

# Diabetes in North Dakota 2018

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

# Report to the Legislative Management

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## Executive Summary

This document is the third report generated to comply with the statute, North Dakota Century Code (NDCC) 23-01-40, established in 2013. 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, recommendations to improve diabetes related health outcomes in North Dakota and collaborative efforts among agencies. Additional collaboration, action planning and budget information is expected at the conclusion of the Diabetes Prevention State Engagement Meeting that will be held in June 2018.

## Recommendations to Legislative Management

### 1. Support coverage of the National Diabetes Prevention Program (DPP) for North Dakota Public Employees Retirement System (NDPERS) Health Plan beneficiaries.

Medicare began coverage of this service April 1, 2018 after estimating a savings of \$2,650 for each enrollee (7). Health plans across the nation are beginning to follow this lead. The NDPERS Board recently implemented a DPP pilot for NDPERS Health Plan subscribers which will continue through June 30, 2021. The Board will be evaluating the results of the pilot to determine whether this program should be added as a covered benefit in the NDPERS Health Plan.

### 2. Support healthy, vibrant communities

Population health contributes to the vibrancy of a region. North Dakota communities are completing health needs assessments and planning for the future. Chronic disease prevention and management are commonly among their priorities.

Legislators can help communities implement strategies to prevent and manage chronic disease and are urged to fund community health promotion grants.

Suggested funding level: \$500,000 per biennium.

### 3. Support policies that improve outcomes for persons with and at risk for diabetes and other chronic diseases.

Policy makers can support policies or initiatives:

- for Medicaid, NDPERS, and other insurers to provide reimbursement for evidence based programs that prevent chronic diseases such as the National DPP.
- that increase physical activity in schools and early childhood centers.
- that make the healthy choice the easy choice, related to being active and choosing healthy nutrition.

## Infographic

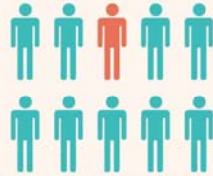
The *Diabetes in North Dakota* infographic shown on pages three through four describes data and information related to diabetes in a visual format using images and charts.

# Diabetes in North Dakota

## DIABETES

**54**  
THOUSAND

Nearly 54 thousand North Dakota adults have diabetes



That's about 1 out of every 10 people

About 17 thousand adults with diabetes are **undiagnosed** that's



never having been told they have diabetes

## PREDIABETES

**198**  
THOUSAND



About 198 thousand North Dakota adults 20 years and older - or 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 \*

## ESTIMATED ND COST OF DIABETES\*

**\$** **\$902**  
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 DISEASE



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 2011 and 2012



In adults, type 1 diabetes accounts for approximately

**5%**

OF ALL DIAGNOSED CASES OF DIABETES

### TYPE 2



BODY CANNOT USE INSULIN PROPERLY

- ▶ Can develop at any age
- ▶ Most cases can be prevented

In adults, type 2 diabetes accounts for approximately

**95%**

of all diagnosed cases of diabetes



More than 5,000 youth diagnosed each year in 2011 and 2012

## RISK FACTORS FOR TYPE 2 DIABETES



BEING OVERWEIGHT



HAVING A FAMILY HISTORY



BEING 45 AND OLDER



PHYSICAL INACTIVITY



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

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Yang W, Dall T, Halder P, Gallo P, Kowal S, Hogan P. Economic costs of diabetes in the U.S. in 2017. Diabetes Care 2018; 41:917-928 [https://doi.org/10.2337/dci18-0007].  
Infographic developed using the Piktochart infographic maker, [www.piktochart.com](http://www.piktochart.com).

LEARN MORE AT: <http://www.diabetesnd.org/>

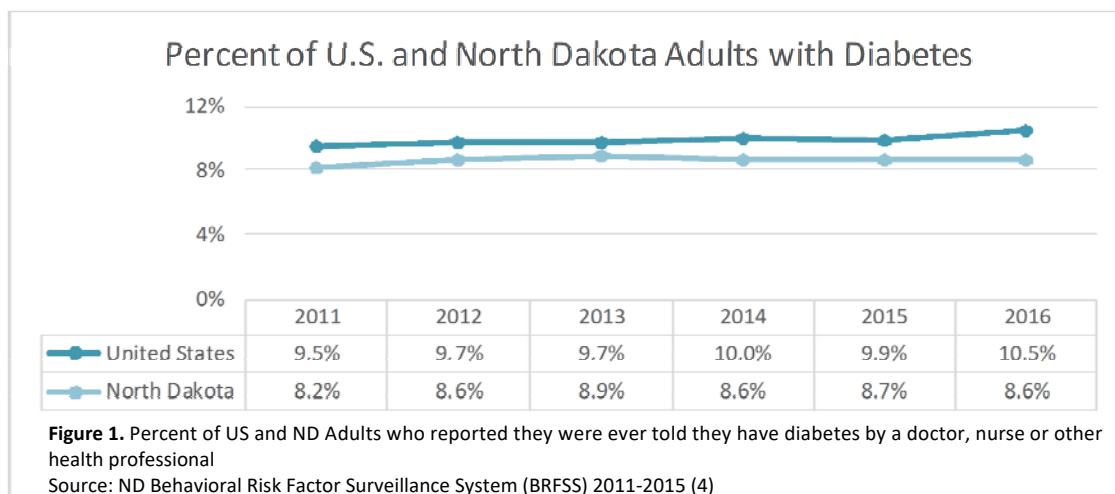
# Diabetes Prevalence in North Dakota

The prevalence of diagnosed diabetes among adults (18 and older) in North Dakota (ND) has increased over the past six years, from **8.2 percent in 2011 to 8.6 percent in 2016** as shown in Figure 1 below. ND’s rising prevalence has paralleled the national trend for diabetes.

## In 2015 (Most current data available)

- An estimated 53,862 adults in ND were living with diagnosed diabetes (4,16).
- An additional 16,861 adults had undiagnosed diabetes (5,16).
- An estimated 34 percent of the total population has prediabetes which translates to 197,637 people in ND (5,16).

**The total ND population affected by elevated glucose (diagnosed and undiagnosed diabetes + estimated prediabetes) = 268,360 people (5, 16).**



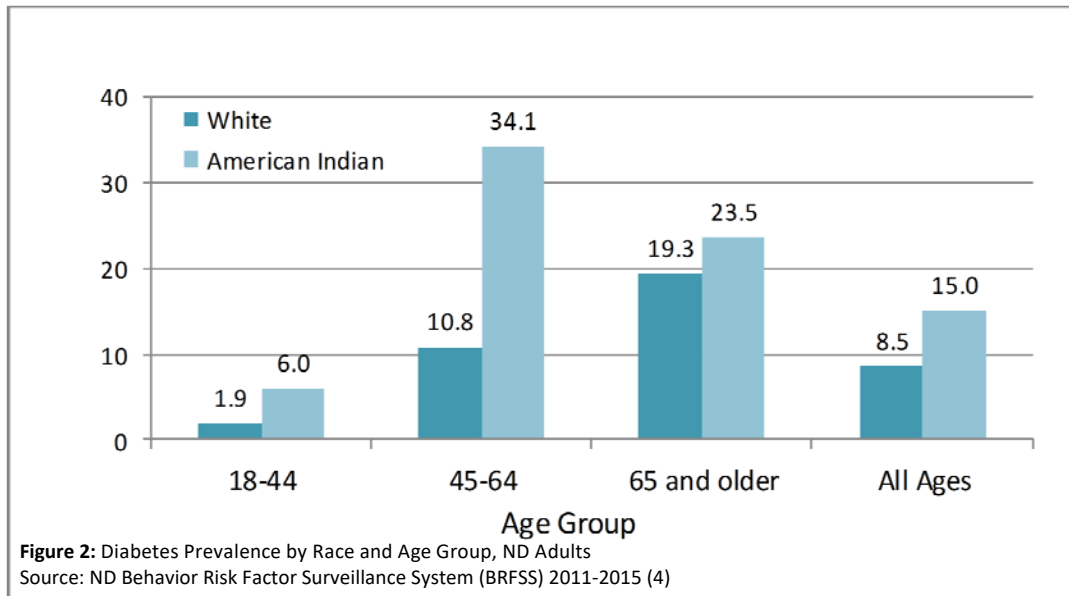
## Diabetes in North Dakota American Indians

American Indians and Alaska Native people are:

- **2.3 times more likely** to have diabetes than non-Hispanic whites
- **9 times more likely** to be diagnosed with type 2 diabetes compared to non-Hispanic whites as youth aged 10-19
- **1.9 times more likely** to experience kidney failure due to diabetes compared with the general US population (8).

