Florida Diabetes Advisory Council

Created by statute & appointed by the Governor of Florida

2017

Florida Diabetes Report

Diabetes Advisory Council

Department of Health

Department of Management Services

Agency for Health Care Administration

Presented to
Honorable Rick Scott, Governor
Honorable Richard Corcoran, Speaker of the House of Representatives
Honorable Joe Negron, President of the Senate

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Executive Summary

Created by the Florida Legislature over 40 years ago, the Diabetes Advisory Council (DAC) is mandated by section 385.203, Florida Statutes to "guide a statewide comprehensive approach to diabetes prevention, diagnosis, education, care, treatment, impact, and costs thereof." Members, are appointed by the Governor to represent professional sectors involved in diabetes prevention and care, as well as citizens with diabetes and other citizen advocates. In 2015, the Florida Legislature added a requirement to the DAC to prepare a report describing the public health consequences and financial impact on the state of all types of diabetes and its complications. The legislation instructed the DAC to collaborate with the Department of Health (DOH), Department of Management Services – Division of State Group Insurance (DSGI), and the Agency for Health Care Administration (AHCA) to collect data about diabetes and state programs that address diabetes, as well as develop an action plan to reduce the impact of diabetes.

The report includes data on the scope and cost of diabetes in Florida; how each partner is addressing diabetes prevention and control for their population; how partners are coordinating efforts; recent successes; and recommended actions to reduce the impact of diabetes. Recommendations are provided and anticipated outcomes described for funding at optimal, intermediate, and current levels.

The Scope of Diabetes in Florida

In Florida, it is estimated that over 2.4 million people have diabetes and over 5.8 million have prediabetes.[1] Over the past 20 years, the prevalence of diagnosed diabetes among Florida adults more than doubled, increasing from 5.2 percent in 1995 to 11.2 percent in 2014.[2] The Centers for Disease Control and Prevention project that one out of three adults could have diabetes by 2050 if trends continue, due to an aging population more likely to develop type 2 diabetes, increases in minority groups that are at high risk for type 2 diabetes, and people with diabetes living longer.[3] This is of particular concern in Florida which has the largest population of adults ages 65 and older in the nation.

In 2014, approximately one out of ten mothers giving birth in Florida experienced gestational diabetes during their pregnancy. Gestational diabetes puts mothers at an increased risk of developing type 2 diabetes later in life, increases the risk of birth complications, and increases the risk of the infant being obese and developing type 2 diabetes in the future. While the data for diabetes in youth are somewhat limited, studies have shown that the number of youth being diagnosed with type 2 diabetes is increasing. More than 18,000 new cases of type 1 diabetes and more than 5,000 new cases of type 2 diabetes are estimated to be diagnosed among US youth younger than age 20 each year.[4]

The Public Health Consequences of Diabetes in Florida

Diabetes and related complications create significant individual, societal, and financial burden. People with diabetes are twice as likely to have heart disease or a stroke as people without diabetes, and at an earlier age. Diabetes is the leading cause of kidney failure, lower-limb amputations, and adult-onset blindness.[5] People with diabetes report lower health status, poorer physical health, and poorer mental health than people without diabetes.

The Financial Impact of Diabetes in Florida

More than 20 percent of national health care spending is for people with diagnosed diabetes.[6] It is estimated that in 2012 the total cost of diabetes in Florida was $24.3 billion, with $19.3 billion attributed to direct medical expenses for diagnosed and undiagnosed diabetes, prediabetes, and gestational diabetes and $4.53 billion attributed to indirect costs. People with diabetes have medical expenditures approximately 2.3 times higher than those who do not have diabetes.[7]

In state fiscal year 2014-2015, the estimated cost of diabetes to Medicaid was $142 million. In 2015, the estimated cost of diabetes to the Division of State Group Insurance was $17 million. These cost estimates were calculated by examining expenses of individuals with one or more diabetes-related claims during the year and likely underestimate the true costs.

Good News about Diabetes in Florida

The good news is that diabetes is manageable and, in the case of type 2 diabetes, preventable. The programs supported by the DAC, DOH, DSGI, and AHCA are effective. If the recommendations described in this report are enacted, even more can be done to prevent and manage diabetes and its complications, resulting in a healthier population, more productive workforce, and reduced burden on the health care system. This will ultimately improve quality of life for our citizens and promote better outcomes for the people of Florida who have or are at risk for diabetes.

This report will be updated biennially to include recommendations enacted, benchmarks set, and outcomes subsequently achieved.

Introduction

Problem Statement

Diabetes is a lifelong disease that affects the way the body produces and/or uses insulin and negatively impacts over 2.4 million people each year. In 2014, diabetes was the seventh leading cause of death in the United States, killing more individuals than AIDS and breast cancer combined.[8,9] In 2012, the Centers for Disease Control and Prevention (CDC) estimated that 29.1 million (9.3%) individuals have diabetes and of those, 8.1 million (27.8%) have not been diagnosed and therefore are not aware of their illness.[10] The rate of individuals diagnosed with diabetes has increased over the past 20 years, and research suggests that the rate will continue to increase and may affect nearly one in three American adults in 2050.[11] In 2012, it was estimated that 37 percent of adults over the age of 20 had prediabetes, and 208,000 (0.25%) of youth have diagnosed diabetes (type 1 or type 2).[12] Among pregnant women it is estimated that between 2 and 10 percent have been diagnosed with gestational diabetes.[13] Diabetes can affect anyone; however, some groups are disproportionally more affected than others. Among individuals diagnosed with diabetes, the majority (25.9%) are 65 years or older; however, individuals aged 45-64 have a higher rate of being diagnosed as a new case.[14] Diabetes affects non-Hispanic Blacks and Hispanics at a higher rate than non-Hispanic Whites.[15]

In 2012, it was estimated that the annual cost associated with diabetes in the United States was $245 billion, which included $176 billion in direct medical costs, and $69 billion in reduced productivity.[16] Additionally, the average medical expenditures among individuals with diabetes are 2.3 times higher than among individuals who have not been diagnosed with diabetes.[17]

In Florida, it is estimated that over 2.4 million people have diabetes and over 5.8 million have prediabetes.[18] Additionally, in 2012 the estimated direct medical expenses for diagnosed and undiagnosed diabetes, prediabetes, and gestational diabetes in Florida was $19.3 billion.[11] During this same time period an additional $5 billion was spent on indirect costs from lost productivity due to diabetes.[11]

There are different types of diabetes, and while the risk factors and health outcomes vary based on the specific type, all types must be managed carefully. Type 1 diabetes is an incurable auto-immune disease, where the body attacks the insulin-producing beta cells in the pancreas. Insulin must be injected daily or infused continuously; without external insulin, an individual with type 1 diabetes will die. Type 2 diabetes is a metabolic disease, where the body either does not produce enough insulin to meet daily needs or develops resistance to the insulin produced. Prediabetes is a condition in which individuals have high blood glucose or hemoglobin A1C levels but not high enough to be classified as diabetes. Gestational diabetes develops during pregnancy and increases the risk of an individual developing type 2 post pregnancy.

Individuals with any type of poorly managed diabetes may develop serious complications that can lead to disability and work loss, which can potentially reduce their overall quality of life. Diabetes can also place an individual at an increased risk of developing other chronic diseases such as hypoglycemia, hypertension, dyslipidemia, cardiovascular disease, heart attack, stroke, blindness, and kidney disease.[19]

Diabetes can be treated, managed, and in type 2 diabetes, prevented by healthful eating, regular physical activity, and medications to lower blood glucose levels.[3] Patient education and self-management of diabetes is a critical component to reduce poor health outcomes that can potentially occur among this population.

Purpose of the Report

In 2015, the Florida Legislature passed a bill that requires the Diabetes Advisory Council (DAC), with assistance of the Department of Health (DOH), the Department of Management Services (DMS), and the Agency for Health Care Administration (AHCA), to develop a report on diabetes and its impact in Florida. The report must be submitted to the Governor, the President of the Senate, and the Speaker of the House of Representatives in odd-numbered years beginning in 2017. The statute specifies three populations: the general public, state employees, and people with diabetes who are covered by Medicaid. These populations are served by DOH, DMS, and AHCA, respectively.

Specific requirements of the report include:

- The public health consequences and financial impact on the state of all types of diabetes and resulting health complications
- A description of current programs and activities, including the amount and sources of funding
- A description of the coordination among state agencies to prevent and manage all types of diabetes
- An assessment of the effectiveness of the diabetes programs and activities implemented by each state agency

Additionally, the statute requires the development of a detailed action plan for preventing and controlling diabetes. The action plan includes evidence-based recommendations to reduce the number of new cases of diabetes and improve education and care of people with diabetes. Benchmarks for preventing and controlling diabetes will be established and tracked. The report discusses the expected outcomes if the plan is implemented. The report also includes the cost savings realized as a result of the implementation of recommended programs and activities.

Report Development

The DOH Bureau of Chronic Disease Prevention, which provides administrative support for the DAC, hosted an organizational meeting in Tallahassee on August 25, 2015. Representatives from the DAC and the three statutorily mandated partner agencies participated. The meeting was facilitated by Ms. Marti Macchi of the National Association of Chronic Disease Directors (NACDD). Ms. Macchi, who has worked with other states that implemented similar legislation, presented the national perspective and shared highlights of other state reports/plans.

A data committee consisting of epidemiology and evaluation professionals from the three partner agencies was developed and tasked with collecting data related to programs that address diabetes in their agencies.

Several meetings of the data committee resulted in compilation of existing data and identification of data needs.

The DAC met in person on May 17, 2016, to review progress on the report and to begin development of the action plan. DAC members and guests participated in one of three workgroups: Prediabetes, type 1 diabetes, and type 2 diabetes. Discussion on the fourth subject area, gestational diabetes, was deferred until experts could be consulted.

Throughout the next several months, staff of the three agencies partnering with the DAC continued to compile data for the report. This included subject matter experts on gestational diabetes and school health. The partner agencies and several members of the DAC met on August 25, 2016 – the first anniversary of their initial organizational meeting – to review the draft report. When all requested changes and other updates were incorporated, the report was sent back to all DAC members and the partner agencies for final review. From start to finish, the report has been a collaborative project that has strengthened the partnership between the key stakeholders.

Diabetes in Florida

In Florida, it is estimated that over 2.4 million people have diabetes and over 5.8 million have prediabetes. There are different types of diabetes, and while the risk factors and health outcomes vary based on the specific type, all types must be managed carefully. Type 1 diabetes is an incurable auto-immune disease, where the body attacks the insulin-producing beta cells in the pancreas. Insulin must be injected daily or infused continuously; without external insulin, an individual with type 1 diabetes will die. Type 2 diabetes is a metabolic disease, where the body either does not produce enough insulin to meet daily needs or develops resistance to the insulin produced. Gestational diabetes develops during pregnancy and increases the risk of an individual developing type 2 post pregnancy.

The following section discusses the scope and impact of diabetes in Florida. Data for this section were compiled from multiple sources, including national health surveys, state-based telephone surveys, vital statistics, and administrative health care data. These data provide a comprehensive picture of the prevalence of diabetes, as well as its associated health complications, overall and within specific populations. More detailed information about each of the data sources is available in Appendix A.

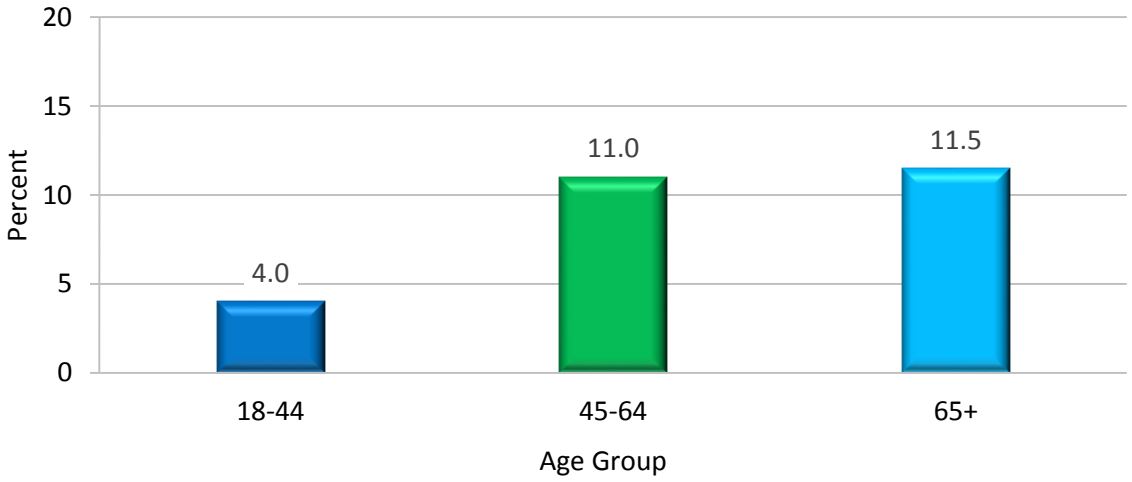
Statewide Prevalence of Prediabetes and Diabetes

Prediabetes

Prediabetes is a serious health condition that increases the risk of developing type 2 diabetes, heart disease and stroke. People with prediabetes are 5 to 20 times more likely to develop type 2 diabetes than someone with normal blood glucose (blood sugar) levels.[20] The CDC estimates that 1 in 3 adults nationally have prediabetes; however, 9 out of 10 people who have prediabetes are unaware that they have it. The following data from the 2014 Behavioral Risk Factor Surveillance System (BRFSS) include individuals who report that they have ever been told by a doctor, nurse, or other health professional that they have prediabetes. The BRFSS is a telephone-based survey overseen by the CDC that looks at behavioral risk factors among adults. BRFSS results are under-reported due to lack of information and awareness about prediabetes.

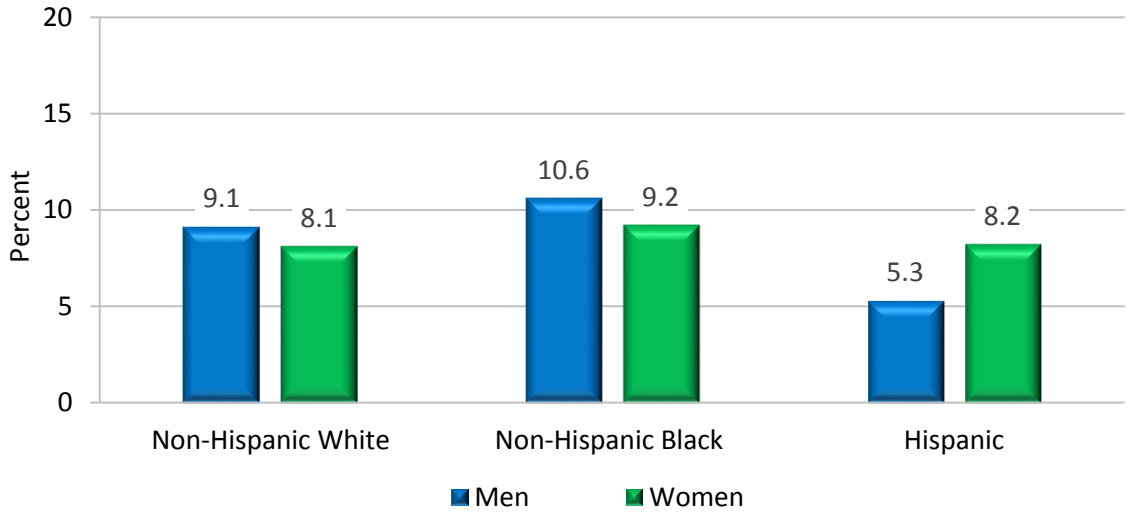
In 2014, approximately one out of 12 Florida adults (8.3%) had ever been diagnosed with prediabetes. The prevalence of prediabetes did not differ between men (8.2%) and women (8.4%). The prevalence of prediabetes increases with age (Figure 1). Florida adults ages 18 to 44 (4.0%) had a statistically significant lower prevalence of prediabetes compared to Florida adults ages 45 to 64 (11.0%) and Florida adults ages 65 and older (11.5%) (Figure 1).

Figure 1. Florida Prevalence of Prediabetes by Age Group, BRFSS 2014



The prevalence of prediabetes among Florida adults did not differ significantly by race/ethnicity in 2014. The prevalence of prediabetes was 8.6 percent among non-Hispanic whites, 9.8 percent among non-Hispanic blacks, and 8.6 percent among Hispanics. Figure 2 shows the difference in prevalence of prediabetes by gender and by race/ethnicity. Hispanic men (5.3%) had the lowest prevalence of prediabetes in 2014.

Figure 2. Florida Prevalence of Prediabetes by Gender by Race/Ethnicity, BRFSS 2014



The prevalence of prediabetes did not differ significantly by income or education, but estimates were slightly higher for those with lower levels of education and income. In 2014, the prevalence of prediabetes was 9.0 percent among Florida adults with an annual household income less than $25,000, 8.4 percent for those with an annual household income between $25,000 and $49,999, and 8.0 percent

among those with an annual household income of $50,000 or greater. The prevalence of prediabetes was 8.8 percent among individuals with less than high school education, 8.4 percent among those who graduated high school or earned a GED, 8.2 percent among those who attended some college, and 8.1 percent among those with a college degree.

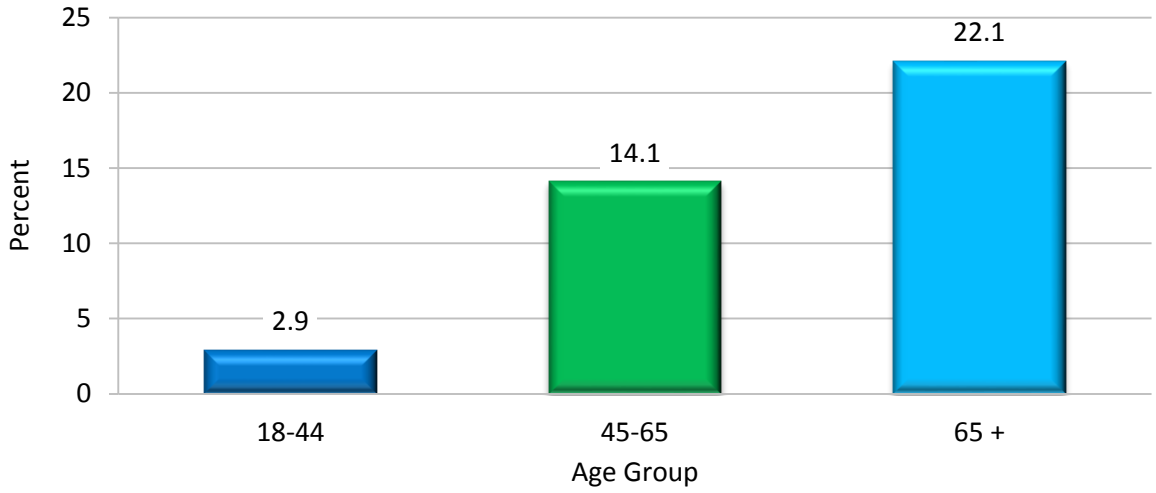
In 2013, three counties (Martin, Miami-Dade, and Palm Beach) had a prediabetes prevalence statistically lower than the state average. No county had a prediabetes prevalence statistically higher than the state average.

