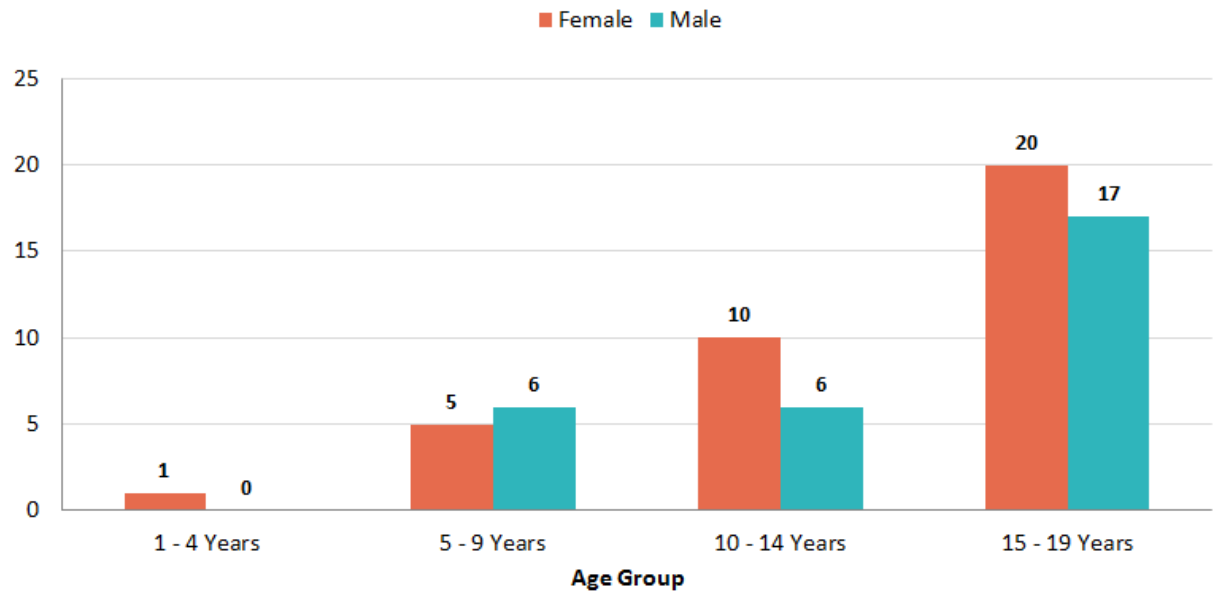


Figure 5. Number of female and male youth ages one to 19 years old with diabetes episode accounting for .39% of the NDPERS population under age 20.
*Data Incurred between July 2015 to October 2015

NDPERS Youth Diabetes Disease Payments by Gender and Age*

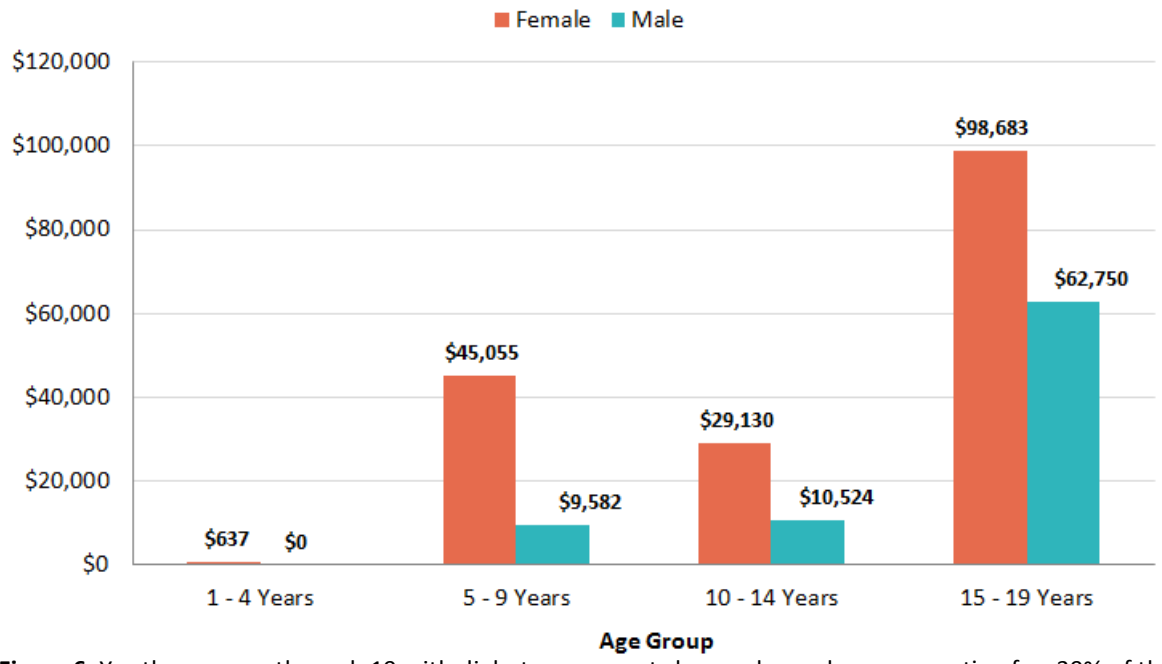


Figure 6. Youth ages one through 19 with diabetes payments by gender and age accounting for .39% of the NDPERS population under age 20.
*Data Incurred between July 2015 to October 2015

Diabetes and Complications

Diabetes increases the risk for many health conditions including heart disease, blindness, end stage kidney disease and amputations. By managing diabetes with routine testing and medical visits, members can prevent and delay the onset of complications. Figure 7 shows complications associated with diabetes and associated costs.