American Indians/Alaska Natives had the highest prevalence of diagnosed diabetes for both men (14.9%) and women (15.3%) (5). For information on ND diabetes prevalence by race and age group, please see Figure 2 on page 6.

## Diabetes Prevalence by Race and Age Group ND Adults, 2011-2015



### 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 2018* (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 and Support (DSMES) as defined in the *National Standards for Diabetes Self-Management Education and Support* (9) has been shown to improve clinical outcomes and quality of life while reducing hospitalizations and healthcare costs. DSMES helps improve hemoglobin A1c, a measure of overall blood glucose control for people with diabetes (12).

“Each 1 percent reduction in hemoglobin A1c was associated with a 37 percent decrease in the risk for microvascular complications and a 21 percent decrease in the risk of any end point or death related to diabetes related to diabetes.” (14)

### Diabetes Mortality

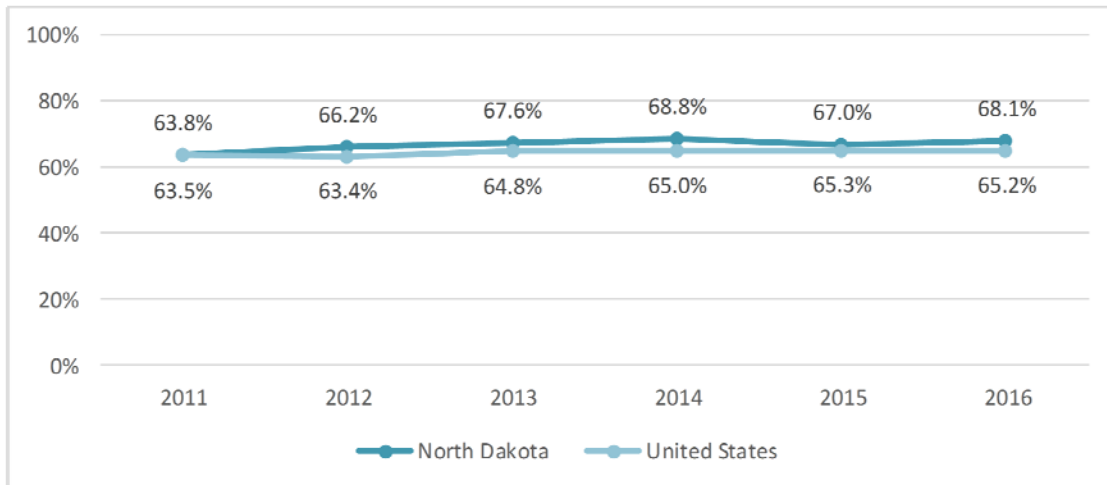
Diabetes was the seventh leading cause of death in the US in 2015 based on the 79,535 death certificates in which diabetes was listed as the underlying cause of death (crude rate, 24.7 per 100,000 persons) (5). In ND, 164 deaths were attributed to diabetes in 2016 which made it the seventh leading cause of death (crude rate, 24.4 per 100,000 persons) (11). The combined 2006-2015 diabetes mortality data shows that in ND, **American Indian mortality rate from diabetes is more than five times that of Whites** (11).

## Risk Factors for Type 2 Diabetes

The following risk factors increase the likelihood of developing prediabetes and type 2 diabetes.

| <b>Non-modifiable</b>   | <b>Modifiable</b>  |
|---|--|
| <p><b>Age</b><br/>Risk increases with age</p> <p><b>Race</b><br/>American Indian, African American, Latino, Asian American or Pacific Islander descent increases risk</p> <p><b>Family History</b><br/>Those with a history of gestational diabetes or polycystic ovary syndrome, or a parent or sibling with diabetes are at an increased risk</p> | <p><b>Overweight or Obese</b></p> <p><b>Low High Density Lipoprotein (HDL)</b></p> <p><b>High Blood Pressure</b></p> <p><b>Physical Inactivity</b></p> <p><b>High Triglycerides</b></p> <p><b>Cardiovascular Disease</b> (2)</p> |

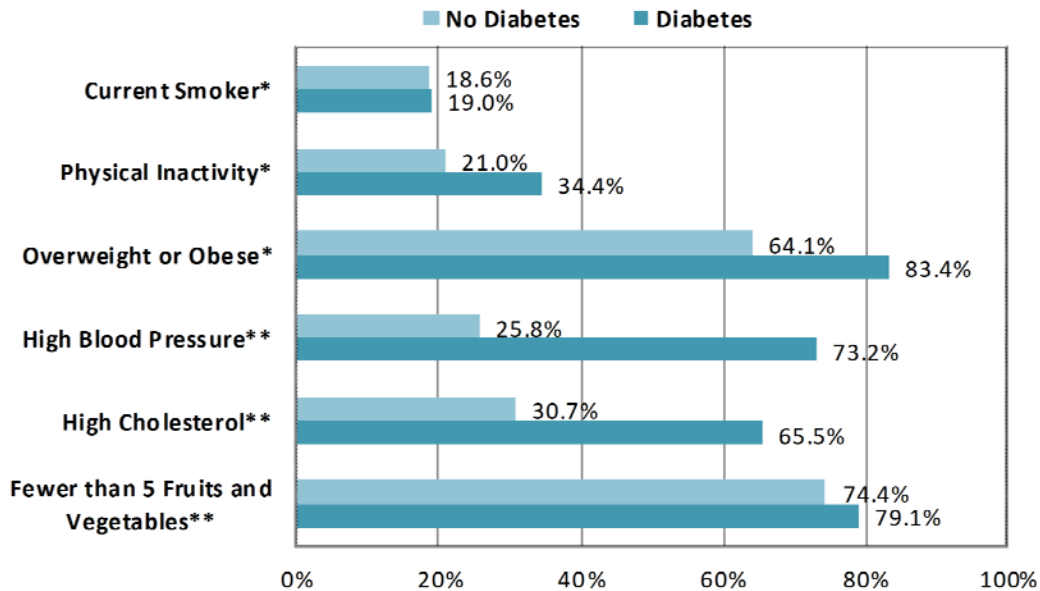
### Prevalence of Obese and Overweight Adults in ND and in the US



**Figure 3.** Percent of US and ND Adults who were overweight or obese  
Source: ND Behavioral Risk Factor Surveillance System (BRFSS) 2011-2016 (4)



## Modifiable Risk Factors Associated with Diabetes in ND Adults



**Figure 4.** Percent of ND adults who smoke, are physically inactive, are overweight or obese, have high blood pressure, have high cholesterol and/or eat fewer than 5 fruits and vegetables for those with diabetes and those without diabetes  
Source: ND Behavioral Risk Factor Surveillance System (BRFSS) \*\*2015 \*2016 (4)

## Prediabetes

Prediabetes is diagnosed when the blood glucose level is higher than normal, but not high enough to be type 2 diabetes. Risk factors for prediabetes are the same as for type 2 diabetes. See page seven for a modifiable and non-modifiable risk factors (2).

There are an estimated 197,637 cases of prediabetes in ND (1, 5 and 16). **Fifteen to 30 percent of people with prediabetes will develop type 2 diabetes within five years.** Significant factors associated with progression of prediabetes to diabetes are being overweight or obese and physically inactive (3).