Adult Diabetes

Diabetes is a lifelong disease that affects the way the body produces and/or uses insulin. People with diabetes either don't make enough insulin (type 1 diabetes) or can't use insulin properly (type 2 diabetes). Type 2 diabetes accounts for about 90-95 percent of all diagnosed cases of diabetes, and type 1 diabetes accounts for about 5 percent.[21] The following data from the BRFSS includes individuals who report that they have ever been told by a doctor, nurse, or other health professional that they have diabetes, including both type 1 and type 2.

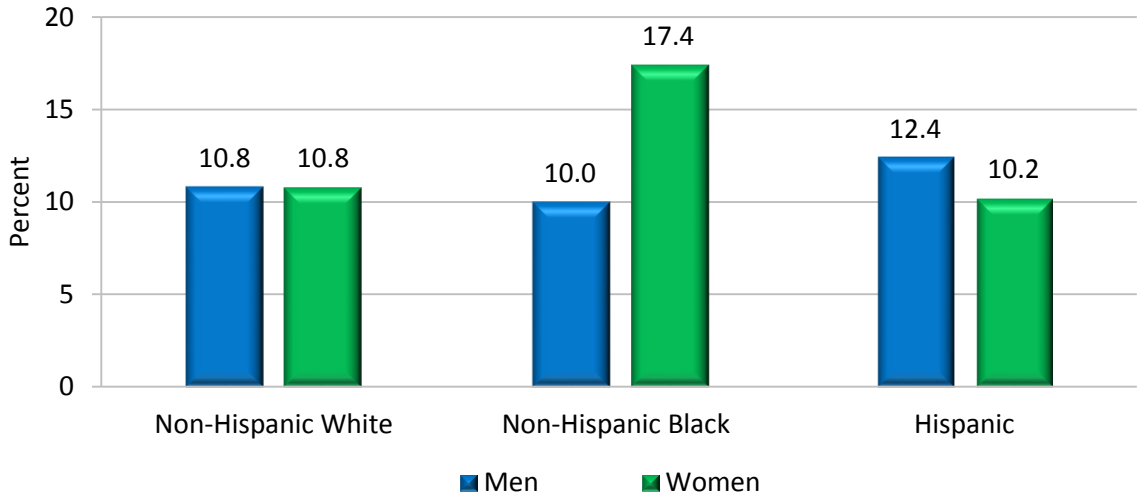
Over the past 20 years, the prevalence of diabetes among Florida adults more than doubled, increasing from 5.2 percent in 1995 to 11.2 percent in 2014. The prevalence of diabetes among Florida adults (11.2%) was higher than the national average of 10.1 percent in 2014.[22] Diabetes prevalence among Florida women was 11.5 percent compared to 10.8 percent among Florida men in 2014. Like prediabetes, the prevalence of diabetes also increases statistically with age. In 2014, only 2.9 percent of Florida adults ages 18 to 44 reported having ever been diagnosed with diabetes compared to 14.1 percent of adults ages 45 to 64 and 22.1 percent of adults ages 65 and older (Figure 3).

Figure 3: Florida Prevalence of Diabetes by Age Group, BRFSS 2014



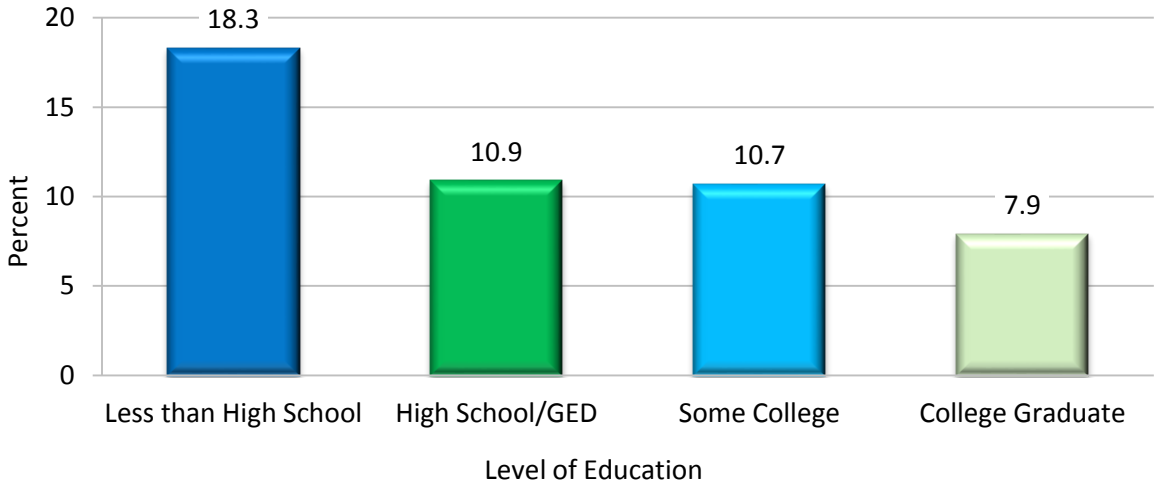
In 2014, the prevalence of diabetes was highest among non-Hispanic blacks (14.1%), compared to non-Hispanic whites (10.8%) and Hispanics (11.3%). However, when looking at diabetes prevalence race/ethnicity and gender, a different picture emerges. The prevalence of diabetes among non-Hispanic black men (10.0%) was slightly lower than non-Hispanic white men (10.8%) and Hispanic men (12.4%). On the other hand, the prevalence of diabetes among non-Hispanic black women (17.4%) was statistically higher than non-Hispanic white women (10.8%) and Hispanic women (10.2%) (Figure 4).

Figure 4: Florida Prevalence of Diabetes by Gender by Race/Ethnicity, BRFSS 2014



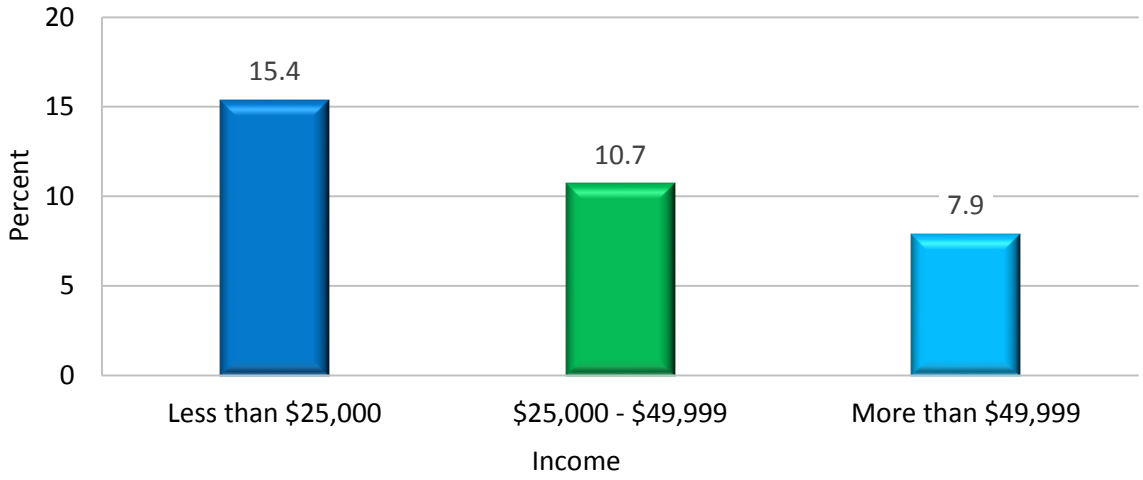
Differences in prevalence of diabetes are also observed when considering socioeconomic factors such as education and income. Florida adults with less than high school education (18.3%) have a statistically higher prevalence of diabetes when compared to adults with a high school education or GED (10.9%), adults who attended some college (10.7%), and adults who graduated college (7.9%) (Figure 5).

Figure 5. Florida Prevalence of Diabetes by Education Level, BRFSS 2014



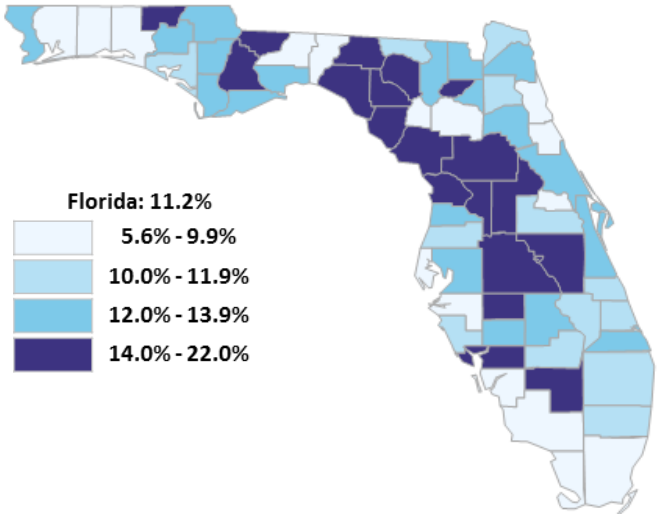
In 2014, the prevalence of diabetes among Florida adults living in households with an annual income less than $25,000 (15.4%) was statistically higher than those with an annual household income between $25,000 and $49,999 (10.7%) and those with an annual household income of $50,000 or greater (7.9%) (Figure 6).

Figure 6. Florida Prevalence of Diabetes by Household Income Level, BRFSS 2014



The prevalence of diabetes varies geographically across the state. In 2013, five counties (Alachua, Collier, Gilchrist, Leon, and Monroe) had a diabetes prevalence statistically lower than the state average and five counties (Gadsden, Hardee, Levy, Madison, and Polk) had a diabetes prevalence statistically higher than the state average. More than one out of five adults in Gadsden County (20.8%) reported having been diagnosed with diabetes.

Map 1. Florida Prevalence of Diabetes by County, BRFSS 2013



Youth Diabetes

Data sources about diabetes among youth statewide are limited. More than 18,000 new cases of type 1 diabetes and more than 5,000 new cases of type 2 diabetes are estimated to be diagnosed among US youth younger than age 20 each year.[23] The National Child Health Survey estimates that approximately 228,480 children ages 0 to 17 (0.3%) currently have diabetes.[24] Applying this estimate to Florida's population, approximately 12,400 children ages 0 to 17 are living with diabetes.

School Health Services

In cooperation with the Department of Education, local school districts, and local community partners, the Florida Department of Health and local School Health Services Programs provide the services mandated in sections 381.0056, 1006.062 and 1002.20(3)(j), Florida Statutes, and Florida Administrative Code Rule 6A-6.0253. School health services are intended to minimize health barriers to learning for public school students in pre-kindergarten through 12th grade. Annually, county school health programs report data on student health conditions and services provided.

In 2014-2015, there were 7,525 students with reported diabetes in Florida schools, of which 5,804 required insulin administration. School health staff provided an estimated 596,592 carbohydrate-counting services, 679,716 insulin administration services, and 1,063,116 glucose monitoring services. These service counts do not include self-administered diabetes management by students authorized to self-carry their diabetes care equipment and supplies.

During 2014-2015, the state average registered professional school nurse (RN) to student ratio in Florida was one RN to 2,170 students, and the RN to school ratio was one RN to 2.9 schools. Due to these high caseloads, student diabetes services are commonly provided by unlicensed assistive personnel (UAP), who may be nursing assistants, health aides or technicians, or school staff (such as office clerks, administrative staff, teachers, coaches, bus drivers, and others) who have been designated by the principal to assist with medications and medical procedures. The RN-to-student ratio recommended by the National Association of School Nurses is one RN for every 750 healthy students and one RN for every 225 students requiring daily professional nursing services.[25] A 2016 policy statement from the American Academy of Pediatrics recommends a full-time RN in every school.[26]

To assist RNs who provide direct services to students with diabetes and those who delegate these services to UAPs, the Department of Health published the Guidelines for the Care and Delegation of Care for Students with Diabetes in Florida Schools - January 2015.[27] These guidelines were developed in collaboration with a stakeholder workgroup of state and local members from both the public and private sector, and may be accessed on the Department of Health website.

Diabetes and Pregnancy

Gestational diabetes is a form of diabetes that develops only during pregnancy. Gestational diabetes 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 mother and baby, including preeclampsia, premature birth, cesarean delivery, and higher risk of birth

injury. Poorly managed pre-existing diabetes also increases the risk of birth defects, miscarriage, or stillbirth, while gestational diabetes puts both mother and baby at a higher risk of developing type 2 diabetes later in life.[28]

According to data from the 2013 Pregnancy Risk Assessment Monitoring System (PRAMS), 4.0 percent of recent mothers in Florida reported having pre-existing diabetes before their most recent pregnancy, while 9.8 percent reported having gestational diabetes during their most recent pregnancy.[29]

Diabetes among the Medicaid Population

For this report, a series of tables was prepared by the state of Florida Agency for Health Care Administration's (AHCA) Division of Medicaid (Medicaid), Bureau of Medicaid Data Analytics (MDA). These tables relate to the occurrence and trend of diabetes – type 1, type 2, any type or gestational – in the state of Florida Medicaid population, both children and adults. All data fall into one of two categories: fee-for-service (FFS) data and managed care plan encounter data or simply encounter data. Where possible, the information in the tables which follow was derived from both FFS data and encounter data. Unlike FFS data where payment is based on these data, encounter data does not drive payment to the managed care plans. As such, care should be taken in the interpretation of any results that are dependent on the encounter data.

Medicaid Adult Diabetes

Table 1 shows the occurrence of claims or encounters with type 1 and type 2 diabetes among Florida adult Medicaid members (ages 18 and older) over time from State Fiscal Year (SFY) 2009-2010 to SFY 2014-2015. The numbers of cases of type 1 and type 2 diabetes have all increased over time in keeping

Table 1. Number of Florida Adult Medicaid Members (Ages 18 and Older) with Diabetes Claims, SFY 2009-10 to SFY 2014-15

Year	Number of Adults	
	Type 1	Type 2
SFY 09/10	27,570	93,949
SFY 10/11	21,859	79,348
SFY 11/12	24,312	92,547
SFY 12/13	27,722	121,504
SFY 13/14	28,922	138,146
SFY 14/15	19,899	120,945

with population growth in Florida. SFY 2010-2011 stands out for having decreased from the previous year, followed by an increase again in SFY 2011-2012. A decrease also took place in SFY 2014-2015. In SFY 2014-2015, there were 19,899 Florida adult Medicaid members with claims or encounters with type 1 diabetes and 120,945 members with type 2 diabetes.

Medicaid Youth Diabetes (0-17 years of age)

Table 2 shows the occurrence claims or encounters of type 1 and type 2 diabetes among Florida child Medicaid members (ages 0 to 17) over time from State Fiscal Year (SFY) 2009-2010 to SFY 2014-2015. The numbers of cases of type 1 and type 2 diabetes have all increased over time in keeping with population growth in Florida. In SFY 2014-2015, there were 3,884 Florida child Medicaid members with claims or encounters with type 1 diabetes and 3,918 members with type 2 diabetes.

Table 2. Number of Florida Medicaid Child Members (Ages 0 to 17) with Diabetes Claims, SFY 2009-10 to SFY 2014-15

Year	Number of Children	
	Type 1	Type 2
SFY 09/10	2,486	2,756
SFY 10/11	2,327	2,529
SFY 11/12	2,680	3,373
SFY 12/13	3,518	4,269
SFY 13/14	3,648	4,545
SFY 14/15	3,884	3,918

Medicaid Diabetes and Pregnancy

Table 3 presents the occurrence of gestational diabetes, preexisting diabetes, or neither among Florida Medicaid female members by SFY 2009-2010 through SFY 2014-2015. It may be seen that the number of women with gestational diabetes and the number with preexisting diabetes increased steadily over the course of the 6-year window.

In SFY 2014-2015, there were a total of 102,964 births among Florida Medicaid members. While the majority of new mothers did not experience any diabetes during pregnancy, approximately 1 percent had diabetes prior to becoming pregnant, and 4 percent experienced gestational diabetes.

Table 3: Diabetes and Pregnancy Among Florida Medicaid Women Members, All Ages, SFY 2009-10 to SFY 2014-15

Year	Women with Gestational Diabetes	Women with Pre-existing Diabetes	Women with Neither Gestational Diabetes nor Pre-existing Diabetes
SFY 09/10	2,342	333	81,045
SFY 10/11	2,280	298	70,505
SFY 11/12	2,804	430	80,800
SFY 12/13	3,315	533	94,612
SFY 13/14	3,704	571	99,641
SFY 14/15	3,786	653	102,964

Diabetes among Individuals Covered by the Division of State Group Insurance

The Division of State Group Insurance (DSGI) offers and manages a comprehensive package of health and welfare insurance benefits for active and retired state employees and their families. Individuals with one or more claims with a diabetes code during a calendar year were included in the counts presented in the following section.

DSGI Adult Diabetes

In 2015, there were 2,909 adults with type 1 diabetes and 28,407 adults with type 2 diabetes whose health care visits were covered by the DSGI (Table 4).

Table 4. Number of Adults (Ages 18 and Older) Covered by DSGI with One or More Diabetes Claims during the Calendar Year, 2012-2015

Year	Number of Adults	
	Type 1	Type 2
2012	3,417	28,079
2013	3,376	29,161
2014	3,397	31,179
2015	2,909	28,407

DSGI Youth Diabetes (0-17 years of age)

In 2015, there were 212 children with type 1 diabetes and 507 children with type 2 diabetes whose health care visits were covered by the DSGI (Table 5).

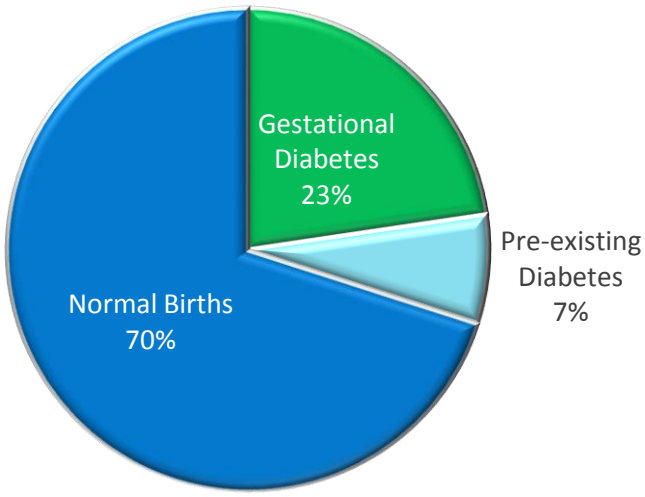
Table 5. Number of Children (Ages 0 to 17) Covered by DSGI with One or More Diabetes Claims during the Calendar Year, 2012-2015

Year	Number of Children	
	Type 1	Type 2
2012	221	580
2013	233	569
2014	265	890
2015	212	507

DSGI Diabetes and Pregnancy

In 2015, there were a total of 2,140 births among individuals covered by DSGI. While the majority (70%) of new mothers did not experience any diabetes during pregnancy, approximately 7 percent had diabetes prior to becoming pregnant, and nearly one out of four women (23%) experienced gestational diabetes (Figure 7).

