North Dakota 2024 Diabetes Report

North Dakota Century Code 23-01-40

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

- North Dakota Department of Health and Human Services
- North Dakota Public Employees Retirement System
- North Dakota Indian Affairs Commission
- Mandan, Hidatsa, Arikara Nation | Three Affiliated Tribes
- Spirit Lake Nation

Table of Contents

Executive Summary 1

Overview of Diabetes in the United States 2

Overview of Diabetes in North Dakota 3-7

North Dakota Department of Health and Human Services 8-10

North Dakota Public Employees Retirement System 11-14

Diabetes Programs for American Indians 15-17

Action Plans, Coordination and Evaluation of Activities 18-19

Glossary 20-21

Appendices 22-23

- North Dakota Century Code 23-01-40
- References

EXECUTIVE SUMMARY

This report has been completed to comply with North Dakota Century Code (N.D.C.C.) 23- 01-40. Diabetes goals and plans - which requires in even numbered years, three state agencies, the North Dakota Department of Health and Human Services (HHS), the North Dakota Indian Affairs Commission, and the North Dakota Public Employees Retirement System (NDPERS), to collaborate to develop a report identifying goals and associated plans to reduce the incidence of diabetes in the state, improve diabetes care, and control complications associated with diabetes.

This report describes the prevalence, complications, cost of diabetes, and how the three reporting agencies address diabetes in the populations they serve. In addition, the report presents recommendations on how to improve the health of North Dakota residents with, or at risk for developing, diabetes.

The North Dakota Diabetes Prevention and Control Program (NDDPCP) Coordinator requested and compiled data about diabetes in the populations each entity serves, including how diabetes is addressed and actionable strategies for future efforts. Many of the future action items rely on policy, system, and environment change approaches in partnership across sectors and stakeholders. Each contributing partner and the three state agencies reviewed and came to consensus on the report that follows.

Acknowledgements

- *Brianna Monahan, Diabetes Prevention and Control Program Coordinator, HHS*
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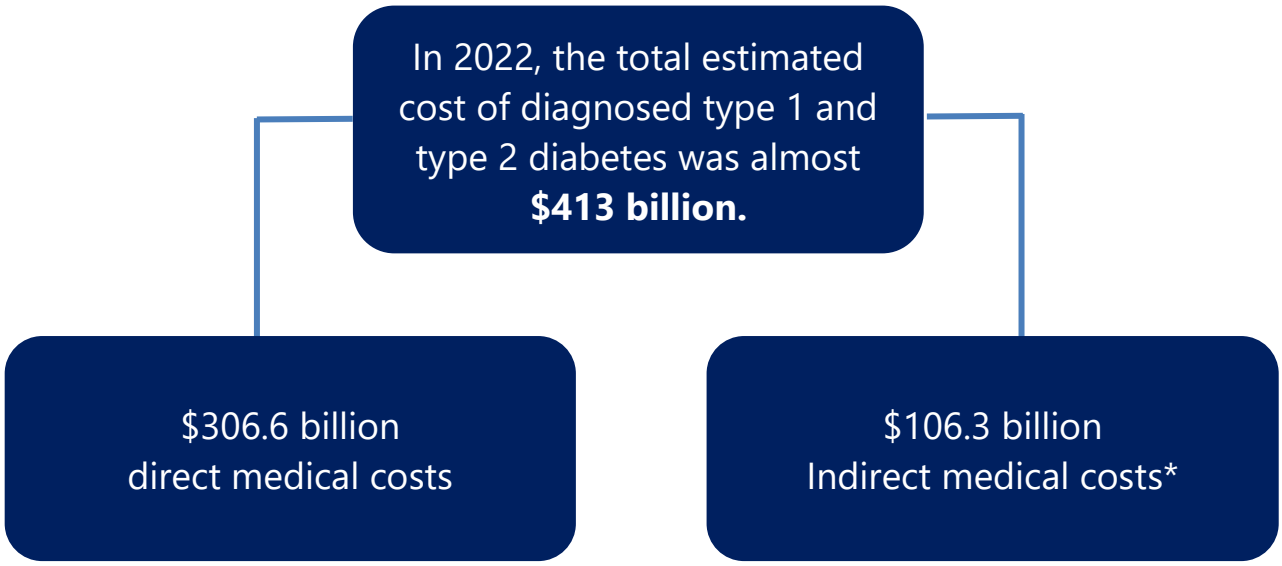
- *North Dakota Indian Affairs Commission*
- *Gwen Davis, Fort Berthold Diabetes Program*
- *Challsey Scallon, Spirit Lake Nation*

The Cost of Diabetes[1]



*Related to absenteeism, presenteeism, inability to work, reduced productivity for those in the workforce, and premature mortality.

Inflation-adjusted direct medical costs of diabetes rose 35% from 2012 to 2022.

Medical expenses for people with diabetes are approximately 2.6 times higher than for those

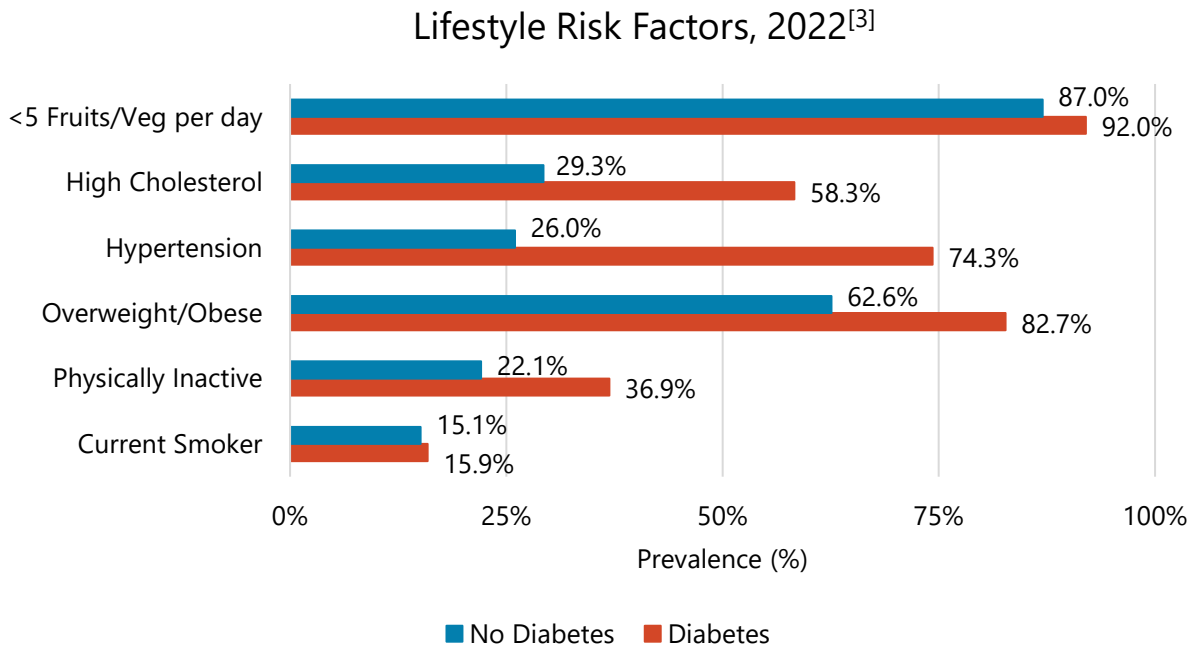
The direct and indirect medical costs cited above place many families at an economic disadvantage, including the additional psychological burden associated with the management of a chronic condition. People with diabetes are on average 2-3 times more likely to experience depression, and parents of children with chronic disease report decreased physiological and physical quality of life.

