Florida Diabetes Advisory Council

Legislative Report January 2025

Ron DeSantis
Governor

Joseph A. Ladapo, MD, PhD
State Surgeon General

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Executive Summary

The Diabetes Advisory Council (DAC) is mandated and authorized by section 385.203, Florida Statutes (F.S.), to guide a statewide comprehensive approach to diabetes prevention, diagnosis, education, care, treatment, impact, and costs. The DAC serves as the advisory unit to the Department of Health (DOH), other governmental agencies, professional and other organizations, and the general public. The DAC provides statewide leadership to continuously improve the lives of Floridians with diabetes and reduce the burden of diabetes. The DAC makes specific recommendations to the State Surgeon General regarding the public health aspects of the prevention and control of diabetes.

By January 10 of each odd-numbered year, the DAC, in conjunction with the DOH, the Agency for Health Care Administration, and the Department of Management Services, is required to submit a report containing the following information to the Governor, the President of the Senate, and the Speaker of the House of Representatives:

1) The public health consequences and financial impact on the state of all types of diabetes and resulting health complications, including the number of persons with diabetes covered by Medicaid, the number of persons with diabetes who are insured by the Division of State Group Insurance (DSGI), and the number of persons with diabetes who are impacted by state agency diabetes programs and activities.
2) A description and an assessment of the effectiveness of the diabetes programs and activities implemented by each state agency, the amount and source of funding for such programs and activities, and the cost savings realized as a result of the implementation of such programs and activities.
3) A description of the coordination among state agencies of their respective programs, activities, and communications designed to manage, treat, and prevent all types of diabetes.
4) The development of and revisions to a detailed action plan for reducing and controlling the number of new cases of diabetes and identification of proposed action steps to reduce the impact of all types of diabetes, identification of expected outcomes if the plan is implemented, and the establishment of benchmarks for preventing and controlling diabetes.

In this 2025 legislative report, the contributors have sought to provide an update on the increasing impact of diabetes care among children and adults, particularly as the number of people living with diabetes increases. Governmental, non-profit, and clinical entities have continued to elevate their partnerships by leveraging resources and expertise in providing evidence-based diabetes programming.

The DAC maintains that advancing the care and prevention of diabetes in Florida involves a multi-faceted approach, which includes:
1) Implementing preventive measures to reduce the incidence of the disease and its complications, which includes education and monitoring.
2) Early diagnosis (prediabetes and diabetes).
3) Enhancing treatment strategies.
4) Education promoting effective self-management.

State funding, innovative health promotion, and data collection methods, as well as a commitment toward increasing health care and diabetes education access to all persons with or at risk for diabetes, will be essential to improving outcomes.

The Scope of Diabetes in Florida

Diabetes mellitus is a group of metabolic disorders characterized by an abnormal carbohydrate metabolism which results in hyperglycemia (high blood sugar).[1] Florida has seen an increase in the percentage of adults diagnosed with diabetes from 8.2% in 2002, to 12.2% in 2022.[2] This is higher than the national rate of 11.6%. It is estimated that 38 million adults in the U.S. have diabetes, with Florida accounting for over 2.1 million of those diagnosed.

While the data for diabetes prevalence in youth continues to be limited, studies have shown that the number of youths being diagnosed with both type 1 and type 2 diabetes is increasing. In 2021, it was estimated that nationally 352,000 children and adolescents younger than age 20 have been diagnosed with diabetes. This was an increase from 260,000 in 2018-2019. The 2022 Florida data also shows that an estimated 2,600 youth aged 18 and under had hospitalizations from or with diabetes as any listed diagnosis.

Prevalence of Prediabetes and Diabetes

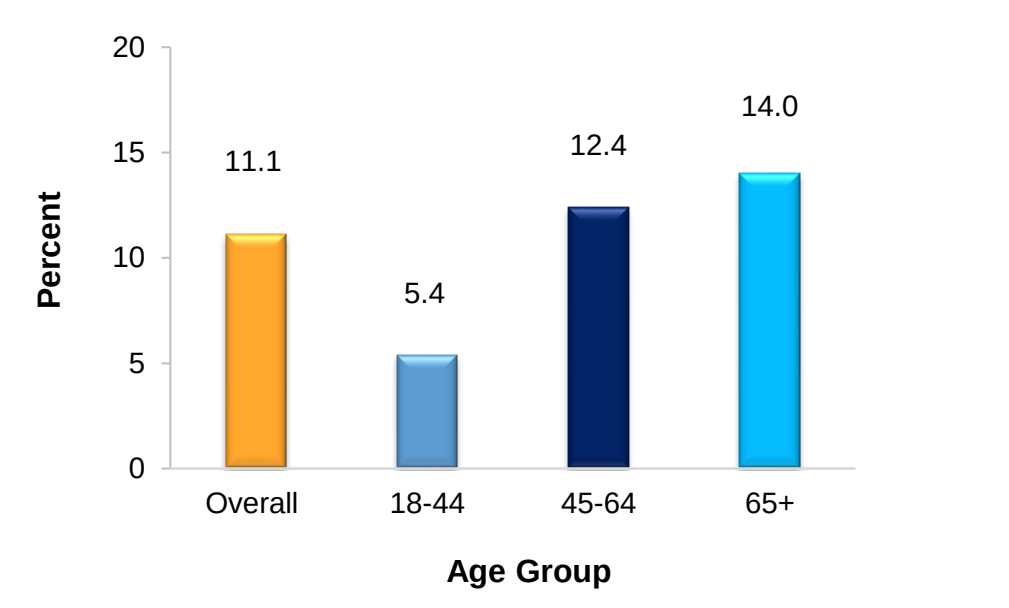
Prediabetes

Prediabetes is a condition defined as an intermediate state between normoglycemia (normal blood sugar) and diabetes.[3] In the U.S., according to the Centers for Disease Control and Prevention (CDC), 97.6 million people aged 18 years or older, more than 1 in 3, have prediabetes.[4] However, more than 8 in 10 are not aware of having such a condition and without any intervention many are likely to progress to type 2 diabetes within five years.[5] Prediabetes is also often associated with other cardiovascular risk factors, including hypertension and dyslipidemia, overall increasing the risk for cardiovascular diseases such as heart attack and stroke.

The Behavioral Risk Factor Surveillance System (BRFSS) report has been used to assess the prevalence of prediabetes and diabetes in Florida. The BRFSS is a telephone-based survey overseen by the CDC which collects nationwide data about U.S. residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services.[6]

National estimates of prediabetes prevalence are derived from the National Health and Nutrition Examination Survey (NHANES). The 2017-2020 NHANES reported that while 38.0% of respondents were found to have prediabetes, based on blood tests, only 19.0% of those respondents reported being previously informed of their diagnosis. The most recent available BRFSS data for the state of Florida from 2021 shows that 11.1% of the adult population, 1 out of 9 adults, reported being told by a provider that they had prediabetes.[2] The prevalence of this condition increases with age, and accordingly, adults ages 18 to 44 had a statistically significant lower prevalence of prediabetes at 5.4% compared to adults ages 45 to 64 at 12.4% and adults ages 65 and older at 14.0% (Figure 1).