NDPERS July 2015 to October 2015 - Diabetes Payments				
Diabetes with:	Inpatient	Outpatient	Professional	Total Allowed
No Complications	-	$197,561	$1,000,193	$197,754
Neurological Manifestations	$68,345	$15332	$46,573	$130,251
Ketoacidosis	$49,955	$11,889	$45,288	$107,132
Ophthalmic Manifestation	-	$20,153	$82,768	$102,921
Other Manifestations	$64,657	$19,624	$17,677	$101,958
Hyper/Hypoglycemia	$20,602	$26,951	$50,529	$98,082
Peripheral Circulatory Disorder	$77,565	$1,710	$3,953	$83,228
Other Diabetic Complications	-	$20,796	$42,201	$62,997
Maternal/Pregnancy	$51,407	$2,808	$8,599	$62,815
Complications	-	$6,547	$40,179	$46,726
Retinopathy	-	$4,891	$41,780	$46,726
Renal Manifestations	-	$13,532	$27,481	$41,004
Grand Total	**$332,532**	**$341,787**	**$1,407,222**	**$2,081,540**

Figure 7. The figure above shows the first four months of incurred claims data related to diabetes and its complications. Payments paid through February 4, 2016.

Diabetes and North Dakota Medicaid

Medicaid was authorized in 1966 for the purpose of providing an effective base to provide comprehensive and uniform medical services that enable persons previously limited by their circumstances to receive needed medical care. It is within this broad concept that the Medicaid Program in North Dakota participates with the medical community in attempting to strengthen existing medical services in the state.

Funding is shared by federal and state governments, with eligibility determined at the county level. Traditional Medicaid pays for health services for qualifying families with children, pregnant women, and individuals who are elderly or disabled. Medicaid Expansion, implemented in 2014, provides coverage to adults under the age of 65 up to 138% of the Federal Poverty Level. Coverage is provided through a managed care contract.

Addressing Diabetes in North Dakota

North Dakota Department of Health
Diabetes Prevention and Control Program

Funding Source: Center for Disease Prevention and Control - 1305 Grant
Staffing Level: One full time equivalent
Mission: To reduce the sickness, disability, and death associated with diabetes and its complications, and to prevent new cases of type 2 diabetes

Current Priority Areas:

1. Diabetes Prevention

Over 200,000 North Dakotans have prediabetes and this makes diabetes prevention a top priority. We are addressing this through promotion of the **National Diabetes Prevention Program (NDPP),** which has been shown to be very effective in reducing type 2 diabetes. There are currently 12 sites in North Dakota that provide the program with potential for more sites, especially in central and western North Dakota.

Participants who complete this program reduce their risk for developing diabetes by 58%.

National Diabetes Prevention Program (NDPP) Characteristics & Results

This program is designed for people who have prediabetes or are at risk for type 2 diabetes but who do not already have diabetes. The program helps people lose 5% to 7% of their body weight through healthier eating and 150 minutes of physical activity per week.

Eligibility for the NDPP

To be eligible for the program, participants must meet the following requirements:

- Be at least 18 years old and
- Be overweight (body mass index >24; >22 if Asian) and
- Have no previous diagnosis of type 1 or type 2 diabetes and
- Have a blood test result in the prediabetes range within the past year:
  - ◊ Hemoglobin A1C: 5.7% - 6.4% or
  - ◊ Fasting plasma glucose: 100—125mg/dL or
  - ◊ Two-hour plasma glucose (after a 75 gm glucose load): 140 - 199 mg/dL or
- Be previously diagnosed with gestational diabetes

Take the Risk Test - Know Your Score

Assessing risk for prediabetes is easy. See the Risk Test in Appendix D on page 29. A diagnosis of prediabetes can be confirmed with a blood glucose (sugar) test and a check up at your doctors office.

NDPP Components:

- CDC-approved curriculum with lessons, handouts, and other resources to help participants make healthy changes.
- A lifestyle coach, specially trained to lead the program, to help participants learn new skills, encourage them to set and meet goals, and stay motivated. The coach will also facilitate discussions and help make the program fun and engaging.
- A support group of people with similar goals and challenges. Together, participants can share ideas, celebrate successes, and work to overcome obstacles.
- Optimal class size is up to 15 participants.

During the first half of the program participants will learn to:

- Eat healthy without giving up all the foods they love
- Add physical activity to their current lifestyle
- Deal with stress
- Cope with challenges that can derail their hard work—like how to choose healthy food when eating out
- Get back on track making healthy choices —because everyone slips now and then

In the second half of the program:

Participants enhance the skills learned to maintain the changes made. These sessions review key ideas:

- Tracking food and physical activity
- Setting goals
- Staying motivated
- Overcoming barriers

The lifestyle coach and small group continue to support the participants.

Time Commitment:

- The program runs for 1 year.
- During the first 6 months participants and lifestyle coaches will meet 16 times.
- During the second 6 months meetings will be held at least monthly.

Participants who complete this program reduce their risk of developing diabetes by 58%. The impact of this program can last for years to come. Research has found that even after 10 years, people who completed a diabetes prevention lifestyle change program were one third less likely to develop type 2 diabetes (3).

2. Diabetes Self-Management Education (DSME) and Support

For the nearly 70,000 people in North Dakota with diabetes, DSME is helping people manage their diabetes independently through:

- Developing qualified DSME programs in underserved areas. There are currently 42 sites in North Dakota where people with diabetes can access quality education.
- Working with health care providers to increase referrals of patients with diabetes into DSME programs.
- Promoting public awareness of the critical need for diabetes self-management.

Diabetes Self-Management Education (DSME) has been shown to be cost-effective by **reducing hospital admissions and re-admissions, as well as estimated lifetime health care costs related to a lower risk for complications.** DSME improves hemoglobin A1C, a measure of blood glucose control, by as much as 1% in type 2 Diabetes (12).

"Each one percent absolute reduction in mean A1c levels has been associated with a 37 percent decrease in the risk of microvascular complications and a 21% reduction in the risk of any diabetes-related complication or death" (14).

Please see Appendix C on page 28 for a map of NDPP and DSME programs in North Dakota.