Associated Complications

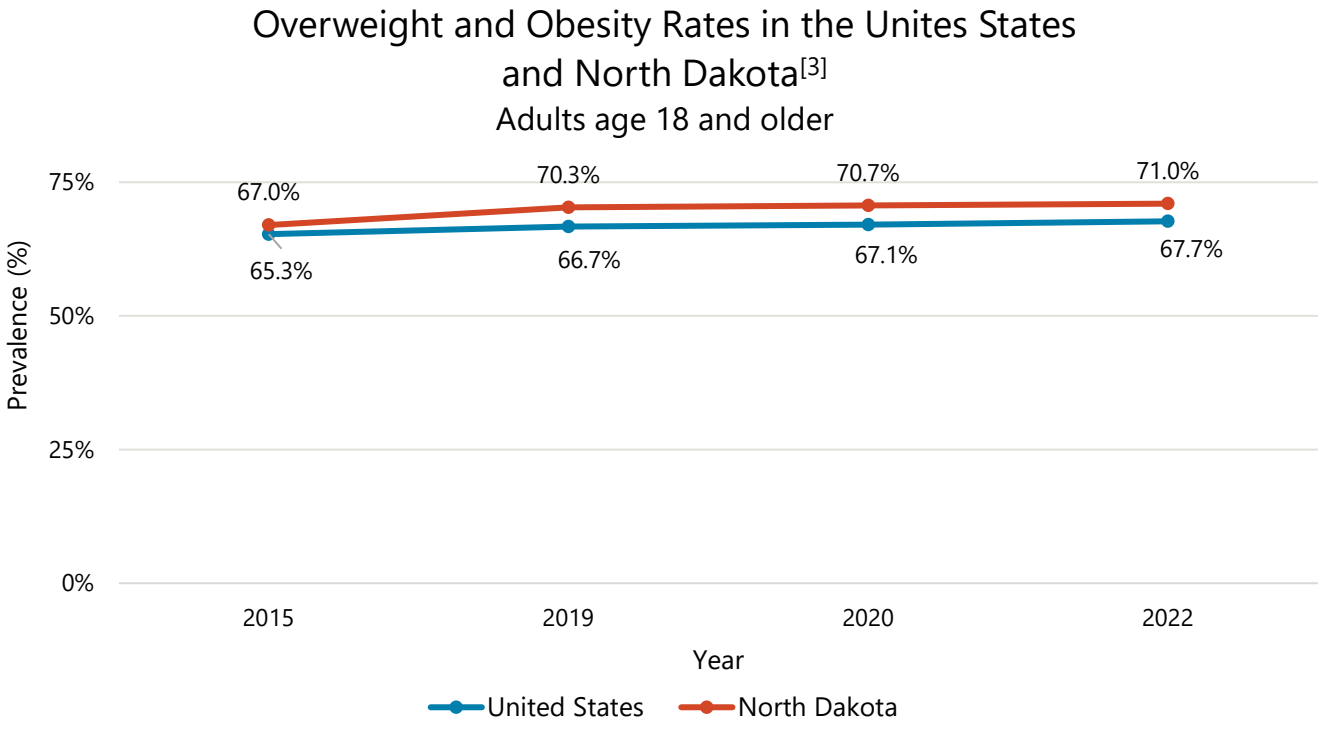
Diabetes increases the risk for many health conditions including heart disease, blindness, end stage kidney disease and amputations. Diabetes also reduces a person's ability to fight infections and increases risk for complications from communicable illnesses. By managing diabetes with routine testing and medical visits, those impacted by diabetes can prevent and delay the onset of complications[2].

Due to the many risks and reduced quality of life, it is important to increase screening and diagnosis of prediabetes so that individuals at risk for type 2 diabetes can modify lifestyle behaviors that can prevent or delay the onset of diabetes.

OVERVIEW OF DIABETES IN NORTH DAKOTA



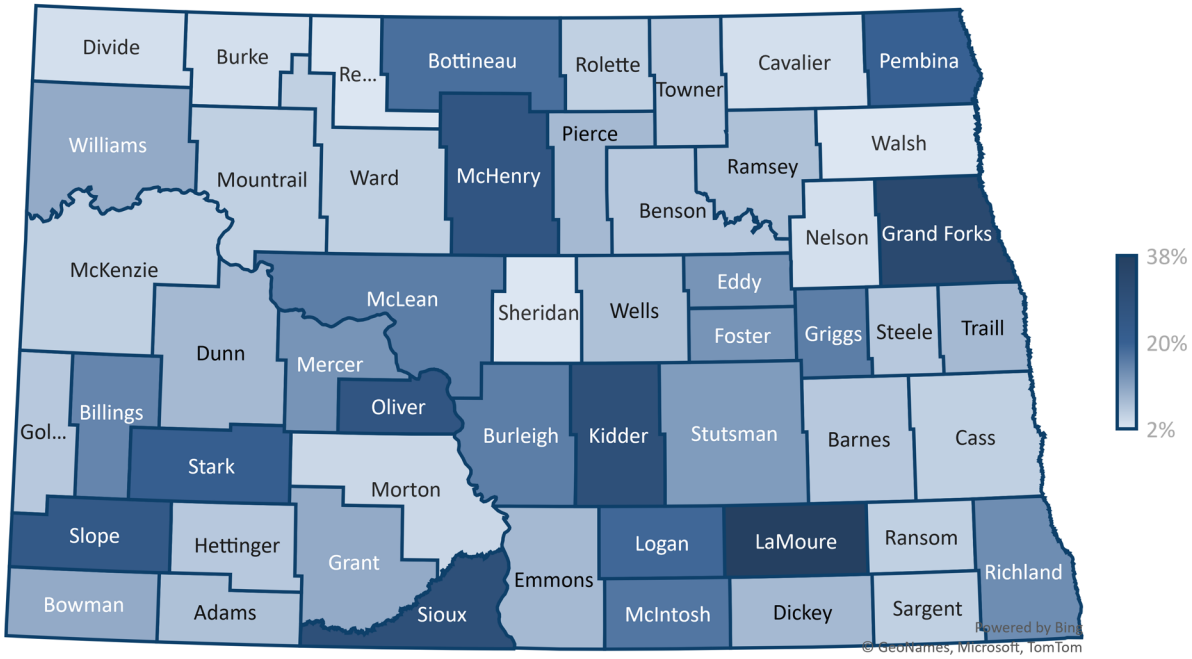
Obesity is a primary risk factor for type 2 diabetes, increasing the risk for disease by at least six times. Rates of obesity and type 2 diabetes have increased linearly in recent decades, with rate of diabetes increasing primarily among obese individuals. Research suggests that if current trends in obesity continue, 1 in 3 adults will be living with type 2 diabetes by 2050. Obesity and diabetes are both chronic, progressive diseases with shared etiology, risk factors, health outcomes and treatments [4].



Food Insecurity in North Dakota

For adults and children who already have type 1 or type 2 diabetes, food insecurity can compound the risk of complications. Chronic disease rates are also higher among adults who are food insecure and low-income. Poor diet quality is associated with negative health outcomes.

Percent of Population with Limited Access to Healthy Foods[5]



In 2023, the Great Plains Food Bank conducted a study of the charitable feeding network and those it serves in North Dakota and Clay County, Minnesota, entitled "Hunger on the Plains." The study included surveys from over 500 individuals served by the feeding network across 64 sites in 44 counties.

75% of those surveyed report having at least one **chronic health condition,** and **65%** report managing **multiple comorbidities** [6].