## Early Detection and Treatment of Prediabetes Prevents Diabetes

Studies of the National Diabetes Prevention Program (DPP) found that small steps such as moderate weight loss (five to seven percent of body weight) and increased physical activity (30 minutes five times per week) produced the following results:

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

Example: For a 225 pound person, this would mean losing and maintaining approximately 16 pounds of weight loss.

# 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 and 2017 using consistent methodology, as reported in *Economic Costs of Diabetes in the US in 2017* (18).

The total estimated cost of diagnosed diabetes in 2017 in the US was **\$327 billion, including \$237 billion in direct medical costs and \$90 billion in indirect cost** related to absenteeism, presenteeism, inability to work, reduced productivity for those not in the workforce and premature mortality (18).

Medications constitute the largest portion (43%) of excess cost associated the total direct medical burden:

- \$15 billion for insulin
- \$15.9 billion for other anti-diabetes agents
- \$71.2 billion in excess use of other prescription medications for conditions associated with diabetes

People with diagnosed diabetes:

- Incur average medical expenditures of approximately **\$16,750 per year**
- Have medical expenditures **approximately 2.3 times higher** than those without diabetes (18).

The average price of insulin nearly tripled between 2002 and 2013 (1).

Care for people with diagnosed diabetes accounts for more than **1 in 4 health care dollars** in the US (18).

An estimate of the annual cost of diabetes in our state for 2015 was approximately \$902 million:

53,862 (Estimate of ND residents with diabetes in 2015) x \$16,750 = \$902,188,500

Diabetes imposes a significant cost to society and families. 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 ND has been estimated at 16,861 (5, 16).

# Diabetes Among North Dakota Public Employees Retirement System Members

## Diabetes Prevalence

For the reporting period January 1, 2017 to October 31, 2017 paid through January 31, 2018, the number of North Dakota Public Employees Retirement System (NDPERS) members with diabetes claims was 3,170 or 5.05 percent of all NDPERS members.

## Cost Associated with Diabetes

- Members identified with diabetes incurred a total of \$46.1 million in paid medical expenses. This amount includes all medical claims paid for these members, whether or not related to diabetes.
- Claims paid for diabetes as the primary diagnosis was \$3.03 million.

### NDPERS Cost of Claims by Disease State in Descending Order

| Disease          | Total Members | Total Paid      | Average Paid Member |
|------------------|---------------|-----------------|---------------------|
| Back Pain        | 14,631        | \$96,713,405.95 | \$6,610.17          |
| Neck Pain        | 9,832         | \$58,454,022.31 | \$5,945.28          |
| Hypertension     | 8,460         | \$90,333,530.88 | \$10,677.72         |
| Hyperlipidemia   | 8,024         | \$76,626,893.43 | \$9,549.71          |
| Major Depression | 3,406         | \$44,085,396.53 | \$12,943.45         |
| Osteoarthritis   | 3,298         | \$44,925,017.60 | \$13,621.90         |
| Diabetes         | 3,170         | \$46,103,780.85 | \$14,543.78         |
| Headache         | 3,035         | \$31,593,440.68 | 10,409.70           |
| Asthma           | 2,419         | \$22,282,185.30 | \$9,211.32          |

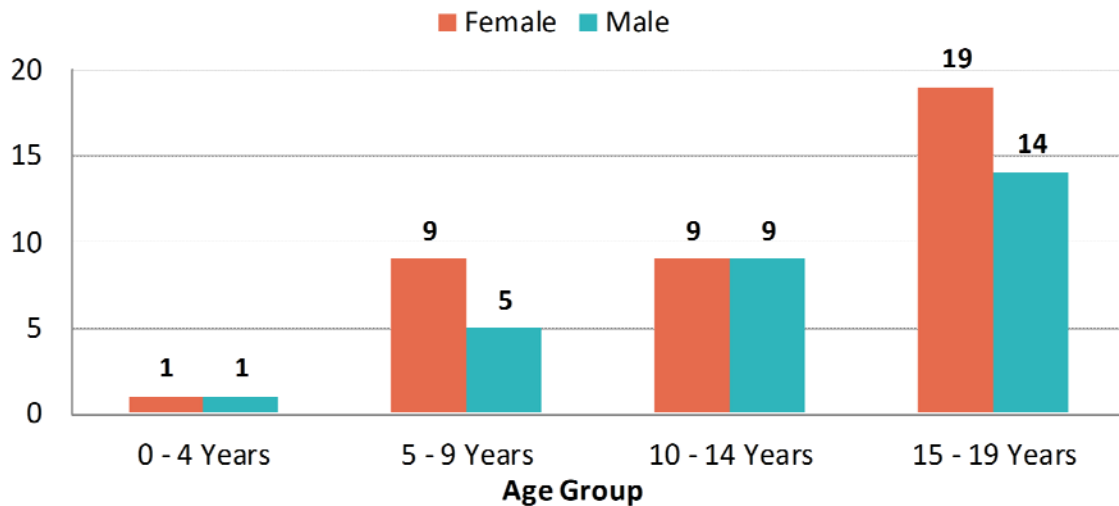
**Figure 5.** Cost of claims filed among NDPERS members by disease diagnosis.  
Source: Sanford Health Plan.

Among NDPERS members, diabetes has moved from the fourth to the seventh most costly disease since 2015.

## NDPERS Diabetes in Youth

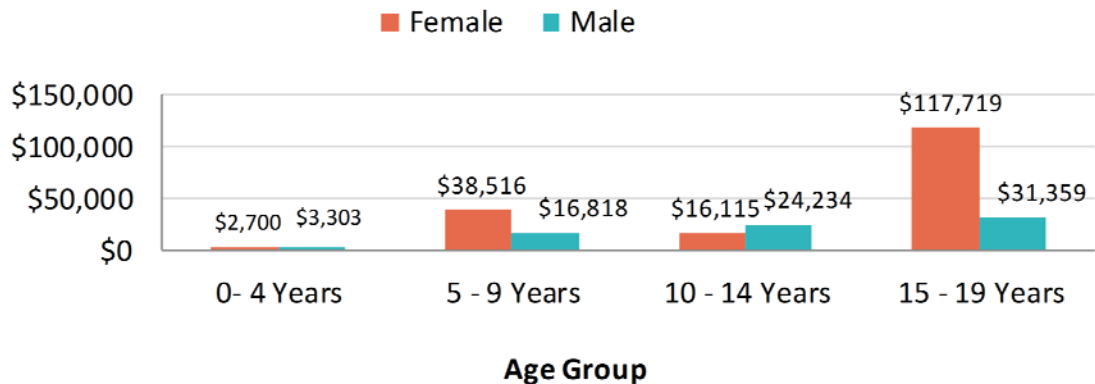
According to the American Diabetes Association (ADA), about 193,000 Americans under the age of 20 (0.25%) are estimated to have diagnosed diabetes: <http://www.diabetes.org/diabetes-basics/statistics/?loc=db-slabnav>. In comparison, based on October 2017 data, there are 60 NDPERS members with diabetes claims.