3. Public Awareness Efforts

The program works to educate the public and promote healthy choices through press releases, a website at www.diabetesnd.org and through limited media campaigns. Messages promote:

- Self-assessment of the risk factors for prediabetes and diabetes.
- Diabetes prevention techniques related to increasing physical activity and making healthy food choices.
- Diabetes self-management strategies and resources.
- Accessing appropriate care for optimal health, including participation in NDPP and DSME programs in North Dakota.

4. Diabetes Care Provider Support

Educational support for diabetes educators and providers such as:

- Diabetes care webinars for health care providers.
- Diabetes Summit, a health professional education conference, held in conjunction with the Dakota Diabetes Coalition.
- Facilitation of best practices through networking among diabetes health care professionals.

5. Health System Assessment and Clinical Care Interventions

A Health System assessment has been developed by the North Dakota Department of Health to measure specific diabetes care parameters. Based on results of the assessment, clinical care interventions are suggested to elevate the level of diabetes care for patient populations.

6. Maintaining a Diabetes Care Network

The diabetes program relies on a network of national, state, regional, and local partners to expand the reach of diabetes prevention and control efforts and strengthen the safety net for people with diabetes in North Dakota. Partners include but are not limited to:

- Dakota Diabetes Coalition
- American Diabetes Association
- American Association of Diabetes Educators
- Hospitals and clinics
- North Dakota State University Extension
- Public Health Units

- Diabetes Self-Management Education sites
- National Diabetes Prevention Program sites
- School systems
- Quality Health Associates

Children's Special Health Services

Children's Special Health Services (CSHS) serves children with diabetes through three programs.

Specialty Care Diagnostic and Treatment Program

CSHS paid $49,593 in health care claims for 23 eligible children with Diabetes Mellitus Type 1 and 2 in fiscal year 2014. Examples of services covered include:

- Medications
- Diabetes care supplies
- Insulin pumps
- Inpatient and outpatient hospital services, office visits, and laboratory tests
- Dilated eye examination for children 10 and older
- Diabetes education provided by a Certified Diabetic Educator
- Care coordination services that help families access other needed services and resources provided for children who are eligible for CSHS treatment services

Multidisciplinary Clinics

- CSHS funds a pediatric diabetes clinic through the Coordinated Treatment Center at Sanford Health in Fargo, N.D. A contract for $41,912 is in effect for the period 7/1/13 - 6/30/16, which supports 13 diabetes clinics per year. Clinics provide multidisciplinary team evaluations and individualized care plans to support ongoing management for participating children and their families. There is no charge to families for the service. Families that travel more than 50 miles one way to attend the clinic are able to receive help to offset travel expenses (mileage and lodging), if needed.

- The clinic team is comprised of medical specialists (pediatric endocrinologist, pediatrician), diabetes nurse educator, social worker, nurse, reception staff, exercise physiologist, licensed registered dietitian, and psychologist who see the children at one place and time. This type of service enhances coordination and supports access to care.

Information Resource Center

CSHS provides health resource information on topics including child growth and development, parent-support (e.g., parent-to-parent programs), well-child care, specialty clinics, programs or doctors, financial assistance, and disease specific information.

Health and Human Services - North Dakota Medicaid

Medicaid of North Dakota offers the *Experience Health ND* program for people with diabetes. The program is voluntary, confidential and free to eligible recipients.

Enrolled participants in *Experience Health ND* can call a nurse for information or assistance 24 hours per day. A registered nurse calls or meets with enrollees to learn what their needs are and prepares an individualized care plan for them. Working with enrollees and their health care provider, the nurse will provide information and education that enrollees can use to manage their health condition, as well as giving assistance in finding services and other support that helps them follow their doctor's treatment plan.

Enrollees and their nurse work together to use these beneficial *Experience Health ND* services:

- A toll-free number enrollees can call 24 hours a day, seven days a week to speak with a nurse about their health concerns
- Help in finding a doctor or coordinating with their doctor and other health care providers to get the most from their care
- Education about choices they can make to improve their health
- Information sources and education about how medicines, exercise, nutrition, recreation, rest, and other factors affect their health and how well they feel

NDPERS

Diabetes Health Management Program

Sanford Health Plan offers a diabetes health management program to all members. Members are identified by claims data and are automatically enrolled in the program. Members receive the following information:

- Diabetes toolkit
- Periodic mailings regarding diabetes
- Tips on how to manage their diabetes to reduce the risk of complications

Currently, 4% of the total NDPERS population or 2,444 members have been automatically enrolled in the diabetes health management program.

Additionally, members identified at increased risk with diabetes are contacted by a nurse case manager. The case manager helps the member develop a self-management plan to support their physician's plan of care. Support and assistance is provided to the member, including education, recommended diabetes care and suggestions on healthy lifestyle changes.

Agency Based Wellness Program

NDPERS offers a program to encourage participating employers to develop employer-based wellness programs to encourage a healthy lifestyle. Pursuant to NDCC 54-52.1-14, employers are offered incentives through their health insurance premium. Last year 197 out of 290

employers elected to participate in the wellness program. This is an employer participation rate of approximately 68%. However, 97% of employees covered on the insurance plan are working for employers that offer wellness programs and activities to their employees.

About the Patient Program

The *About the Patient** program is an opt-in program for North Dakota Public Employee Retirement System beneficiaries with diabetes. On a monthly basis, newly eligible patients are sent a letter explaining the program and a wellness enrollment form. The wellness enrollment form allows patients to choose one of 50 community pharmacy locations across North Dakota for face-to-face program participation.