Figure 7. Percent of Births Covered by DSGI by Diabetes Status, 2015



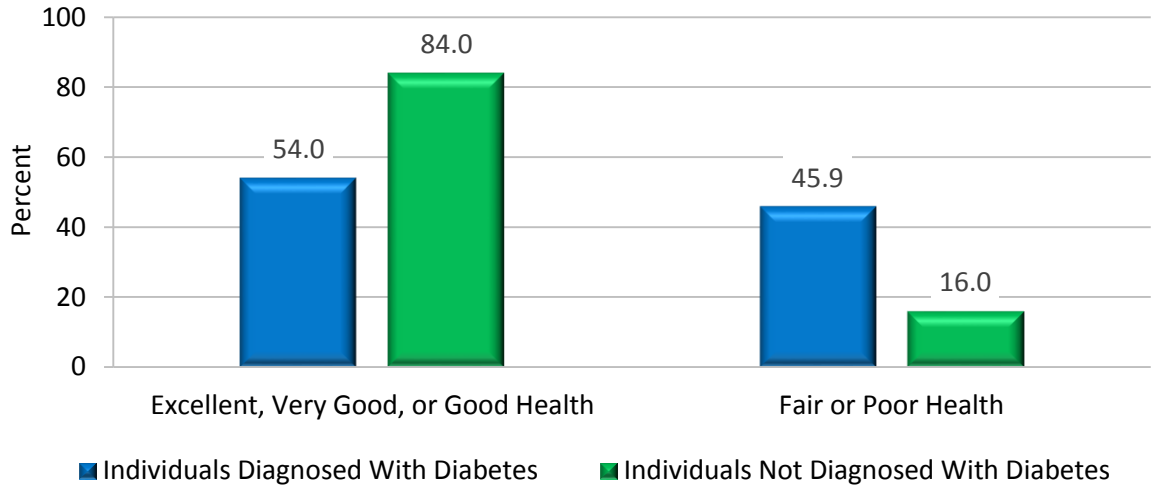
Public Health Consequences and Financial Impact of Diabetes

Diabetes and related complications create significant individual, societal, and financial burden. People with diabetes are twice as likely to have heart disease or a stroke as people without diabetes, and at an earlier age.[14] Diabetes is the leading cause of kidney failure, lower-limb amputations, and adult-onset blindness. More than 20 percent of national health care spending is for people with diagnosed diabetes.[14] This section of the report highlights some of the ways diabetes impacts Florida's residents, health systems, and economy.

Health Status

Individuals with diabetes may have a lower health status when compared to individuals who do not have diabetes. Among adults with diabetes, 54.0 percent reported that their health is excellent, very good, or good, compared to 84 percent of adults without diabetes. Additionally, 46 percent of adults with diabetes reported that their health is fair or poor, compared to 16 percent of adults without diabetes in 2013 (Figure 8).

Figure 8. Self-Reported Health Status by Diabetes Status, Florida, BRFSS 2013

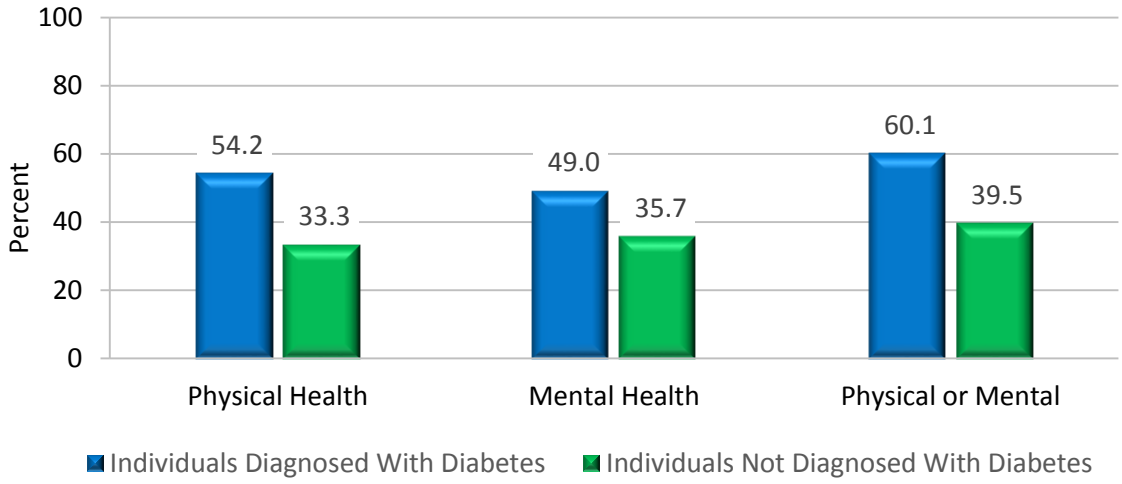


Physical and Mental Health

Diabetes can influence both physical and mental health. More than half of adults with diabetes (54.2%) reported that their physical health was not good for two or more weeks during the past month, compared to one out of three adults without diabetes (33.3%). Approximately half of adults with diabetes (49.0%) reported that their mental health was not good for two or more weeks during the past month, compared to 35.7 percent of adults without diabetes. When assessing physical and mental health combined, three out of five adults with diabetes (60.1%) reported that their physical or mental

health was not good for two or more weeks during the past month, compared to two out of five adults without diabetes (39.5%) (Figure 9).

Figure 9. Self-Reported Poor Physical or Mental Health Greater than 14 Days in One Month by Diabetes Status, Florida, BRFSS 2013



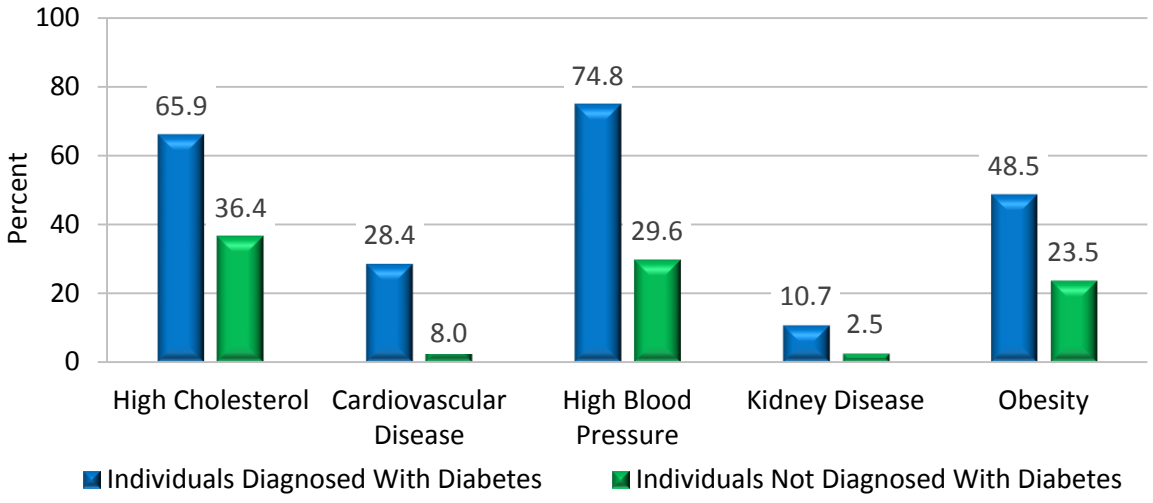
Comorbidities

Several chronic conditions are commonly associated with diabetes. Some of these comorbidities include high cholesterol, high blood pressure, cardiovascular diseases, kidney diseases, and obesity. Figure 10 depicts the prevalence of chronic condition by diabetes status in Florida.

In 2013, Florida adults who have been diagnosed with diabetes had a significantly higher prevalence of high cholesterol, cardiovascular disease, high blood pressure, kidney disease, and obesity than Florida adults who have never been diagnosed with diabetes (Figure 10).

- Nearly two-thirds of adults with diabetes (65.9%) have high cholesterol, compared to a little more than one-third of adults who do not have diabetes (36.4%).
- More than one out of four adults with diabetes (28.4%) have a history of cardiovascular diseases, including heart attack, stroke, and coronary heart disease, compared to fewer than one out of 12 adults without diabetes (8.0%).
- Approximately three out of four adults with diabetes (74.6%) have high blood pressure, compared to 29.6 percent of adults without diabetes.
- One out of ten adults with diabetes (10.7%) have kidney disease compared to one out of 40 adults without diabetes (2.5%)
- Nearly half of adults with diabetes (48.5%) are obese compared to fewer than one out of four adults who do not have diabetes (23.5%).

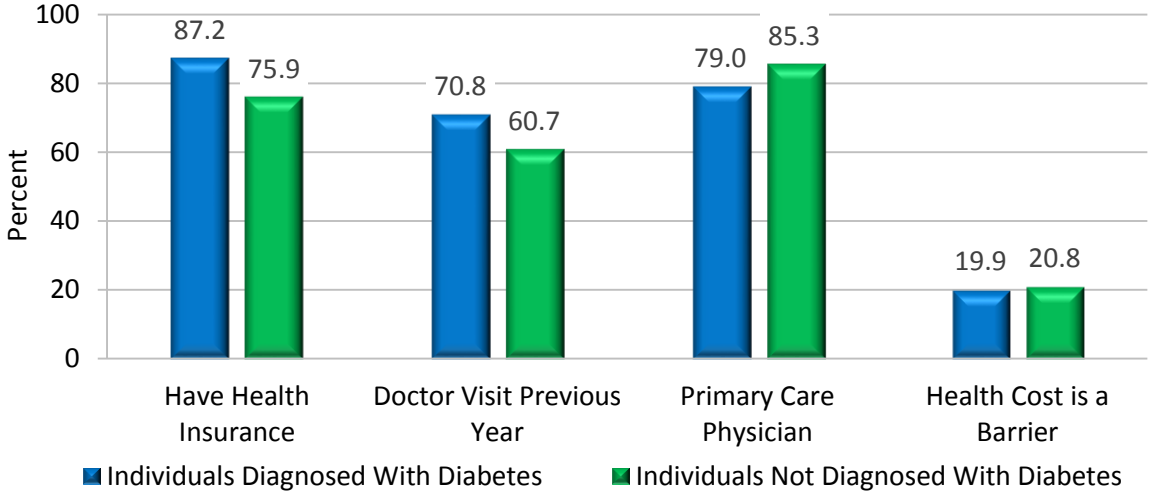
Figure 10. Chronic Conditions by Diabetes Status, Florida, BRFSS 2013



Health Care Access

In 2013, adults with diabetes have a higher prevalence of having health insurance (87.2%), having had a doctor visit in the past year for a routine check-up (86.5%), and a lower prevalence of having one person they think of as their personal doctor or health care provider (79.0%) compared to adults without diabetes (75.9%, 68.2%, and 85.3%, respectively). Approximately one out of five adults reported that there was a time during the past year when they needed to see a doctor but could not because of cost, regardless of diabetes status (Figure 11).

Figure 11. Health Care Access by Diabetes Status, Florida, BRFSS 2013



Emergency Department Visits and Hospitalizations

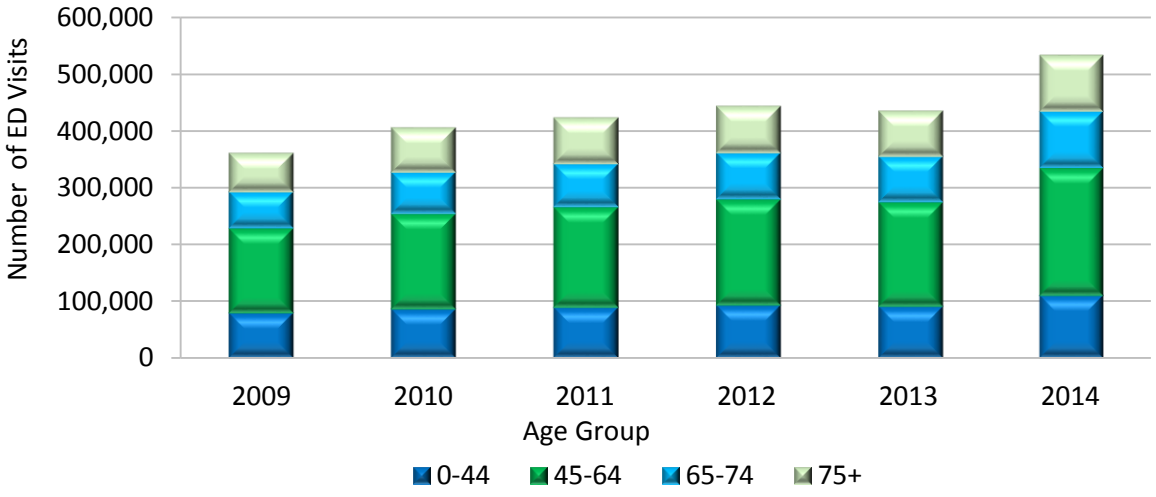
Diabetes-related emergency department (ED) visits and subsequent hospitalization occur as a result of serious health complications that often accompany undetected or poorly controlled diabetes. This includes cardiovascular disease, dehydration, ulcers, kidney problems, nerve damage, blindness, and lower-limb amputation. Many of these ED visits and hospitalizations could be avoided with improved access to care, appropriate diagnosis and monitoring of diabetes in in the physician's office, increased adherence to treatment regimens, and diabetes self-management education (DSME).

The following section presents Florida data on ED visits with diabetes as any-listed diagnosis and hospitalizations with diabetes as first-listed diagnosis using the International Classification of Diseases, Clinical Modification, 9th Revision (ICD-9-CM) diagnosis code 250. Although hospitalizations with diabetes as first-listed diagnosis are the main focus of this section, it is important to note that the number of hospitalizations substantially increases when cases with diabetes as any-listed diagnosis are included. ED and inpatient hospitalization data sets from the Agency for Health Care Administration (AHCA) were used for this analysis. Additional information about these data is available in Appendix A.

ED Visits over Time

From 2009 to 2014, the number of ED visits in Florida with diabetes as any-listed diagnosis increased by 47.2 percent from 362,854 to 534,005. During this time, the largest number of ED visits occurred among Floridians ages 45-64 years (Figure 12). However, the largest rate increase was seen among adults ages 75 and older. The age-specific ED rate with diabetes as any-listed diagnosis for adults ages 75 and older increased from 421.8 per 10,000 in 2009 to 608.7 per 10,000 in 2014, a 44 percent increase.

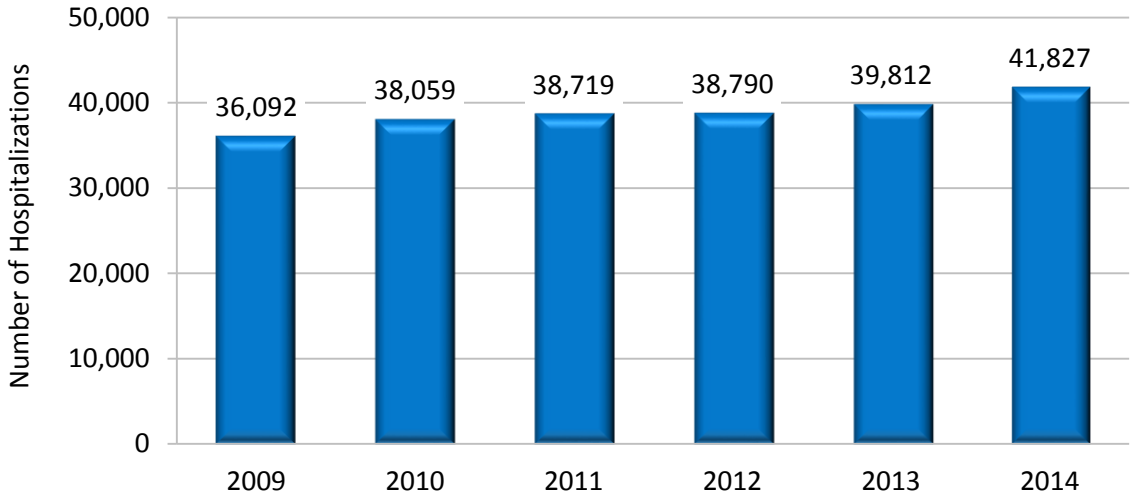
Figure 12. Total Number of ED Visits with Diabetes as Any-Listed Diagnosis by Age Group, AHCA 2009-2014



Hospitalizations over Time

Over the last six years, the number of hospitalizations in Florida with diabetes as first-listed diagnosis increased by 15.9 percent, from 36,092 in 2009 to 41,827 in 2014 (Figure 13). During this time, the age-adjusted rate increased by 20.5 percent, from 17.4 per 10,000 in 2009 to 19.3 per 10,000 in 2014. This means that the increase seen in the number of hospitalizations is not due solely to the growing population.

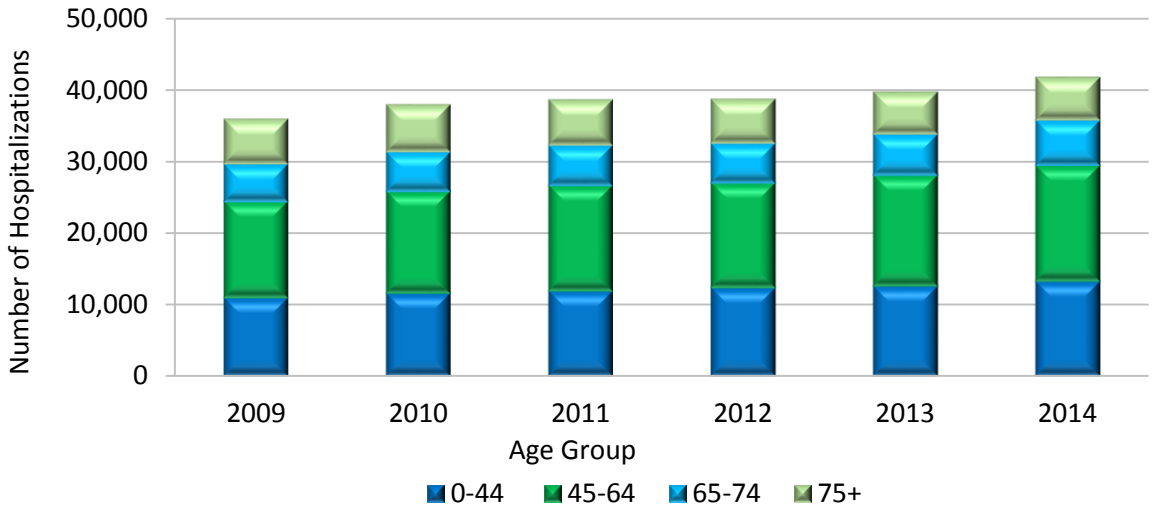
Figure 13. Total Number of Hospitalizations with Diabetes as First-Listed Diagnosis, AHCA 2009-2014



Hospitalizations by Age Group

From 2009 to 2014, the largest number of hospitalizations with diabetes as first-listed diagnosis occurred among Floridians ages 45-64 years. This number increased by 20.0 percent from 13,497 in 2009 to 16,200 in 2014. During this time, the number of hospitalizations among Floridians ages 0-44 years and 65-74 years also increased by 20.7 percent and 19.2 percent, respectively. A slight decrease (4.2%) occurred in the number of hospitalizations among Floridians ages 75 years and older during this time (Figure 14).