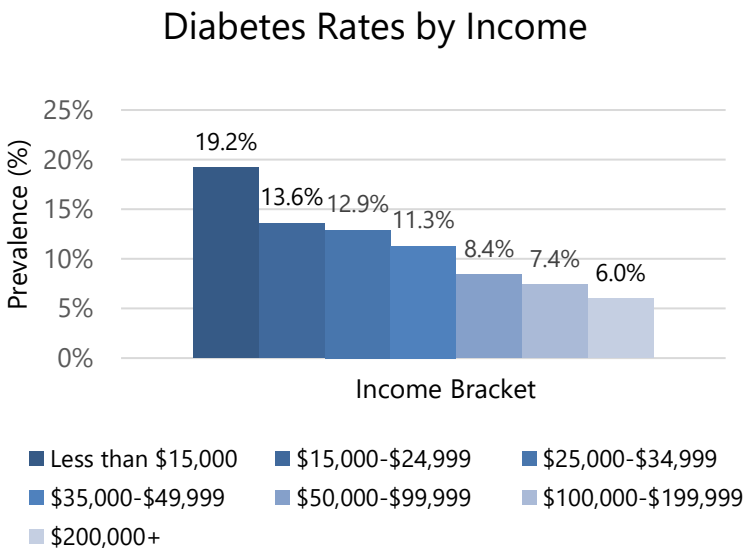
Disease	Reported Rate
High blood pressure	32%
Mental health condition	31%
Diabetes	**24%**
Obesity	14%
Heart disease	10%

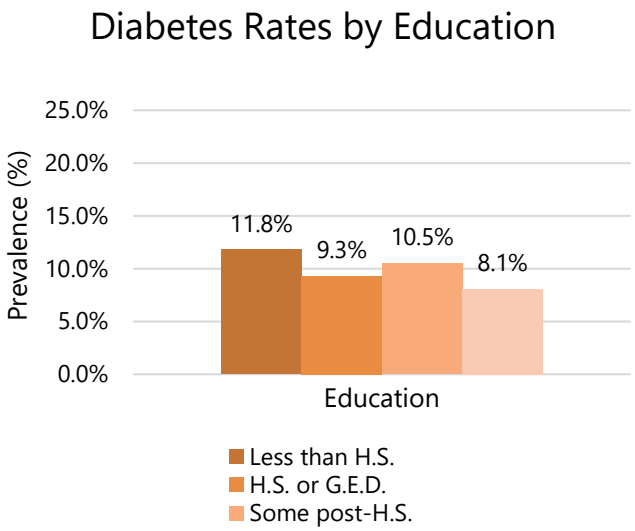
A recent national study found that families experiencing food insecurity have annual **healthcare expenditures 20% higher** than non-food insecure families, *regardless of insurance payer type*[7].

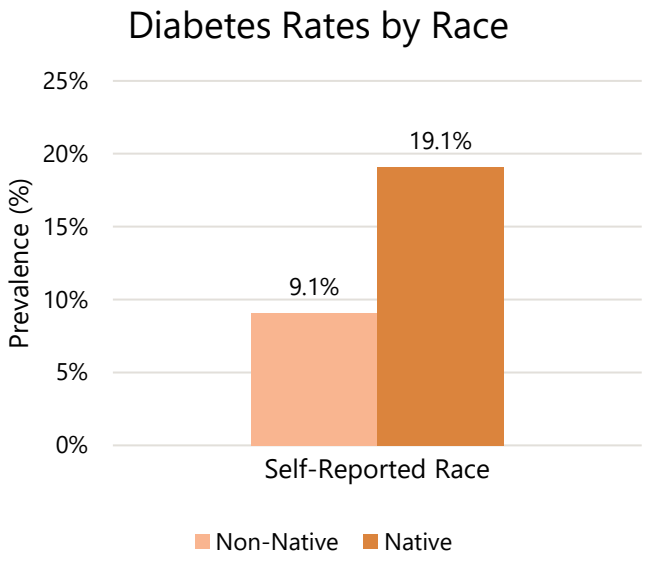
OVERVIEW OF DIABETES IN NORTH DAKOTA

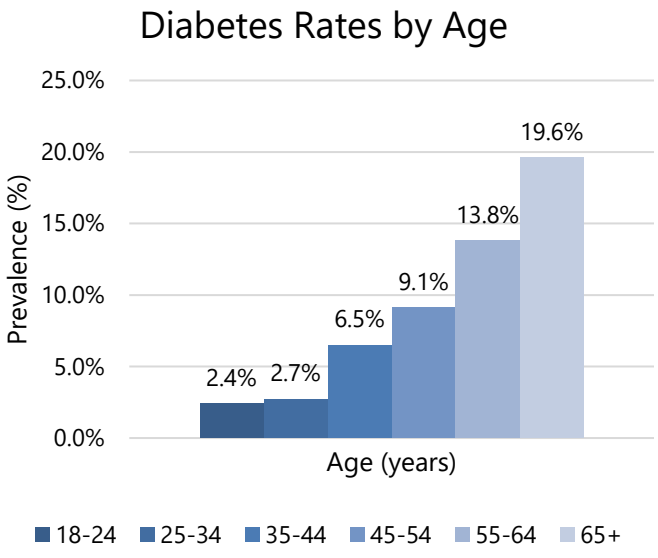
In North Dakota, the **most vulnerable and underserved** populations suffer from the highest rates of diabetes and have the **poorest health outcome.**

The graphs below illustrate the degree to which the overall rates of diabetes among adults 18 years and older in North Dakota varied by demographic and geography in 2018-2022, based on Behavioral Risk Factor Surveillance System (BRFSS) data[3].









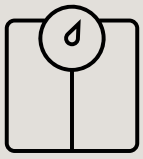
OVERVIEW OF DIABETES IN NORTH DAKOTA

The overall rate of diabetes in North Dakota has consistently fallen below that of the United States average. However, rates vary by demographics and significant disparities exist in the state. Individuals of lower income and education levels experience higher rates of diabetes than those of higher income and education.

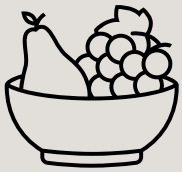
The most significant disparity that exists is among American Indians. Not only is the prevalence of diabetes higher for American Indians, but they also experience the highest rates of diabetes-related amputations and mortality compared to any other race[8,9].

National data also illustrates that American Indian children **ages 10-19** are **nine times** more likely to be diagnosed with type 2 diabetes than their white counterparts[10].

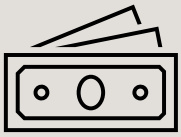
These high rates of diabetes are primarily attributable to:



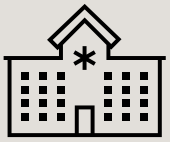
Increased prevalence of contributing risk factors such as obesity and tobacco use[3]



Limitations in food access and affordability[11]



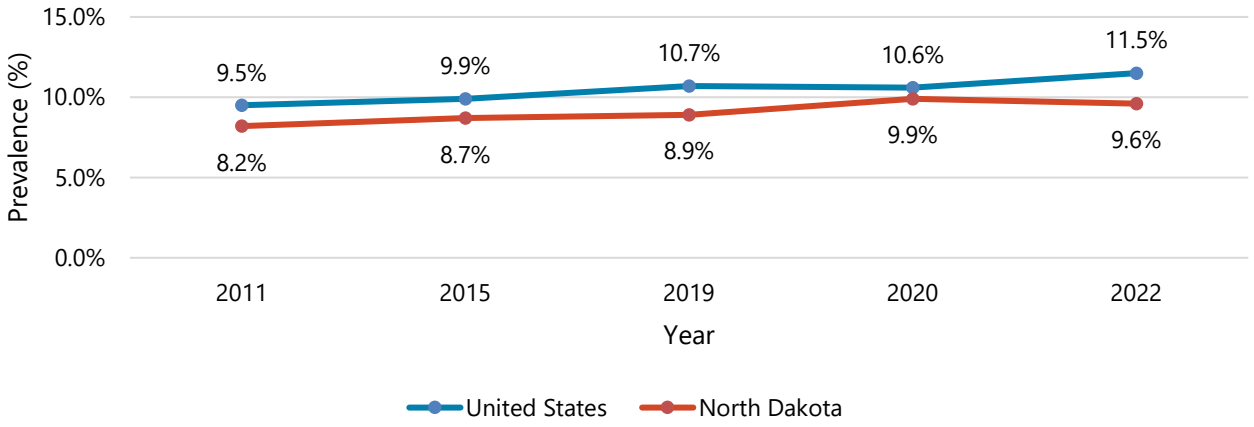
Economic instability[12]