**Number of NDPERS Youth with Diabetes Episodes by Gender Incurred 1-2017 to 10-2017 and paid through 1-1-2018**



**Figure 6.** Number of female and male youth ages zero to 19 years old with diabetes episode accounting for 0.15 percent of the NDPERS population under age 20.  
Source: Sanford Health Plan

**Number of NDPERS Youth Diabetes Disease Payments Gender Incurred 1-2017 to 10-2017 and paid through 1-1-2018**



**Figure 7.** Youth ages zero through 19 with diabetes payments by gender and age accounting for 0.15 percent of the NDPERS population under age 20.  
Source: Sanford Health Plan

## 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 8 shows ten months of incurred claims data related to diabetes and its complications.

| <b>NDPERS January 2017 to October 2017<br/>Diabetes Payments through January 31, 2018</b> |                  |                   |                     |                      |
|---|------------------|-------------------|---------------------|----------------------|
| <b>Diabetes with:</b>   | <b>Inpatient</b> | <b>Outpatient</b> | <b>Professional</b> | <b>Total Allowed</b> |
| No complications  | 4,425            | \$ 201,094        | \$1,257,043         | \$1,462,562          |
| Hyper/hypoglycemia  | \$62,556         | \$76,791          | \$517,526           | \$656,872            |
| Other diabetes complications  | \$212,149        | \$29,106          | \$237,442           | \$478,697            |
| Retinopathy   |                  | \$24,023          | \$327,595           | \$351,618            |
| Maternal/pregnancy  | \$155,780        | \$21,375          | \$96,723            | \$273,879            |
| Ketoacidosis  | \$209,371        | \$18,154          | \$22,632            | \$250,157            |
| Peripheral circulatory disorder   | \$90,442         | \$6,877           | \$93,085            | \$190,404            |
| Renal manifestations  | \$9,000          | \$98,782          | \$67,573            | \$175,354            |
| Neurological manifestations   | \$8,687          | \$11,823          | \$76,634            | \$97,145             |
| Ophthalmic manifestations   |                  | \$,13,430         | \$16,909            | \$30,339             |
| With other complications  |                  |                   | \$2,391             | \$2,391              |
| Other manifestations  |                  |                   | \$13                | \$13                 |
| <b>Grand Total</b>  | <b>\$752,409</b> | <b>\$501,456</b>  | <b>\$2,715,565</b>  | <b>\$3,969,431</b>   |

**Figure 8.** Cost of claims data related to diabetes and its complications, January 2017 to October 2017 paid through January 31, 2018  
Source: Sanford Health Plan

## 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 medical care. It is within this broad concept that the Medicaid Program in ND 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 percent of the Federal Poverty Level. Coverage is provided through a managed care contract.

In 2016, there were 10,198 Medicaid recipients age 18 and older with diabetes, and 803 of them had a Medicaid claim related to their diabetes.

# Action Plan for North Dakota

## North Dakota Department of Health

### Diabetes Prevention and Control Program

**Funding Source:** Centers for Disease Control and Prevention (CDC) grants  
**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

Nearly 200,000 North Dakotans are estimated to have prediabetes and are therefore at risk for type 2 diabetes: this makes **diabetes prevention a top priority**. The North Dakota Department of Health (NDDoH) is working to engage at-risk North Dakotans and encourage their participation in the CDC's evidence-based **National Diabetes Prevention Program (DPP)**. The National DPP is being offered in more than 24 locations across our state and further expansion is anticipated, with technical assistance provided by the Diabetes Prevention and Control Program. **Studies have shown that participants who complete this program reduce their risk for developing type 2 diabetes by 58 percent (6).**

##### DPP Characteristics & Results

This program is designed for people with prediabetes and helps prevent the progression to type 2 through lifestyle changes that promote a five to seven percent body weight loss. This year-long, participant-centered program helps people make healthier nutrition choices, increase physical activity and cope with stress and challenges that make choosing a healthy lifestyle difficult.

##### Eligibility for the DPP

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

- Be at least 18 years old, non-pregnant **and**
- Be overweight (body mass index  $\geq 25$ ;  $\geq 23$  if Asian) **and**
- Have no previous diagnosis of type 1 or type 2 diabetes **and**
- Have either 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
  - ◊ Previously diagnosed with gestational diabetes with a blood test **or**
- Have a positive screening for prediabetes based on the CDC's Prediabetes Risk Test.

##### Take the Risk Test - Know Your Score

See the Risk Test in [Appendix C on page 24](#). A diagnosis of prediabetes can be confirmed with a blood glucose (sugar) test and a check up at your doctor's office.

### DPP Components:

- CDC-approved curriculum with lessons, handouts and other resources
- Trained lifestyle coaches to help participants learn new skills, set goals and stay motivated to achieve them
- Support from peers with similar goals and challenges

### Key Features:

- Class size of up to 15 participants
- Making healthier meals without giving up most-desired foods
- Inclusion of physical activity in lifestyle
- Coping with stress and challenges that would otherwise derail success
- Getting back on track after a slip-up
- Setting goals
- Staying motivated
- Overcoming barriers to success
- Tracking food intake and physical activity

### One-Year Time Commitment:

- Sixteen one-hour sessions in the first six months
- Monthly one-hour sessions in months seven through 12

Participants who complete this program can reduce their risk of developing type 2 diabetes by 58 percent (6). The impact of this program can last for years to come. Research has shown 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 and Support (DSMES)

The NDDoH is helping people with diabetes by promoting evidence-based DSMES education by:

- Developing qualified DSMES programs in underserved areas. There are currently 42 DSMES sites in ND.
- Facilitating health care provider referrals of patients with diabetes to DSMES programs.
- Promoting public awareness of the benefits of diabetes self-management education and support and where to find DSMES programs.

DSMES has been shown to be cost-effective by **reducing hospital admissions and readmissions, as well as estimated lifetime healthcare costs related to a lower risk for complications**. DSMES improves hemoglobin A1c, a measure of blood glucose control, by as much as 1 percent in type 2 diabetes (12).

**“Each 1 percent reduction in hemoglobin A1c was associated with a 37 percent decrease in the risk for microvascular complications and a 21 percent decrease in the risk of any end point or death related to diabetes. (14).**

Please see Appendix D on page 25 for a map of DPP and DSME programs in ND.



### **3. Public Awareness Efforts**

The NDDoH Diabetes Prevention and Control Program works to educate the public and promote healthy choices through press releases, an informational website ([www.diabetesnd.org](http://www.diabetesnd.org)) and media campaigns. Messages promote:

- Self-assessment of the risk factors for prediabetes and diabetes
- Self-help diabetes prevention information
- Diabetes self-management strategies and resources
- Awareness of recommended care options including North Dakota's evidence-based programs like the National DPP and DSMES programs

### **4. Education for Diabetes Care Professionals**

Resources are directed toward the support of education for diabetes care health professionals in the form of:

- Webinars on diabetes care related topics
- The annual Diabetes Summit, an educational event held in collaboration with the Dakota Diabetes Coalition

### **5. Health System Assessment and Clinical Care Interventions**

A health system assessment has been developed by the NDDoH 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 patients.

### **6. Diabetes Care Network**

The Diabetes Prevention and Control Program relies on a network of national, state, regional and local partners to expand the reach of diabetes prevention and control efforts. Partners include but are not limited to:

- American Association of Diabetes Educators
- American Diabetes Association
- Dakota Diabetes Coalition
- Centers for Disease Control and Prevention, Division of Diabetes Translation
- Community Health Centers of the Dakotas
- Diabetes care health professionals
- Hospitals and clinics
- Local Public Health Units
- North Dakota State University Extension
- North Dakota Universities
- National Association of Chronic Disease Directors
- National Diabetes Prevention Program sites
- Quality Health Associates
- School systems
- Third party payers

## Children's Special Health Services

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

### 1. Specialty Care Diagnostic and Treatment Program

CSHS paid \$16,810 in health care claims for 17 eligible children with Diabetes Mellitus type 1 and 2 in fiscal year 2016. 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 Diabetes Educator
- Care coordination services that help families access other needed services and resources provided for children who are eligible for CSHS treatment services

### 2. Multidisciplinary Clinics

- CSHS funds monthly pediatric diabetes clinics through the Coordinated Treatment Center at Sanford Health in Fargo, ND. 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.

### 3. Information Resource Center

CSHS provided 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.

## 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.

## 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.

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. The nurse provides information and education to help manage their health condition, and gives assistance with finding services and other supports that help them follow their doctor's treatment plan.

*Experience Health ND* members use the following 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 in 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.