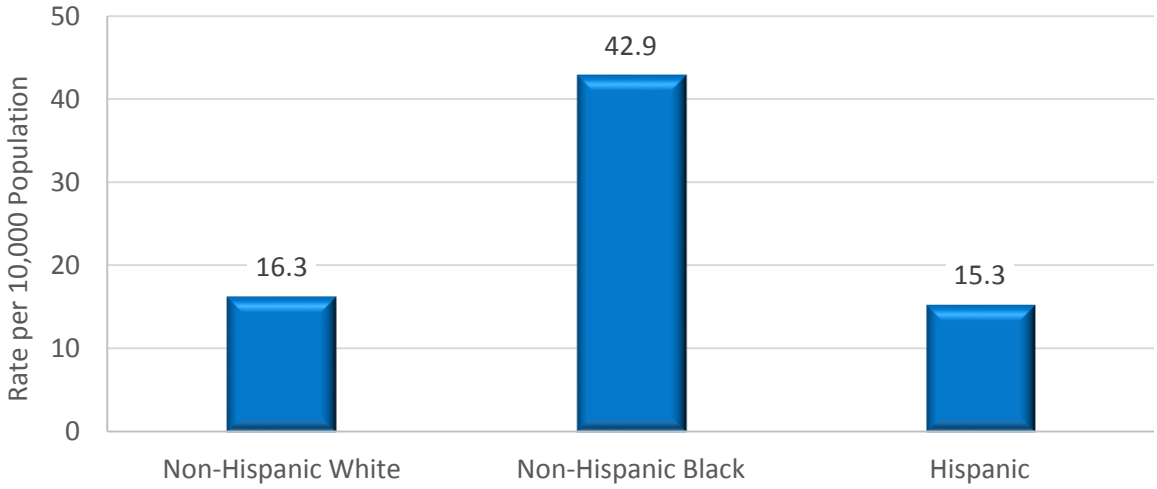
Figure 14. Total Number of Hospitalizations with Diabetes as First-Listed Diagnosis by Age Group, AHCA 2009-2014



Hospitalizations by Race/Ethnicity

Large disparities exist in hospitalization rates by race/ethnicity. In 2014, the age-adjusted hospitalization rate with diabetes as first-listed diagnosis for non-Hispanic blacks (42.9 per 10,000 population) was more than double that of non-Hispanic whites (16.3 per 10,000 population) and Hispanics (15.3 per 10,000 population) (Figure 15).

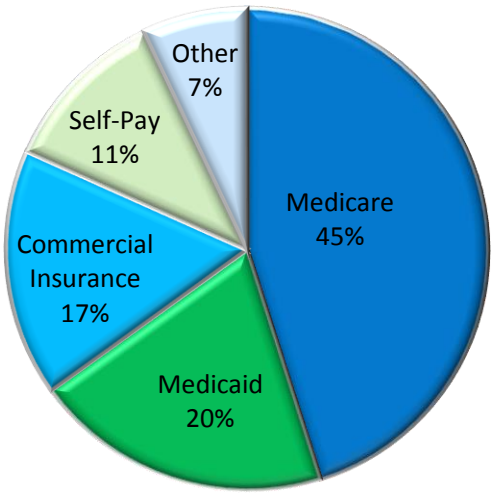
Figure 15. Age-adjusted Hospitalization Rate per 10,000 Population with Diabetes as First-Listed Diagnosis by Race/Ethnicity, AHCA 2014



Hospitalizations by Payer Type

In 2014, Medicare covered the largest number of hospitalizations with diabetes as first-listed diagnosis (45%) followed by Medicaid (20%) and commercial insurance (17%). The fewest number of hospitalizations were covered by self-pay and other funds (11% and 7%, respectively) (Figure 16).

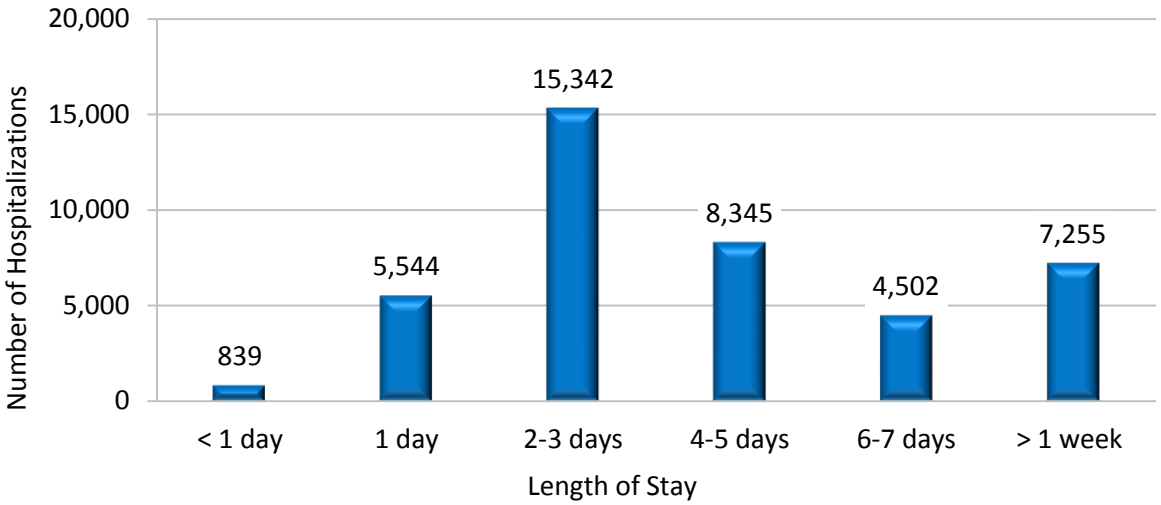
Figure 16. Hospitalizations with Diabetes as First-Listed Diagnosis by Payer Type, AHCA 2014



Hospitalizations by Length of Stay

The average length of stay for hospitalizations with diabetes as first-listed diagnosis was 5.1 days in 2014. More than half of patients (52%) admitted to the hospital for diabetes were discharged within three days. Of the remaining patients admitted to the hospital for diabetes, 20 percent were discharged within four to five days, 11 percent were discharged within six to seven days, and 17 percent were discharged more than one week later (Figure 17).

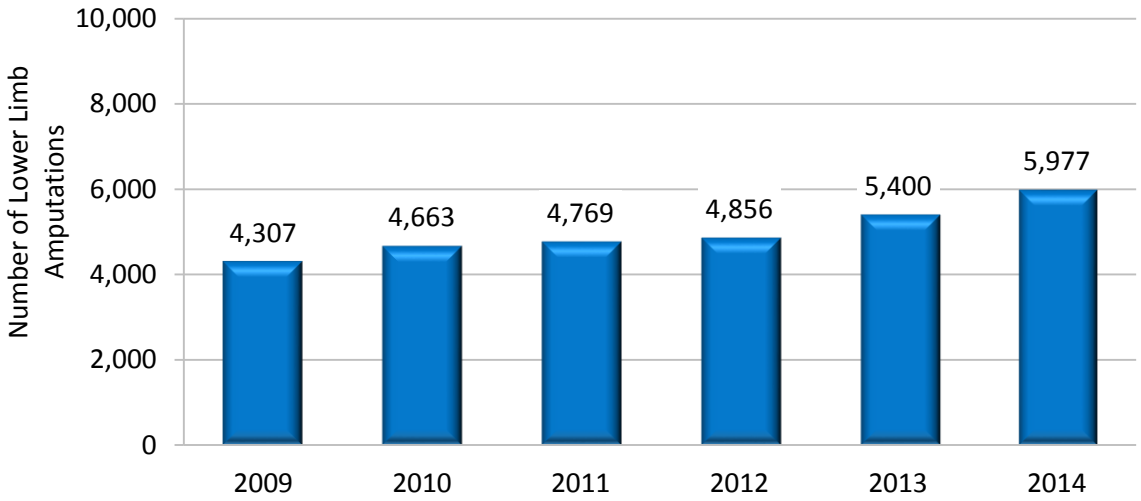
Figure 17. Length of Stay for Hospitalizations with Diabetes as First-Listed Diagnosis, AHCA 2014



Lower Limb Amputation Hospitalizations

From 2009 to 2014, the number of lower limb amputation hospitalizations with diabetes as any-listed diagnosis increased by 38.8 percent, from 4,307 in 2009 to 5,977 in 2014 (Figure 18).

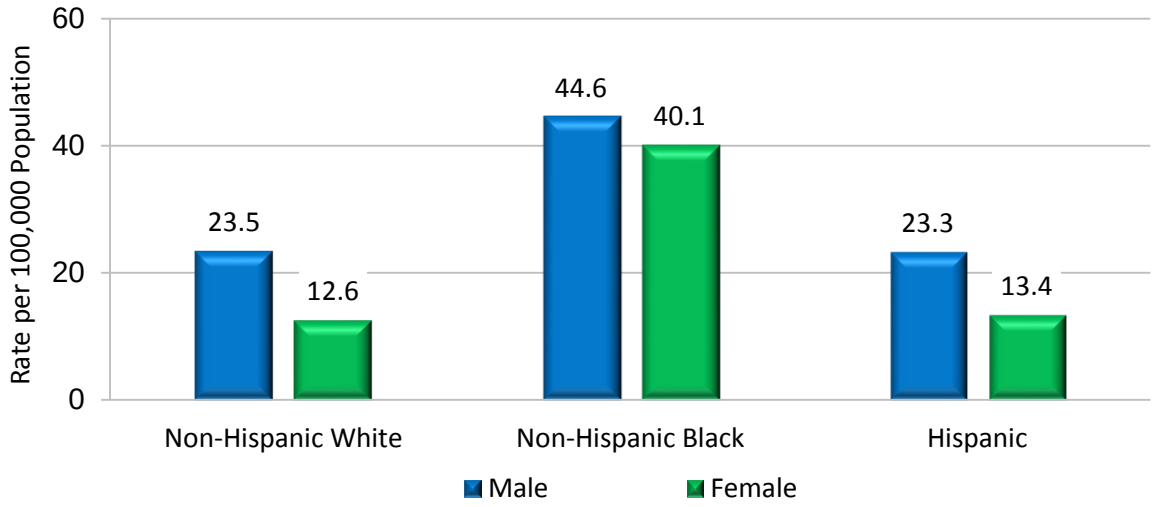
Figure 18. Number of Lower Limb Amputation Hospitalizations with Diabetes as Any-Listed Diagnosis, AHCA 2009-2014



Diabetes Mortality

Diabetes is the seventh leading cause of death in Florida. In 2014, there were 5,324 deaths due to diabetes. The diabetes mortality rate has remained mostly level over the past several years. However, when looking at the age-adjusted diabetes mortality rates by gender and by race/ethnicity, large disparities are seen. Males have an age-adjusted diabetes mortality rate of 24.9 per 100,000 population, higher than the female rate of 15.3 per 100,000 population. Non-Hispanic blacks have an age-adjusted diabetes mortality rate nearly 2.5 times that of non-Hispanic whites and Hispanics. Figure 19 shows the age-adjusted diabetes mortality rate by gender by race/ethnicity.

Figure 19. Age-Adjusted Diabetes Mortality Rate per 100,000 by Gender by Race/Ethnicity, AHCA 2014



Financial Consequences

In 2012, the American Diabetes Association published an article that estimated the annual national cost of diagnosed diabetes at $245 billion, including $176 billion in direct medical costs and $69 billion in reduced productivity (indirect costs). The largest components of medical expenditures are hospital inpatient care (43 percent of the total medical cost) and prescription medications to treat the complications of diabetes (18%). Indirect costs include increased absenteeism ($5 billion) and reduced productivity while at work ($20.8 billion) for the employed population, reduced productivity for those not in the labor force ($2.7 billion), inability to work as a result of disease related disability ($21.6 billion), and lost productive capacity due to early mortality ($18.5 billion).[30]

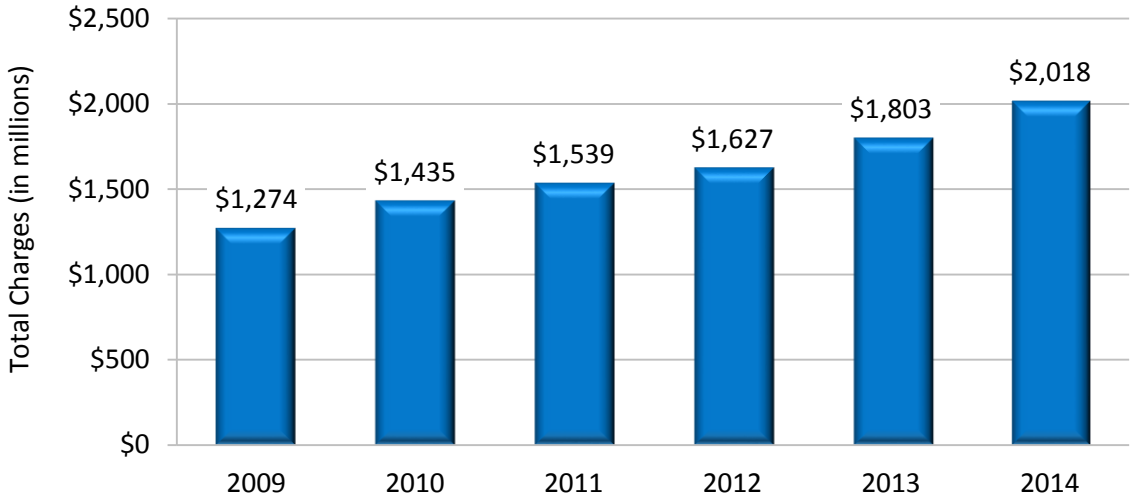
It is estimated that in 2012 the total cost of diabetes in Florida was $24.3 billion, with $19.3 billion attributed to direct medical expenses for diagnosed and undiagnosed diabetes, prediabetes, and gestational diabetes and $4.53 billion attributed to indirect costs. People with diabetes have medical expenditures approximately 2.3 times higher than those who do not have diabetes.[31] This not only creates a significant problem for the health care system, but also generates health inequity and loss of quality life for people with diabetes.

Hospitalization Charges

The median charge per hospitalization with diabetes as the first-listed diagnosis was $29,619 in 2014. The total charges for hospitalizations with diabetes as the first-listed diagnosis increased by 58.4 percent, from $1.3 billion in 2009 to $2.0 billion in 2014 (Figure 20). As stated previously, the number of hospitalizations only increased by 15.9 percent during this same time period, meaning that the cost per hospitalization with diabetes as the first-listed diagnosis is increasing.

The total charges for hospitalizations with diabetes as any-listed diagnosis increased by 47.0 percent, from $13.8 billion in 2009 to $20.4 billion in 2014. The number of hospitalizations with diabetes as any listed diagnosis only increased by 10.5 percent during this same time period, meaning that the cost per hospitalization with diabetes as any-listed diagnosis is increasing.

Figure 20. Total Charges for Hospitalizations with Diabetes as First-Listed Diagnosis, AHCA 2009-2014



Medicaid Costs

In SFY 2014-2015, the total Medicaid cost of diabetes was $142 million. Table 6 provides a comparison of costs for select chronic conditions including hypertension, any diabetes, COPD, coronary heart disease, congestive heart failure, asthma less than 20 years of age and asthma 20 years of age and older. COPD treatment is most expensive at more than $250 million in Medicaid spending in SFY 2014-15. Diabetes is third most costly behind COPD and coronary heart disease. The Medicaid cost per member with diabetes was $1,079. It is important to remember that diabetes is a risk factor for, and a common co-morbid condition of, coronary heart disease. Expenditures from Managed Care Plans are self-reported in the encounter data and do not drive payments to the managed care plans, so caution should be used when using this information to draw inferences.

Table 6: Medicaid, Cost Comparison of Chronic Conditions, SFY 14/15

Chronic Condition	Total Medicaid Spending	Member Count	Cost Per Member
Hypertension	$117,547,851	186,499	$630.29
Diabetes - any	$142,765,863	132,267	$1,079.38
Coronary Heart Disease	$154,323,325	62,432	$2,471.86
COPD and Allied Conditions	$252,062,900	315,592	$798.70
Congestive Heart Failure	$70,087,705	25,479	$2,750.80
Asthma - Less than 20	$65,360,180	162,994	$401.00
Asthma - 20 and Over	$39,868,086	47,978	$830.97

Notes: Utilizes both fee-for-service (FFS) claims data and managed care organization (MCO) encounter data. Care should be taken in drawing inferences based on the encounter data. Gestational diabetes not included in this analysis. Chronic condition categories are not mutually exclusive.

Table 7 presents Medicaid inpatient hospital discharges for a set of ten specific diabetes complications as principal diagnosis. Diabetic ketoacidosis and hypoglycemic manifestations are the two most common complications in terms of percent of discharges, and among the least costly in terms of average charge, yet still the costliest in terms of total charges at $10.0 million and $12.5 million, respectively. The costliest diabetes complication hospitalizations are those with other coma ($14,416) and those with peripheral circulatory disorders ($11,592) as the primary diagnosis.

Table 7: Medicaid Inpatient Hospital Discharges with Specific Diabetes Complication as Principal Diagnosis, SYF 14/15

ICD-9-CM Diagnosis Code	Total Discharges	Percent of Discharges	Average Charge	Total Charges
(250.0) Without mention of complication	1,004	12.37%	$2,806	$2,816,940
(250.1) Ketoacidosis (DKA)	3,138	38.66%	$3,202	$10,046,301
(250.2) Hyperosmolarity	316	3.89%	$4,139	$1,307,860
(250.3) With other coma	22	0.27%	$14,416	$317,153
(250.4) With Renal Manifestations	207	2.55%	$7,046	$1,458,474
(250.5) With Ophthalmic manifestations	14	0.17%	$2,947	$41,252
(250.6) With Neurological Manifestations	1,190	14.66%	$4,550	$5,414,657
(250.7) With Peripheral Circulatory Disorders	328	4.04%	$11,592	$3,802,020
(250.8) With Hypoglycemic Manifestations	1,815	22.36%	$6,871	$12,470,522
(250.9) Unspecified Complications	83	1.02%	$3,141	$260,735
Total	**8,117**	**100%**	**$4,674**	**$37,935,916**

Notes: Utilizes both fee-for-service (FFS) claims data and managed care organization (MCO) encounter data. Care should be taken in drawing inferences based on the encounter data. Gestational diabetes not included in this analysis. Chronic condition categories are not mutually exclusive.