- Patients are eligible for three visits within the first year and two visits per year thereafter. By actively participating in the program, patients receive reimbursement of co-pays on diabetes medications, ACE inhibitors, and testing supplies on a quarterly basis.
- The patient curriculum is based on the seven self-care behaviors identified by the American Association of Diabetes Educators and principles of medication therapy management as outlined by the American Pharmacist Association.
- Patients are seen by a health professional, currently a community pharmacist, who has completed additional training in diabetes management outside of their terminal degree and must document continuing education in this area on an annual basis.
- All patient clinical encounters are documented and billed using the North Dakota Pharmacy Services Corporation electronic medical record software MTM Express™.
- **Return on investment calculations demonstrated a health cost savings of $2.34 for every $1.00 spent for the program.**

Funding*:* Funding for the above programs is provided from the health premiums paid.

*See Appendix E on page 30 for more information on *About the Patient.*

Indian Affairs Commission

The Indian Affairs Commission does not administer a program that specifically targets diabetes, but collaborates with the agencies on diabetes-related activities in American Indian communities and with American Indian populations. The commission plays an important role as a liaison between the departments and the tribes.

Collaborative Efforts

Representatives of the North Dakota Department of Health, the North Dakota Public Employees Retirement System (NDPERS), the Department of Human Services and the Indian Affairs Commission meet twice a year to share information and identify opportunities to work together. Collaboration is occurring among the departments through the Epidemiology and Evaluation Team, Chronic Disease Coordination Team and through discussion of a pilot program to offer the National Diabetes Prevention Program to some employees as a benefit through the wellness fund.

Health Department Chronic Disease Coordination Team

The North Dakota Department of Health (NDDoH) has an internal team called the Chronic Disease Coordination Team which meets monthly to share upcoming activities and collaboration opportunities across a variety of chronic disease and risk factor related programs. The team includes staff from heart disease and stroke, diabetes, cancer, tobacco, nutrition and physical activity, school health, maternal and child health, and injury/violence prevention. The NDDoH diabetes program director attends these meetings regularly and keeps the team aware of diabetes and prediabetes issues and grant activities as well as opportunities for collabtion. This team led the effort to develop a chronic disease state plan and formed the statewide chronic disease partnership to aid in that process and its implementation.

Epidemiology and Evaluation Team

The agencies working together on this report meet and share data compiled by the North Dakota Department of Health epidemiology staff including burden reports, fact sheets, presentations, and grant applications.

National Diabetes Prevention Program (NDPP) Pilot Study

Discussions are being held at this time to develop a pilot study in which a limited number of NDPP sites would receive reimbursement from an employer wellness fund for employees who are completing the NDPP. A small scale study of this type would provide an opportunity to replicate program effectiveness, demonstrate the return on investment and substantiate the case for reimbursing the program on a broader scale in North Dakota. As previously mentioned, national results have shown that people with prediabetes who complete the NDPP reduce their risk for developing diabetes by 58%.

Goals

1. Reduce the prevalence and cost of diabetes in North Dakota.

Objectives:

A. Make the North Dakota Diabetes Prevention Program (NDPP) accessible to North Dakota residents who have or are at risk for diabetes.
B. Increase the number of at-risk North Dakotans who participate in the NDPP lifestyle change program.
C. Increase the number of sites that offer the NDPP in North Dakota.
D. Support training for additional staff (Lifestyle Coaches) for NDPPs.
E. Communicate the NDPP's return on investment to health plans which do not cover the cost at this time to develop a sustainable framework.
F. Work with health systems to identify prediabetes and referral mechanisms to lifestyle intervention programs such as the NDPP.
G. Work with employers to identify prediabetes and develop wellness policies to support lifestyle intervention programs such as the NDPP.
H. Monitor data on program outcomes that measure NDPP participant success.

2. Improve the quality of life for people with diabetes in North Dakota.

Objectives:

A. Promote awareness of accredited or recognized Diabetes Self-Management Education (DSME) programs in North Dakota.
B. Increase the number of people with diabetes who participate in education through DSME programs in North Dakota.
C. Facilitate DSME programming for disparate populations in North Dakota.
D. Continue to build awareness about the Standards of Medical Care in Diabetes to optimize medical management visits for people with diabetes.
E. Support diabetes care professional development to facilitate quality of care and education for people with diabetes.
F. Promote the use of self-management programs available through health plans that improve patient outcomes, such as *About the Patient.*
G. Work with employers to identify wellness policies to support diabetes management.

3. Leverage chronic disease initiatives through partnerships and coalition building.

Objectives:

A. Promote collaboration among state agencies to optimize benefits for those with diabetes and other chronic diseases in North Dakota.
B. Provide information to coalitions working for the benefit of those with chronic diseases in North Dakota.

Recommendations to Legislative Management

1. **Fund coverage of the National Diabetes Prevention Program** through NDPERS, reimbursing the program similar to the proposed payment guidelines stated in the Centers for Medicare and Medicaid Services March 14, 2016 memo *Certification of Medicare Diabetes Prevention Program* as shown in Figure 8 below (6) for their payment of the

Services Provided	Payment
Core Sessions	
1 Session Attended	$25
4 Session Attended	+$50
9 Session Attended	+100
5 Percent Weight Loss from Baseline	+$160
9 Percent Weight Loss from Baseline	+$25
Maximum Total for Core Sessions in Year 1	$360
Maintenance Sessions (Maximum of 6 Monthly Sessions Over 6 Months in Year 1)	
3 Maintenance Sessions Attended With Maintenance of 5 percent Weight Loss	$45
6 Maintenance Session Attended With Maintenance of 5 Percent Weight Loss	+$45
Maximum Total for Maintenance Sessions in Year 1	$90
Maximum Total for Year 1	**$450**
Maintenance Sessions After Year 1 (Minimum of 3 sessions attended per quarter with no maximum)	
3 Maintenance Sessions Attended Plus Maintenance of 5 percent Weight Loss	$45
6 Maintenance Sessions Attended Plus Maintenance of 5 percent Weight Loss	+$45
9 Maintenance Sessions Plus Maintenance of 5 percent Weight Loss	+$45
12 Maintenance Sessions Attended Plus Maintenance of 5 percent Weight Loss	+$45
Maximum Annual Total After Year 1	**$180**

Figure 8. The figure above shows the summary of payments recommended for the proposed National Diabetes Prevention Program, the same as those made on behalf of Medicare participants in the YMCA Diabetes Prevention Program. Source: Centers for Medicare & Medicaid Services, Office of the Actuary, Certification of Medicare Diabetes Prevention Program, March 14, 2016.