Low access to quality healthcare due to geographical and transportation barriers and racialization in clinical decision making[12,13]

Diabetes Rates in the United States and North Dakota[3]

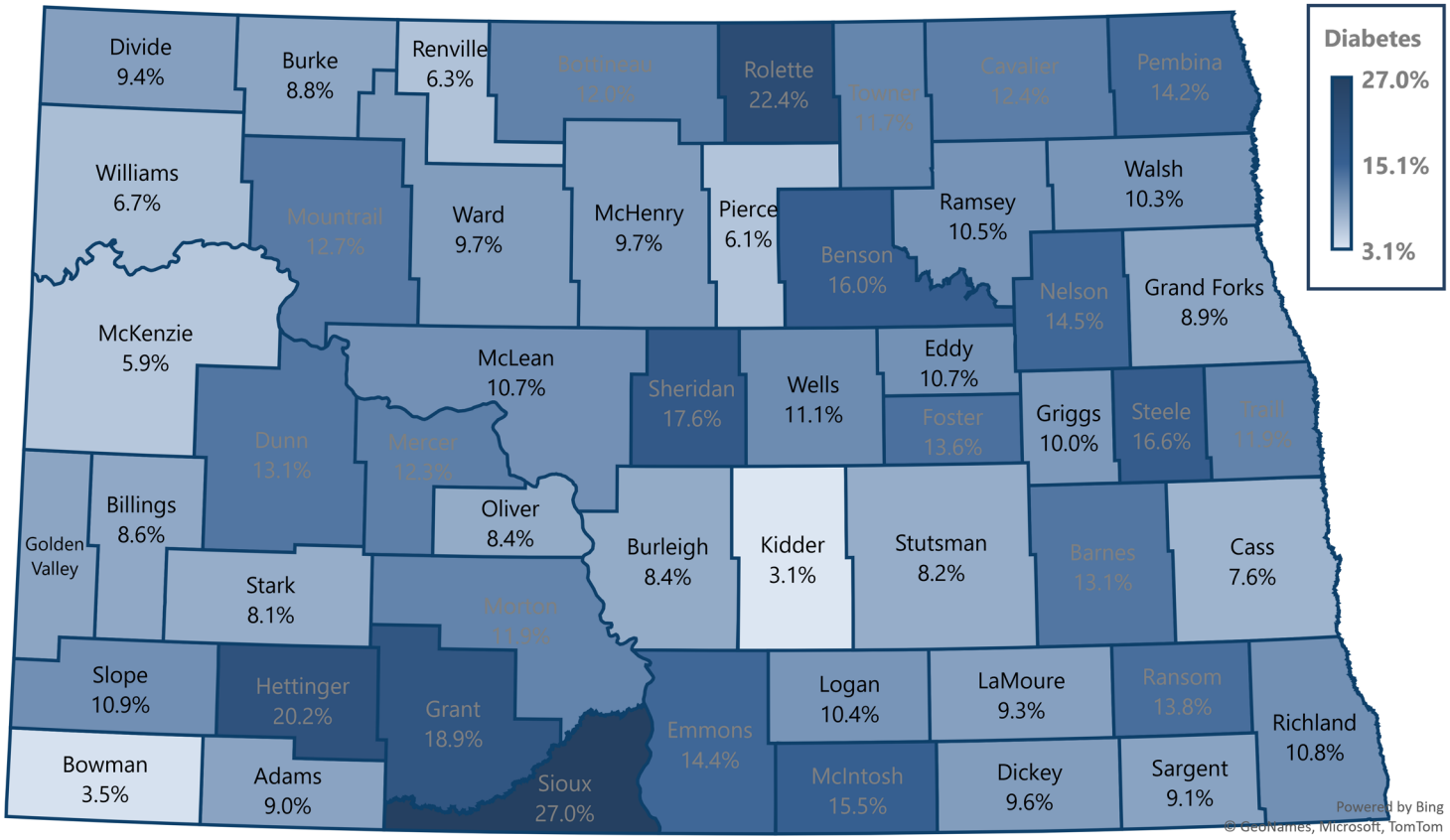
adults ages 18 years and older



OVERVIEW OF DIABETES IN NORTH DAKOTA

2018-2022 North Dakota Diabetes Prevalence[3]

adults ages 18 years and older



In 2022 in North Dakota, an estimated:

57,203 adults were living with diagnosed diabetes[3]

15,965 adults had undiagnosed diabetes[14]

226,430 adults had prediabetes (38%), including 48,560 aged 65 years or older (48.8%)[3]

The North Dakota Diabetes Prevention and Control Program

The North Dakota Department of Health and Human Services (HHS) receives federal funding for the North Dakota Diabetes Prevention and Control Program (NDDPCP) from the Centers for Disease Control and Prevention (CDC) award DP23-0020: A Strategic Approach to Advancing Health Equity for Priority Populations with or at Risk for Diabetes. Federal funding for the NDDPCP totals $1.8 million in the 2023-2025 biennium. The purpose of the DP23-0020 grant is to implement and evaluate evidence-based strategies to reduce the burden of diabetes in North Dakota, especially for underserved populations. The NDDPCP carries out this work through collaborations with health systems, federally qualified health centers, pharmacies, and community entities to improve policies and processes that help patients prevent or manage diabetes. The NDDPCP currently partners with entities across the state to reach 75% of North Dakota's adult population.

The NDDPCP Strategies for 2023-2028 include:

- **Strengthen self-care practices** by improving access, appropriateness, and feasibility of diabetes self-management education and support (DSMES) services for priority populations.
- **Prevent diabetes complications** for priority populations through early detection by:
    a) Increasing diabetic retinopathy (DR) screening in priority populations with diabetes and
    b) Improving early detection of chronic kidney disease (CKD) in priority populations with diabetes.
- **Improve acceptability and quality of care** for priority populations with diabetes.
- Increase enrollment and retention of priority populations in the **National Diabetes Prevention Program** (National DPP) lifestyle intervention and the Medicare Diabetes Prevention Program by improving access, appropriateness, and feasibility of the programs.
- Support the development of **multi-directional e-referral systems** that underpin electronic exchange of information between health care and Community-Based Organizations (CBOs).
- Improve the capacity of the diabetes workforce to **address factors related to the Social Determinants/Drivers of Health (SDOH) that impact health outcomes** for priority populations with and at risk for diabetes.

The primary, long-term measures and expected outcomes for the above diabetes management and prevention strategies are to, by July 2028, 1) decrease the proportion of adults with type 2 diabetes that have an A1C greater than 9% (indicative of poor control) from 9.8% (2023) to 7.5% and 2) increase the proportion of participants served by CDC recognized National DPP delivery organizations who successfully reduce their risk for type 2 diabetes (as measured by CDC Diabetes Prevention Recognition Program standards) from 17.% (2023) to 30%.

Additional, intermediate metrics include the number and percent of patients with diabetes who have 1) received DR and CKD screening tests in partnering health care organizations and 2) are served by

health care organizations that have adopted or enhanced a) team-based care supported by sustainable payment models and b) clinical systems and care practices to improve health outcomes for people with diabetes.

The NDDPCP partners with other HHS programs, when possible, to leverage available funding for addressing the lifestyle risk-factors and comorbidities associated with diabetes and increasing awareness and identification of prediabetes. Recent collaborations include the Heart Disease Prevention and Stroke Program, Preventive Health and Health Services Block Grant, Oral Health Program and North Dakota Family Planning.