DSGI Costs

In 2015, the total DSGI combined cost for adults and youth with one or more type 1 or type 2 diabetes claims was $17 million. The total DSGI costs for type 1 diabetes (adults and youth combined) increased by 26.2 percent, from $3.6 million in 2012 to $4.6 million in 2015. During this same time, the number of clients covered by DSGI with one or more type 1 diabetes claims decreased by 14 percent from 3,638 to 3,121, respectively. Similarly, the total DSGI costs for type 2 diabetes (adults and youth combined) increased by 28.8 percent, from $9.6 million in 2012 to $12.5 million in 2015. During this same time, the number of clients covered by DSGI with one or more type 2 diabetes claims did not change greatly (28,659 in 2012 vs. 28,914 in 2015). From 2012 to 2015, the average cost per client covered by DSGI with one or more type 1 diabetes claims increased by 47 percent, while the average cost per client covered by DSGI with one or more type 2 diabetes claims increased by 29 percent (Table 8).

Table 8. Total Cost for Adults and Youth Covered by DSGI with One or More Diabetes Claims during the Calendar Year, 2012-2015

Year	Type 1		Type 2	
	Total	Average per Client	Total	Average per Client
2012	$3,646,318	$1,002	$9,625,820	$336
2013	$3,527,543	$977	$11,309,758	$380
2014	$4,270,689	$1,166	$11,233,645	$350
2015	$4,602,407	$1,475	$12,488,018	$432

State Agency Programs and Activities

The programs and activities implemented by each state agency help ameliorate the financial burden of diabetes and also improve the lives of people in Florida who have the disease. The programs, funding sources, and cost savings realized as a result of state agency initiatives are described below.

Department of Health

The Department of Health – Bureau of Chronic Disease Prevention promotes evidence-based programs for diabetes prevention and education. The bureau receives funding from the Centers for Disease Control and Prevention (CDC) through the "State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health (DP13-1305)" grant, referred to as 1305, to support diabetes prevention and diabetes self-management goals and objectives. The 1305 grant has four categories, or domains:

Domain 1: Epidemiology and Evaluation
Domain 2: Environmental Approaches
Domain 3: Clinical-Community Linkages
Domain 4: Health Systems

Most of the diabetes prevention and education initiatives are part of Domain 4: Health Systems. The bureau is staffed by one FTE and one OPS position who work full-time on diabetes initiatives. Additional support is provided by the bureau's epidemiology/evaluation staff and administrative support staff. Additionally, the Healthiest Weight Florida team and the diabetes team collaborate on projects at county health departments.

1305 – Health Systems

The focus of the Health Systems team is the awareness, prevention, and education, and management of diabetes and heart disease. These two chronic diseases share risk factors and steps for prevention. Integration of efforts increases feasibility and success. The Health Systems team incorporates diabetes awareness into its Heart Health Plus initiative, which will award $15,000 each to 17 county health departments for community-based initiatives in 2016-2017. The overall goal of this initiative is to improve the cardiovascular health of Floridians and contribute to the Million Hearts initiative by preventing one million heart attacks and strokes in the U.S. by December 2017.

Heart Health Plus aims to increase health equity by targeting counties in need of evidence-based interventions and prevention efforts. Risk factors such hypertension and obesity are associated with increased infant mortality and poor health outcomes for women of child-bearing age. Interventions to decrease health inequities will include smoking cessation, diabetes prevention and self-management education, and hypertension awareness activities.

Health Equity

Health Equity is the equal opportunity for all individuals to attain their highest level of health. The Health Systems team has taken part in various health equity trainings and webinars in order to be better equipped to align interventions to the needs of various groups of people. It has been discovered that current Diabetes Prevention Program (DPP) curricula focus on incorporating physical activity, but do not take into consideration the needs of persons with mobility limitations. The diabetes prevention team is collaborating with the Disability and Health Program to incorporate inclusive language in the CDC's existing standard DPP curriculum (e.g., adapted exercise examples, accessibility checklist for locations, list of methods to target outreach to disability populations). These modifications will allow for more equitable DPPs and will have a greater impact on reducing diabetes among persons with disabilities.

Diabetes Prevention

The National Diabetes Prevention Program (National DPP) is an evidence-based program based on a research study that proved type 2 diabetes can be prevented in people who are at high risk. The study demonstrated a 58 percent lower risk of developing type 2 diabetes among all participants; among participants over age 60, the risk is 71 percent lower.

Additional research supports the use of lifestyle/behavior change programs, including the DPP:

- The USPSTF also recommends referring adults who are overweight or obese and have additional cardiovascular risk factors (e.g., unhealthy cholesterol levels, high blood pressure, cigarette smoking, diabetes, lack of physical activity) to intensive behavioral counseling interventions that promote a healthful diet and physical activity. The DPP is one of two programs mentioned in the guidelines that can be delivered in either primary care or community settings.
- The Community Preventive Services Task Force recommends combined diet and physical activity programs for people at increased risk of type 2 diabetes.

To ensure fidelity to the evidence-based DPP, the CDC recognizes diabetes prevention programs that meet certain criteria. Programs can be added to the registry as "pending recognition" while they collect two years' worth of data showing participants achieve the desired results of 5-7 percent reduction in body weight over the year-long course. The bureau promotes the National DPP criteria by:

- Offering subawards to organizations whose programs are on the CDC registry of DPPs and to accredited and recognized diabetes self-management education (DSME) programs to establish DPPs. The purpose of the subawards is to increase provider referrals and increase access to quality diabetes prevention services. Table 9 shows the funds distributed during FY2016-2017.

Table 9. Programs Funded to Increase Provider Referrals and Access to Diabetes Prevention Programs

Organization	**County(ies)**	**Funding Amount**
Central Florida Regional Hospital	Seminole	$ 2,000
DOH-Bay County	Bay	$ 15,000
DOH-Hillsborough County	Hillsborough	$ 5,500
DOH-Lake County	Lake	$ 9,800
DOH-Santa Rosa County	Santa Rosa	$ 13,800
Lakeland Regional Health	Polk	$ 9,667
MELSAO, USA	Multiple	$ 6,500
Northwest Florida Diabetes and Nutrition Center	Okaloosa	$ 5,000
Sarasota Memorial Health Care System	Sarasota	$ 4,950
St. Joseph's Hospital	Hillsborough	$ 5,000
The Villages Health	Sumter, Lake, Marion	$ 5,675
YMCA of Florida's First Coast	Duval	$ 9,570
YMCA of Greater St. Petersburg	Pinellas	$ 4,437
YMCA, The SKY Family	Sarasota	$ 15,000
YMCA of the Suncoast	Pinellas	$ 13,324
YMCA, Tampa Metropolitan Area	Hillsborough	$ 8,280
TOTAL		**$133,503**

- Promoting the DPP through a social marketing campaign. The three goals of the campaign are to increase coverage of the DPP by health plans; increase health provider awareness of the benefit and availability of DPP; and increase consumer awareness of the risk of prediabetes and how to take action to prevent diabetes
- Collaborating with the Breast and Cervical Cancer Program (BCCP) at headquarters and at county health departments. This partnership equips health care providers with information about diabetes risk and encourages them to discuss diabetes with their BCCP clients and refer those who are at-risk to DPPs
- Encouraging county health departments to establish or partner with community organizations to establish a DPP and to develop referral policies

Diabetes Self-Management Education

For people who have diabetes, taking a quality DSME course delays or prevents complications such as kidney failure, blindness, and lower extremity amputations. DOH supports quality DSME that meets the national standards by offering subawards to organizations that want to build infrastructure to obtain recognition by the American Diabetes Association (ADA) or accreditation by the American Association of Diabetes Educators (AADE). Recognition or accreditation signifies that the organization offers quality DSME. Only organizations with recognition or accreditation are eligible for reimbursement. The bureau promotes DSME by:

- Offering subawards to organizations to build their DSME programs' infrastructure toward accreditation or recognition, including establishment of satellite sites in counties with limited access to quality DSME. A unique feature of the mini-grant program is provision of a mentor with auditing experience for either the ADA recognition process or the AADE accreditation process. Table 10 shows the funds distributed during FY2016-2017.
- Promoting awareness of DSME via telehealth as a mechanism for increasing access to quality DSME in rural communities
- Providing subawards to organizations in Florida to serve as a provider or consumer site for providing DSME via telehealth
- Encouraging county health departments to establish or partner with community organizations to establish a DSME program and to develop referral policies

Table 10. Diabetes Self-Management Education Programs Funded to Improve Quality Services and/or Achieve Accreditation or Recognition.

Organization	County(ies)	Funding Amount	Mentoring Amount	Total
DOH-Sarasota	Sarasota	$15,000	$4,100	$19,100
Family Health Centers of	Lee, Charlotte	$10,900	$1,800	$12,700
Living Smart	Charlotte, DeSoto, Sarasota	$6,500	$0	$6,500
DOH-Alachua	Alachua	$5,500	$0	$5,500
Putnam	Putnam	$7,800	$4,100	$11,900
Azalea	Putnam	$10,000	$4,100	$14,100
Langley	Sumter, Marion	$7,600	$4,100	$11,700
Lifestream	Lake	$6,500	$4,100	$10,600
Suwannee	Suwannee	$8,000	$1,800	$9,800
DOH-Bay	Bay	$8,150	$0	$8,150
PanCare	Bay, Calhoun, Gulf, Holmes, Liberty, Walton, Washington	$10,500	$0	$10,500
North Florida Medical	Dixie, Franklin, Gadsden, Gulf, Lafayette, Madison, Okaloosa, Taylor, Wakulla	$18,700	$6,000	$24,700
Sacred Heart	Escambia, Walton, Gulf	$7,800	$0	$7,800
TOTAL		**$122,950**	**$30,100**	**$153,050**

Diabetes Advisory Council

The bureau acts as administrative liaison to the DAC as required by statute. Staff fulfill the following support functions:

- Set up conference calls, webinars, and face-to-face meetings
- Notice all DAC meetings and subcommittee meetings
- Take and disseminate meeting minutes/summary of actions and decisions

- Assist with travel arrangements
- Act as liaison with the DOH Boards and Councils office and the Governor's appointments office
- Facilitate development of the DAC's annual recommendations to the State Surgeon General
- Make arrangements for the DAC chair's annual meeting with the State Surgeon General to discuss recommendations
- Facilitate the on development and coordination of the biennial report to the Florida Legislature

County Health Departments

Healthiest Weight Florida (HWF) is a public-private collaboration bringing together state agencies, not for profit organizations, businesses and entire communities to help Florida's children and adults make choices about healthy eating and active living. HWF provides funding through the Preventive Health and Health Services Block Grant to Florida's 67 county health departments to implement policy, system and environmental interventions that improve access to healthy foods, increase opportunities for physical activity, and promote chronic disease prevention activities. During SFY 2016-2017, each county health department receives $35,000 to complete activities defined in the Healthiest Weight Florida basic work plan. The work plan contains activities to promote best practices related to physical activity, nutrition and chronic disease prevention in the following Healthy Places: Birthing Facilities, Early Care and Education, Schools, Worksites, Health Care Settings, and Communities. HWF is working in Health Care Settings to promote chronic disease prevention strategies and programs, specifically addressing high blood pressure, heart disease, diabetes, and associated risk factors. County health departments prioritized four of the six healthy places in which to focus their work. A total of 27 counties selected to work in Health Care Settings. As part of the requirements for Health Care Settings, these counties will be required to complete the following activities specifically related to diabetes prevention and management by June 30, 2017:

- Implement a county health department policy to refer patients with prediabetes to a CDC-recognized Diabetes Prevention Program (DPP) and to follow the American Association of Diabetes Educators (AADE) algorithm for referring patients with diabetes to a Diabetes Self-Management Education (DSME) Program.
- Partner with a health care provide (external to DOH) to increase referrals of eligible patients to a CDC-recognized DPP and DSME program that is accredited by the AADE or recognized by the American Diabetes Association.

In addition, these counties receive ongoing technical assistance, data reports, and information on educational or grant opportunities related to diabetes. A webinar was offered to all 67 county health departments focusing on how to access county-level data related to cardiovascular disease, diabetes, and associated risk factors.

Department of Management Services - Division of State Group Insurance

The Division of State Group Insurance (DSGI), a team of 21 employees, procures and administers a $2.1 billion package of tax-favored insurance benefits for members in the State Group Insurance Program, including health, life, disability, dental, vision and other supplemental plans. DSGI covers active and retired employees, their eligible dependents and surviving spouses. Fifty-six employers participate in the program, including the executive, legislative and judicial branches of government, the State University System, and statutorily defined agencies.

DSGI offers health plans with a minimum level of benefits, including age-based and gender-based wellness benefits. These benefits are statutorily defined as "aerobic exercise, education in alcohol and substance abuse prevention, blood cholesterol screening, health risk appraisals, blood pressure screening and education, nutrition education, program planning, safety belt education, smoking cessation, stress management, weight management, and women's health education."

Currently, DSGI contracts with and oversees six health plans, offering both preferred provider organization (PPO) or health maintenance organization (HMO) services, and a pharmacy benefits manager (PBM) to provide health and pharmacy coverage to members. DSGI health plans offer a variety of disease management and wellness programs as well as online resources and health compliance reminders. The goals in providing these extensive services and resources are to encourage personal health management, empower plan members to be proactive about their health, and provide those struggling with chronic conditions with the tools they need to manage their diseases. For example, one health plan had a 74.8 percent engagement rate in its disease management programs (e.g., diabetes, asthma, COPD) in 2015, resulting in a $1.7 million estimated cost avoidance in medical spending.

Despite programs and resources offered by DSGI health plans and member engagement, medical and pharmacy claims data continue to paint a troubling picture of the health of our covered population. A 2015 Population Health Management Report produced for DSGI found that chronic disease (e.g., diabetes, heart disease, obesity, hypertension, etc.) affected more than 63 percent of members (or 228,000 covered lives). The report suggested that an additional 10-15 percent of members have a chronic illness but have not yet been diagnosed.

In response to these findings, Chad Poppell, Secretary of the Department of Management Services, challenged Tallahassee-area health plans for the State Group Health Insurance Program, to partner on a pilot program to address the issue of pre-diabetes and help members be proactive about their health.

The pilot program, which launched April 1, 2016, includes 100 members from two Tallahassee area health plans. Those eligible for the pilot program include employees and their covered family members aged 18 or older who do not have diabetes, have a BMI of 24 or greater, and have one of the following:

- A score of nine or higher on the prediabetes risk test (Appendix B);
- A fasting blood glucose between 100-125; or
- A previous diagnosis of gestational diabetes

The program requires participants to make a one-hour-a-week commitment for 16 weeks followed by attendance at a one-hour maintenance session every month for eight months. Program success will be measured by the number of employees who participate in the pilot for six months or more, have a weight loss greater than 5 percent, and increase their physical activity by at least 150 minutes per week. This one-year program is being jointly funded by Florida Blue and Capital Health Plan with limited staff resource support from DSGI. Program results will be reported in April 2017.

DSGI is also working this year to facilitate a culture of personal health management and wellness through several approaches:

- DSGI produces a monthly e-publication for plan members called *The Wellness Wire*. The publication includes tips on healthy lifestyle changes, stress management, weight control, nutritious recipes and a schedule of events by health plans offering diabetes education, exercise classes, nutrition workshops and more for plan members
- In partnership with the State University System, DSGI hosted more than 20 health fairs during 2016 Open Enrollment (October 17 - November 4, 2016). The health fairs offered health risk appraisals, biometric screenings, preventive care education (with a focus on screenings), wellness activities, and other services.
- DSGI will conduct a cultural survey to determine plan members' receptivity to a health management program and results-based health plans

These activities are supported with staff resources provided by DSGI health plans as well as DSGI staff.

DSGI's long-term goal is to impact member health through health management strategies and member engagement, which is the link that connects education to action. Personal health accountability, adherence to preventative services and clinical care and better lifestyle choices are integral health management solutions that will lead to a healthier workforce and lower health care costs. Disease prevention programs that move beyond awareness to adoption of healthy lifestyles, targeted member education to promote preventative screenings and lifestyle modification opportunities, and meaningful incentives that reward healthy choices are key engagement strategies that will also have a lasting impact on member health, behavior and costs.

Agency for Health Care Administration

Definitions

Disease Management (DM) — A system of coordinated health care intervention and communication for populations with conditions in which patient self-care efforts are significant. Disease management supports the physician or practitioner/patient relationship and plan of care; emphasizes prevention of exacerbations and complications using evidence-based practice guidelines and patient empowerment strategies, and evaluates clinical, humanistic and economic outcomes on an ongoing basis with the goal of improving overall health.

Health Assessment — A complete health evaluation combining health history, physical assessment and the monitoring of physical and psychological growth and development.

Healthy Behaviors (HB) — A program offered by a Medicaid Managed Medical Assistance (MMA) health plan that encourages and rewards behaviors designed to improve the enrollee's overall health. Florida Medicaid health plans' contractual requirements include implementation of Healthy Behaviors Programs (e.g., medically approved smoking cessation, weight loss, and alcohol and substance abuse recovery programs).[32]

Intervention — Related to an MMA Healthy Behaviors Program, any measure or action that is intended to improve or restore health or alter the course of a disease.

Reward — Related to an MMA Healthy Behaviors Program, if used in the program, something that may be offered to an enrollee after successful completion of a milestone (meaningful step toward meeting the goal) or goal attainment. A reward should be linked to positive behavior change. For example, a reward may be offered after successful completion of a series of educational classes focused on a target behavior.

Introduction and Objective

In Florida, the Agency for Health Care Administration (AHCA) is responsible for administering the Medicaid program. AHCA successfully implemented the Statewide Medicaid Managed Care (SMMC) program August 1, 2013 through August 1, 2014. Nationally accredited health plans were selected through a competitive procurement for participation in the program. As the Medical Managed Assistance (MMA) program was implemented from May through August 2014, most plans implemented their Disease Management and Healthy Behaviors Programs in state fiscal year (SFY) 2014-2015 and others implemented them post SFY 2014-2015.

Given AHCA's commitment to reducing the burden of diabetes in the state of Florida, and desire to contribute valuable information to the 2017 Florida Diabetes Report, AHCA conducted a baseline Focused Diabetes Study. AHCA developed the Diabetes Disease Management Survey to assess the current status of the following: Diabetes Disease Management (DDM) programs, Diabetes Self-Management Training and Education (DSMT/E) utilization, and weight loss and smoking cessation Healthy Behavior programs in sixteen (16) SMMC MMA health plans.

Disease Management (DM) Program Overview

AHCA's contract with the MMA health plans requires the plans to provide Disease Management (DM) programs that address and consider co-morbid conditions, and the whole health of enrollees. The DM program oversees care management of Medicaid enrollees with primary chronic diseases (e.g., asthma, **diabetes**, HIV/AIDS, coronary artery disease, chronic obstructive pulmonary disease (COPD), and behavioral conditions).[33]

Plans must have policies and procedures that include identification and stratification processes, and determine how eligible enrollees are contacted for outreach to engage enrollees in disease

management services. The MMA plans' Disease/Case Management Programs include common policies and procedures that address the following:

- Evidence-based practice guidelines
- Population identification process
- Gaps in care
- Collaborative practice models to include both the member's primary health care practitioner and other enrollees of the health care team
- Member self-management education
- Process and outcomes measurement, evaluation and management
- Routine reporting and feedback loops on individual practitioner performance related to management of enrollees in Disease Management

MMA plans employ methods for informing and educating enrollees, caregivers, and or practitioners based on a member's identified risk level. Plans identify enrollees for DM outreach and participation using a variety of sources including, but not limited to:

- Hospital admission and discharge (e.g., readmission reports)
- Encounter or paid claims, including pharmacy data
- Health risk assessments
- Electronic medical records
- Gaps in care analysis
- Predictive modeling
- Laboratory reports
- Primary care/practitioner referrals

MMA plans are required to evaluate DM programs and services annually and assessments are used to verify compliance with internal policies and procedures, and support continuous quality improvement initiatives. Plans also coordinate with service departments outside of DM to effectively manage the member's dynamic health care needs and ensures that enrollees are referred or transferred within a certain timeframe.