Medicare estimated savings of $2,650 for each enrollee in the Diabetes Prevention Program.

Recommendations Continued

2. **Support efforts to educate the public through targeted public awareness marketing about**:
   A. Risk factors for prediabetes and diabetes
   B. Diabetes prevention strategies
   C. Educational opportunities for people with prediabetes and diabetes
   D. Components of optimal medical care of diabetes and prediabetes

   Suggested Initiative:
   - Professional advertising campaign with messages targeting the adult population with **prediabetes**
   - Additional campaign with messages that target people with **diabetes**, engaging and motivating them as well as informing them of steps to properly self-manage diabetes, including opportunities for education at qualified DSME programs.

   Suggested funding level: $200,000 per biennium.

3. **Support policies that improve outcomes for persons with and at risk for diabetes and other chronic diseases.** Systems and policy change is a cost effective way for states to improve a population's health:
   - Policy makers can support the enrollment of eligible people in insurance plans, so that more people with diabetes will be able to receive appropriate medical care and avoid costly hospitalizations or emergency department visits.
   - Reimbursement for diabetes education by Certified Diabetes Educators can ensure that people can learn how to manage their diabetes and prevent complications.
   - Support policies for Medicaid, NDPERS, and other insurers to provide reimbursement for evidence based diabetes prevention classes.
   - Policy makers can also support policies that increase physical activity in schools and early childhood centers and sponsor or support legislation and funding that promotes chronic disease prevention and control.
   - Raise constituents' awareness about chronic disease prevention and control programs in communities and they can help establish new programs as needed, to ensure that all North Dakotans have access to health care, screenings and early detection services.

4. **Support local communities in their efforts to improve the health of their residents**. North Dakota communities are assessing their health in an effort to address their specific health issues. These assessments have included focus groups, key informant interviews and community-wide surveys from which the community members ranked the most pressing community health needs.

The majority of the communities have identified chronic disease management or obesity and physical activity as significant health needs in their community. And while some communities are able to move forward to implement the polices, or initiatives that will favorably impact the health of their community, a majority lack the necessary resources.

Providing grants to communities that have identified chronic disease or obesity and physical activity as a priority will enable North Dakota to make strides toward improving the health of its citizens.

Suggested Initiatives:

Conduct a pilot study with six community partners that have identified chronic disease or obesity and physical activity as a priority.

- Provide each partner with a community grant to address chronic disease or obesity and physical activity in their community.
- Community partners would apply for the grants indicating their degree of readiness. The grants would range from $3,000 to 5,000 for capacity building to $25,000 for implementation grants for each of two years.
- The application would include a list of evidence-based items to select from and require an evaluation element.

Suggested Funding Level: $300,000

Appendices

Appendix A: North Dakota Century Code 23-01-40

Diabetes goals and plans - Report to legislative management.

1. The department of human services, state department of health, Indian affairs commission, and public employees retirement system shall collaborate to identify goals and benchmarks while also developing individual agency plans to reduce the incidence of diabetes in the state, improve diabetes care, and control complications associated with diabetes.
2. Before June first of each even-numbered year the department of human services, state department of health, Indian affairs commission, and public employees retirement system shall submit a report to the legislative management on the following:

   a. The financial impact and reach diabetes is having on the agency, the state, and localities. Items included in this assessment must include the number of lives with diabetes impacted or covered by the agency, the number of lives with diabetes and family members impacted by prevention and diabetes control programs implemented by the agency, the financial toll or impact diabetes and diabetes complications places on the agency's programs, and the financial toll or impact diabetes and diabetes complications places on the agency's programs in comparison to other chronic diseases and conditions.

   b. An assessment of the benefits of implemented programs and activities aimed at controlling diabetes and preventing the disease. This assessment must document the amount and source for any funding directed to the agency from the legislative assembly for programs and activities aimed at reaching those with diabetes.

   c. A description of the level of coordination existing between the agencies on activities, programmatic activities, and messaging on managing, treating, or preventing diabetes and diabetes complications.

   d. The development or revision of detailed action plans for battling diabetes with a range of actionable items for consideration by the legislative assembly. The plans must identify proposed action steps to reduce the impact of diabetes, prediabetes, and related diabetes complications. The plan must identify expected outcomes of the action steps proposed in the following biennium while also establishing benchmarks for controlling and preventing relevant forms of diabetes.

   e. The development of a detailed budget blueprint identifying needs, costs, and resources required to implement the plan identified in subdivision d. This blue print must include a budget range for all options presented in the plan identified in subdivision d for consideration by the legislative assembly.

Appendix B: Glossary of Terms

Prevalence: The proportion of a population found to have a condition, like diabetes.