## North Dakota Public Employee Retirement System 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, 7.39 percent of the total North Dakota Public Employees Retirement System (NDPERS) population or 4,637 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 provider'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 North Dakota Century Code (NDCC) 54-52.1-14, employers are offered incentives through their health insurance premium. Last year 198 out of 249 employers elected to participate in the wellness program. This is an employer participation rate of approximately 76 percent. However, 97 percent 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 NDPERS 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 ND 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 26 for more information on *About the Patient*.

## Diabetes Prevention Program

The NDPERS Board approved the implementation of Diabetes Prevention Program (DPP) pilot for NDPERS subscribers who are at risk for type 2 diabetes. The pilot program began in January 2018 in the Bismarck-Mandan area and has successfully launched four cohorts to date. The NDPERS Board approved expanding the pilot into Grand Forks, Fargo, Dickinson, Minot and Jamestown and also extending the pilot into the 2019-2021 biennium. The Board will evaluate the results of the pilot program to determine whether this program should be added as a covered benefit in the NDPERS Health Plan.

## Collaborative Efforts

Representatives of the NDDoH, the NDPERS, the Department of Human Services and the Indian Affairs Commission share information and identify opportunities to work together. Collaboration is occurring among the departments through epidemiology and evaluation, the Chronic Disease Coordination Team (CDCT) and through the development of a pilot program for the National DPP.

### Health Department Chronic Disease Coordination Team

The NDDoH coordinates the CDCT that meets regularly to share upcoming activities and collaboration opportunities among chronic disease and risk factor related programs. The NDDoH Diabetes Prevention and Control Program Director attends these meetings and informs team members of program activities and opportunities for collaboration and integration.

### Epidemiology and Evaluation Team

Epidemiology staff from NDDoH, the NDPERS and ND Medicaid each provided data for this report and other documents that promote care of people with prediabetes and diabetes. Evaluation staff assist with developing progress reports on programmatic initiatives including ND health outcomes.

### National Diabetes Prevention Program (DPP) Pilot Study

NDPERS and the NDDoH have worked together to develop and implement an incentive-based pilot project to study the benefit of the National DPP for NDPERS beneficiaries. In January 2018 area lifestyle coaches began offering the National DPP to NDPERS members in the Bismarck-Mandan area and gathering data on program outcomes. NDPERS is providing reimbursement for this pilot, and a summary of the pilot results will be developed at its conclusion. The aim of the pilot program is to determine the level of effectiveness of the National DPP for NDPERS members related to reducing modifiable risk factors for type 2 diabetes (overweight, obesity, physical inactivity). Results of the pilot program will potentially influence future decisions related to offering the National DPP to NDPERS beneficiaries as a covered health plan benefit.

# Overarching Collaboration Goals

## 1. Reduce the prevalence and cost of diabetes in ND

### Objectives:

- A. Make diabetes prevention programming accessible to all ND residents who have prediabetes by developing more National DPP sites in underserved areas.
- B. Promote training of additional lifestyle coaches to support further expansion of the National DPP.
- C. Increase the number of at-risk North Dakotans who participate in the National DPP lifestyle change program.
- D. Communicate the National DPP's return on investment to health plans to promote future coverage of the National DPP for all North Dakotans.
- E. Work with health systems and other partners to identify prediabetes and refer people with prediabetes to lifestyle intervention programs such as the National DPP.
- F. Work with employers to identify prediabetes and develop wellness policies to support lifestyle intervention programs such as the National DPP.

## 2. Improve the quality of life for people with diabetes in ND

### Objectives:

- A. Continue to promote awareness of qualified Diabetes Self-Management Education and Support (DSMES) programs to North Dakotans.
- B. Facilitate diabetes care and DSMES programming for disparate populations in ND.
- C. Continue to build awareness and adherence to the Standards of Medical Care in Diabetes to optimize medical management visits for people with diabetes.
- D. Continue to support professional development that improves diabetes care in ND health-care settings.
- E. Work with employers to identify wellness policies and practices that support optimal diabetes self-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 ND.
- B. Provide information to coalitions working for the benefit of those with chronic diseases in ND.

## 4. CDC-Sponsored State Engagement Meeting

In June 2018 a meeting of national, state and local diabetes partners with representatives from all impacted agencies will convene in Bismarck. Key members will share current diabetes information and participate in professionally led strategic planning to develop an action plan and a budget blueprint to reduce the economic and social impact of diabetes in ND. This plan will help direct future efforts to reduce the burden of diabetes in ND.

# 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

**Crude rate:** A crude rate is the number of new cases occurring in a specified population per year, usually expressed as the number of cases per 100,000 population at risk.

**Diabetes:** Diabetes is a disease in which the body either doesn't produce enough insulin or can't use its insulin as well as it should, resulting in above-normal levels of blood sugar. This build-up of blood sugar can lead to many complications including heart disease, blindness, kidney failure and lower-limb amputation.

**Diabetes Episode** (Figure 6 on page 11): A member having a claim with an ICD-10 diagnosis code in the ranges of E08.0 through E13.99 or O24.0 and O24.93, related to diabetes with or without complications.

**Hemoglobin A1c Level:** Hemoglobin A1c is a measure of a person's average blood sugar level over the previous two to three months and is usually expressed as a percentage. A common targeted Hemoglobin A1c for people with diabetes is less than 7 percent.

**Gestational Diabetes:** Gestational diabetes is a type of diabetes that develops only during pregnancy. Untreated or uncontrolled gestational diabetes can cause problems for the baby, such as a larger than normal birth size, low blood sugar right after birth, breathing problems (respiratory distress syndrome) and an increased chance of dying before or soon after birth. Women with gestational diabetes are at higher risk for developing type 2 diabetes later in life.

**Obesity and Overweight:** Obesity is having a high amount of extra body fat. Overweight is having extra body weight from muscle, bone, fat, and/or water. Body mass index or BMI, is a surrogate measure of body fat. For adults 20 years of age and older, BMI 25-29.9 is considered overweight; BMI of 30 and above is considered obese.

**Prediabetes:** Prediabetes is a health condition characterized by blood sugar levels that are higher than normal, but not high enough to be diagnosed as diabetes. Lifestyle change programs, such as those offered through the CDC's National DPP can help people with prediabetes reduce their risk of developing type 2 diabetes by as much as 58 percent.

**Presenteeism:** Presenteeism means working while sick which can cause productivity loss, poor health, exhaustion and the spread of workplace illness.

**Prevalence:** Prevalence is the proportion of a population found to have a condition, like diabetes.

**Type 1 Diabetes:** Type 1 diabetes is 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:** Type 2 diabetes is 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.



## Appendix C: Prediabetes Risk Test

# CDC Prediabetes Screening Test



### 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  |
| 1   | 0  |
| 1   | 0  |
| 5   | 0  |
| 5   | 0  |
| 5   | 0  |
| 9   | 0  |

Are you a woman who has had a baby weighing more than 9 pounds at birth?

Do you have a sister or brother with diabetes?

Do you have a parent with diabetes?

Find your height on the chart. Do you weigh as much as or more than the weight listed for your height?

Are you younger than 65 years of age and get little or no exercise in a typical day?

Are you between 45 and 64 years of age?