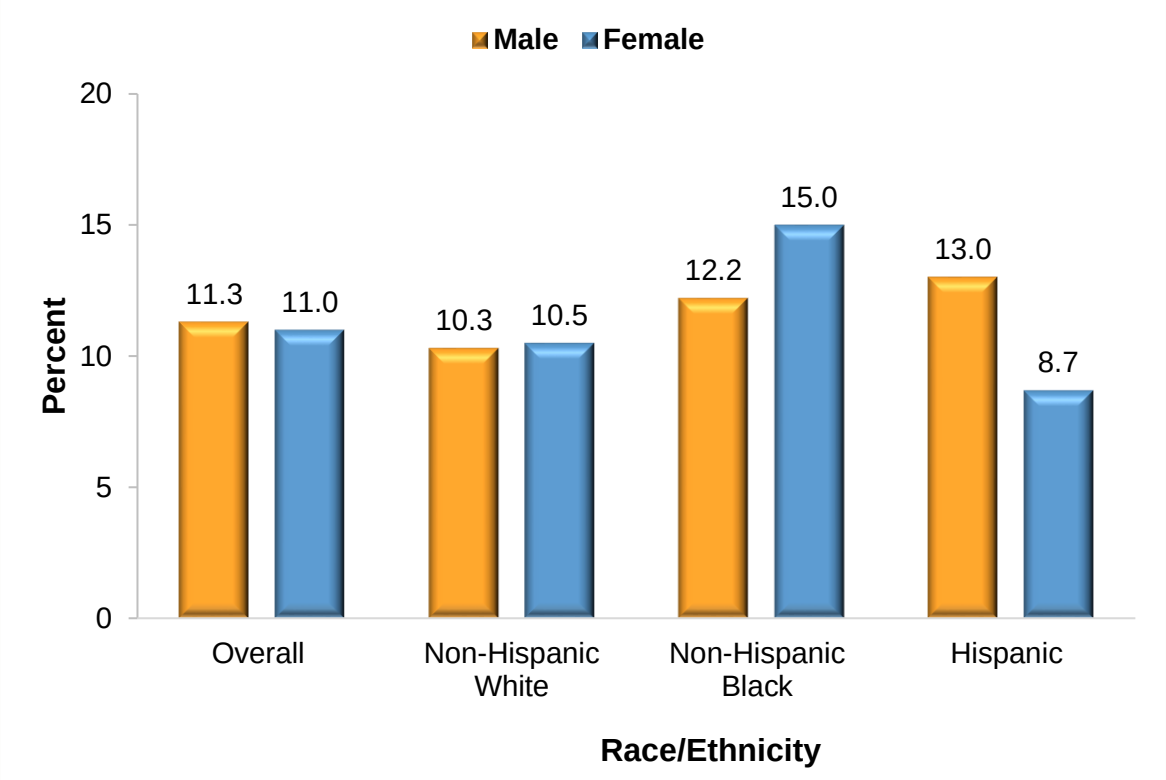
Figure 1. Florida Prevalence of Prediabetes, Overall, and by Age Group, BRFSS, 2021



The prevalence of prediabetes among adults differed by race/ethnicity, although this was not statistically significant. The prevalence of prediabetes was 10.4% among non-Hispanic Whites, 13.7% among non-Hispanic Blacks, and 11.0% among Hispanics. Specifically, non-Hispanic Black women had the highest prevalence of prediabetes at 15.0% and Hispanic women had the lowest prevalence of prediabetes at 8.7% (Figure 2); however, this was not statistically significant.

The prevalence of prediabetes did not differ significantly by education level, but estimates were slightly higher for those with lower education. In 2021, the prevalence of prediabetes was 14.4% among adults with less than a high school level education, 7.9% for those who graduated from high school, and 12.1% for those with a higher than high school level education.

Figure 2. Florida Prevalence of Prediabetes in Adults by Sex, Overall, and by Race/Ethnicity, BRFSS, 2021



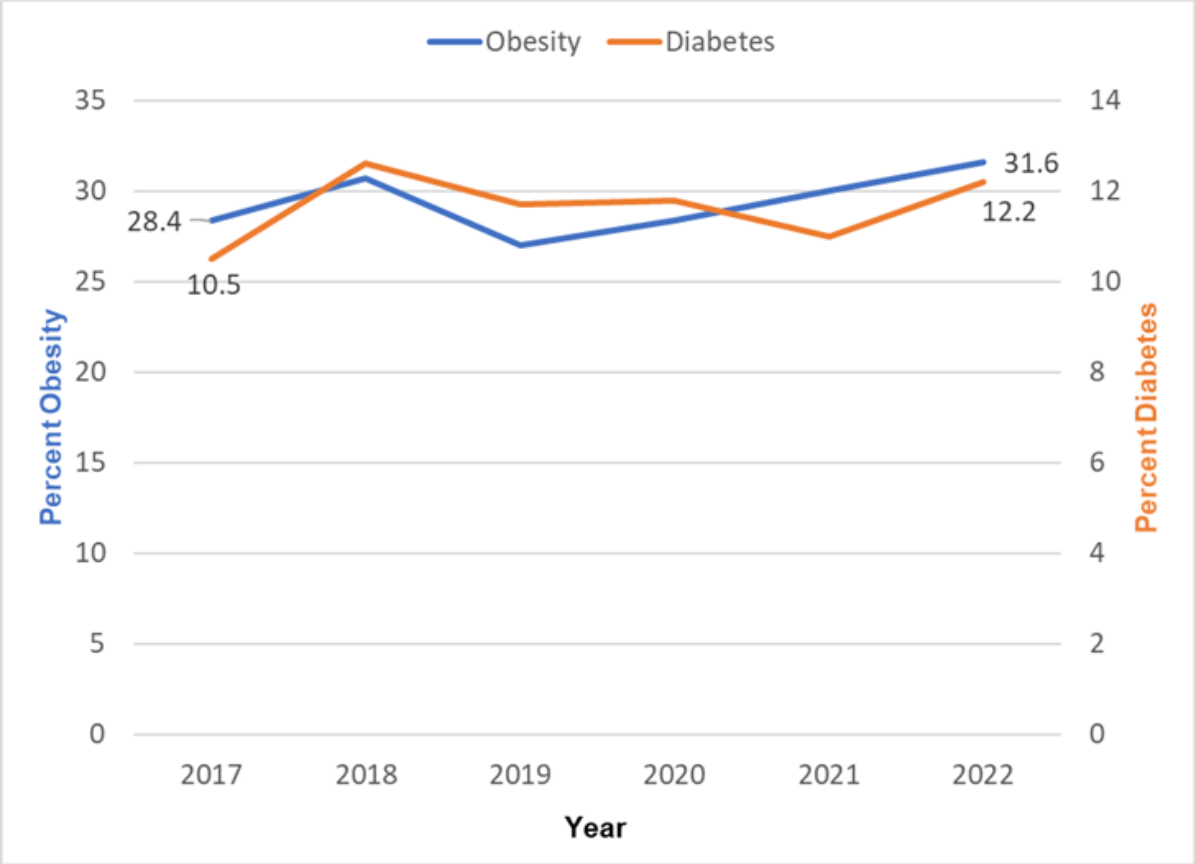
Finally, the prevalence of prediabetes did not differ significantly by income, but estimates were slightly higher for those with lower household incomes. In 2021, the prevalence of prediabetes was 14.9% among adults with an annual household income less than $25,000, 8.2% for those with an annual household income between $25,000 and $49,999, 9.4% for those with an annual household income between $50,000 and $74,999, and 11.2% among those with an annual household income of $75,000 or greater.

Diabetes

There are three main types of diabetes. Type 1 diabetes accounts for 5-10% of all cases and is characterized by an autoimmune (the immune system attacks its cells by mistake) destruction of the insulin-producing cells in the pancreas, leading to insulin deficiency. Type 2 diabetes accounts for another 90-95% and is characterized by a progressive loss of adequate insulin secretion associated with a variable degree of insulin resistance. Lastly, gestational diabetes develops in pregnant women who have never had diabetes.[7] In the U.S., according to the CDC, 38.4 million people of all ages (11.6%) have diabetes, 38.1 million of which are adults aged 18 years or older (14.7% of adults) and another 8.7 million (22.8% of adults) are estimated to be undiagnosed.[3] Diabetes is a risk factor for a number of complications, representing the leading cause of kidney failure, lower-limb amputations, and adult blindness.