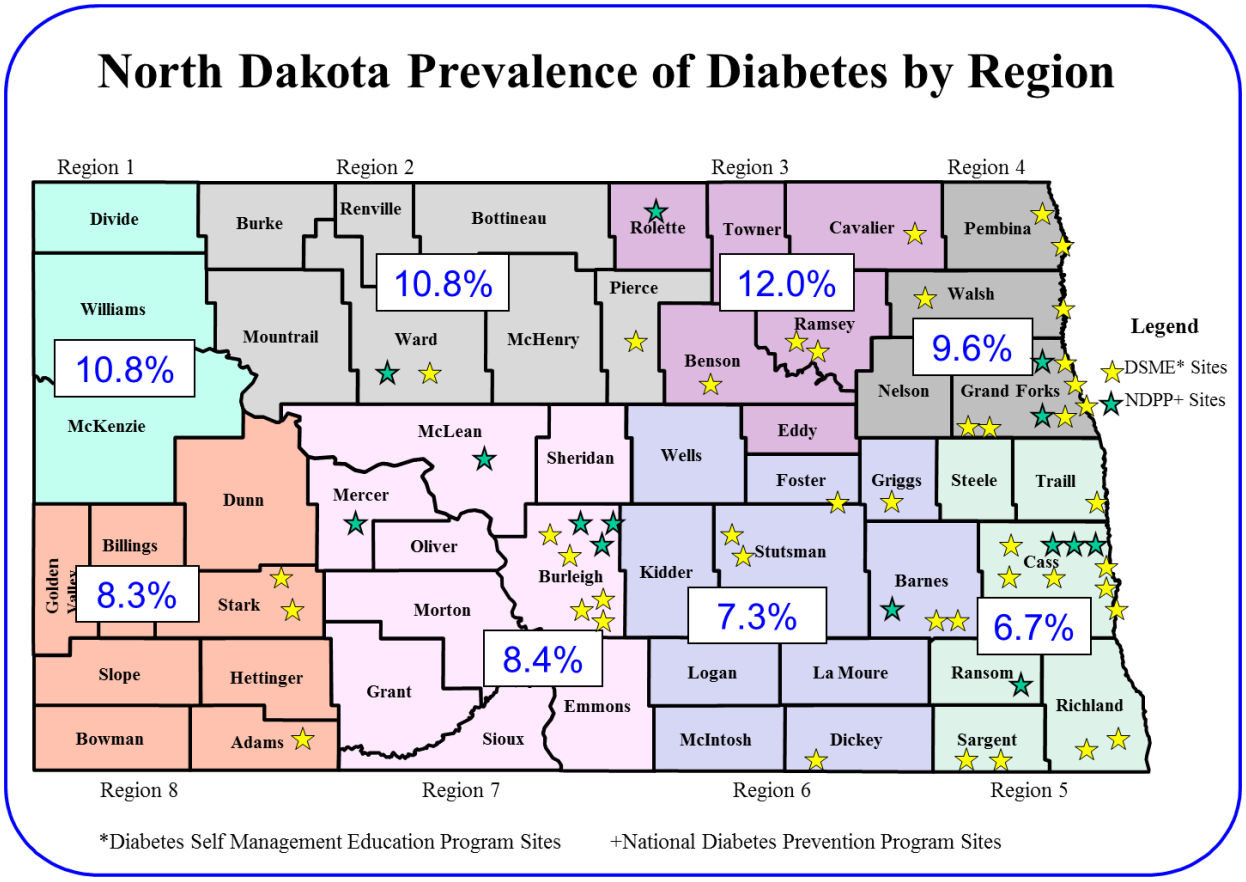
Type 1 Diabetes: An autoimmune disorder characterized by high blood glucose levels as a result of the loss of insulin production, requiring insulin administration for sustainment of life and blood glucose control.

Type 2 Diabetes: A condition characterized by high blood glucose levels that result from a deficiency of or a resistance to insulin that develops gradually over time. A sedentary lifestyle, obesity and genetic factors contribute to the risk for type 2 diabetes.

A1C Level: A blood test that correlates to an estimated average glucose over the past 2-3 months.

Prediabetes: Having prediabetes means your blood glucose (sugar) levels are higher than normal—but not high enough to be diagnosed as type 2 diabetes. Prediabetes can lead to heart disease, stroke, and type 2 diabetes, the most common form of diabetes. Prediabetes can often be reversed.

Appendix C: Diabetes Prevalence and Location of DSME and NDPP Sites in North Dakota



Source: Behavioral Risk Factor Surveillance System, 2014

Appendix D: Prediabetes Risk Test

CDC Prediabetes Screening Test

NATIONAL Diabetes PREVENTION PROGRAM

COULD YOU HAVE PREDIABETES?

Prediabetes means your blood glucose (sugar) is higher than normal, but not yet diabetes. Diabetes is a serious disease that can cause heart attack, stroke, blindness, kidney failure, or loss of feet or legs. Type 2 diabetes can be delayed or prevented in people with prediabetes through effective lifestyle programs. Take the first step. Find out your risk for prediabetes.

TAKE THE TEST—KNOW YOUR SCORE!

Answer these seven simple questions. For each "Yes" answer, add the number of points listed. All "No" answers are 0 points.

Yes	No	
1	0	Are you a woman who has had a baby weighing more than 9 pounds at birth?
1	0	Do you have a sister or brother with diabetes?
1	0	Do you have a parent with diabetes?
5	0	Find your height on the chart. Do you weigh as much as or more than the weight listed for your height?
5	0	Are you younger than 65 years of age and get little or no exercise in a typical day?
5	0	Are you between 45 and 64 years of age?
9	0	Are you 65 years of age or older?

Add your score and check the back of this page to see what it means.

AT-RISK WEIGHT CHART

Height	Weight *Pounds*	Height	Weight *Pounds*
4'10"	129	5'7"	172
4'11"	133	5'8"	177
5'0"	138	5'9"	182
5'1"	143	5'10"	188
5'2"	147	5'11"	193
5'3"	152	6'0"	199
5'4"	157	6'1"	204
5'5"	162	6'2"	210
5'6"	167	6'3"	216
		6'4"	221

National Center for Chronic Disease Prevention and Health Promotion
Division of Diabetes Translation

CDC

IF YOUR SCORE IS 3 TO 8 POINTS

This means your risk is probably low for having prediabetes now. Keep your risk low. If you're overweight, lose weight. Be active most days, and don't use tobacco. Eat low-fat meals with fruits, vegetables, and whole-grain foods. If you have high cholesterol or high blood pressure, talk to your health care provider about your risk for type 2 diabetes.

IF YOUR SCORE IS 9 OR MORE POINTS

This means your risk is high for having prediabetes now. Please make an appointment with your health care provider soon.