Diabetes Disease Management (DDM) Program

The Diabetes Disease Management (DDM) Programs in Medicaid managed care provide secondary and tertiary prevention interventions based on comprehensive, multidisciplinary, system-wide approaches that encompasses evidence-based guidelines, education, provider practice, and member engagement

strategies to improve enrollees' health outcomes. Enrollee participation in the DDM programs is optional and they may opt out at any time.

AHCA is required by section 627.65745(3), Florida Statutes, to adopt standards for diabetes outpatient self-management training and education (DSMT/E) services, taking into consideration standards approved by the American Diabetes Association (ADA) necessary to treat diabetic enrollees. MMA plans have adopted and operate according to clinical practice guidelines recommended by the ADA.[34]

The Diabetes Disease Management Survey assessed the characteristics of member participants with diabetes to identify who is accessing and utilizing the program. Table 11 shows the number of Medicaid managed care enrollees with diabetes enrolled in the Disease Management Programs during SFY 2014-2015.

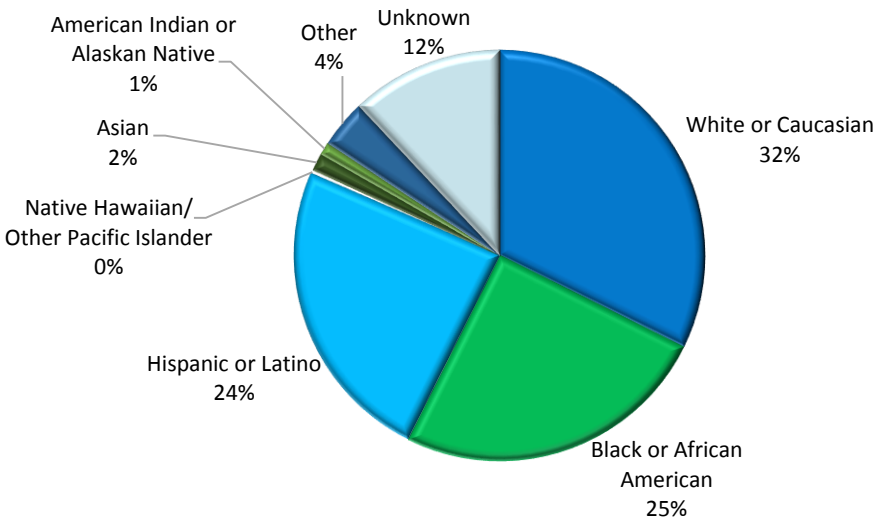
Table 11: Diabetes Disease Management Program Participation by MMA Health Plan SFY 14-15

Plan ID	Enrollees Eligible	Active* Enrollees	Participation Rate
Plan H	21,436	11,573	54%
Plan B	17,033	652	4%
Plan I	13,337	2,951	22%
Plan J	10,456	5,389	52%
Plan F	9,632	499	5%
Plan N	9,013	4,871	54%
Plan M	7,988	758	9%
Plan C	5,108	1,847	36%
Plan A	3,168	518	16%
Plan D	2,819	737	26%
Plan L	1,816	45	2%
Plan E	826	1	0%
Plan G	777	209	27%
Plan K	99	82	83%

Source: [35]Florida Medicaid Program Analysis and Plan-reported through Diabetes Disease Management Survey
*Enrollees who chose to opt-in to the DDM program.
Note: Two MMA plans were unable to report due to later implementation.

Figure 21 shows the percentage of Medicaid enrollees with diabetes enrolled in the Disease Management Program during SFY 2014-2015 by race/ethnicity.

Figure 21. Percent of DDM Participants by Race/Ethnicity, SFY 14/15

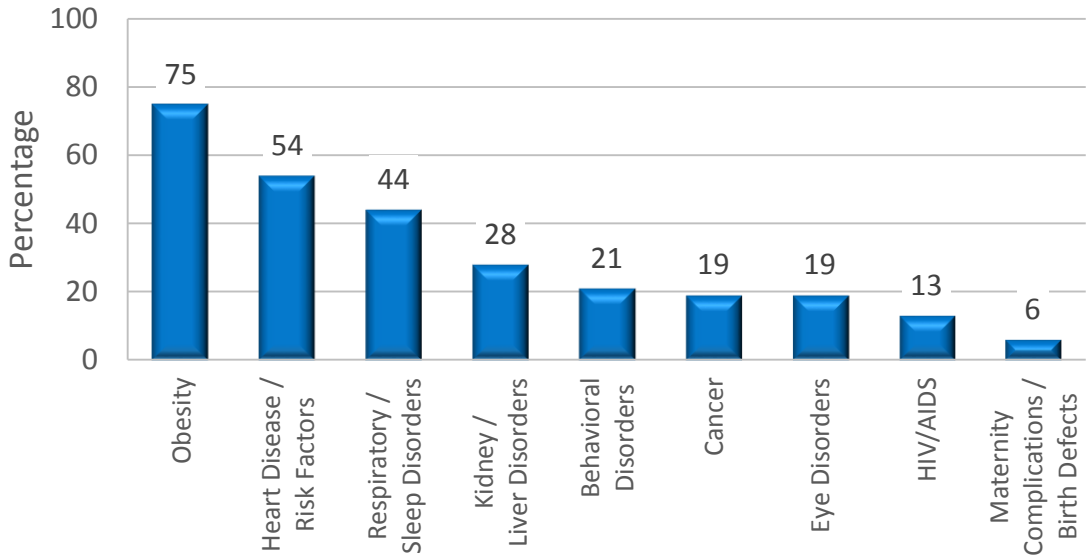


Source: Plan-reported through Diabetes Disease Management Survey

Co-Morbid Conditions

Co-morbid diseases among Medicaid enrollees with diabetes are provided in Figure 22**.** The most common co-morbidities prevalent among DDM participants are obesity (75%), heart diseases and associated risk factors (e.g., high cholesterol, hypertension, and other heart conditions) (54%), respiratory or sleep disorders (e.g., COPD, asthma, and obstructive sleep apnea) (44%), and kidney or liver diseases (e.g., end-stage renal disease and fatty liver disease) (28%).

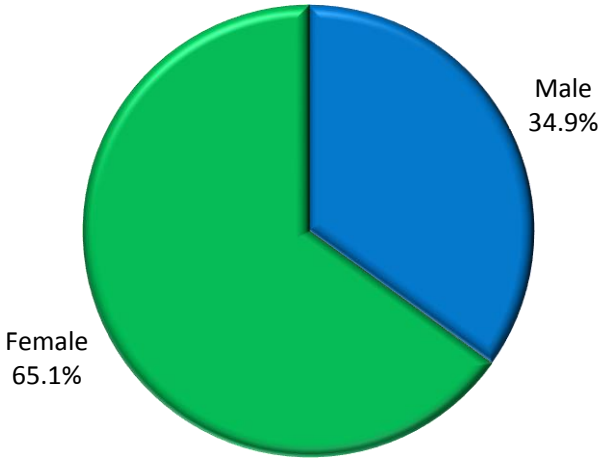
Figure 22: Percentage of DDM Participants with the Most Common Co-morbid Conditions, SFY 14/15



Source: Plan-reported through Diabetes Disease Management Survey

Figure 23 provides the percentage of Medicaid enrollees with diabetes enrolled in the DDM program by gender during SFY 2014-2015. Sixty-five percent of Medicaid enrollees with diabetes enrolled in the DDM are female; 35 percent are male.

Figure 23. Percent of DDM Participants by Gender, SFY 14/15

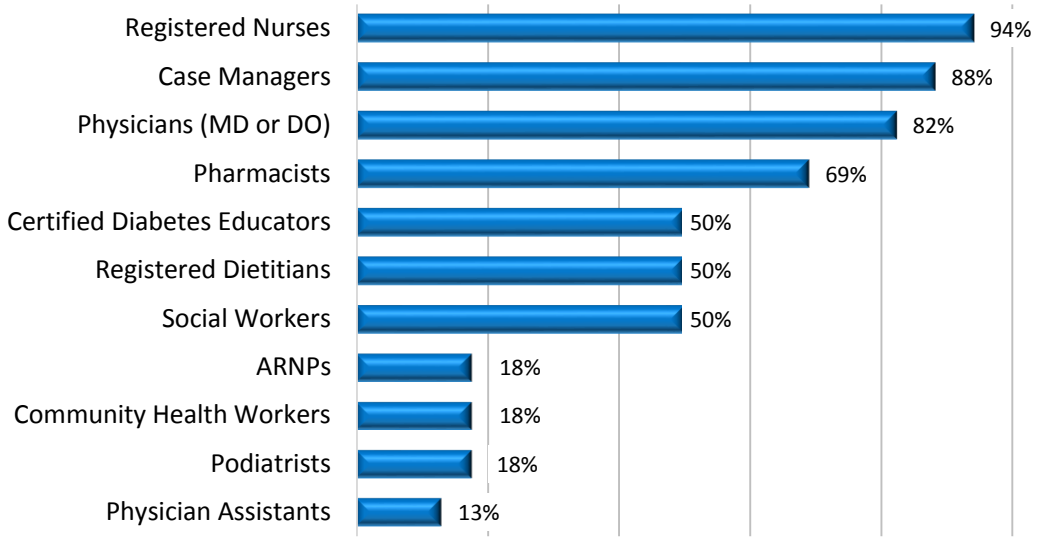


Source: Plan-reported through Diabetes Disease Management Survey

Multidisciplinary Team Approach

Health plans employ a team-based approach using health care professionals from a broad range of disciplines to improve chronic care management and complications prevention for enrollees with diabetes. Many of the plans use registered nurses (94%), case managers (88%), physicians (82%), and pharmacists (69%) on their diabetes management teams. Figure 24 shows the percentage of MMA plans that use various health care professionals on their DDM multi-disciplinary care teams.

Figure 24: Percent of MMA Health Plans that used Specified Health Care Professionals on the DDM Multi-Disciplinary Team, SFY 14/15

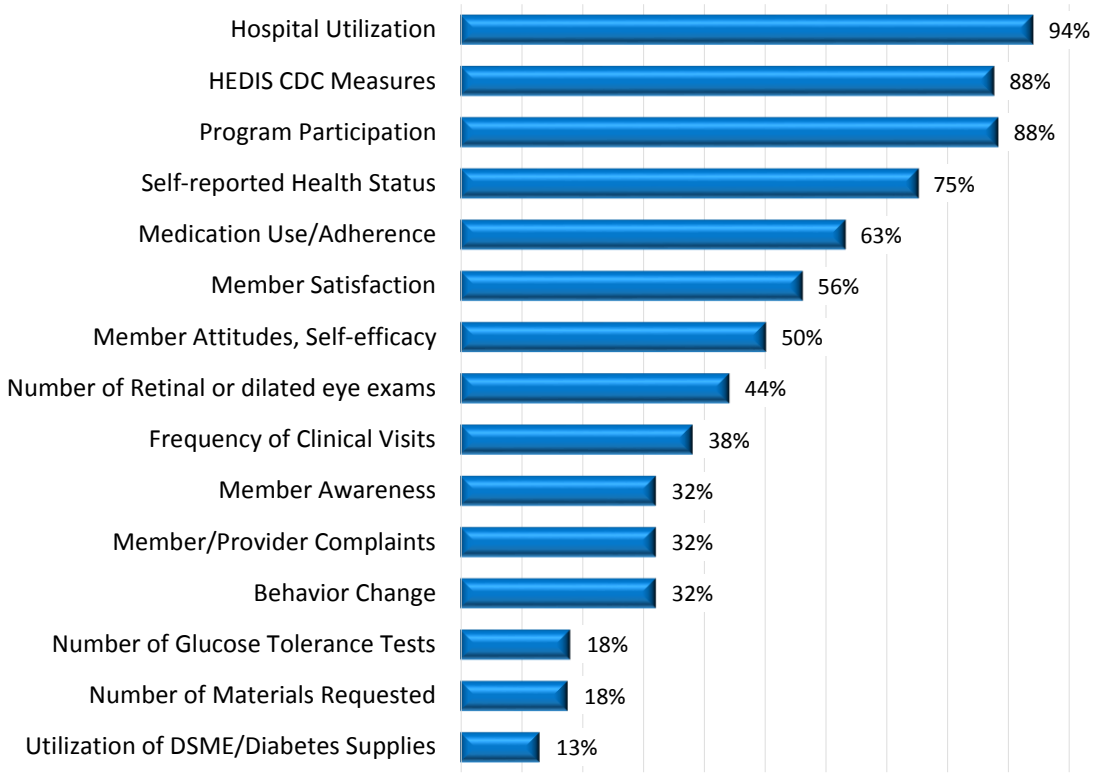


Source: Plan-reported through Diabetes Disease Management Survey

Diabetes Disease Management Program Effectiveness

MMA plans may measure the effectiveness of their DDM programs using a variety of indicators. Figure 25 shows indicators for program effectiveness used by MMA plans. Hospital utilization rates were used by 94 percent of plans. Other frequently used measures of effectiveness are the HEDIS *Comprehensive Diabetes Care (CDC)* measures and program participation (88% each), self-reported health status (75%), medication use/adherence (63%), member satisfaction (56%), member attitudes/self-efficacy (50%), and number of retinal eye exams (44%). Less common indicators and measures are the frequency of clinical visits including the number of primary care physician and scheduled prenatal visits (38%), member awareness, member/provider complaints, and behavior change (32% each), and the number of glucose tolerance tests and number of materials requested (18% each).

Figure 25: Indicators Used by MMA Health Plans to Assess the Effectiveness of Diabetes Disease Management Programs, SFY 14/15



Source: Plan-reported through Diabetes Disease Management Survey

HEDIS Measures

Medicaid managed care plans are in the process of identifying population needs and developing programs and interventions to better serve Medicaid enrollees. Florida Medicaid managed care plans showed improvements from calendar year 2013 to 2014 on the all HEDIS measures of diabetes care provided to adults shown in **Table 12.**

Table 12: Florida Medicaid Managed Care HEDIS Diabetes Measures Calendar Years 2013 and 2014

Measure	2013	2014
Hemoglobin A1c (HbA1c) Testing	80%	85%
HbA1c Poor Control (>9.0%)	48%	42%
HbA1c Good Control (<8.0%)	43%	48%
Eye Exam (Retinal) Performed	49%	51%
LDL Screening	80%	82%
LDL-C Control Performed (<100mL)	33%	34%
Micro-albumin/Nephropathy Test	80%	84%

Source: Plan-reported HEDIS data, certified by National Committee for Quality Assurance-certified HEDIS auditors

Medicaid – Diabetes Self-Management Training/Education (DSMT/E)

Medicaid managed care plan enrollees with diabetes may receive diabetes self-management training and educational services as a covered benefit in efforts to manage and control their chronic condition. Table 13 shows total DSME/T encounters by state fiscal year for enrollees with diabetes by session type (e.g., individual or group). Overall, there was a 48 percent increase in the use of DSME/T services among Medicaid enrollees diagnosed with diabetes from SFY 2013-2014 to SFY 2014-2015.[36]

Table 13: Total DSME/T Encounters for Medicaid Enrollees with Diabetes Mellitus (including type 1, type 2, and gestational) by State Fiscal Year

Session Type	SFY 13/14 Encounters	SFY 14/15 Encounters	Percent Increase
Individual	515	850	65%
Group	262	301	15%
Total	**777**	**1,151**	**48%**

Source: Florida Medicaid Program Analysis

Table 14 provides DSME/T encounters of Medicaid enrollees with gestational diabetes and pregnancy complications by session type. From SFY 2013-2014 to 2014-2015, there was a 746 percent increase in the use of DSME/T services among enrollees diagnosed with gestational diabetes who had pregnancy complications.

Table 14: DSME/T Encounters for Medicaid Enrollees with Gestational Diabetes Mellitus, Complicating Pregnancy by State Fiscal Year

Session Type	SFY 13/14 Encounters	SFY 14/15 Encounters	Percent Increase
Individual	20	197	885%
Group	17	116	582%
Total	**37**	**313**	**746%**

Source: Florida Medicaid Program Analysis

Healthy Behaviors (HB) Program Overview

Pursuant to section 409.973(3), Florida Statutes, Florida Medicaid Managed Medical Assistance (MMA) plans must establish and maintain programs to encourage and reward healthy behaviors. AHCA must approve each program prior to it being implemented. At a minimum, the MMA plans are required to establish a medically approved smoking cessation program, a medically directed weight loss program, and a medically approved alcohol or substance abuse recovery program. HB Program participation is optional, and enrollees may opt out at any time. The plan must identify enrollees who smoke, are morbidly obese, or are diagnosed with alcohol or substance abuse in order to offer these programs and establish written agreements to secure the enrollees' commitment to participate.

1) The medically approved smoking cessation program must be evidence based and recognized by medical professionals as an effective treatment method in addressing tobacco/nicotine dependence. The program may include interventions such as counseling and/or the use of medications (nicotine replacement products) as a part of the overall therapeutic process.

2) The medically directed weight loss program requires ongoing supervision by a physician and may include the use of prescription drugs/supplements depending upon the need and goals of the enrollee, along with other physician approved interventions (diet, exercise, etc.). AHCA has determined that DPPs included on the CDC registry meet this requirement.

3) The medically approved alcohol or substance abuse recovery program must be evidence based and recognized by medical professionals as an effective treatment method/approach. The program may include interventions such as medically assisted detoxification, medication and behavioral therapy, followed by treatment and relapse prevention as a part of the overall therapeutic process.

As required by the MMA program contract, Attachment II-Exhibit II-A, plans may, through their Healthy Behavior Programs, deploy a number of interventions as part of the overall therapeutic process. Examples of interventions include:

1) Series of counseling sessions;
2) Series of health educational classes;
3) Gym membership;
4) Nicotine replacement therapy patches; and
5) Meal planning services (e.g., NutriSystem®)

Healthy Behavior Programs must include a detailed description of the rewards and incentives offered to enrollees. Incentives or rewards may have some health- or child development-related function and may include any of the following:

1) Money through debit cards;
2) Gift cards;
3) Flexible spending accounts that may be used for health and wellness items;
4) Infant car seats, strollers, and cloth baby carriers/slings only with special exemption and agency approval;
5) Vouchers for health and wellness related items; and
6) Points or credits which are redeemable for goods or services.

Incentives and rewards shall be limited to a value of $20; however, there are exceptions to this monetary limit based on program completion of a series of health education classes, activities, and participation in multiple healthy behavior programs.