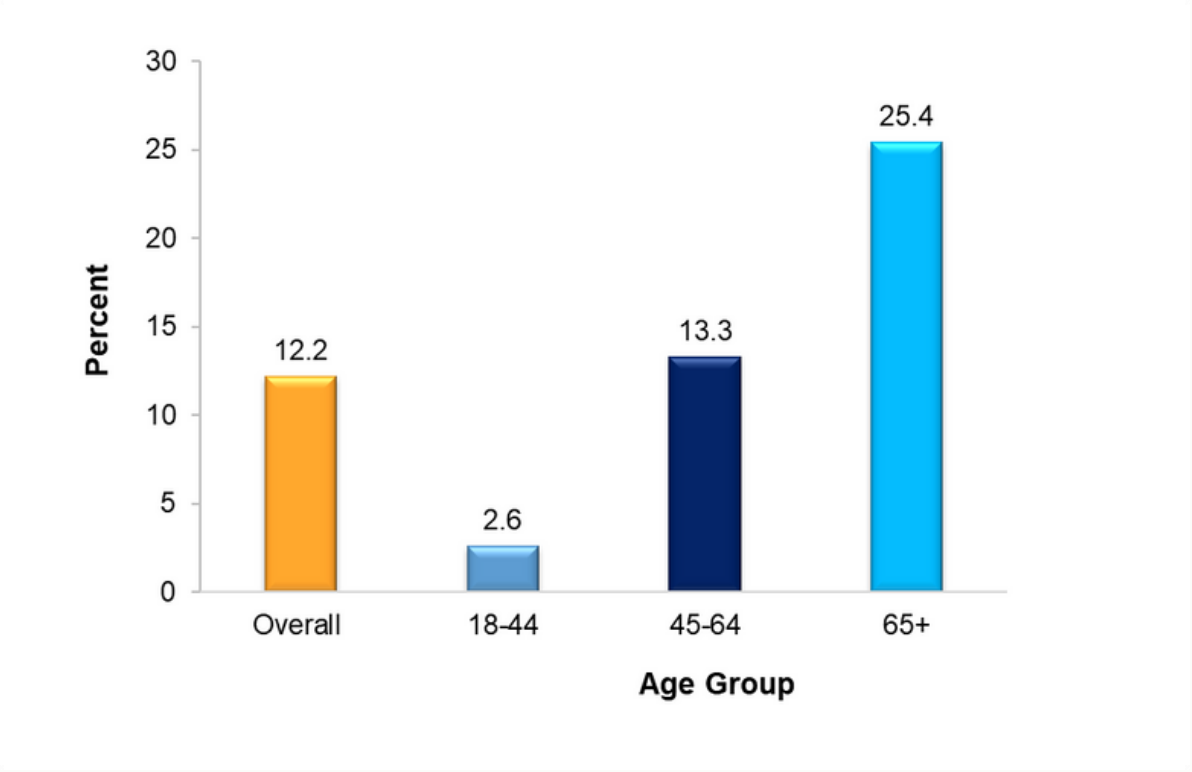
Obesity is a major risk factor for the development of type 2 diabetes. According to the American Diabetes Association, obesity is linked to up to 53% of new cases of type 2 diabetes each year.[8] The prevalence of obesity in the U.S. has increased from 30.5% in 1999-2000 to 41.9% in 2017–2020, which is reflected in a parallel significant increase in the prevalence of diabetes from 9.8% in 1999-2000 to 14.3% in 2017-2018.[9] Since the DAC's first biennial legislative report in 2017, the prevalence of obesity among Florida adults went from 28.4% to 31.6%, although this was not statistically significant. This was an increase of 11.3% over the 6-year-period. A similar trend was observed for the prevalence of diabetes, which increased by 16.2%, from 10.5% to 12.2% (Figure 3), although this was not statistically significant. Overall, over the past 15 years, the prevalence of diagnosed diabetes among Florida adults increased by 28.4%, from 9.5% in 2008 to 12.2% in 2022.[2] In Florida, it is estimated that over 2 million individuals have diabetes.[9]

Figure 3. Florida Prevalence of Obesity and Diagnosed Diabetes, BRFSS, 2017-2022



Like prediabetes, the prevalence of diabetes also increases with age. In 2022, 2.6% of Florida adults ages 18 to 44 reported having ever been diagnosed with diabetes, compared to 13.3% of adults ages 45 to 64 and 25.4% of adults ages 65 and older (Figure 4), a difference that was statistically significant. These rates are similar to those that were reported nationally in the NHANES survey, with Florida having slightly higher rates of diagnosed diabetes in adults (12.2% vs. 11.3%, respectively).[3]

Figure 4. Florida Prevalence of Diagnosed Diabetes Overall and by Age Group, BRFSS, 2022

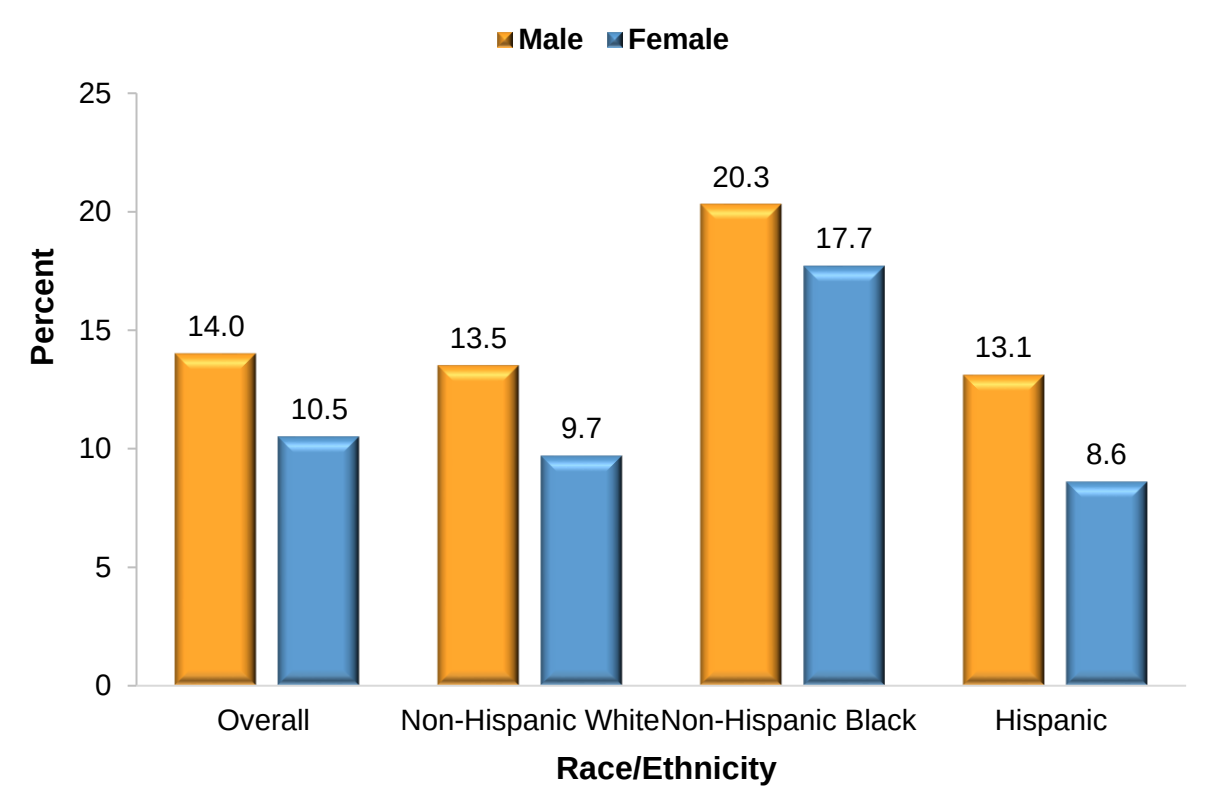


In the 2022 Florida BRFSS report, the prevalence of diabetes was highest among non-Hispanic Blacks at 18.9%, compared to non-Hispanic Whites at 11.5% and Hispanics at 10.8%. A similar pattern was observed for racial/ethnic groups among men. The prevalence of diabetes among non-Hispanic Black men was 20.3% and higher than that of non-Hispanic White men at 13.5% and Hispanic men at 13.1%. Similarly, the prevalence of diabetes was higher among non-Hispanic Black women at 17.7% compared to non-Hispanic White women at 9.7% (statistically significant difference) and Hispanic women at 8.6% (Figure 5).[10]

Differences in prevalence of diabetes were observed when considering socioeconomic factors such as education and income in 2022. The prevalence of diabetes was 20.6% among adults having less than a high school education. This was significantly higher when compared to a diabetes prevalence of 11.8% among adults with a high school education or a general education diploma (GED), 12.5% of adults with some college education, and 9.0% of college graduates.