Appendix E: NDPERS "About the Patient" Program

Collaborative Drug Therapy Program Annual Report

2014

About The Patient— 1641 Capital Way Bismarck, ND 58501

T: 1.888.326.4657 **DD:** 701.231.6685 **E:** wbrown@aboutthepatient.net

Executive Summary

The Uniform Group Insurance Program-Collaborative Drug Therapy Program in accordance with section 54-52.1-17 of the North Dakota Century code purpose is to improve the health of individuals with diabetes in order to manage health care expenditures through face-to-face collaborative drug therapy services by pharmacists and certified diabetes educators. For covered individuals waived or reduced co-payment for diabetes treatment drugs and supplies are provided as an incentive for program participation. The North Dakota Pharmacist Association or specified delegate currently About the Patient facilitates patient curriculum based on national standards for diabetes care, enrollment procedures, documentation of clinical encounters, and assess economic/clinical outcomes. Funding of program is through the uniform group insurance program and if necessary an additional charge on the policy premium for medical and hospital benefits coverage may be added up to two dollars per month.

The About The Patient Program has been administering the Diabetes Management Program since July of 2008. A cost analysis of the Diabetes Management Program was conducted by the Center for Health Promotion and Prevention Research, University of North Dakota School of Medicine and Health Sciences in November of 2010. Return on investment calculation demonstrated a $71.14 pmpm health cost savings ($2.34 saved for every $1.00 spent for the program). Funding and program administration by About The Patient was extended for next biennium July 2013-June 2015.

Targeted direct marketing via letter and postcards to all eligible beneficiaries occurred during the first three quarters of 2014 in order to increase awareness and enrollment in the program.

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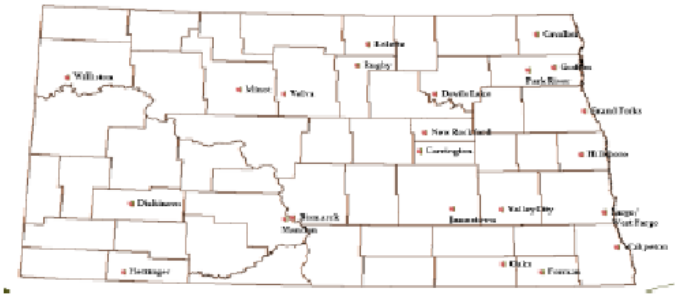
Diabetes Management Program

The Diabetes Management Program is an opt-in program for North Dakota Public Employee Retirement System beneficiaries with diabetes. On a monthly basis newly eligible patients are sent a letter explaining the program as well as a wellness enrollment form. The wellness enrollment form allows patients to choose one of 45 community pharmacy locations across North Dakota for face-to-face program participation.

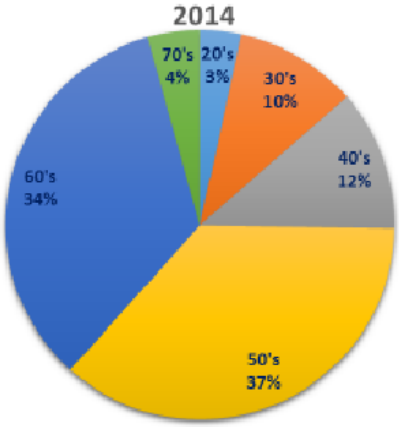


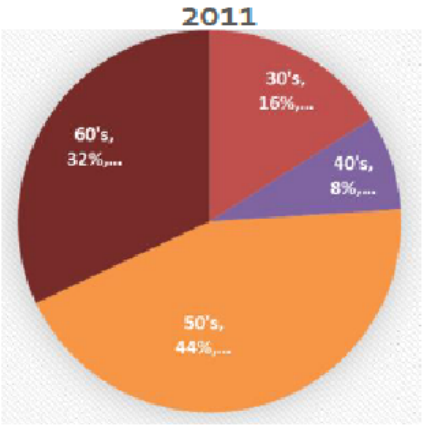
Patients are eligible for three visits within the first year and two visits per year thereafter. By actively partaking in the program patients receive reimbursement of co-pays on diabetes medications, ACE inhibitors and testing supplies on a quarterly basis. The patient curriculum is based on the seven self-care behaviors identified by the American Association of Diabetes Educators and principles of medication therapy management as outlined by the American Pharmacist Association. Patients are seen by a heath professional, currently a community pharmacist, who has completed additional training in diabetes management outside of their terminal degree and must document continuing education in this area on an annual basis. All patient clinical encounters are documented and billed using the North Dakota Pharmacy Services Corporation electronic medical record software MTM Express™.