Smoking Cessation and Weight Loss

The AHCA Diabetes Focused Survey results provided specific data on enrollees in MMA plans with diabetes who participated in the smoking cessation and weight loss/management Healthy Behaviors Programs. During SFY 14-15, all but two MMA plans reported enrollment in their Healthy Behaviors Programs. Since HB Program participation is optional for enrollees, the percentage for program completion was computed by dividing the number of enrollees who completed the program by the total number that completed a consent.

Table 15 shows the number and percent of enrollees who completed a written consent form or promise agreement for participation in the smoking cessation program, and the number and estimated percent of those who completed the program.[37] In the third and fourth quarters of SFY 2014-2015, 1,007 members enrolled in the smoking cessation program, 152 of whom had diabetes (15%). Among members with diabetes who enrolled in the smoking cessation program, approximately 35 percent completed the program.

Table 15: Smoking Cessation Program Enrollment and Completion SFY 14/15

Number Completed Consent with Diabetes	**Percent Completed Consent with Diabetes**	**Number Completed Program with Diabetes**	**Percent of Enrolled with Diabetes who Completed Program**	**Total Member Enrollment** (diabetic and non-diabetic)
152	15%	53	35%	1,007

Source: Florida Medicaid Program Analysis and Plan-reported through Diabetes Disease Management Survey. Data are from 3rd and 4th quarters only.

Table 16 represents the number and percent of enrollees with diabetes who completed a written consent form or promise agreement for participation in the weight loss program; and enrollment and completion for diabetic and non-diabetic enrollees. In the third and fourth quarters of SFY 2014-2015, 2,566 members enrolled in the smoking cessation program, 208 of whom had diabetes (8%). Among members with diabetes who enrolled in the smoking cessation program, approximately 20 percent completed the program.

Table 16: Weight Loss Program Enrollment and Completion SFY 14/15

Number Completed Consent with Diabetes	**Percent Completed Consent with Diabetes**	**Number Completed Program with Diabetes**	**Percent of Enrolled with Diabetes who Completed Program**	**Total Member Enrollment** (diabetic and non-diabetic)
208	8%	41	20%	2,566

Source: Florida Medicaid Program Analysis and Plan-reported through Diabetes Disease Management Survey. Data are from 3rd and 4th quarters only.

Recommendations and Action Items to Address Diabetes

The Diabetes Advisory Council (DAC), Department of Health, Department of Management Services, and the Agency for Health Care Administration have identified a broad range of recommendations to address preventing the development of new cases of diabetes and improving the management for Floridians of all ages living with diabetes. These recommendations will highlight specific actions to support prevention of type 2 diabetes and gestational diabetes, and awareness and control of all types of diabetes (prediabetes, type 1 diabetes, type 2 diabetes, and gestational diabetes).

These recommendations and action plans are supported by evidence-based research, national standards developed by the American Association of Diabetes Educators and the American Diabetes Association, and other diabetes state legislative reports. These recommendations and action items are consistent with national and state efforts to prevent and control diabetes such as section 385.203, Florida Statutes, which mandated the DAC; the Florida Diabetes Strategic Plan 2015-2020; and the Centers for Disease Control and Prevention federal grant, "State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health."

Cost and no-cost strategies are recommended for implementation.

Recommendation #1:

Require health plans for state employees to cover CDC-recognized/pending recognition diabetes prevention programs as a health benefit.

Rationale: The CDC estimates that one in three people have prediabetes. Out of Florida's state work force of over 98,000 employees, over 32,000 are believed to have prediabetes. Every year, 10 percent of people with prediabetes progress to type 2 diabetes. The National Diabetes Prevention Program is an evidence-based program that demonstrated a 58 percent lower risk of developing type 2 diabetes. Among participants over age 60, the risk is 71 percent lower.

The cost of the Diabetes Prevention Program is $500 per participant. However, the annual cost of an employee with diabetes is $13,243, more than five times the annual cost of an employee without diabetes ($2,560). Preventing diabetes in just one employee with prediabetes can save the state $53,415 over five years.

Budget Request

Optimal Funding Level: $300,000 per year

Outcomes Achievable at This Amount:

At this funding level, a third-party vendor would be contracted to provide administrative oversight of the DPP for state employees, including marketing, recruitment, and reporting. This amount would also provide one full-time staff at the Florida Department of Health (DOH) and one full-time staff at the Florida Department of Management Services – Division of State Group Insurance (DSGI) to

accommodate administrative responsibilities of offering the DPP as a covered benefit to all eligible employees in Florida.

The outcomes achievable by offering DPP to all state employees and their dependents are both financial and health-related. The DPP not only shows people how to take charge of their health and make lasting changes, it also helps reduce health care spending. Diabetes care and management costs Florida an estimated $24.3 billion each year. By offering the DPP, Florida would reduce the number of people with type 2 diabetes and the health care costs associated with the disease.

Intermediate Funding Level: $100,000 per year

Outcomes Achievable at This Amount:

At this funding level, a third-party vendor would be contracted to provide administrative oversight of the DPP as shown above. Contract monitoring, additional marketing, and other functions would be absorbed by existing staff at DOH and DSGI.

No Funding:

Outcomes Achievable at This Amount:

In some states, the costs of administrative oversight have been absorbed by the fee for the program. This requires a co-pay by participants in the DPP.

Action items:

1. Modify contracts with health plans that cover state employees to require coverage of CDC-recognized/pending recognition DPPs for eligible employees.
    a. Develop definition of “eligible employee” that includes the medical definition of prediabetes.
2. Allocate new state funding for diabetes. State diabetes funding will support:
    a. Contracting for administration of the DPP as a covered health benefit for state employees and their dependents
    b. Hiring staff at DOH and DSGI to manage contract, determine eligibility, oversee recruitment, market the program to employees, provide technical assistance, and other responsibilities
    c. Evaluation of participation and outcomes
3. Hire staff at DOH and DSGI dedicated to administration of the DPP health benefit for state employees and their dependents. Staff responsibilities will include:

DSGI

a. Update health plan contracts

b. Manage third-party vendor contract

c. Provide technical assistance to health plans

d. In conjunction with DOH, develop and maintain a patient portal

e. In conjunction with DOH, evaluate participation levels and outcomes

DOH

a. Establish eligibility based on definition of prediabetes and CDC criteria

b. Provide technical assistance to new DPPs which will be required to meet the need of newly registered participants

c. Market the program and recruit participants

d. In conjunction with DSGI, develop and maintain a web-based patient portal

e. In conjunction with DSGI, evaluate participation levels and outcomes

4. Contract with third-party vendor. Vendor responsibilities will include:

a. Signing up participants

b. Collecting data

c. Submitting data to CDC and to DSGI

Recommendation #2:

Increase awareness about the signs and symptoms of prediabetes and type 1 and type 2 diabetes for the purpose of reducing and controlling the number of new cases of type 2 diabetes and to promote early diagnosis of type 1 and type 2 diabetes.

Primary focus: Create an awareness campaign that will educate people about the signs and symptoms that indicate the risk or presence of diabetes.

We recommend using an Ad Council campaign to increase awareness of prediabetes and signs and symptoms of diabetes. In partnership with the CDC, the Ad Council developed radio, print, and television materials which states may use; however, placement of these materials must be non-paid. Budget can be used to produce copies of materials for distribution to media outlets and for placement in other

locations such as health care providers, including close-circuit television in doctor's offices waiting rooms. Another resource is the CDC's in-house toolkit, Prevent T2 Diabetes, which can be tailored to Florida or to a specific region, county, or community. A third resource that is being promoted in Florida is the Prevent Diabetes STAT campaign to increase awareness of prediabetes among patients, health care providers, employers, and insurers. Additionally, a new website, fldiabetesprevention.com, was developed through a contract between the Department of Health and the University of South Florida. Camera-ready copies may be downloaded from the site and may be tailored as needed.

Rationale: There is a need for more emphasis on Floridians' understanding of the signs and symptoms of diabetes. Having a better understanding of the signs and symptoms will allow earlier diagnosis and lessen development of comorbidities. The American Diabetes Association promotes awareness of the symptoms of diabetes, as early detection and treatment of diabetes can decrease the risk of developing the complications of diabetes.[38] Although type 1 diabetes cannot be prevented, knowing the signs and symptoms is especially important to be able to diagnose the disease, begin treatment as early as possible, and reduce the risk of further complications.

Budget Request

Optimal Funding Level: $5,000,000 annually

Outcomes Achievable at This Amount:

$5,000,000 will be used to create a statewide awareness campaign that addresses all types of diabetes. This level of funding will allow diabetes awareness messages to be televised throughout the year with maximum saturation in priority regions. Out of home ads such as billboards, bus stops, and health magazines and publications are also achievable within this budget. Social media campaigning by means of Twitter, Facebook, and Instagram will allow an effective reach of our target audience. Digital advertising is also possible through websites, online ads and online banners.

Intermediate Funding Level: $1,000,000

Outcomes Achievable at This Amount:

Funding at this level will enable diabetes awareness messages to be televised for only a specific quarter of the year. Print, radio, and social media materials will also be included but in a smaller capacity than at the optimal funding level. Existing resources and partnerships will be used as much as possible to maximize the reach and effectiveness of the campaign.

No Funding:

Outcomes Achievable at This Amount:

A media campaign is not possible without funding. Existing no-cost opportunities and avenues will continue to be used.

Action items:

1. The Legislature will provide funding to support creation of awareness campaign.
2. DOH will contract with a marketing firm to develop, launch, and manage an awareness campaign incorporating available and new resources.
3. The marketing contractor will work with DOH, other agencies, and state providers to create an awareness campaign for all Floridians and visitors to be aware of the signs and symptoms of diabetes.
4. The marketing contractor will promote the awareness campaign in all the "Healthy Places."
5. The marketing contractor will utilize Facebook, Twitter, and other forms of social media platforms to promote the awareness campaign.
6. The marketing contractor will provide infographics and public service announcements to reach Floridians via print, radio, and television.
7. The marketing contractor will create poster materials to place in schools, grocery stores, county health departments, and public libraries to promote the awareness campaign.
8. The county health departments will form partnerships with local community centers and faith-based organizations to extend the campaign's reach to increase health equity among all Floridians.
9. DOH will develop and maintain a website that provides a central location for education, support, and resources for all types of diabetes.

Recommendation #3

Facilitate compliance with federal and state policies that prohibit discrimination in school or day care settings by allocating funding for registered nurses to coordinate diabetes care in all school districts in Florida.

Primary focus: To ensure children with diabetes are provided the proper care at public and private schools and day care facilities

Rationale: Individuals who attend school or day care can face discrimination based on their disability in decisions about where they may go to school, conditions of employment, or admission or access to the goods, programs, or benefits of state or local government or businesses offering public accommodations.[39] Collaboration among pediatricians, families, school staff, school physicians, and

school nurses is increasingly critical to optimal health care in school settings. Although state and federal laws prohibit discrimination, shortage of school nurses can hinder the medical management of students with diabetes. School nurses play an important role in interpreting medical recommendations within the educational environment and participate in the development of action plans for diabetes management and safe transportation of a child with such health care needs.

Budget Request

Optimal Funding Level: $4,020,000 per year

Outcomes Achievable at This Amount:

At this amount, 67 registered nurses can be hired as diabetes care coordinators to coordinate, facilitate, and if needed, provide diabetes care in all of Florida's school districts. These positions would coordinate individualized health care planning, training, delegation, and supervision and monitoring of staff involved in the care of students with diabetes.

Action items:

1. Each school district in Florida will hire a registered nurse to serve as the district diabetes care coordinator.

2. The diabetes care coordinators will ensure that all students with diabetes in all 67 Florida school districts are afforded the protections and school-based accommodations and care pursuant to:

    a. Section 1002.20(3)(j), Florida Statutes

    b. Florida Administrative Code Rule 6A-6.0253

    c. Nursing Guidelines for the Care and Delegation of Care for Students with Diabetes-2015

    d. Section 504 of the Rehabilitation Act of 1973 (Section 504)

    e. Individuals with Disabilities Education Act (IDEA)

3. To facilitate compliance with the above statutes, rules, and guidelines, diabetes care coordinators will ensure the following for all district students with diabetes:

    a. A current diabetes medical management plan (DMMP) from the student's physician on file at school

    b. An individualized health care plan (IHP) consistent with the National Association for School Nurses position statement, Individualized Healthcare Plans: The Role of the School Nurse, 2015.

    c. An individualized emergency care plan (ECP)

- School clinic staff and additional school staff trained who have received the following training: Level 1: Diabetes Overview and How to Recognize and Respond to an Emergency Situation

- Level 2: Diabetes Basics and What to Do in an Emergency Situation

- Level 3: General and Student-Specific Diabetes Care Tasks

4. A school clinic in compliance with State Requirements for Educational Facilities in which to perform safe diabetes care for students that do not yet self-manage.

5. Accommodations for students with parent and physician authorization to safely self-carry diabetes care supplies, perform glucose testing and self-administer insulin, glucagon or high carbohydrate food or drink in the least restrictive environment.

6. Accommodations for all students with diabetes to use restroom facilities, eat, or drink as necessary to manage their diabetes.

Intermediate Funding Level: $1,362,000 for one year

Outcomes Achievable at This Amount:

At this amount, grants can be made to 22 of Florida's school districts to establish an evidence-based pilot program to determine whether the support described above improves the health status and school attendance of students with diabetes. The pilot program would fund a registered nurse to serve as the diabetes care coordinator in each of the 22 counties in the pilot program.

Action items:

1. Determine which school districts to include in the pilot program.

2. Hire a registered nurse to serve as the district diabetes care coordinator in each of the 22 school districts participating in the pilot program.

3. Collaborate with the American Diabetes Association to develop and provide a comprehensive clinical diabetes update on Diabetes Care Tasks in Schools, providing 6 nursing CEUs

4. Implement the pilot program directed and with technical assistance provided by the Department of Health School Health Program.

5. Evaluate the pilot program outcomes.

6. Report to Governor and Legislature on outcomes.

7. Based on positive outcomes, request funding for full statewide implementation as described under Optimal Funding Level.

No Funding:

Outcomes Achievable at This Amount:

With no additional funding, school nursing care levels cannot be increased to meet the standards recommended by the National Association of School Nurses.

Recommendation #4:

Fund a direct appropriation to the Diabetes Advisory Council (DAC) to perform the functions mandated by statute.

Primary focus: Direct appropriation to the DAC would enhance their productiveness and effectiveness.

Rationale: Meeting face-to-face facilitates the DAC's ability to complete the following activities required by statute:

- Biennial legislative report on public health and financial consequences of diabetes and the cost and effectiveness of diabetes programs and activities implemented by state agencies in Florida
- Annual recommendations to the State Surgeon General regarding the public health aspects of the prevention and control of diabetes.
- Conduct the business of the council, including strategic planning and collaboration with state and national partners in diabetes prevention and control.

Budget Request

Optimal Funding Level: $52,000 per year

Outcomes Achievable at This Amount:

This amount would allow four face-to-face meetings per year, including facility rental fees and travel reimbursement for DAC members, staff, and a limited number of experts invited to make presentations on relevant diabetes issues.

Intermediate Funding Level: $26,000 per year

Outcomes Achievable at This Amount:

This amount would allow two face-to-face meetings per year, including facility rental fees and travel reimbursement for DAC members, staff, and a limited number of experts invited to make presentations

on relevant diabetes issues. Other meetings will continue to be held via conference calls and/or webinars.

Outcomes Achievable with No Funding:

Without funding, face-to-face meetings are not possible. The DAC will continue to meet via conference calls and/or webinars. This would greatly limit the effectiveness of the DAC in its statutorily mandated functions.

Action Items:

1. Provide funding appropriation to the DAC for face-to-face meetings.
2. Develop a calendar of face-to-face meetings.
3. Develop annual recommendations document to the State Surgeon General regarding the public health aspects of prevention and control of diabetes.
4. Perform strategic planning and collaboration with state and national partners in diabetes prevention and control.
5. Develop a biennial legislative report on public health and financial consequences of diabetes.
6. Include in the biennial legislative report the cost and effectiveness of diabetes programs and activities implemented by state agencies in Florida.

Recommendation #5:

Support policy changes to reduce the impact of all types of diabetes.

Primary focus:

A. Include passage of statewide changes to reimburse Certified Diabetes Educators (CDEs) and Board Certified-Advanced Diabetes Management (BC-ADM) educators for providing diabetes self-management education (DSME); increase reimbursement for DSME from Medicare.

B. Require that all health plans offered to state employees cover CDC-recognized (or pending recognition) diabetes prevention programs (DPP) for employees who are eligible.

Rationale:

A. A credentialed diabetes educator is a health care professional who specializes in teaching individuals with diabetes to develop the necessary skills and knowledge to manage the individual's diabetic condition and are certified as a diabetes educator by a recognized certifying body.[40] A credentialed diabetes educator can greatly impact the life of a person with diabetes by providing self-management knowledge about nutrition, medication adherence, exercise, and coping skills. This is very important because diabetes is a chronic disease that impacts various facets of a person's life such as home, work, school, social, and community involvement. Providing policy changes to allow credentialed diabetes educators to receive reimbursement for DSME will reduce the harmful impact that diabetes has on people's lives. People with diabetes who receive diabetes education have lower health care costs, decreased hospitalizations and readmissions as well as decreased lifetime health care costs related to lower risks for complications than those who do not receive diabetes education. In addition to improved health outcomes, a return on investment has been shown.[41]

B. The DPP is an evidence-based program that is proven to reduce the risk of developing type 2 diabetes by 58 percent among all participants and by 71 percent among participants aged 60 and older.[42] The return on investment for a company that offers the diabetes prevention program to its eligible employees is approximately $55,000 over 10 years for each employee with prediabetes who does not develop diabetes.[43] The risk of progression from prediabetes to diabetes is about 5-10 percent per year.[44]

Budget Request

No budget is needed to implement this recommendation. This recommendation requires a statutory change.

Action Items:

The state of Florida will pass legislation to increase reimbursement for diabetes prevention and education as follows:

1. Increase reimbursement for accredited or recognized diabetes education provided by credentialed diabetes educators

2. Increase reimbursement for Diabetes Prevention Programs on the CDC registry of recognized programs and programs pending recognition.

3. Increase reimbursement for Diabetes Self-Management Education for all types of diabetes.

4. Include credentialed diabetes educators as providers who can receive reimbursement for Diabetes Self-Management Education.

5. Increase reimbursement for Diabetes Self-Management Education for telehealth services.

6. Increase Medicaid reimbursement for related co-morbidities and all types of diabetes.

7. Legislative mandates for inclusion of diabetes education that leads to incentives for the workplace.

8. Provide reimbursement for metabolic surgery for extremely obese patients with diabetes.

Recommendation #6

Increase access to metabolic bariatric surgery for extremely obese patients with type 2 diabetes.

Primary focus: A legislative mandate that all carriers admitted to the state of Florida cover metabolic bariatric surgery for severely obese (BMI>35) patients with type 2 diabetes mellitus.