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 <small>Pounds</small> | Height | Weight <small>Pounds</small> |
|--------|------------------------------|--------|------------------------------|
| 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



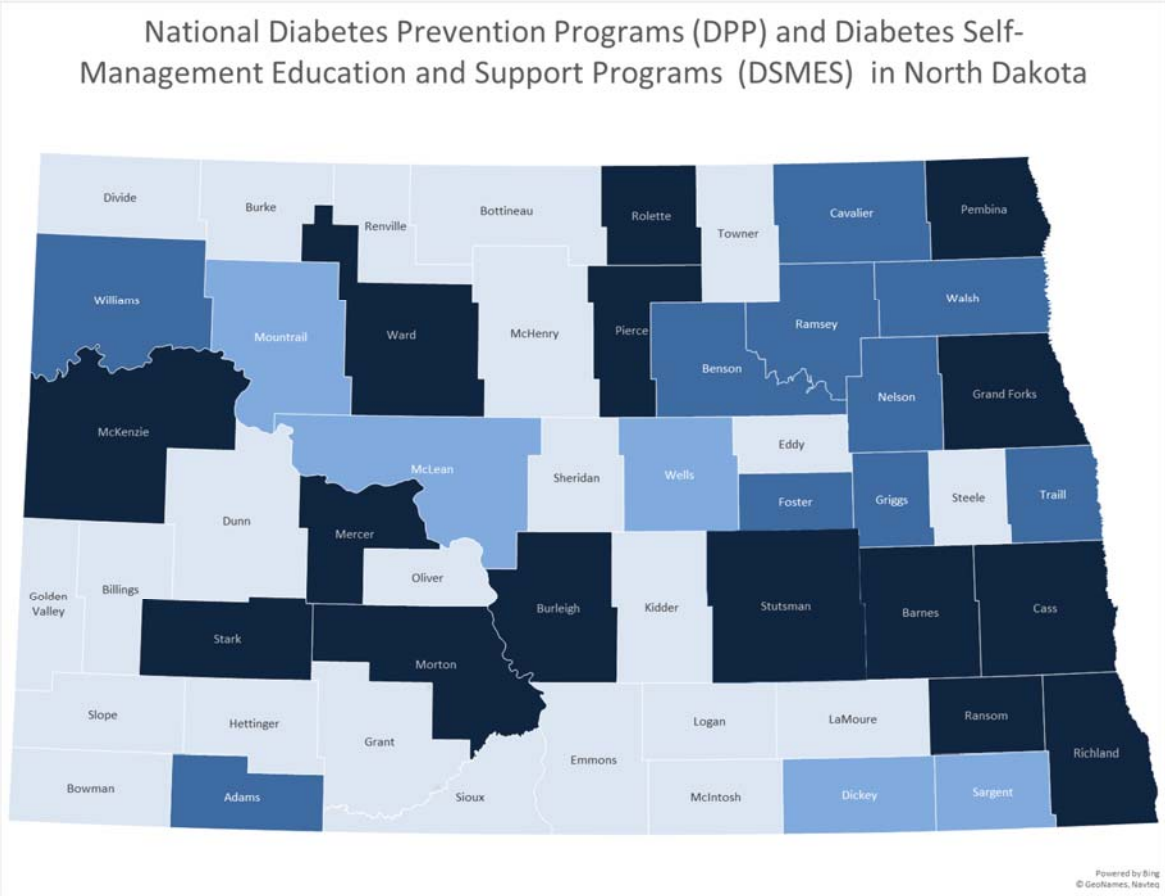
### IF YOUR SCORE IS 3 TO 8 POINTS

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 D: Diabetes Self-Management Education and Support and National Diabetes Prevention Program Sites in North Dakota



None
  DPP
  DSMES
  Both

# Appendix E: North Dakota Public Employees Retirement System “About the Patient” Program



## Collaborative Drug Therapy Program Annual Report

December 2017

About The Patient—1641 Capital Way Bismarck, ND 58501

T: 1.888.326.4657 W: [www.aboutthepatient.net](http://www.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 facilitates the About the Patient program, patient curriculum based on national standards for diabetes care, provider network, enrollment procedures, documentation of clinical encounters, and assessment of 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). The diabetes program was included in the 2016 impact of diabetes report to state legislators as part of NDCC 23-01-40 requirement for even - numbered years reporting. Funding and program administration by About the Patient and Sanford Health Plan was extended for next biennium July 2017 - June 2019.

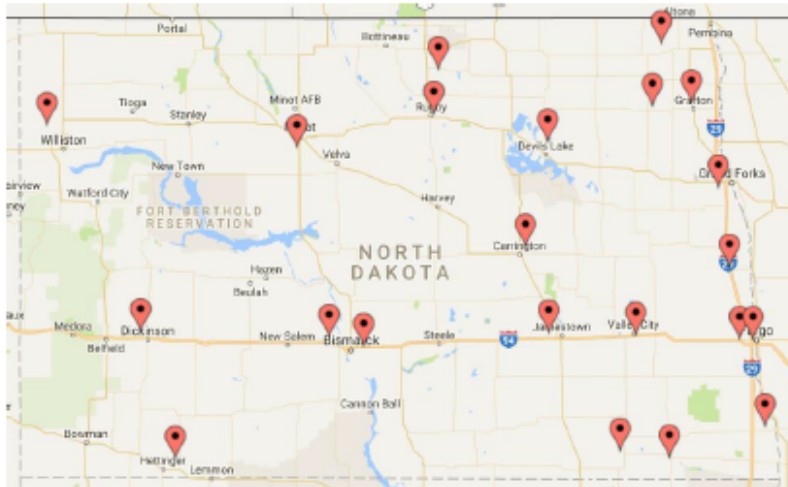
All data elements in this report are generated from pharmacist input of eligible patients into the North Dakota Pharmacy Services Corporation MTM Express System. The results indicate a mature & stable program with consistent outcomes in participation, interventions, and health outcomes.

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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. Targeted direct marketing via letters is done by the About the Patient program to inform eligible beneficiaries about the opt-in program. NDPERS also sends a letter to newly eligible patients on a month-to-month basis. The wellness enrollment form allows patients to choose one of 57 community pharmacy locations across North Dakota for face-to-face program participation and/or live secure video conferencing (Telepharmacy) in Edgeley, Glen Ullin, New Salem and all Thrifty White Drug locations in North Dakota. The Thrifty White Patient Care Center also provides teleconference visits for those patients where a barrier to participation is location.



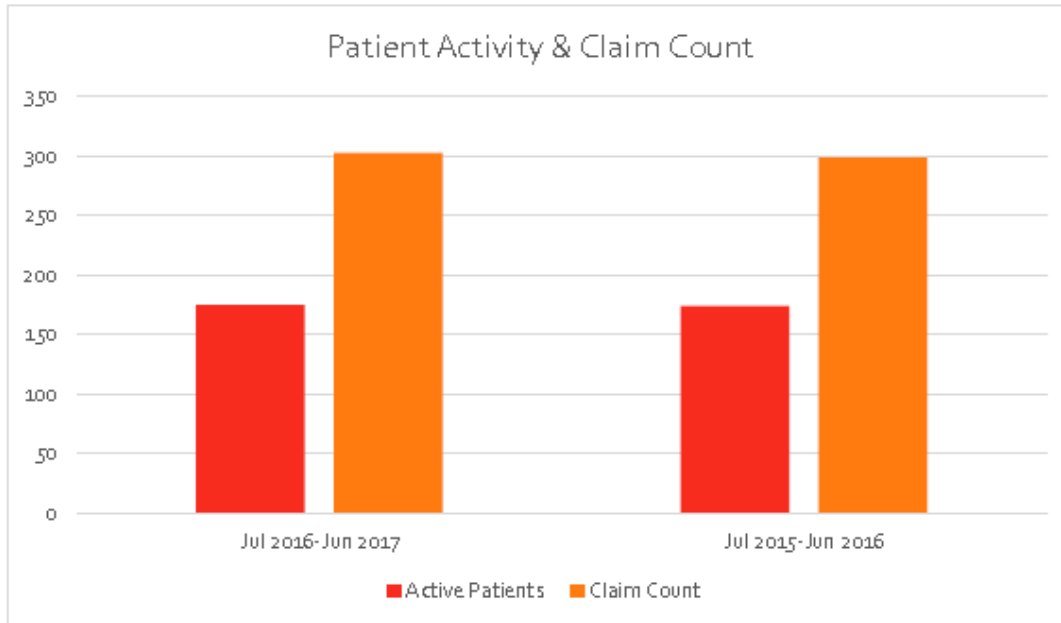
Patients are eligible for three visits within the first year and two visits during the second year. By actively partaking in the program patients receive reimbursement of co-pays on diabetes medications and testing supplies. Patients receive copay reimbursements on a quarterly basis. The patient curriculum 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's electronic medical record software MTM Express™.