Program Analysis 2014

Demographics

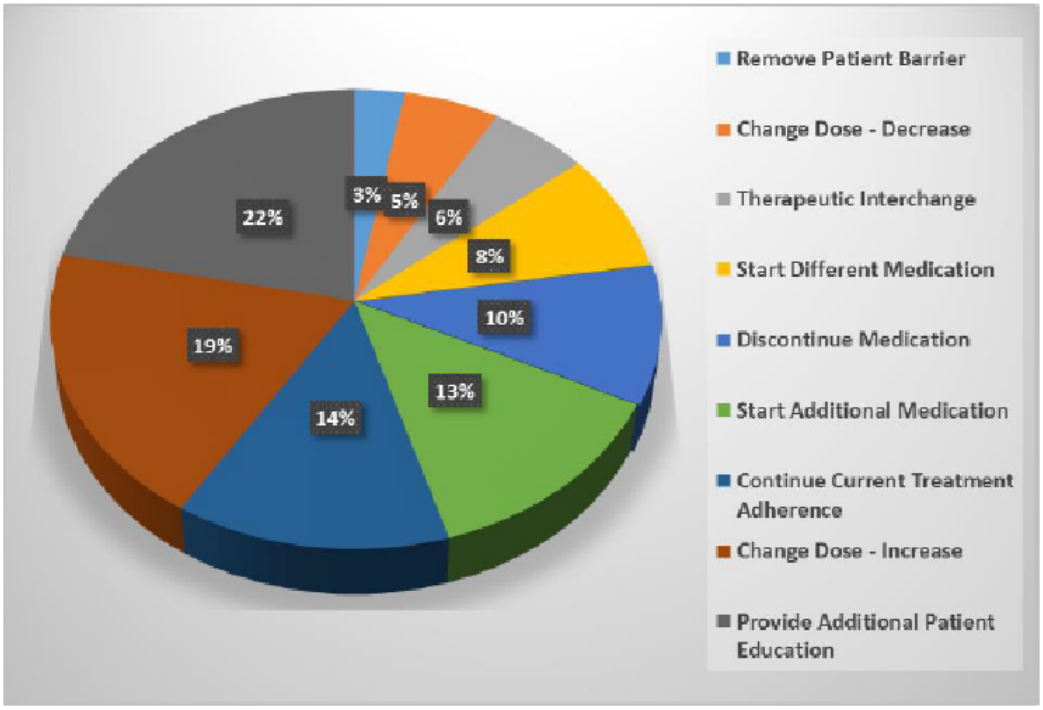
Marketing efforts have increased enrollment. The program currently has 207 active patients with signed wellness agreements. Within the active patients population 57% are male. Overall program participation rate is 6%. The trend with the current marketing strategy has increased participation among males and younger eligible patients.





Pharmacist Interventions

In 2014 there were 419 interventions (2011-2013 biennium there were 155 interventions) made by the pharmacists in collaboration with the patient and there primary health provider in order to manage diabetes and prevent costly complications.



Of the additional education 33% was on proper injectable medication use. The majority of the recommendations for increasing medication was to optimize basal insulin requirements.

Average Hemoglobin A1C =7.4 with most common HA1C=7.2 (Range 4.7 to 12.5). Most common blood pressure reading 138/80 which falls within ADA recommend blood pressure goals for most patients with diabetes.

According to the American Diabetes's Association's annual update 2015 most patients with diabetes should be receiving a moderate statin. In 2014, within the current active participants in the Diabetes Program 29% are receiving Statin therapy. Of those receiving Statins 64% are on a moderate to high dose.

Patient Satisfaction with Program

Perception: Diabetes Awareness Survey (1=Strongly Disagree to 5=Strongly Agree)	2014
1) Ask my pharmacist questions I may have about diabetes	4.1
2) Take my medications and administer injections as instructed	4.4
3) Check and record my blood glucose at least 2 times per day or as directed	4.2
4) Describe the long term complication of uncontrolled diabetes	4.1
5) Be motivated to keep up with my diabetes self-management	4.2
6) Voice concerns to my doctor about my diabetes	4.3
7) Keep my doctor appointments	4.6

Current active patients are motivated to work with their health providers. Maintain a high level of self-efficacy with a chronic disease.

Patient Satisfaction Survey (1=Strongly Disagree to 5=Strongly Agree)	2014	7/2013-3/2014
1.) Professional appearance of the provider	4.9	5.0
2.) Appearance of the meeting area	4.6	4.8
3.) System for scheduling your appointment	4.7	4.8
4.) The provider's interest in your health	4.8	4.9
5.) How well the provider helps you manage your medications	4.8	4.3
6.) How well the provider explains possible side effects	4.7	4.1
7.) The provider's efforts to solve problems that you have with your medications	4.7	4.3
8.) The responsibility that the provider assumes for your drug therapy	4.7	4.2
9.) Ability of the provider to answer your questions about your medications	4.8	4.4
10.) Ability of the provider to answer your questions about your health problems	4.7	4.4
11.) The provider's efforts to help you improve your health or stay healthy	4.8	4.9
12.) The program services overall	4.7	4.3
13.) Ability of the provider to see you at your scheduled time	4.8	4.8
14.) Courtesy and professionalism of the staff	4.9	5.0
15.) Follow-up after the appointment	4.7	4.8
16.) The educational materials provided	4.7	4.9

Patients continue to be highly satisfied with the diabetes management program. Over the course of this last year the program experienced co-workers of active patient call to inquire about the program.

Proposed Level of Service July 2015-June 2017

	July2015-June 2017
Direct Program Cost	
Provider Visits	$132,000.00
Patient Incentives	$43,000.00
Subtotal	$175,000.00

Administration Costs	
Subtotal	$20,000.00

Marketing Costs	
Direct to consumer mailings In-pharmacy marketing	$5000.00
Subtotal	$5000.00

TOTAL Biennial Expenses	$200,000.00

Expense estimates are for serving ~200 patients (~5% participation rate) over the next biennium. Each patient would be eligible to receive a Comprehensive Medication Review (CMR-$400.00) and up to 2 Targeted Medication Reviews (TMR-$80.00) the first year and one CMR ($200.00) and one TMR ($80.00) in for any subsequent years of participation in the program.

In-kind from NDPhA and NDSU: Telephone (maintaining toll free direct number for patients), office space, office supplies, Training/Credentialing/Certification of providers, patient curriculum, Clinical Coordinator, Data Analysis

Appendix F: Committee Members

North Dakota Department of Health
Jane Myers, Diabetes Prevention and Control Program Director
Mylynn Dumlao, Center for Disease Control and Prevention Public Health Advisor
Clint Boots, Chronic Disease Epidemiologist
Tamara Lelm, Division Director, Children Special Health Services
Krista Fremming, Director, Division of Chronic Disease
Kim Crawford, Evaluation Consultant

North Dakota Public Employees Retirement System
Kathy Allen, Employee Benefit Programs Manager
Bryan Reinhardt, Research Analyst/ Benefits Planner

Division of Medical Services, the Department of Human Services
Maggie Anderson, Medical Services

Indian Affairs Commission
Bradley Hawk, Indian Health Systems Administrator

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