Rationale: Type 2 diabetes, along with obesity, may yet be the greatest chronic disease epidemic in the history of human existence.[45] Individuals who develop this disease should have access to all effective treatment options.[46] There have been 11 randomized controlled trials (RCTs) demonstrating that bariatric/metabolic surgery achieves superior glycemic control and reduction of cardiovascular disease risk factors compared with medical/lifestyle interventions. Clinical and mechanistic evidence supports inclusion of metabolic surgery among interventions for people with type 2 diabetes and obesity. Beyond weight-loss related mechanisms, some operations engage mechanisms that improve glucose homeostasis independent of weight loss.[47] The mortality benefit of metabolic surgery among patients with type 2 diabetes and obesity is 92 percent compared to medical treatment.

There has been a 41 percent increase in expenditures related to type 2 diabetes over the past five years, according to data compiled by the American Diabetes Association. The expenditure for type 2 diabetes is now $1 out of every $3 spent by Medicare and $1 out of every $5 spent in total health care expenditures.[48] According to the International Diabetes Federation (IDF) statement in 2010, the average cost per individual with type 2 diabetes is between $172,000 and $305,000. The IDF concluded that weight loss (metabolic) surgery is not just cost effective, but results in cost savings.[49] A study completed in South Carolina determined that metabolic surgery resulted in a $2.7 million savings in direct costs per 1000 patients and $5.4 million total savings per 1000 patients over 10 years.[50] Coverage of metabolic surgery does not significantly increase the cost of insurance premiums.[51] The Maryland Commission report studied this issue and determined only a 0.6 percent increase in premium; a recent study of health care exchanges in Oklahoma, Oregon, and Virginia found that premiums either decreased or had a negligible increase.[52] [53] The Florida Medical Association supports legislation to promote access to metabolic bariatric surgery among severely obese (BMI>35) patients with type 2 diabetes.

Budget Request

This recommendation can be implemented with no additional budget.

Action Items:

1. Implement a statutory change that requires all carriers admitted to the state of Florida cover metabolic bariatric surgery for severely obese (BMI>35) patients with type 2 diabetes.

2. Inform insurance carriers of the change.

Recommendation #7

Require health care professionals to take continuing education units/continuing medical education that focuses on all types of diabetes.

Primary focus: Implement statutory changes that require at least 2 hours of mandatory continuing education units/continuing medical education (CEU/CME) in diabetes prevention, education, and care for Florida licensure and relicensure of all health care professionals. Educational modules will encompass symptoms, management, and referral options for all types of diabetes.

Rationale: Certification renewal demonstrates that professionals previously certified have maintained a level of contemporary knowledge in diabetes education. It is the responsibility of each health care professional to stay abreast of changes in certification and/or renewal requirements and to recertify in a timely manner. CEUs and CMEs are important because they provide evidence-based, peer-reviewed instruction on quality diabetes management. Continuing education helps health professionals solve real world problems, advance team-based care, and achieve their institutions' goals.[54] The establishment of this statutory change would be a benchmark for preventing and controlling diabetes.

Budget Request

This recommendation can be implemented with no additional budget. Health care professionals would bear the cost of obtaining CEUs/CMEs. This recommendation requires a statutory change.

Action items:

1. The Florida Legislature will amend Florida Statutes to include a requirement for health care practitioners in professions regulated by the Department of Health to receive one semester instruction in diabetes prevention, education, and care to obtain initial licensure and 2 hours of CEU/CME credits in diabetes prevention, education, and care within each renewal period to renew their license.

2. The Department of Health will update its Continuing Education Tracking System (CEBroker) to reflect the new continuing education requirements.

3. The Division of Medical Quality Assurance will disseminate information to boards, associations, post-secondary schools and colleges, and health care licensees to notify them of the change in educational requirements.

Conclusions

It is imperative that Florida prepares for an increasing burden of diabetes. The recommendations in this report address ways to prevent diabetes and its complications. If implemented, these actions will result in significant health care savings and improvement in quality of life. To stave off the looming diabetes health care crisis, changes must occur throughout state, local, and national health care systems. Partnerships and collaborations are occurring in Florida that, if these recommendations are implemented, will improve outcomes for people with or at risk for diabetes and will strengthen the state's economic outlook and its population's wellness.

Appendix A. Data Sources and Methods

Data Sources

Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is a telephone-based survey that uses a random-digit dial sampling methodology to collect state data from respondents 18 years of age and older concerning their health and health behaviors. The BRFSS has been conducted annually in Florida since 1986 and gathers detailed information about chronic health conditions, health-related risk behaviors, and the prevalence of preventive health care practices among Florida adults. The BRFSS is conducted at the county-level every third year. Over 35,000 surveys were completed statewide in the 2013 calendar year, with a target sample size of 500 completed surveys in each of Florida's 67 counties. The BRFSS data were analyzed by age group, gender, combined race and ethnicity, household income level, and geographic locality.

The BRFSS data included in this report have been weighted to be representative of the state population. Weighting is a procedure that adjusts for the chance of being selected to participate in the survey and for discrepancies between those who complete the survey and the overall population of Florida. The data were weighted to the respondent's probability of selection by county, as well as age and gender.

Pregnancy Risk Assessment Monitoring System

The Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing population-based surveillance project sponsored by the Centers for Disease Control and Prevention (CDC). PRAMS was designed to establish and maintain state-specific data on maternal attitudes and experiences before, during, and shortly after pregnancy. The information collected by PRAMS is used to supplement vital records and inform state and local efforts to reduce infant morbidity and mortality. Currently, 47 states and several territories and tribes participate in PRAMS, representing about 83 percent of all U.S. births.

Florida PRAMS began data collection in 1993. Each year, a sample of approximately 2,500 women who have recently had a live birth are randomly selected from the state's birth certificate file. Women from high-risk groups are oversampled to ensure adequate data are available for these populations. Sampled women are contacted by mail or telephone and asked to complete the Florida PRAMS questionnaire. Topics typically addressed include attitudes and feeling about pregnancy, source and content of prenatal care, maternal use of alcohol and cigarettes, contraception, and pregnancy-related morbidity, however, the questionnaire is revised every four years to address current and important issues for mothers and infants. Florida PRAMS data included in this report are weighted to be representative of the state's entire population of live births.

The National Survey of Children's Health

The National Survey of Children's Health (NSCH), sponsored by the Maternal and Child Health Bureau of the Health Resources and Services Administration, is a cross-sectional telephone-based survey designed to provide national and state-level data on the health and well-being of children 0-17 years of age. The

NSCH places special emphasis on physical and developmental health, access to quality health care, family interactions, activities in and outside of school, and neighborhood safety. The resulting data are used to support policies and programs aimed at improving the health of children, families, and communities.

The NSCH was conducted three times between 2003 and 2012 and is currently being conducted again, with initial data expected by 2017. In each round of data collection, a random-digit dial sampling methodology is used to identify households with one or more children under 18 years of age. In each household, one child is randomly selected to be the subject of the interview. A parent or guardian with the most knowledge of the selected child's health completes the survey. Over 95,000 surveys were completed nationally in 2011-2012, including approximately 1,800 surveys in Florida. The NSCH data in this report are based on the 2011-2012 Florida surveys and have been weighted to be representative of the state population of children.

School Health Services Reports

The School Health Services report draws from a compilation of data sources. The sources include services entered into the health management system (HMS), local county health department's annual school health reports, Department of Education's annual school and student population data, Community Health Assessment Resource Tool Set (CHARTS) and annual Schedule C allocation tables.

Emergency Department Visits and Hospitalizations

In Florida, the Agency for Health Care Administration (AHCA) is tasked with collecting patient discharge data from all Florida hospitals for emergency department visits and hospitalizations. However, there are some hospitals in Florida, such as state operated, federally funded, or Shriner's hospitals, that are not required to report to AHCA.

AHCA's Emergency Department (ED) Visit dataset and Hospital Inpatient (HI) dataset have a detailed record for each visit or admission including discharge date, demographics of the patient, primary and additional diagnoses, procedures, charges, and payer information. The ED and HI datasets are mutually exclusive. If a patient enters into the ED and is then admitted to the hospital, their record for that visit is removed from the ED dataset and included in the HI dataset. The data were collected by hospitals primarily for the purpose of medical billing and therefore clinical accuracy may vary.

Cases with diabetes listed as the primary diagnosis (determined by ICD-9 code 250), and cases with diabetes listed as any diagnosis (primary and 6 other diagnoses) are the main focus of this report. These data were analyzed by year, age group, race/ethnicity, and payer.

Mortality Data

The mortality data in this report are derived from the Florida Department of Health, Bureau of Vital Statistics and only include cases with diabetes listed as the underlying cause of death (determined by ICD-10 codes E10-E14). Mortality counts and rates were pulled from Florida CHARTS (www.FLCHARTS.com).

Medicaid Data

For this report, a series of tables was prepared by AHCA's Bureau of Medicaid Data Analytics (MDA). These tables relate to the occurrence and trend of diabetes – type1, type2, any type or gestational – in the state of Florida Medicaid population, both children and adults. All data for those tables reside in either AHCA's Decision Support System (DSS) and/or internal databases maintained by MDA. Data residing in the DSS were extracted using SAP Business Objects, version 12.5.0, build 1190. Data residing in MDA's internal databases were pulled using either Microsoft SQL Server 2014 or SAS (aka, Statistical Analysis Suite), version 9.4. All data fall into one of two categories: fee-for-service (FFS) data and managed care plan encounter data or simply encounter data. Where possible, the information in the tables was derived from both FFS data and encounter data. Unlike FFS data where payment is based on these data, encounter data does not drive payment to the managed care plans. As such, care should be taken in the interpretation of any results which are dependent on the encounter data. Unless stated otherwise, all tables relate to Medicaid-eligible individuals in State Fiscal Year (SFY) 2014-2015.

In the Medicaid tables, the types of diabetes are defined as follows:

Type 1 - any Medicaid-eligible individual with a claim or encounter containing a principal diagnosis ICD-9 code of 250.01, 250.03, 250.11, 250.13, 250.21, 250.23, 250.31, 250.33, 250.41, 250.43, 250.51, 250.53, 250.61, 250.63, 250.71, 250.73, 250.81, 250.83, 250.91, or 250.93.

Type 2 - any Medicaid-eligible individual with a claim or encounter containing a principal diagnosis ICD-9 code of 250.00, 250.02, 250.10, 250.12, 250.20, 250.22, 250.30, 250.32, 250.40, 250.42, 250.50, 250.52, 250.60, 250.62, 250.70, 250.72, 250.80, 250.82, 250.90, or 250.92.

Any type - any Medicaid-eligible individual with a claim or encounter containing a principal diagnosis ICD-9 code of 250, 250.0, 250.00, 250.02, 250.10, 250.12, 250.20, 250.22, 250.30, 250.32, 250.40, 250.42, 250.50, 250.52, 250.60, 250.62, 250.70, 250.72, 250.80, 250.82, 250.90, 250.92, 250.01, 250.03, 250.11, 250.13, 250.21, 250.23, 250.31, 250.33, 250.41, 250.43, 250.51, 250.53, 250.61, 250.63, 250.71, 250.73, 250.81, 250.83, 250.91, or 250.93

Gestational diabetes - any Medicaid-eligible woman with a claim or encounter containing a diagnosis ICD-9 code between 648.80 and 648.89. Due to small cell counts, four diagnosis codes were used to determine the presence of gestational diabetes rather than just the principal diagnosis.

Preexisting diabetes - any Medicaid-eligible woman with a claim or encounter containing a diagnosis ICD-9 code between 648.00 and 648.04. Due to small cell counts, four diagnosis codes were used to determine the presence of preexisting diabetes rather than just the principal diagnosis.

Division of State Group Insurance Data

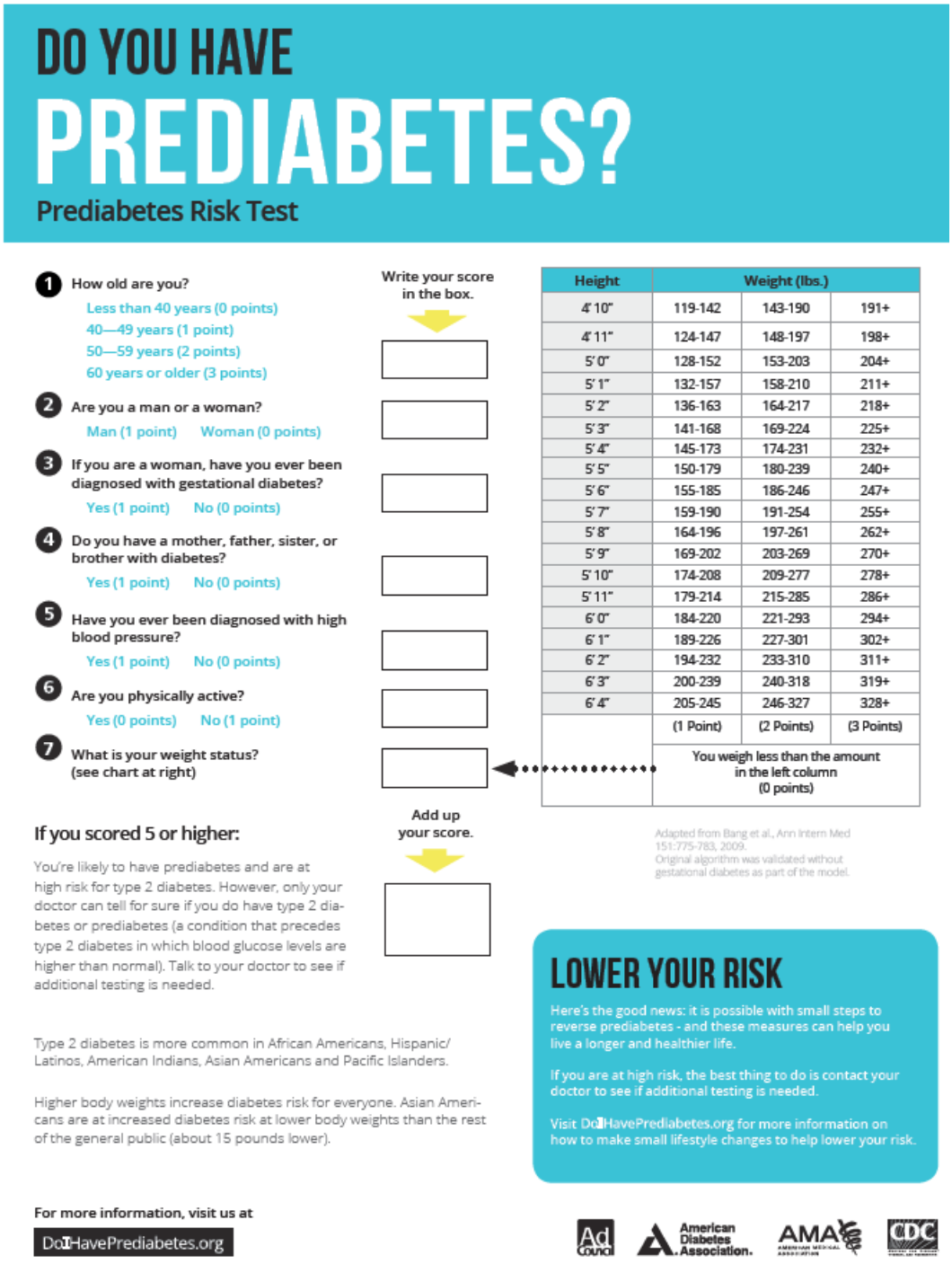
For this report, records from the Division of State Group Insurance HIMIS were analyzed. Records were analyzed to identify claims with diabetes ICD-9 codes as outlined above in the Medicaid section above. Tables include claims with a 'Service From' date, excluding pharmacy claims.

Methods

Race and Ethnicity

Race and ethnicity are presented as a combined measure in this report. In most cases, race and ethnicity were captured as two separate measures. Race and ethnicity measures were combined to create the following groups when possible: non-Hispanic white, non-Hispanic black, Hispanic, and Other. Any individual coded as Hispanic was considered Hispanic, regardless of race. "Other" includes Asian, American Indian or Alaska Native, Hawaiian or Other Pacific Islander, and Other.

Appendix B. Prediabetes Risk Quiz



DO YOU HAVE PREDIABETES?

Prediabetes Risk Test

1. **How old are you?**
   - Less than 40 years (0 points)
   - 40—49 years (1 point)
   - 50—59 years (2 points)
   - 60 years or older (3 points)

2. **Are you a man or a woman?**
   - Man (1 point)
   - Woman (0 points)

3. **If you are a woman, have you ever been diagnosed with gestational diabetes?**
   - Yes (1 point)
   - No (0 points)

4. **Do you have a mother, father, sister, or brother with diabetes?**
   - Yes (1 point)
   - No (0 points)

5. **Have you ever been diagnosed with high blood pressure?**
   - Yes (1 point)
   - No (0 points)

6. **Are you physically active?**
   - Yes (0 points)
   - No (1 point)

7. **What is your weight status? (see chart at right)**

Write your score in the box.

Height	Weight (lbs.)		
4' 10"	119-142	143-190	191+
4' 11"	124-147	148-197	198+
5' 0"	128-152	153-203	204+
5' 1"	132-157	158-210	211+
5' 2"	136-163	164-217	218+
5' 3"	141-168	169-224	225+
5' 4"	145-173	174-231	232+
5' 5"	150-179	180-239	240+
5' 6"	155-185	186-246	247+
5' 7"	159-190	191-254	255+
5' 8"	164-196	197-261	262+
5' 9"	169-202	203-269	270+
5' 10"	174-208	209-277	278+
5' 11"	179-214	215-285	286+
6' 0"	184-220	221-293	294+
6' 1"	189-226	227-301	302+
6' 2"	194-232	233-310	311+
6' 3"	200-239	240-318	319+
6' 4"	205-245	246-327	328+
	(1 Point)	(2 Points)	(3 Points)
	You weigh less than the amount in the left column (0 points)		

Add up your score.

Adapted from Bang et al., Ann Intern Med 151:775-783, 2009.
Original algorithm was validated without gestational diabetes as part of the model.

If you scored 5 or higher:

You're likely to have prediabetes and are at high risk for type 2 diabetes. However, only your doctor can tell for sure if you do have type 2 diabetes or prediabetes (a condition that precedes type 2 diabetes in which blood glucose levels are higher than normal). Talk to your doctor to see if additional testing is needed.

Type 2 diabetes is more common in African Americans, Hispanic/Latinos, American Indians, Asian Americans and Pacific Islanders.

Higher body weights increase diabetes risk for everyone. Asian Americans are at increased diabetes risk at lower body weights than the rest of the general public (about 15 pounds lower).

LOWER YOUR RISK

Here's the good news: it is possible with small steps to reverse prediabetes - and these measures can help you live a longer and healthier life.

If you are at high risk, the best thing to do is contact your doctor to see if additional testing is needed.

Visit DoIHavePrediabetes.org for more information on how to make small lifestyle changes to help lower your risk.

For more information, visit us at

DoIHavePrediabetes.org

Ad Council · American Diabetes Association. · AMA · CDC

Source: https://doihaveprediabetes.org/prediabetes-risk-test.html

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