The prevalence of diabetes was 20.9% among Florida adults living in households with an annual income less than $25,000. This was considerably higher compared to 14.9% among those with an annual household income between $25,000 and $49,999, and 8.9% for those with an annual household income of $50,000 or greater (statistically significant).

Figure 5. Florida Prevalence of Diagnosed Diabetes in Adults by Sex, Overall, and by Race/Ethnicity, BRFSS, 2022



Finally, the prevalence of diabetes among Florida adults varies geographically across the state. According to the most recent available data from the 2021/2022 BRFSS, several counties (Gadsden, Madison, Hamilton, Dixie, Putnam, Sumter, Desoto, Highlands, and Glades) far exceed the national average diabetes prevalence, while a few counties (Alachua, Leon, and St. Johns) are below the national average.[11]

Diabetes in Youth

Diabetes diagnosed in children and adolescents is generally considered to be type 1 diabetes, but type 2 diabetes has increased especially among youth with obesity and in high-risk ethnic groups. As of 2021, 352,000 children and adolescents younger than age 20 years, or 35 per 10,000 U.S. youths, were diagnosed with diabetes, and this includes 304,000 youths with type 1 diabetes.[3] As of 2022, 15.7% of middle school and 15.2% of high school students in Florida had obesity.[12] Data from the SEARCH for Diabetes in Youth study indicated that among U.S. children and adolescents aged 10 to 19 years, for the entire period 2002–2018, overall incidence (new cases) of type 2 diabetes significantly increased. Incidence of type 2 diabetes significantly increased for all racial and ethnic groups, especially Asian or Pacific Islander, Hispanic, and non-Hispanic Black children and adolescents. Non-Hispanic Black children and adolescents had the highest incidence of type 2 diabetes across all years.[3]

Data sources about diabetes among youth statewide are limited, but data from the DOH School Health Services Program provides some insight about diabetes in youth. Managing diabetes during school days places additional stress on both families and school staff. Annually, local school health programs report data on student health conditions and the services provided. In 2022-2023, in a population of 2,851,846 pre-kindergarten through 12th grade students, there were 6,568 reported students with type 1 diabetes (0.23%) and 1,139 students with type 2 diabetes (0.04%) in Florida public schools, for a total of 7,707 (0.27%) students living with diabetes. Of these students, 5,833 (0.20%) received glucose monitoring assistance, 4,821 (0.17%) received carbohydrate-counting assistance, and 5,197 (0.18%) received assistance with insulin administration at schools throughout the school year.[13]

Diabetes During Pregnancy

Gestational diabetes is a form of diabetes that develops only during pregnancy. It is distinct from pre-existing diabetes, which includes type 1 and type 2 diabetes, that a woman had before becoming pregnant. Both gestational and pre-existing diabetes can lead to serious health complications for the mother and baby including preeclampsia, premature birth, cesarean delivery, and higher risk of birth injury. According to data from the 2020 Pregnancy Risk Assessment Monitoring System (PRAMS), 1.6% of recent mothers in Florida reported having pre-existing diabetes before their most recent pregnancy and 11.3%, an increase from 9.8% in 2018, reported having gestational diabetes during their most recent pregnancy.[14]

Diabetes Among the Medicaid Population

The Agency for Health Care Administration is responsible for the oversight and administration of the Florida Medicaid program, overseeing the delivery of health care for over 6 million low-income children, adults, seniors, and individuals with disabilities.

For the purposes of this report, a series of data tables was prepared by the Agency for Health Care Administration's Division of Medicaid, Bureau of Medicaid Data Analytics and Bureau of Medicaid Quality. For State Fiscal Year (SFY) 2022-23, the prevalence of diabetes among Florida Medicaid recipients ages 18 and older was 0.65% for type 1 diabetes and 8.52% for type 2 diabetes. For comparison, the prevalence of type 1 diabetes and type 2 diabetes were 0.73% and 6.36% respectively in SFY 2016-17, when the DAC's first biennial legislative report was published, and 0.73% and 8.87% in SFY 2021-22 (Table 1). From SFY 2016-17 to SFY 2022-23, the number of type 1 diabetes cases increased by 24%, while the number of type 2 diabetes cases increased by 87%, reflecting the rising prevalence of type 2 diabetes statewide. A chi-square test found the change in prevalence from SFY 2016-17 to SFY 2021-22 and from SFY 2021-22 to SFY 2022-23 to be statistically significant. In the same period, the number of diabetes cases in women increased by 32.5% from 6.5% to 8.6% and in men by 30% from 6.8% to 8.8%.

Table 1. Prevalence of Florida Medicaid Members Ages 18 and Older with Type 1 and Type 2 Diabetes SFY 2016-2017, 2021-2022 and 2022-2023

State Fiscal Year (SFY)	Type 1 Diabetes Cases		Type 2 Diabetes Cases		Medicaid Enrollment	
	Number	Prevalence	Number	Prevalence	Adults 18 Years of Age or Older	Total Enrollment
***SFY 16/17**	17,944	0.73%	157,250	6.36%	2,472,824	4,912,142
SFY 21/22	22,112	0.73%	267,579	8.87%	3,017,198	5,547,494
SFY 22/23	22,289	0.65%	293,357	8.52%	3,443,980	6,096,717

*Provided as a reference year

In SFY 22/23, the prevalence of type 1 and type 2 diabetes among Medicaid members less than 18 years of age was the same at 0.19%. The prevalence of these two conditions was 0.15% and 0.12% respectively in SFY 16/17 and 0.19% and 0.20% respectively in SFY 21/22 (Table 2). A chi-square test found the change in prevalence from SFY 16/17 to SFY 21/22 to be statistically significant. For the period SFY 16/17 to 22/23, there was an increase of 33.6% in the cases of type 1 diabetes and 70.5% in the cases of type 2 diabetes. In the same period, the number of diabetes cases in females less than 18 years of age increased by 70% from 0.20% to 0.34% and in males less than 18 years of age by 45% from 0.20% to 0.29%.

Among Medicaid members, the prevalence of pregnant women who had a diagnosis of either gestational diabetes or preexisting diabetes as of SFY 22/23 was 3.5% compared to 2.4% in SFY 16/17.