### Program Analysis July 2016-June 2017

#### Participation & Activity

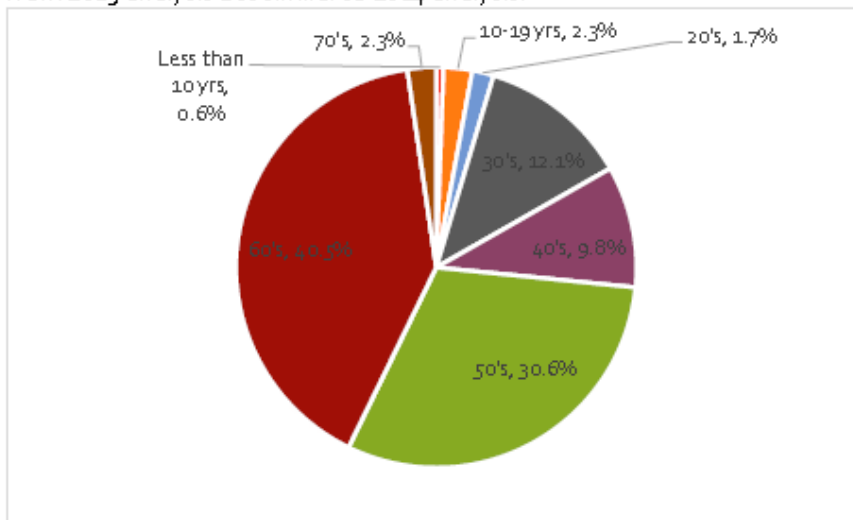
**The program had 175 patients with billable services during the current reporting period.** These 175 patients accounted for 303 billable visits during the reporting period. The last eligibility report indicated 3,271 eligible patients for a participation rate of 5.4%. For comparison, the reporting period of July 2015 to June 2016 had 174

patients with 299 billable visits from 2,920 eligible patients for a participation rate of 6.0%. These comparisons indicate stability in both patient count and claim activity. During the time period of July 2013-June 2017 patients that have participated in the program have an average of 3.04 claims during their course of participation in the program.

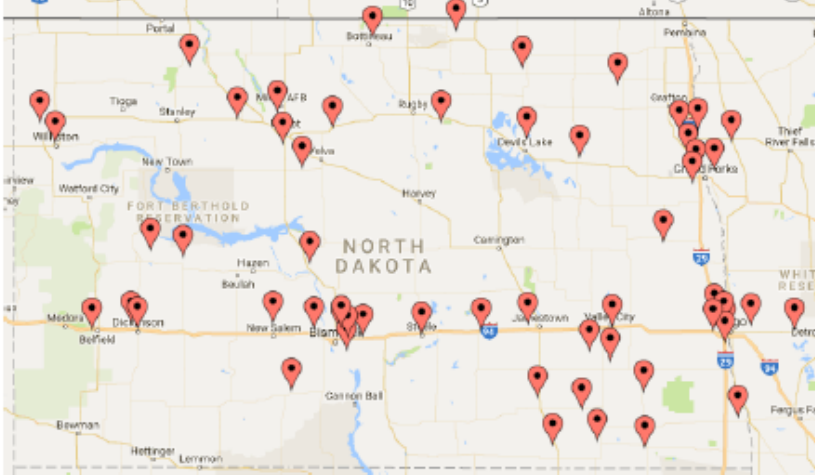


**Demographics**

Of the patients with billable services during the reporting period, there was an even split of male and female participation. 50.3% of participants were male. Over 70% of participants were over the age of 50, an increase from 2015 analysis but similar to 2014 analysis.



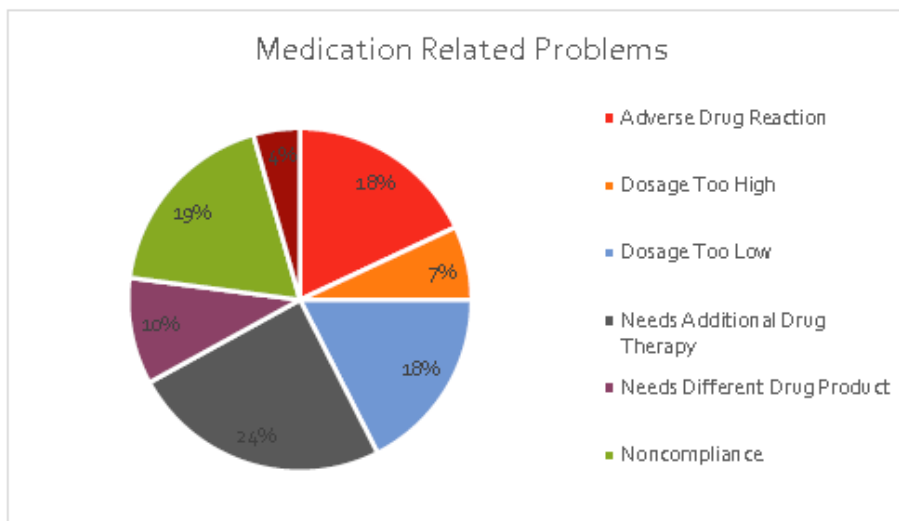
Participants were widely distributed geographically across the state. Pharmacy providers provide face to face or telepharmacy services (secure audio and video connection) to ensure all patients have access to the program.



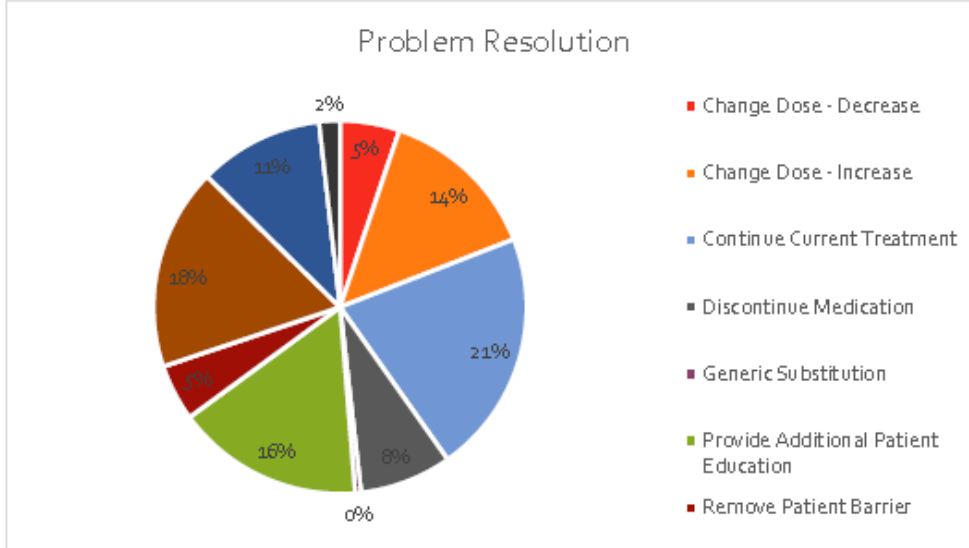
### Pharmacist Interventions

From July 2016-June 2017 there were 388 interventions made by the pharmacists in collaboration with the patient and their primary health provider in order to manage their diabetes and other medical conditions and prevent costly complications. There were 373 interventions made during the previous year, again showing consistency within the program.