North Dakota Medicaid

North Dakota Medicaid provides coverage for approximately 106,350 North Dakotans including families with children, pregnant women and people who are elderly or disabled [15]. Diabetes affects many North Dakota Medicaid members and can be costly to manage.

Between July 1, 2022, and June 30, 2023, 11,790 unique, traditional (fee for service) North Dakota Medicaid members had incurred at least one claim that included a diabetes diagnosis code or for diabetes-related medication or blood glucose test strips. The net payment made by North Dakota Medicaid for these claims was $25,041,486.43.

ND Medicaid Condition Prevalence by Age
Between July 1, 2022, and June 30, 2023

	Under 18yr	18-44 years	45-64	65+	Total
Prediabetes	210	875	933	627	2,645
Obesity	3,894	8,686	4,639	2,823	20,042
Diabetes	888	6,002	6,152	3,528	16,570

ND Medicaid – Diabetes – All Patient Claims by Age
Between July 1, 2022, and June 30, 2023

	Under 18yr	18-44 years	45-64	65+	Total
Charges Submitted	$3,813,436.57	$47,601,242.11	$131,558,386.42	$128,033,912.59	$311,006,977.69
Net Payment	$1,025,158.24	$7,749,139.01	$14,146,539.29	$2,120,649.89	$25,041,486.43

ND Medicaid – Prediabetes and Obesity – All Patient Claims by Age
Between July 1, 2022, and June 30, 2023

	45-64	65+	Total
Charges Submitted	$499,350.53	$279,911.39	$779,261.92
Net Payment	$889.37	$50.34	$939.71

North Dakota Medicaid covers a variety of services, equipment, and medications to help members manage diabetes:

- Diabetes Self-Management Training by programs accredited or recognized by the Association of Diabetes Care and Education Specialists or American Diabetes Association, respectively.
- Medical Nutrition Therapy provided by a registered dietitian nutritionist.
- Medication Therapy Management by a pharmacist
- Annual eye exams
- Continuous blood glucose monitoring
- Diabetic shoes and inserts
- Access to "smart devices," including Omnipod and InPen
- Medications and supplies including insulin, test strips, syringes, needles, etc.

North Dakota Medicaid Expansion

Provided by Blue Cross Blue Shield of North Dakota (BCBSND)

Medicaid Expansion is available to individuals ages 19-64 with household incomes up to 138% of the federal poverty level (FPL).

Covered benefits for eligible North Dakota Medicaid Expansion members include:

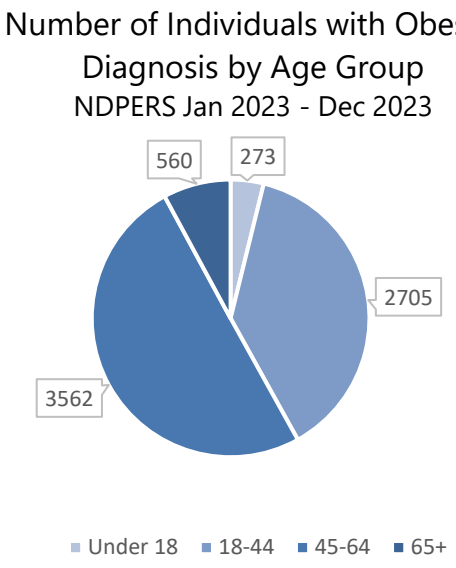
- Diabetes screening
- Medical Nutrition Therapy provided by a registered dietitian nutritionist, 4 visits per benefit period.
- Diabetes Self-Management Education and Support
- The National DPP
- Dilated eye examinations
- Diabetes supplies

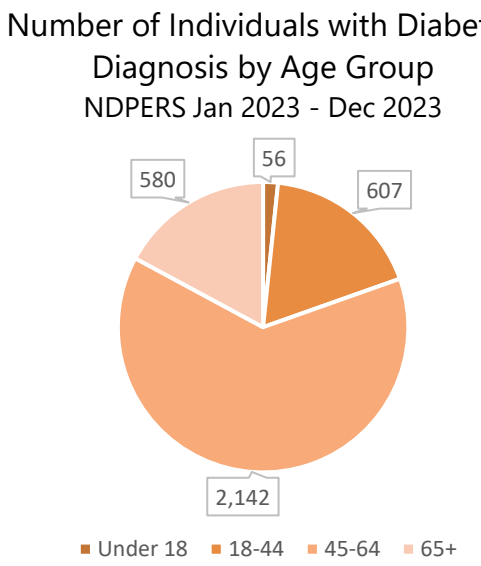
Due to the prevalence of diagnosed diabetes, undiagnosed diabetes and prediabetes seen in residents of North Dakota, BCBSND recognizes the opportunity to diagnose individuals that are going undiagnosed, monitor closely the individuals that are currently prediabetic and ensure proper treatment is provided for individuals diagnosed with diabetes. Early interventions can decrease the short-term and long-term issues related to diabetes. For this reason, BCBSND currently has a Performance Improvement Project (PIP) related to diabetes care. Performance indicators tracked for the PIP include the percent of:

1. Enrollees who have had at least one annual visit with a health care provider for a principal diagnosis of diabetes during the calendar year.
2. Acute inpatient and observation stay discharges during the measurement year for a principal diagnosis of diabetes during the calendar year.
3. Enrollees discharged from acute inpatient and observation stay discharges for a principal diagnosis of diabetes who also had a visit with a health care provider for a principal diagnosis of diabetes during the calendar year.

4. Diabetes admissions for a diagnosis of diabetes with short-term complications (ketoacidosis, hyperosmolarity, or coma), per 100,000 Member months for ages 21-6 years.
5. Diabetes admissions per 100,000 member months, ages 21 - 64 years. Includes admissions for one of the following conditions: diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower extremity amputation.
6. Enrollees with diabetes (types 1 and 2) whose hemoglobin A1c (HbA1c) was in control (HbA1c <8.0%).
7. Enrollees with diabetes (types 1 and 2) whose hemoglobin A1c (HbA1c) was in poor control (HbA1c >9.0%).
8. Enrollees with diabetes (types 1 and 2) who had a retinal eye exam.

North Dakota Public Employees Retirement System (NDPERS)
Provided by Sanford Health Plan (SHP)





The NDPERS members identified with diabetes incurred a total of $74.2 million in allowed medical expenses. This amount includes all medical claims paid for these members, including both diabetes- and non-diabetes-related expenses. $15.97 million was the amount allowed for claims with diabetes as the primary diagnosis. Members with diabetes claims had the fourth highest cost during this twelve-month period.

Based on December 2023 data, there are 71 NDPERS members under age 20 with diabetes claims. This represents 0.42% of the NDPERS population under age 20 (16,778 members).

NORTH DAKOTA PUBLIC EMPLOYEES RETIREMENT SYSTEM (NDPERS) PROVIDED BY SANFORD HEALTH PLAN (SHP)

All data and graphs for NDPERS are based on Reporting period January 1, 2023 to December 31, 2023. Information provided by Sanford Health Plan (SHP).