Table 2. Prevalence of Florida Medicaid Members
Less Than 18 years of Age with Type 1 and Type 2 Diabetes
SFY 2016-2017, 2021-2022 and 2022-2023

State Fiscal Year (SFY)	Type 1 Diabetes Cases		Type 2 Diabetes Cases		Medicaid Enrollment	
	Number	Prevalence	Number	Prevalence	Children Less Than 18 Years of Age	Total Enrollment
***SFY 16/17**	3,778	0.15%	2,941	0.12%	2,439,318	4,912,142
SFY 21/22	4,864	0.19%	5,076	0.20%	2,530,296	5,547,494
SFY 22/23	5,047	0.19%	5,015	0.19%	2,652,737	6,096,717

*Provided as a reference year

Diabetes Among Individuals Covered by the Division of State Group Insurance (DSGI)

The Department of Management Services, DSGI, offers and manages a comprehensive package of health and welfare insurance benefits for active and retired state employees and their families. Individuals with a primary diagnosis of diabetes during a calendar year were included in the counts presented in Table 3. While the number of members with diabetes has had minor fluctuations since the 2017 DAC report (2,909 members with type 1 diabetes and 28,407 members with type 2 diabetes in 2015), the cost of diabetes management has increased substantially, from approximately $17 million in 2015 to almost $28 million in 2023.

Table 3. Prevalence of Florida DSGI Members

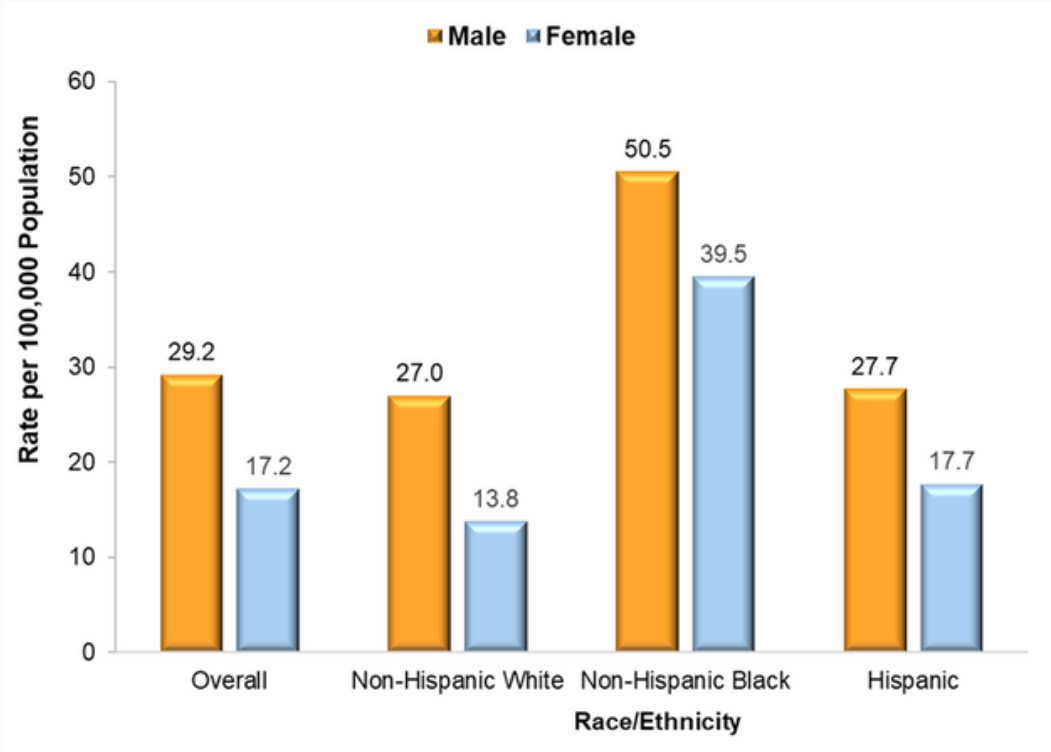
State Fiscal Year (SFY)	Type 1 Diabetes Cases		Type 2 Diabetes Cases		Total Members with Diabetes	Total Enrollment
	Number	Prevalence*	Number	Prevalence		
2022	2,306	0.67%	28,485	8.32%	30,791	342,187
2023	2,082	0.60%	29,090	8.36%	31,172	347,857

*Prevalence of case based on total enrollment

Diabetes Mortality

Diabetes is the seventh leading cause of death in Florida. In 2022, there were 7,550 deaths with diabetes listed as the underlying cause. The diabetes mortality rate has remained consistent from 2013 to 2019, gravitating around 20 per 100,000. The death rate due to diabetes as the underlying cause increased 15.7% from 19.7 per 100,000 in 2019 to 22.8 per 100,000 in 2022.[15] That increase can be attributable to the effect of the recent pandemic (World Health Organization and the U.S. declared respectively in March 2020).[16] Also, when looking at the 2022 age-adjusted diabetes mortality rates by sex, overall and race/ethnicity, large disparities are seen (Figure 6). Overall, males have an age-adjusted diabetes mortality rate of 29.2 per 100,000 population, higher than the rate of 17.2 per 100,000 population for females. Non-Hispanic Blacks have a higher age-adjusted diabetes mortality rate than both non-Hispanic Whites and Hispanics and across all racial/ethnic groups, males have higher mortality rates than females.

Figure 6. Florida Age-Adjusted Diabetes Mortality Rate per 100,000 by Sex, Overall and by Race/Ethnicity, Vital Statistics, 2022



Financial Impact of Diabetes and Its Complications

It is estimated that in 2017, the total cost of diabetes in Florida was $24.8 billion, with $19.3 billion attributed to direct medical expenses for diagnosed diabetes and $5.5 billion attributed to indirect costs from loss of productivity due to the condition. This not only creates a significant problem for the health care system but also generates health inequities and loss of quality of life for individuals with diabetes.

The total national estimated cost of diagnosed diabetes in 2022 was $412.9 billion, including $306.6 billion in direct medical cost and $106.3 billion in reduced productivity. In Florida, the estimated cost of diagnosed diabetes in 2017 was $24.8 billion each year, with $19.3 billion being spent as direct medical expenses and $5.5 billion as indirect cost from lost productivity. The average annual medical expenditures among individuals with diabetes are 2.6 times higher than among individuals who have not been diagnosed with diabetes.

Medicaid Expenditures

In SFY 2022-23, the aggregate cost for all health care services provided to Medicaid recipients diagnosed with diabetes in Florida was over $1 billion. Table 4 shows a comparison of total and average cost for diabetes and other chronic conditions. Hypertension was the costliest condition, totaling more than $1 billion in Medicaid spending in SFY 2022-23. Diabetes and chronic obstructive pulmonary disease (COPD) were the second and third most costly conditions. Congestive heart failure and coronary artery disease were the two costliest diseases on a per-member spending basis. Diabetes was the third most costly disease on a per-member spending basis. It is noted that diabetes is a significant risk factor for, and a common co-morbid condition of, heart disease.

Table 4. Medicaid, Cost Comparison of Chronic Conditions
State Fiscal Year 2022-2023

Chronic Condition	Total Medicaid Spending - Only Diagnosis within first 5 Diagnosis	Member Count	Cost Per Member for SFY 22/23	Total Medicaid Spending - Coexisting Diabetes diagnosis with first 5 Diagnosis	Member Count	Cost Per Member for SFY 22/23
Hypertension	$1,457,715,028	428,221	$3,404	$691,560,219	153,805	$4,496
Diabetes - any	$1,134,584,646	211,394	$5,367			
COPD and Allied Conditions	$946,961,255	458,996	$2,063	$348,825,346	54,167	$6,440
Coronary Heart Disease	$525,743,162	94,928	$5,549	$270,266,829	43,733	$6,180
Congestive Heart Failure	$466,088,044	53,005	$8,793	$257,152,422	27,167	$9,212
Asthma - Less than 20	$173,500,232	242,344	$716	$3,142,950	1,796	$1,750
Asthma - 20 and Over	$168,959,940	112,177	$1,506	$53,973,259	21,004	$2,570

Note: All SFY 2022-23 fee-for-service and managed care adjudicated (Paid and denied) claims were used to identify diabetes diagnoses

Source: Multi-Dimensional Array claims, encounter tables and Decision Support System claim universe as of July 10, 2024

DSGI Expenditures

In 2023, the total DSGI combined medical cost for adults and youth with a primary diagnosis of diabetes was $27.9 million. The total DSGI cost for type 1 diabetes (adults and youth combined), decreased by 1%, from $7.0 million in 2022 to $6.96 million in 2023. During this same time, the number of individuals covered by DSGI with type 1 diabetes claims decreased by 10% from 2,306 to 2,082.

