



SPECIAL DIABETES PROGRAM

# North Dakota

## PROGRAM BACKGROUND

The Special Diabetes Program (SDP) consists of two components: *The Special Statutory Funding Program for Type 1 Diabetes Research* that supports research on the prevention, treatment and cures of type 1 diabetes (T1D) and its complications, and *The Special Diabetes Program for Indians (SDPI)* that supports type 2 diabetes treatment and prevention strategies for American Indian and Alaska Native (AI/AN) populations. This program has demonstrated tangible results and has become a critical part of our nation's federal investment in diabetes. Currently, each part of the program is funded annually at \$150 million.

### NATIONAL BURDEN OF DIABETES

Diabetes affects over 26.9 million adults and children in the U.S., or roughly 8.2 percent of the population. Statistics from peer-reviewed journals and the Centers for Disease Control (CDC) show that the population diagnosed with diabetes grew by approximately 700,000 people annually between 2012 and 2015. Among people 20 years and younger, data has shown that between 2002-2015, overall incidence of type 1 diabetes significantly increased. It is projected that in the overall population, prevalence will continue to rise over time. One in four health care dollars and one in three Medicare dollars are spent on people with diabetes and estimates show that diabetes costs the U.S. economy \$327 billion annually, a 26 percent increase from 2012.

### MOVING THERAPIES FROM BENCH TO BEDSIDE

Promising ideas for novel therapeutic interventions for T1D can encounter roadblocks in movement from bench to bedside testing. Many investigators who have discovered a promising therapeutic agent in the laboratory may not have the resources to conduct multiple studies and bring their product to market. The NIDDK Central Repositories store data and biological samples, including samples available for genetic analysis, from significant, NIDDK-funded clinical studies to provide access to a wider research community. For example,

### BURDEN OF DIABETES IN NORTH DAKOTA

Diabetes is a common and growing disease in North Dakota. Approximately 68,097 people—or 11.2 percent of the state's population—have diabetes. People with diabetes suffer from many related complications or conditions. In North Dakota, there were 101 new cases of end-stage renal disease (ESRD) related to diabetes in 2015 alone. In addition to the human toll, the financial burden the disease places on North Dakota's health system is staggering—diabetes and prediabetes cost an estimated \$596 million in North Dakota each year.

nearly 300 studies have used the dataset from the landmark Diabetes Control and Complications Trial (DCCT) study.

### TESTING NEW THERAPIES IN PATIENTS

TrialNet and the Immune Tolerance Network (ITN) are providing the key infrastructure for testing promising therapies in people with T1D. TrialNet consists of over 200 clinical sites, including one in Fargo, that support the development and implementation of clinical trials using drugs aimed at preventing the disease in at-risk individuals and slowing the progression of T1D in newly diagnosed patients. For example, a recent TrialNet study showed that teplizumab, a form of immunotherapy, can delay the onset of T1D by nearly 2 years in people who present with islet cell autoantibodies but are not yet clinically symptomatic.

ITN is an international clinical network that develops and tests innovative strategies for immune tolerance to “re-educate” the immune system to prevent negative immune responses, such as the destruction of insulin-producing islets. ITN conducted the first multicenter clinical trial to replicate the Edmonton Protocol for islet transplantation that resulted in some patients achieving insulin independence for a year or longer after transplantation. ITN centers are also currently conducting a trial to test whether a rheumatoid arthritis drug

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THE SPECIAL DIABETES PROGRAM  
HAS PROVIDED APPROXIMATELY  
**\$32.07 MILLION** TO TRIBAL  
COMMUNITIES IN NORTH DAKOTA

## NORTH DAKOTA TRIBAL COMMUNITIES RECEIVING SUPPORT FROM THE SDPI

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 Fort Yates IHS

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 Spirit Lake Tribe

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 Three Affiliated Tribes

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 Trenton Indian Service Area

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 Turtle Mountain Band of Chippewa Indians

can halt the body's improper immune response to beta cells and extend the ability to naturally produce insulin in newly diagnosed people with T1D.

Currently, the SDPI provides grants for diabetes treatment and prevention services to 301 Indian Health Service (IHS), tribal, and urban Indian health programs in 35 states.

- **Between 1996 and 2013, the incident rates of ESRD in AI/AN people with diabetes decreased 54 percent**—that decrease is more than for any other racial group in the U.S. Given that the Medicare cost per year for one patient on hemodialysis was \$90,000 in 2016, this reduction in new cases of ESRD means a significant decrease in the number of patients requiring dialysis, translating into an estimated \$435.9 million in savings from 2006-2015 for Medicare alone.
- The average blood sugar level (A1c) decreased from 9.0 percent in 1996 to 7 percent in 2018. Scientific studies have shown that every percentage point drop in A1c translates into a 40 percent reduction in the risk of developing diabetes-related complications such as blindness, kidney failure, nerve disease, and amputations.
- The average LDL ("bad" cholesterol) declined from 118 mg/dL in 1998 to 70 mg/dL in 2018. Research has shown that lowering cholesterol levels may help reduce by 20-50 percent the chance of developing cardiovascular complications associated with diabetes such as heart attack, stroke, or heart failure.
- Blood pressure has been well-controlled throughout the SDPI era. Controlling blood pressure reduces the risk of cardiovascular disease by 33-50 percent and reduces the risk of complications by 33 percent.