NDPERS Top 10 Conditions by Total Allowed
NDPERS Jan 2023 - Dec 2023

Disease	Total Members	Total Amount Allowed	Amount Allowed Total/Member
Hypertension	9,895	$134,177,217.91	$13,560.10
Joint degeneration, localized	8,318	$117,221,333.29	$14,092
Mood disorder, depressed	5,919	$75,098,870.65	$12,687.76
*Diabetes	4,279	$74,229,708.74	$17,347.44
Ischemic heart disease	2,394	$52,565,341.60	$21,957.12
Inflammatory bowel disease	449	$18,604,567.99	$41,435.56
Psoriasis	639	$16,817,782.99	$26,318.91
Adult rheumatoid arthritis	461	$13,792,954.98	$29,919.64
Malignant neoplasm of breast	581	$12,555,162.99	$21,609.57
Multiple Myeloma	49	$5,334,496.52	$108,948.91

Costs Associated by Type 1 or 2 Diabetes: Annual Allowed Costs by Age
NDPERS Jan 2023 - Dec 2023

Age	Type 1	Type 2
Under 18	$518,626.86	$257,834.39
18-44	$3,710,852.63	$7,681,825.03
45-64	$4,840,074.88	$41,136,750.41
65+	$455,950.43	$13,611,908.70
Grand Total	**$9,525,504.80**	**$62,688,318.53**

Incurred Claims Related to Diabetes and Its Complications
NDPERS Jan 2023 - Dec 2023

Diabetes with:	Inpatient	Outpatient	Professional	Total Allowed
Diabetes in Pregnancy	$562,195.78	$66,747.34	$361,257.83	$990,200.95
Diabetes Insipidus	$258,129	$0.00	$1,427.58	$259,556.58
Diabetes with severe retinopathy	$46,500.07	$16,584.97	$172,570.98	$235,656.02
Diabetes Type I	$155,839.83	$33,681.82	$225,066.45	$414,588.10
Diabetes Type II	$528,370.75	$334,827.67	$1,310,584.33	$2,173,782.75
Diabetes with chronic micro & macrovascular complications	$586,531.25	$134,688.00	$605,832.68	$1,327,051.93
Diabetic Coma	$0	$0	$914.41	$914.41
Diabetic hyperosmolar coma	$366,926.66	$2,582.54	$22,990.78	$392,499.98
Diabetic Ketoacidosis	$171,100.41	$9,649.06	$56,527.66	$237,277.13
Total Allowed	**$2,675,593.75**	**$598,761.40**	**$2,757,172.70**	**$6,031,527.85**

Average Allowed Costs per Individual
NDPERS Jan 2023 - Dec 2024

Age	Type 1	Type 2
Under 18	$11,274.50	$25,783.44
18-44	$21,326.74	$17,864.71
45-64	$34,820.68	$20,547.83
65+	$22,797.52	$24,614.66
Grand Total	**$25,133.26**	**$20,930.99**

Incurred Out-of-Pocket Costs for Individuals with Diabetes
NDPERS Jan 2023 - Dec 2024
**Costs may not be directly related to treatment of diabetes diagnosis*
***Only Endocrine Drugs*

Total Out of Pocket		Average Out of Pocket per Member	
*Medical	$7,343,098.24	*Medical	$2,176.38
**Pharmacy	$1,989,801.84	**Pharmacy	$589.75
Grand Total:	**$9,332,900.08**	**Grand Total:**	**$2,766.12**

Current NDPERS/Sanford Health Plan (SHP) Programs and Services

Exercise is Medicine
A fee-reduced "Exercise is Medicine" program is available for all SHP members with type 2 diabetes, prediabetes, obesity, metabolic syndrome, high blood pressure, high cholesterol and/or depression/anxiety.

Sanford Health Plan Member Outreach
Targeted outreach twice per year to members with type 2 diabetes and prediabetes, ensuring members know about all the wellness benefits available to them.

Health Coaching
Provided by a trained health professional such as a registered dietitian, wellness coach or fitness expert to help members establish a personalized wellness program that may include exercise, nutrition, weight management, stress management, tobacco cessation or other topics based on the member's needs, desires, and goals.

Online Wellness Portal
- Health Assessment to evaluate current health status and provide resources for improving well-being.
- Daily Habits plans to encourage long-term behavior change.
- Community forum to connect on a variety of wellness topics.
- Media Library for members to watch easy-to-follow exercise videos, recipes, and podcasts on mental health.

Current NDPERS/Sanford Health Plan (SHP) Programs and Services *(continued)*

Sanford Health Plan Case Management Programs Offered at no cost to members with chronic health conditions, this program provides support to members with conditions like diabetes, ensuring they understand their condition, have a self-management plan in place and are coordinated between all members of the care team. As part of the program, an assessment is completed to identify any social determinants/drivers of health that are impacting the health of the member. When needs are identified, a referral is placed for the social work team to address and remove any barriers.	**Diabetes Prevention Programming** Change Your Weigh is a recognized National Diabetes Prevention Program (DPP) where participants meet in a group with a trained coach to focus on strategies to lose weight, increase physical activity and decrease their risk of developing type 2 diabetes. Positively Me is individual health coaching focused on reducing risk of developing type 2 diabetes and is offered through the online wellness partnership with WebMD Health Services.
About the Patient Administered by the North Dakota Pharmacists Association, this program reduces out-of-pocket expenses for diabetic medication and supplies while including pharmacy consultation at no cost. On average, program participants reduced their A1c by 0.5 points.	**North Dakota Worksites** Sanford Health Plan staff help North Dakota workplaces with interventions to increase cultures of wellness, including helping to start fresh fruit programs, wellness education presentations, cooking classes and employee health screens.
North Dakota Schools Provide free access to https://fit.sanfordhealth.org/, which includes classroom curriculum and lesson ideas. The Sanford fit team also consults with North Dakota schools free of charge.	**Livongo Diabetes Solution** SHP has partnered with Livongo to offer a digital diabetes management solution to empower members with type 1 or type 2 diabetes to live better and healthier lives.

Each tribal community was asked to provide input from their communities. The Mandan, Hidatsa, Arikara (MHA) Nation-Three Affiliated Tribes and Spirit Lake Nation responded. Prevalence and mortality data provided previously under "Diabetes in North Dakota" is inclusive of all American Indians residing in North Dakota.

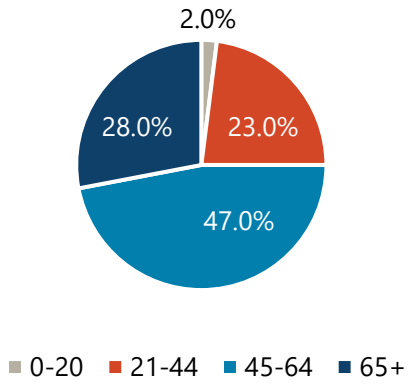
MHA Nation

In 2023, diabetes was the top condition in the MHA Nation health system.

The Fort Berthold Diabetes Program (FBDP)

FBDP conducts community blood sugar, total cholesterol, and blood pressure screenings for community members throughout Fort Berthold.

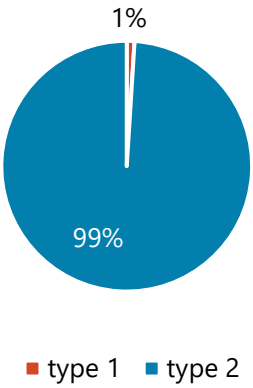
Distribution of Diabetes Cases by Age (2023)



Annual school screenings, consisting of height/weight and hemoglobin A1c, are conducted to assess for risk factors related to diabetes and other chronic diseases. Diabetes prevention education is scheduled at each school to promote healthy lifestyle changes. The FBDP has an adolescent diabetes prevention and lifestyle adaptation program, Health Futures, which focuses on youth at risk for developing diabetes.

MHA Nation and the FBDP address diabetes prevention efforts and promote healthy lifestyle change through community outreach and education. The FBDP Registered Dietitians provide monthly cooking classes and other nutrition activities to community members in a state-of-the-art teaching kitchen. Fitness classes and activities, including circuit training and walking clubs, are provided by FBDP Health Education Technicians.

Distribution of Diabetes Cases By Type (2023)



Diabetes self-management education services are provided at monthly Diabetes Education clinics throughout Fort Berthold.