Conversely, the total DSGI medical cost for type 2 diabetes (adults and youth combined) increased by 4% from 20.1 million in 2022 to 20.9 million in 2023 (Table 5). During this same time the number of clients covered by DSGI with a primary diagnosis of type 2 diabetes increased by 3% (28,485 in 2022 vs 29,090 in 2023).

From 2022 to 2023, the average cost per client covered by DSGI with a primary diagnosis of type 1 diabetes increased by 10%, while the average cost per client covered by DSGI with a primary diagnosis of type 2 diabetes essentially increased by 1.8%.

Table 5. Total Medical Cost* for Adult and Youth with Diabetes and Covered by DSGI During the Calendar Year 2022 and 2023

Year	Type 1	Type 1	Type 2	Type 2
	Total	Average per Client	Total	Average per Client
2022	$7,030,568.88	$3,048.81	$20,113,061.19	$706.09
2023	$6,962,931.89	$3,344.34	$20,907,620.82	$718.72

*Excluding pharmacy costs

Table 6. Total Pharmacy Cost for Adults and Youth with Diabetes and Covered by DSGI During the Calendar Year 2022 and 2023

Year	Total	Average per Client
2022	$150,797,563.97	$4,420.27
2023	$202,775,050.50	$5,320.92

In 2023, the total DSGI pharmacy cost for antidiabetic drugs was $203 million, an increase of 34.0% from 2022. This increase is, in part, due to the high cost of newer medication classes like GLP-1s.

Addressing Diabetes in Florida

Treatments

Lifestyle Interventions and Medical Nutrition Therapy

Implementing lifestyle modifications and utilizing medical nutrition therapy is essential for managing diabetes in Florida, particularly type 2 diabetes. The National Diabetes Prevention Program (National DPP) is based on the CDC's initial randomized, controlled clinical trial, which started in 1996 and demonstrated a significant 58% decrease in diabetes risk among individuals who took part. Medical nutrition therapy (MNT) is a personalized, nutrition-based treatment plan created by registered dietitian nutritionists.[17] Research has demonstrated that MNT can significantly reduce A1c levels by 1-2% in individuals diagnosed with diabetes.[18] Diabetes educators, dietitians, and providers educate patients on strategies such as portion control and carbohydrate counting, which are helpful for maintaining stable blood glucose levels.

Diabetes Self-management Education and Support (DSMES) interventions include activities that support persons with diabetes to implement and sustain the self-management behaviors and strategies to improve diabetes and related cardiometabolic conditions and quality of life on an ongoing basis.[19] Skills focus primarily on how to better manage diabetes by monitoring blood sugar regularly, eating healthy food, being physically active, taking medications, and managing stress. Based on evidence-based standards, this process includes the needs, goals, and life experiences of the person with diabetes. Evidence-based DSMES programs have demonstrated the achievement of the following patient outcomes:

- Lower A1c levels.
- Prevent or reduce diabetes complications.
- Improve the quality of life.

National DPP Participant Edwin says, "Before this course, I was very unhealthy: overweight, high blood pressure, high cholesterol, low energy. I knew I needed to do something but did not know how. I had just recently been diagnosed with [prediabetes] and so I decided to take this course……After six months in this course, I no longer eat sugary things like cookies and cake, and I eat a lot more vegetables because I understand what is in the food I eat. I have lost 5% of my starting weight and plan to lose more. I am so grateful that this [program has helped me] understand how to select proper diet and the importance of exercise."

❖

-Lifestyle Coach Kaumini's Statement: "Participants like Edwin benefit greatly from the program, as evidenced by his successful lifestyle transformation and a 5.2% loss of his initial body weight (11.2 lbs) within the first six months."

--Submitted by the Department of Health in Hillsborough County

Subsequent improvement in these outcomes results in lower health care costs. DSMES has been shown to be cost-effective by reducing hospital admissions and readmissions, as well as estimated lifetime health care costs related to lower risk for complications.[19]

While there is no "best" education program or approach, diabetes self-management education that incorporates behavioral and psychosocial strategies have been associated with improved outcomes. Most DSMES programs have evolved from didactic presentations to empowerment-based models. For participants to sustain progress, ongoing support is essential.

DSMES programs should meet the National Standards for DSMES, developed by a joint task Force of the Association of Diabetes Care and Education Specialists (ADCES) and the American Diabetes Association (ADA).

Managing diabetes every day can be challenging, but there are seven areas that self-management and support should focus on as priority areas. These are known as the ADCES7 Self-Care Behaviors:

1) Healthy eating habits
2) Being active
3) Monitoring blood sugar levels
4) Taking medication
5) Problem solving
6) Reducing risks
7) Healthy coping

DSMES participant Ken D stated: "This course has provided the information I needed to fully understand the complications of this disease. The instructor was exceptional in explaining each chapter and allowed us to ask the pertinent questions and to guide us on the journey. I also made and achieved my goals to eat healthier, exchange carbs, control my portions, chart the numbers, and to know current medications. Thank you providing this course!"

Dietitian/Diabetes Care and Education Specialist Deanna D shared that "Participants like Ken, who was newly diagnosed with type 2 diabetes, are often confused about how to care for themselves, and worried about the many complications that can afflict those with diabetes. Our classes help participants learn ways to keep their diabetes in better control, thereby preventing future complications. Equally important, they gain confidence in their ability to manage their diabetes, and peace in the realization that they too can live long, happy, and healthy lives!" Ken really took the recommendations we made to heart and was able to lower his A1c from 6.5 to 5.4 without the use of medication!

--Submitted by the Department of Health in Hillsborough County

Clinical Interventions and Medication Therapy

Clinical interventions involve pharmacological treatment, blood glucose monitoring, and regular follow-up with physicians or other primary care providers. NHANES data collected between 2015, and March 2020 show that 81.8% of participants aged ≥ 20 years with type 2 diabetes took a glucose-lowering medication.[20]

Insulin therapy is necessary for the management of type 1 diabetes and for many children and adults with type 2 diabetes. Studies suggest that individuals who are treated with insulin therapy and regular blood glucose monitoring, as a part of their overall treatment plan, can significantly reduce A1c levels.[21] The most common types of insulin used are short-, rapid-, and long or ultralong-acting formulations. Combinations of these types of insulin are used to replicate basal insulin needs, cover meals, and treat high blood sugar.

Diabetes care providers, including endocrinologists, primary care providers, and pharmacists, emphasize tailoring pharmaceutical regimens to each client and doing regular check-ins to adjust doses and monitor diabetes control, ensuring the best possible treatment outcomes.

Most medications for type 2 diabetes are given orally. However, many newer treatment regimens include medicines given as injections. The medications used for type 2 diabetes target many different areas including the liver, kidneys, digestive tract, muscles, or brain. These medications may alter the production, absorption, storage, and use of glucose, or they may affect the body's sensitivity to and production of insulin. The choice of medications for type 2 diabetes depends on many factors, such as the client's activity level, degree of high blood sugar, co-existing medical problems, and more.

Effective management of diabetes requires careful monitoring and evaluation. Several randomized controlled trials have demonstrated the positive effects of continuous glucose monitors (CGM) on A1c levels for people with type 2 diabetes, with or without changes to insulin doses or other medications.[22] Furthermore, use of telemedicine can provide prompt provider-patient feedback, enhancing patient adherence and outcomes. Telemedicine also helps eliminate some barriers to clinic visits, including problems with transportation.