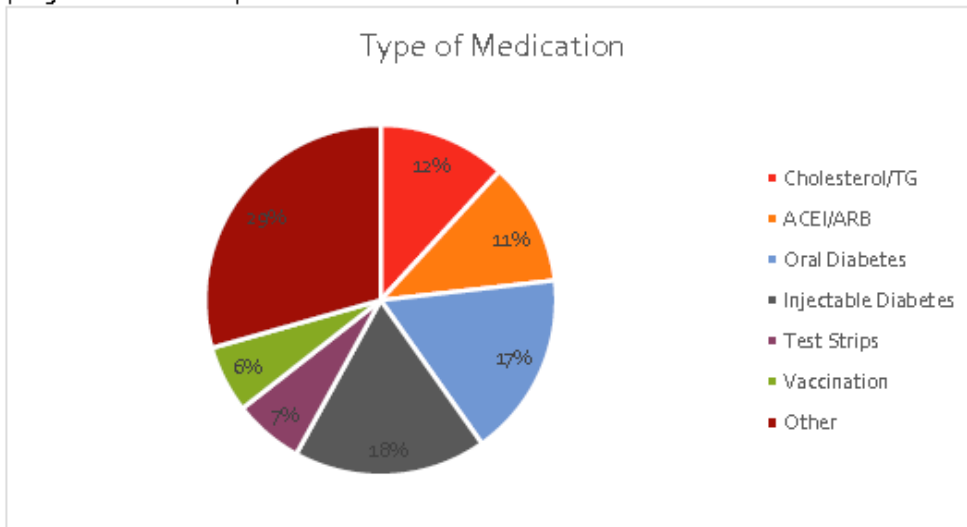
Noncompliance accounted for almost 20% of identified medication problems. Dose adjustments were involved in 25% of medication related problems, while 42% were related to needing to change or discontinue a medication.



These themes are also displayed in how the medication related problems were resolved.



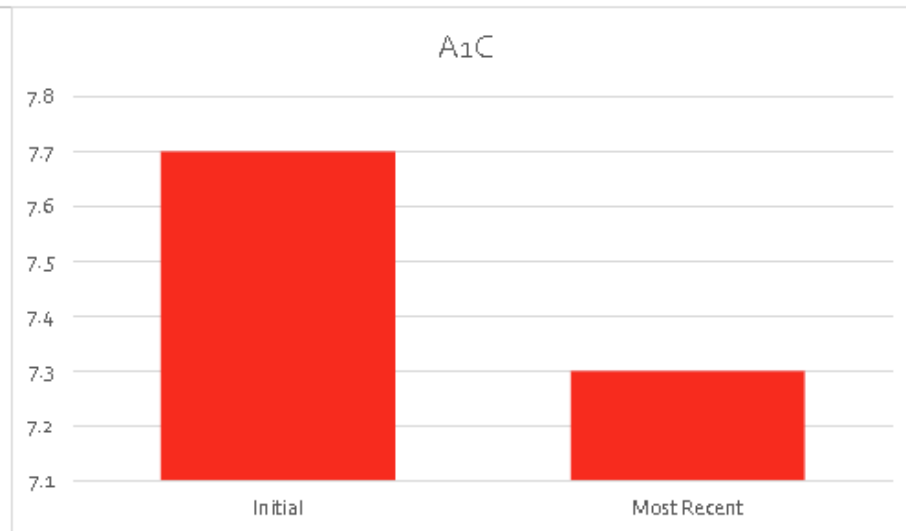
Of the interventions identified over 78% were related to drug classes directly involved in treatment of diabetes and its comorbidities. This is exactly what we would expect to see in a successful program given program areas of emphasis.



### Blood Glucose Lab Results

Of the 175 patients with claims during the reporting period, 122 (69.7%) had more than one A1C level documented. This is an improvement over previous years. For all participants with more than one A1C level document, the most recent result was 0.4 lower than the initial result, indicating improvement in scores.





55% of participants had lower A1c scores on their most recent lab compared to their initial result. Those with improvement experienced an average A1c decrease of 1.1.

**The average fasting blood glucose for active participants was 130.5.** American Diabetes Association (ADA) recommends controlled fasting range of 80-130 mg/dL.

**The average random blood glucose for active participants was 123.9.** American Diabetes Association (ADA) recommends random range less than 180mg/dL.

**The results above are consistent with prior reporting years and demonstrate the program's ability to help reduce complications associated with diabetes in a majority of participating patients.**

## Hypertension

**In general, the ADA recommends systolic blood pressure less than 140 and diastolic less than 90.** For those active participants during the reporting period, the average systolic pressure was 131 and average diastolic was 78. Both of these results fall within the ADA recommendations.

## Cholesterol

**Improvements were seen in lipid levels for active participants.** For those with multiple lab reports on file, overall improvements were seen in total cholesterol, HDL, LDL, and triglycerides. The most improvement was seen in the HDL results, with over 60% of participants having improved results on their most recent labs.



## Patient Survey Results

| <b>Perception: Diabetes Awareness Survey (1=Strongly Agree to 5=Strongly Agree)</b> | <b>7/2016-6/2017</b> | <b>7/2015-6/2016</b> |
|---|----------------------|----------------------|
| Ask my pharmacist questions I may have about diabetes                               | 4.3                  | 4.2                  |
| Take my medications and administer injections as instructed                         | 4.5                  | 4.6                  |
| Describe the long term complication of uncontrolled diabetes                        | 4.2                  | 4.2                  |
| Be motivated to keep up with my diabetes self-management                            | 4.3                  | 4.4                  |
| Voice concerns to my doctor about diabetes  | 4.5                  | 4.4                  |
| Keep my doctor appointments   | 4.5                  | 4.5                  |
| <b>Patient Satisfaction Survey (1=Strongly Disagree to 5=Strongly Agree)</b>        | <b>7/2016-6/2017</b> | <b>7/2015-6/2016</b> |
| Professional appearance of the provider   | 4.9                  | 5.0                  |
| Appearance of the meeting area  | 4.8                  | 4.9                  |
| System for scheduling your appointment  | 4.9                  | 4.8                  |
| The provider's interest in your health  | 4.9                  | 5.0                  |
| How well the provider helps you manage your medications                             | 4.9                  | 5.0                  |
| How well the provider explains possible side effects                                | 4.9                  | 4.9                  |
| The provider's efforts to solve problems that you have with your medications        | 4.9                  | 5.0                  |
| The responsibility that the provider assumes for your drug therapy                  | 4.8                  | 4.9                  |
| Ability of the provider to answer your questions about your medications             | 5.0                  | 5.0                  |
| Ability of the provider to answer your questions about your health problems         | 4.9                  | 5.0                  |
| The provider's efforts to help you improve your health or stay healthy              | 4.9                  | 5.0                  |
| The program services overall  | 4.9                  | 5.0                  |
| Ability of the provider to see you at your scheduled time                           | 4.9                  | 5.0                  |
| Courtesy and professionalism of the staff   | 5.0                  | 5.0                  |
| Follow-up after the appointment   | 4.9                  | 5.0                  |
| The educational materials provided  | 4.8                  | 5.0                  |

The patient surveys indicate patients are highly satisfied with the program, motivated to work with their health providers, and maintain a high level of self-efficacy with a chronic disease.



## Summary

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### Interpretation:

The Diabetes Management Program administered by the About the Patient Program continues to produce consistent results. The results indicate a mature & stable program with positive interventions and health outcomes.

### Looking into the Future:

As we move forward into this biennium, About The Patient with the help of NDPERS and Sanford would like to increase enrollment into the program. We continue to look at adding program providers to our network as well.

At the direction of the NDPERS Board of Trustees, we would be happy to assist in having another cost analysis of the program completed.

In addition, we are ready and willing to help NDPERS look at any alternatives or changes to the current program design and requirements.

## **Appendix F: Committee Members**

### **North Dakota Department of Health**

Jane Myers, Diabetes Prevention and Control Program Director

### **North Dakota Public Employees Retirement System**

Bryan Reinhardt, Research Analyst/Benefits Planner

Rebecca Fricke, Employee Benefit Programs Manager

Sharon Schiermeister, Chief Operating Officer

### **North Dakota Department of Human Services**

Maggie Anderson, Director, Medical Services Division

### **North Dakota Indian Affairs Commission**

Bradley Hawk, Indian Health Systems Administrator

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