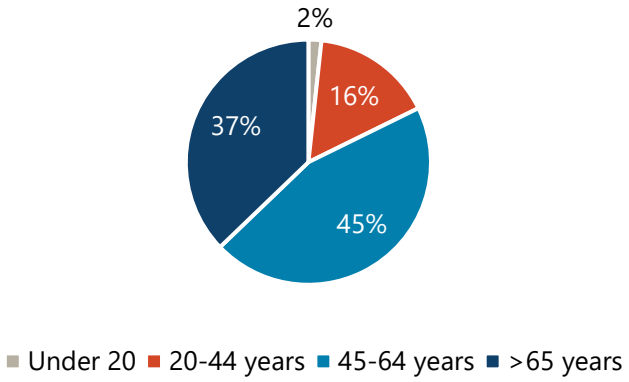
The Elbowoods Memorial Health Center offers:

- Daily diabetes care and self-management education
- Monthly specialty clinics (podiatry, nephrology)
- Field clinics to better provide services to all communities on Fort Berthold
- Monthly diabetes shoe clinics at the FBDP
- A continuous glucose monitor (CGM) program

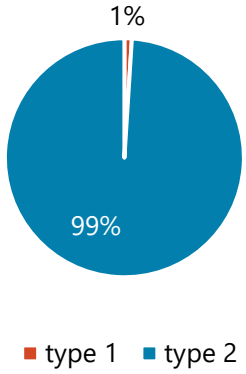
Spirit Lake Nation

In 2023, diabetes was the top condition in the Spirit Lake Health Center, followed by hypertension, hyperlipidemia, Vitamin D Deficiency and Anxiety.

Distribution of Diabetes Cases by Age (2023)



Distribution of Diabetes Cases By Type (2023)



The Spirit Lake Health Center (SLHC)

Diabetes program services include:

- Daily diabetes care and management
- Diabetes Self-Management Education & Support (DSMES)-individual or group
- Medical Nutrition Therapy (MNT), including prediabetes education.
- Gestational diabetes education
- Retinal eye imaging
- Foot care & Podiatry
- Continuous Glucose Monitoring (CGM) Program

Special Diabetes Program for Indians (SDPI) and a Sacred Life Center

In a 2015 Spirit Lake Nation Comprehensive Community Assessment, survey respondents identified diabetes and cancer as the top critical health issues, and a pressing need to have regular community activities, especially for children.

This data drove SDPI's decision to create a facility to help reduce the incidence of type 2 diabetes and other chronic health conditions across the lifespan. This facility was named by a community member and is known locally as *a Sacred Life Center*.

The Center is a two-story fitness and diabetes center that provides up-to-date exercise equipment, group fitness classes, fitness consultations with a certified trainer, educational sessions (e.g., diabetes care, diabetes prevention, healthy eating, etc.) and much more.

Additional initiatives by SDPI and a Sacred Life Center to address risk factors associated with diabetes and diabetes complications include:

- Prediabetes education
- In-school screenings to identify students at risk for type 2 diabetes
- An after-school diabetes prevention program (DPP) for youth known as the "Power Hour" that follows the Sanford Fit curriculum.
- A summer youth DPP known as "Wicozani Waste Wicoti," which means "Good Health Camp" in Dakota Sioux language.
- Culturally tailored raised garden bed project for youth to learn about the basics of gardening and food preservation in collaboration with the local community college.
- A day camp for youth with a diagnosis of diabetes in collaboration with the SLHC diabetes program and other healthcare professionals
- Monthly lunch and learns to provide education regarding certain nutrition/healthy eating topics.
- A healthy food and beverage vending machine in the local tribal headquarters building.

ACTION PLANS, COORDINATION AND EVALUATION OF ACTIVITIES

Each of the contributing agencies agreed that, in addition to ongoing evaluation and improvement of their own strategies, diabetes can best be prevented through a cross-sector, community-based approach with goals to increase:

- Access to nutritious food options— addressing availability, affordability, food security and knowledge among communities.
- Wellness programming for youth, including physical activity and cooking instruction.
- Equitable access to quality medical care that is aligned with best practice guidelines.
- Mental and behavioral health services for persons with or at risk for diabetes.

The contributors recommend investing in and/or implementing the following:

Develop sustainable food systems at the community level including greenhouses, food sovereignty initiatives, rural grocer/food distribution cost reductions and/or community gardens. (Budget: Approximate initial cost for a community greenhouse would be $30,000 - 300,000 per site. Approximate initial cost for a community garden would be $3,500-7,500 per site)

Develop a grant fund to support organizations statewide in implementing meal repack programs to reduce food waste and increase community access to low-barrier, low-stigma food. (Budget: Approximate initial cost for program implementation would be $1,000 per site.)

Support the implementation and licensure of community health workers as deemed appropriate through the task force established in House Bill No. 1028 (2023). Community health workers can deliver individual or group education on diabetes self-management, provide adherence support for medications, and monitor patients' blood pressure as recommended by the American Diabetes Association. A community health worker also serves as a liaison/intermediary between individuals, communities and health and social services to facilitate access to care, improve the quality and cultural responsiveness of service delivery, and address social determinants of health.

Support cities and counties implementing transformation projects that improve infrastructure and green space that encourages year-round, healthy living and physical recreation for residents of all ages and abilities. (Budget: Depending on the scope of the project and size of community, the needed financial support varies.)

Support a comprehensive transition towards value-based care and reimbursement models designed to increase utilization of preventive care, improve quality of services, and reduce incurred costs related to the treatment of chronic disease. These efforts should encourage health systems to follow best practice guidelines for disease management; provide effective coordination of team-based, patient-centered care; and innovate ways of preventing disease and monitoring patient outcomes. Currently CDC DP23-0020 funds are allocated to three tertiary health systems for technical assistance and support in improving health care outcomes for diabetes patients.

Implement policy and system changes at the state and local level that address socio-economic factors contributing to rising obesity rates. Examples include un/under employment, increasing reliance on commodity and food pantry services, low wages, high cost of living, access to greenspace and lack of active transportation-friendly community development. (Budget: Varies, based on the size and scope of project(s) chosen).

Invest in interventions and innovative lifestyle change programs for all ages.

- Sustain NorthDakota360 wellness platform (budget: $24,000/year licensing fee) and support Artificial Intelligence enhancements to ensure equitable access to diverse programming in the face of workforce shortage and language barriers.
- Support local communities in delivering family-centered, multigenerational nutrition and food preparation classes in ways best suited to their demographics (e.g., provision of funding for mobile kitchens to serve rural communities within a region). (Approximate initial cost for this project would be $10,000-30,000 per site).
- Support the development of a statewide, multidirectional Community Information Exchange (CIE) network to promote streamlined access to health-enhancing, non-clinical services (e.g., social services and supports, community programming, etc.) and coordinated care across a variety of clinical and non-clinical partners, while using data on existing community resources, needs and gaps to drive policy change. (Approximate initial cost for this project would be $1-2 million over a 2-year period).
    - Investigate and implement opportunities for Artificial Intelligence-driven care coordination for all North Dakotans.

Financial Impact Related to Current and Future Strategies

While none of the contributing entities suggested a need for additional funding at this time for their current workplans, there was consensus that implementation of the actionable items would best occur at the local level. For that reason, it is suggested to create a community grant fund specifically for communities and organizations to apply that would support local implementation of diabetes and risk-factor prevention strategies. The cost to implement any community strategies will vary based on the available resources and existing infrastructure.

The financial burden for individuals in North Dakota is related to the daily choices they must face that are beyond diabetes care, including access to affordable nutritious food, safe places to engage in physical activity, and out-of-pocket healthcare costs for prevention and intervention. Access to affordable, fresh, nutritious food is not widely available but is the single most effective prevention method for diabetes and many other chronic conditions and diseases.