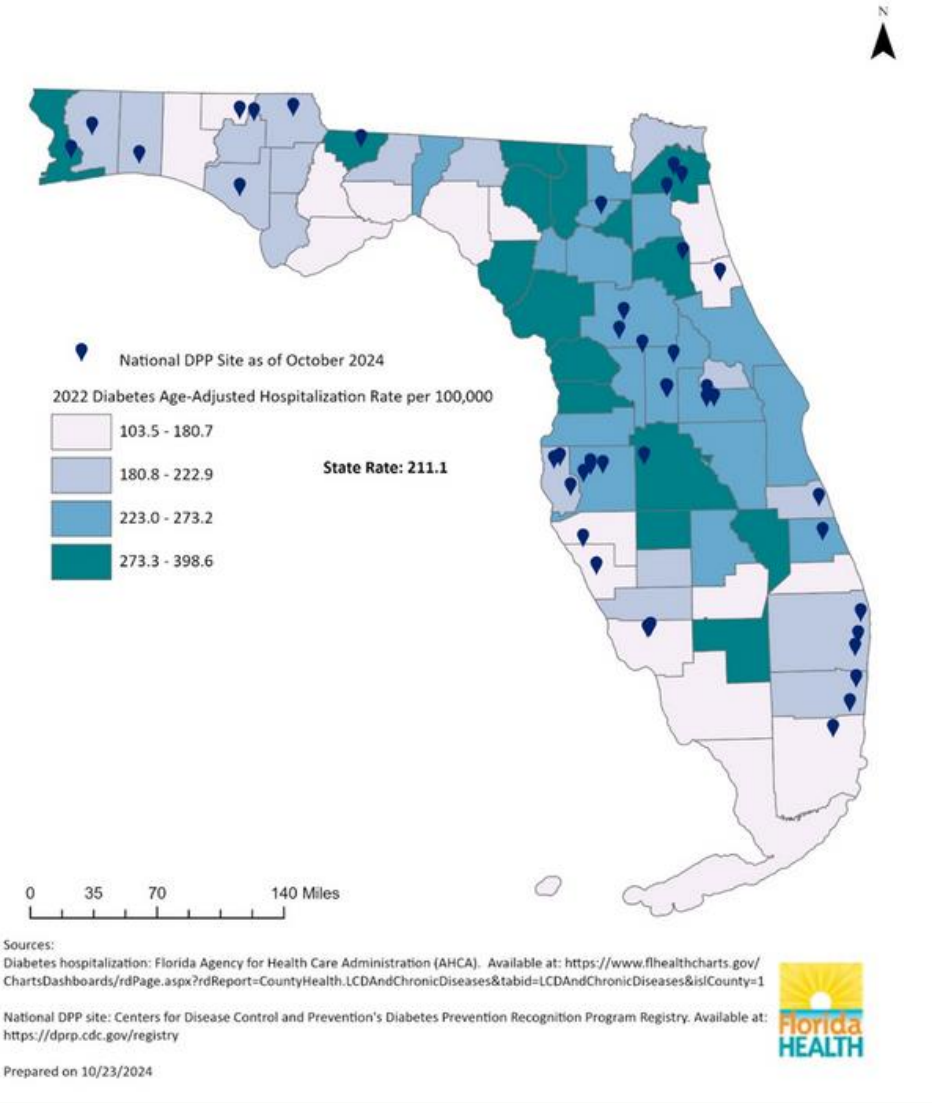
Other clinical interventions for type 2 diabetes may include dietary and lifestyle changes with weight management, and metabolic surgery. Metabolic surgery is recommended in the 2024 ADA Standards of Care (Rec. 8.19) with Level A evidence as a weight and glycemic management approach in people with diabetes with body mass index ≥ 30 (or ≥ 27.5 in Asian Americans) who are otherwise good surgical candidates.[23] Metabolic/bariatric surgery is a frontline intervention more effective than intensive medical/lifestyle intervention and more cost effective than GLP-1 medication therapy. The effects are weight-loss independent. There have been 13 randomized-controlled studies in support of surgery for people with type 2 diabetes, and surgery is indicated for people with type 1 diabetes who also have obesity.

Current Efforts

Florida is addressing the diabetes pandemic through a variety of measures. Current efforts include public health campaigns, activities rooted in the community, and partnerships with local groups. Several public health campaigns aim to enhance awareness regarding the prevention and management of diabetes, with a particular focus on risk factors such as obesity and a sedentary lifestyle. Community-based programs offer screenings, educational sessions, and support groups. Better mechanisms for referrals to these programs are under development.

Through the current 5-year cooperative agreement with the CDC, DOH's Diabetes Prevention and Management Team manages $1.25 million in annual funding to implement diabetes programming. For instance, the National DPP, as well as the Medicare DPP, have been introduced in many regions in Florida. While the number of CDC-accredited National DPP delivery organizations has decreased in the past few years (the October 2023 Diabetes Prevention Recognition Program State Report listed 58 organizations, while October 2024 report listed 52), the number of participants served has increased (54,478 to 57,776, respectively).[24] This suggests an expanded capacity to recruit and serve eligible residents, as well as the increased availability of virtual programs. Multidisciplinary workgroups are strategically utilizing data, such as emergency department visits, hospitalizations, social vulnerability index, and diabetes prevalence to determine where to direct funds for initiating or expanding National DPP delivery sites (Map 2).

Map 1. Florida Age-Adjusted Hospitalization Rates for Diabetes as Primary Diagnosis and National Diabetes Prevention Program (DPP) Sites, by County



In 2023, 91 DSMES delivery organizations across public health programs, health systems, and independent medical providers, and community-based organizations served 28,421 people with diabetes in Florida.[25]

In 2024, pursuant to section 381.9855, F.S., DOH made available approximately $10,000,000 under the Dr. and Mrs. Alfonse and Kathleen Cinotti Health Care Screening and Services Grant Program funding opportunity for nonprofit entities to expand access to certain no-cost health care screenings and services for the public, including diabetes screening. DOH also provides funding for community needs assessments aimed at identifying the distinct challenges encountered by residents of Florida, such as the influence of social and economic factors and geographical gaps on diabetes management.

The DOH School Health Services Program, in collaboration with the Florida Department of Education, is authorized to provide school-based health services to all public school children in grades pre-kindergarten through 12 in all 67 Florida counties.

Rule 6A-6.0253, Florida Administrative Code, provides students with diabetes the ability to self-carry diabetes care equipment and medications and self-manage their diabetes during the school day. These students must have an authorization that is signed by their health care provider and parent/guardian. Registered nurses work with primary care providers, parents, and the students to educate and plan for diabetes self-management and the students' long-term success in managing their condition.

For calendar year 2023, the Florida Department of Management Services, through DSGI, sponsored the Weight Management Program pilot. At the end of 10 months, 191 of 738 participants (25%) reported a cumulative weight loss of 4,024 pounds (an average of 21 pounds per participant). Of the 191 participants, 142 participants reported an average body mass index reduction of 4.9; 144 participants improved their blood pressure; and 187 participants improved their low-density lipoprotein cholesterol. In addition, 136 participants reported improved A1c.

Coordinated Efforts - Public and Private Partnerships

Efficient diabetes management in Florida necessitates the collaborative endeavors of public health entities, private health care providers, non-profit organizations, and community groups. These collaborations utilize resources and specialized knowledge to amplify the effectiveness of interventions. Public-private collaborations involve cooperation between public health authorities, hospitals, and clinics to ensure comprehensive treatment. Non-profit organizations are crucial in reaching out to the community, while relationships with the private sector help finance research and deploy cutting-edge technologies. In addition, organizations such as the Association of Diabetes Care and Education Specialists' Florida Coordinating Body and the Florida Diabetes Alliance help to maintain a quality, informed diabetes workforce.