GLOSSARY

A1C: The Hemoglobin A1C test reflects an individual's average blood sugar for the previous three months. Specifically, the A1C test measures the percentage of hemoglobin — a protein in red blood cells that carries oxygen — that is coated with sugar. A higher A1C level indicates poor blood sugar control and, in turn, a higher risk of complications.

Allowed Claims: The maximum amount of money that a health insurance company, or a payor, will pay a healthcare provider for a specific health care service. It may also be referred to as a negotiated rate, eligible expense, or payment allowance.

BRFSS: The Behavioral Risk Factor Surveillance System (BRFSS) is the nation's premier system of health-related telephone surveys that collect state data about US residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services.

Diabetes Insipidus: A rare disorder that causes the body to produce too much urine, causing extreme thirst and an inability to properly retain water.

Diabetic Coma: A severe complication associated with diabetes that causes loss of consciousness. May be caused by severely low blood sugar (hypoglycemia), Diabetic Ketoacidosis, or Diabetic Hyperosmolar Syndrome.

Hyperosmolar Coma: A life-threatening metabolic condition that can develop in people with diabetes. It is characterized by severe high blood sugar (hyperglycemia), dehydration, and electrolyte imbalance.

Diabetic Ketoacidosis (DKA): Occurs when the body lacks insulin and uses fat instead of glucose for energy. Ketone bodies accumulate in the bloodstream and, when left untreated, can lead to diabetic coma.

Diabetic Retinopathy: An eye condition that can cause vision loss and blindness in people who have diabetes. It results from high blood sugar levels causing damage to blood vessels in the retina (the light-sensitive layer of tissue in the back of the eye).

DSMES: Diabetes Self-Management Education and Support (DSMES) is an evidence-based diabetes management service model. Organizations offering DSMES services can apply for either accreditation by the American Association of Diabetes Educators (AADE) or recognition by the American Diabetes Association (ADA), and must be run by a Registered Dietitian, a Registered Nurse, or a pharmacist. Reimbursement for DSMES services varies by insurer and policy.

Endocrine Drugs: Endocrine drugs are agents directed to a malfunctioning endocrine path, which controls the hormones in the body (example: Metformin).

Insulin: a hormone produced by the pancreas that is required for blood sugar to enter the cells in the body to be used for energy.

National DPP: The National Diabetes Prevention Program (National DPP) is an evidence-based lifestyle change program developed by the Centers for Disease Control and Prevention (CDC) to address the increasing burden of prediabetes and type 2 diabetes. Participation in the year-long program can reduce and individual's risk of developing diabetes by up to 58%.

Presenteeism: The practice of employees habitually coming to work when they shouldn't—especially coming in sick or working overly long hours. Presenteeism is modeled after absenteeism, which is the opposite: employees habitually not coming to work.

GLOSSARY

Type 1 Diabetes: In type 1 diabetes, the pancreas does not make sufficient insulin to allow for carbohydrates (sugar) to be used for energy. Type 1 diabetes can be diagnosed at any age but is most often diagnosed in younger patients. Previously known as insulin-dependent or juvenile diabetes, type 1 diabetes accounts for only 5-10% of diabetes cases. There is no known prevention for type 1 diabetes, but it can be effectively managed with medical intervention.

Type 2 Diabetes: In type 2 diabetes, the body resists the effects of insulin or does not produce enough insulin, leading to increased blood sugar levels. Type 2 diabetes has historically been diagnosed most often in adults over 45 years old but is being seen with increasing frequency in progressively younger ages as rates of childhood obesity continue to rise. Type 2 diabetes accounts for 90-95% of diabetes cases and most are preventable. Lifestyle intervention is effective for both the prevention and management of type 2 diabetes.

Value-Based Care: Value-Based Care provides a model for delivery of healthcare and payment that is based on patient outcomes. As opposed to a traditional fee-for-service model, in which physicians are paid based on the number of services delivered, value-based care rewards providers based on improved patient health, reduction in the effects and incidence of chronic disease and improved quality of life as the result of evidence-based care.

Vascular Complications: Complications from T2DM can be classified as microvascular complications, such as retinopathy, neuropathy and nephropathy, or macrovascular complications, including cardiovascular, cerebrovascular, and peripheral vascular disease (3).

North Dakota Century Code 23-01-40

TITLE 23 HEALTH AND SAFETY CHAPTER 23-01 STATE DEPARTMENT OF HEALTH 23-01-40. Diabetes goals and plans - Report to legislative management.

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1. The department of health and human services, 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 health and human services, 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 blueprint must include a budget range for all options presented in the plan identified in subdivision d for consideration by the legislative assembly.

References

[1] Parker, E. D., Jyh Dong Lin, Mahoney, T. J., Nwanneamaka Ume, Yang, G., Gabbay, R. A., ElSayed, N. A., & Bannuru, R. R. (2023). Economic Costs of Diabetes in the U.S. in 2022. *Diabetes Care*, *47*(1). https://doi.org/10.2337/dci23-0085

[2] CDC. (2019, October 21). Put the Brakes on Diabetes Complications. Centers for Disease Control and Prevention. https://www.cdc.gov/diabetes/library/features/prevent-complications.html

[3] Centers for Disease Control and Prevention. (2022). *CDC - BRFSS*. CDC. https://www.cdc.gov/brfss/index.html

[4] Bhupathiraju, S. N., & Hu, F. B. (2016). Epidemiology of Obesity and Diabetes and Their Cardiovascular Complications. *Circulation Research*, *118*(11), 1723–1735. https://doi.org/10.1161/CIRCRESAHA.115.306825

[5] North Dakota | County Health Rankings & Roadmaps. (2019). www.countyhealthrankings.org. https://www.countyhealthrankings.org/health-data/north-dakota?year=2024&measure=Limited+Access+to+Healthy+Foods

[6] Syvertson, T., Tweet, J., & Koren, A. (2023). Hunger on the Plains 2023. In *Great Plains Food Bank*. https://www.greatplainsfoodbank.org/ending-hunger-2-0/research/our-research/hunger-on-the-plains-2023/

[7] Caswell, M. (2023, February 23). *Food Insecurity is caused by and leads to Higher Health Care Cost*. PBGH. https://www.pbgh.org/food-insecurity-cause-and-effect-of-higher-health-care-costs/

[8] Clayton, E. O., Confidence Njoku-Austin, Scott, D., Cain, J. D., & Hogan, M. V. (2023). Racial and Ethnic Disparities in the Management of Diabetic Feet. *Current Reviews in Musculoskeletal Medicine*, *16*(11), 550–556. https://doi.org/10.1007/s12178-23-09867-7

[9] *Disparities | Fact Sheets*. (2013, January 1). Newsroom. https://www.ihs.gov/newsroom/factsheets/disparities

[10] Bloomgarden, Z., & Rapaport, R. (2023). Diabetes trends in youth. *Journal of Diabetes*, *15*(4), 286–288. https://doi.org/10.1111/1753-0407.13382

[11] Hales, L. J. & Alisha Coleman-Jensen (2024). Household food insecurity across race and ethnicity in the United States, 2016–21 (Report No. EIB-269). U.S. Department of Agriculture, Economic Research Service. https://www.ers.usda.gov/webdocs/publications/108905/eib-269.pdf?v=9972.6

[12] National Indian Council on Aging. (2024). American Indian Health Disparities.

[13] Racialization as a Barrier to Achieving Health Equity for Native Americans. (2020). AMA Journal of Ethics, 10.1001/amajethics.2020.874

[14] Centers for Disease Control and Prevention. (2020, August 7). *Prevalence of Both Diagnosed and Undiagnosed Diabetes | Diabetes | CDC*. www.cdc.gov. https://www.cdc.gov/diabetes/data/statistics-report/diagnosed-undiagnosed-diabetes.html

[15] *Data Dashboards | Health and Human Services North Dakota | Medicaid Eligibility Statistics* https://www.hhs.nd.gov/medicaid/data

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