To address the state's diabetes burden, community health improvement plans (CHIPs) at the local county level have been implemented. Through the Healthy Communities of Florida Program, county health departments have implemented diabetes prevention and management activities into their CHIPs; 44 of 67 county health departments reported to have diabetes prevention and management as a goal or objective in their CHIP. Twenty-five county health departments have implemented a National DPP and 16 have implemented a DSMES program to provide services to residents.

The DOH Diabetes Prevention and Management team is collaborating with the Florida State Alliance of YMCAs Foundation to provide the National DPP and the Healthy Weight and Your Child program, substantially decreasing the likelihood of developing diabetes among the individuals involved. The team has leveraged long-standing relationships with the Health Planning Council of Southwest Florida, Florida Community Health Worker Coalition, and Big Bend Area Health Education Center to administer and implement robust training and accredited diabetes programming for delivery organizations, medical providers, and Florida residents. DOH continues to cultivate these relationships to establish a unified network of assistance for individuals with diabetes, guaranteeing they have the essential health care and resources they require. Other state-level funding has supported initiatives to address barriers to care have been accomplished through partnerships with health systems, such as Advent Health, as well as the Florida Podiatric Medical Association. The Diabetes Prevention and Management team also relies on internal collaborations across DOH's chronic disease programs to efficiently utilize funds to reach vulnerable populations of children and adults.

The ADA's Florida chapter continues to coordinate efforts toward common goals of preventing diabetes and improving the lives of people impacted by the disease. The ADA helps find solutions for living well with diabetes by educating people about the health risks associated with the disease, providing access to support tools and resources, reinforcing the vital role health and nutrition play in diabetes management, and supporting health care professionals. The ADA continues to collaborate with public and private entities to better understand the nutritional needs of people living with diabetes, obesity, and metabolic dysfunction and how nutrition formulas can support those needs and overall health. The ADA also recognizes and supports dozens of DSMES delivery organizations across the state.

On June 22, 2023, Governor Ron DeSantis approved legislation that will allow a broader population of Florida Medicaid beneficiaries to be eligible for a continuous glucose monitor (CGM) device. The new law, created by House Bill 967, streamlines CGM eligibility criteria and extends eligibility to adults.[26] CGMs allow patients and their medical providers to better manage their diabetes daily.

Cost Savings and Clinical Improvements

DSGI's 2023 Population Health Management Report demonstrated that providing care for members with diabetes has an increasingly expensive impact.[27] While advances in medications like GLP-1s have shown good success in managing type 2 diabetes, these medications are also very expensive, accounting for nearly half of DSGI's most expensive drugs covered overall. This reinforces the need for prevention through established and novel mechanisms.

A study recently published in the ADA's Diabetes Care journal found that among 5,948 adults enrolled in an employer-sponsored health insurance plan, enrollment in the National DPP had an 88% probability of cost-saving, compared with non-enrollment. The researchers estimated that approximately $160,000 were saved per case of diabetes prevented.[28]

Advancing the Prevention and Care for Diabetes in Florida

Recommendations and Actions

This report includes data on the scope and cost of diabetes in Florida; how statewide partnership across public and private sectors are addressing diabetes prevention, control and management for people living with prediabetes and diabetes; how partners are coordinating efforts; recent successes; and recommended actions to reduce the impact of diabetes. The information shared aligns with the three overarching goals of the DAC:

1) Reducing the incidence of diabetes.
2) Improving community and health care services for people with diabetes.
3) Controlling complications resulting from diabetes to improve the health of Floridians.

Recommendations are provided and anticipated outcomes are described for optimal and no-funding scenarios.

Advancing the care and prevention of diabetes involves a multi-faceted approach that includes:

1) Implementing preventive measures to reduce the incidence of the disease and its complications, which includes education and monitoring.
2) Early diagnosis (prediabetes and diabetes).
3) Enhancing treatment strategies.
4) Education promoting effective self-management.

1) Implementing Preventive Measures

- Increase access to the National DPP by increasing the number of DOH program staff, as well as community health workers across the state, who are trained as lifestyle coaches to facilitate the program.
- Although some medical associations and diabetes care entities have reported for years on the dangers of hypoglycemia, a more robust, inter-sectorial campaign is needed to guide persons with diabetes on how to avoid hypoglycemia while driving. The DAC recommends a collaborative approach from medical associations, retail pharmacies, state agencies, and car insurance companies.
- Insulin-Dependent Driver's License Designation – section 322.141(2)(a), F.S., states that "All licenses for the operation of motor vehicles originally issued or reissued by the department to persons who have insulin-dependent diabetes may, at the request of the applicant, have distinctive markings separate and distinct from all other licenses issued by the department." However, ongoing campaigns are needed to make persons with diabetes aware that this designation can be requested. In the event of an emergency, this allows emergency responders and law enforcement to address the driver's needs more quickly.

2) Encourage Earlier Detection

- Community health educators should routinely encourage community members to complete the prediabetes risk test to determine their risk of prediabetes/type 2 diabetes. The paper or online risk test can also be offered as part of any initial provider visit registration, at pharmacies, etc. Primary care providers and specialists should order a blood-based test (A1c) at their patients' annual wellness exam as a part of preventive care. As previously stated, the NHANES data show that only a fraction of respondents whose lab values were found to be within prediabetes range had been previously informed by their providers, which demonstrates an opportunity to reinforce this screening guideline.
- Further research is needed to determine the appropriate audience and conditions in which to order screening for type 1 diabetes. However, providers should be encouraged to utilize the range of available diagnostic methods to ensure accurate diagnosis (including type of diabetes) and treatment.

3) Enhance Treatment Strategies

- A multidisciplinary team approach is needed to optimize outcomes for persons with diabetes. These teams may include primary care providers; specialty providers in the areas of endocrinology, nephrology, cardiology, neurology, metabolic and bariatric surgeons, ophthalmology/optometry, dietitians, credentialed diabetes care and education specialists, nurses, pharmacists, mental health professionals, exercise physiologists, physical therapists and assistants, occupational therapists and assistants, and community health workers.
- Increase awareness/access to DOH's Insulin Distribution Program, which provides select insulins at no cost to eligible Florida residents.
- Promote digital health tools and applications on the DAC's web page and other platforms. The DAC will seek input from partners on the most used and most effective tools, applications, and resources that support diabetes-related health goals related to insulin delivery, lifestyle, biometrics, mental health, etc. Resource pages will include service organizations such as Blue Circle Health, Touched by Type 1, Breakthrough T1D (formerly Juvenile Diabetes Research Foundation), and many others.

4) Promote Effective Self-Management

- Education is crucial in diabetes management and empowers persons with diabetes to better manage diabetes and decrease complications. Clinical and public health practitioners should use existing educational materials and resources, both for diabetes prevention and management, available through ADCES, ADA, and the CDC.
- Persons with diabetes should have access to all available technologies and therapies proven to improve diabetes self-management and health outcomes. Continued advocacy is needed to ensure affordable medications, devices, and treatment options are accessible to all eligible persons with diabetes.

Conclusion

Care for people with diabetes and its complications continues to create a substantial economic and public health care impact on the state of Florida. However, current lifestyle and clinical interventions, when adequately utilized, have been shown to be instrumental in preventing and managing diabetes.

Further investigation is needed to better understand the increasing burden of diabetes within the pediatric population in Florida and the future implications to the state as they transition into the adult diabetes care system. More information is needed about diabetes care for pediatrics in private schools and emerging adults in college/university settings as they transition from pediatric endocrinology care. Statewide reporting of A1c blood tests will provide a more clinical basis for calculating the prevalence of diabetes in Florida, particularly in comparison to national data. The state will also benefit from more detailed cost-savings analyses to further justify the need to expand diabetes-related funding, infrastructure, and workforce. Finally, further exploration is needed to quantify the prevalence and health care burden of diabetes among uninsured Florida residents and beneficiaries of Medicare and commercial health plans.

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