

***Georgia Department of Public Health***

**2015 Georgia Diabetes Report and Action Plan**

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## Executive Summary

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This report provides an overview of diabetes and the burden of the disease in Georgia, the cost and complications of diabetes, and information regarding how the Georgia Department of Public Health (DPH) proposes to address diabetes in partnership with the Department of Community Health and other state agencies. The Department of Public Health is required to provide an annual submission of the report as directed by Senate Resolution 1121 adopted in the 2014 Georgia State Senate.

Diabetes is a chronic disease that affects the pancreas' ability to produce the hormone, insulin. Insulin helps regulate the glucose level in the blood. The recommended blood glucose range is anywhere between 70-110 mg/dl. With diabetes the pancreas either does not produce enough insulin to go throughout the body, the body rejects the insulin that is produced, or it does not produce any insulin at all.

Some key facts about diabetes in Georgia include—

- Between 2000 and 2013, there were 223,924 diabetes-related hospitalizations in Georgia. Approximately 1 in 10 Georgia adults has diabetes.
- The prevalence of diabetes has increased by almost half since 2000 when an estimated 6.8% of adults had diabetes, compared to 9.7% in 2010.
- Approximately 6.5% of Georgians with diabetes have not been tested and are unaware they have the disease.
- Georgia's death rate for diabetes is 8% higher than the national average.<sup>1</sup>
- Diabetes hospitalizations from Georgia's Medicaid and State Health Benefit Plan populations resulted in charges of \$30 million in 2013<sup>2</sup> for just 36,567 admissions.
- As of 2013 the total cost of diabetes in Georgia is approximately \$5.1 billion. Of that, \$3.3 billion was attributed to direct medical cost and the remaining \$1.8 billion was attributed to loss of productivity and sick days.
- Georgia currently has only 92 accredited self-management programs, an insufficient number to meet the needs of the already nearly 1 million people with diabetes.

While diabetes is a serious challenge for Georgia, there are steps that can be taken to prevent some types of diabetes and improve the diagnosis and quality of care for persons with diabetes. This report contains recommendations to improve data collection related to diabetes; prevent more diabetes cases; offer more evidence-based and accredited self-management and prevention programs at the community level; and support health care providers and health systems in providing health quality care for diabetes.

## What is Diabetes?

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Diabetes is a complex group of chronic conditions where the glucose levels in the blood stream become dangerously high. High blood glucose levels result from the pancreas producing inadequate amounts of insulin or the body does not properly absorb insulin. Insulin is a hormone produced by the pancreas to lower the levels of glucose in the blood stream and assist in using that glucose for energy.

Diabetes is a leading cause of death in Georgia and nationwide. While type 2 diabetes and prediabetes can be prevented through physical activity and good nutrition, once acquired, there is no known cure for this disease. With proper treatment it can be controlled and managed so that it does not progress to the point of severe medical complications.

Symptoms include frequent urination, excessive hunger, extreme thirst, blurred vision, fatigue and nausea. Constant blood glucose monitoring is crucial for optimal control. When the amount of sugar circulating in the blood is too high, it causes damage to many parts of the body including the eyes, heart, blood vessels, kidneys and nerves. Uncontrolled blood glucose levels can lead to complications such as blindness, kidney disease, slow healing wounds, and even death. This damage makes diabetes the leading cause of adult blindness, end-stage kidney disease and amputations of the foot and/or leg. People with diabetes are also at greater risk for heart disease and stroke.

There are four different types of diabetes: Type 1, Type 2, Gestational, and Pre-diabetes. All of these diseases affect the body's ability to produce and use insulin in the proper way.

- 1) **Type 1 Diabetes**, once known as “juvenile diabetes” or “insulin-dependent diabetes,” is an autoimmune disease that affects the production of insulin via the pancreas. The body produces little to no insulin, resulting in elevated blood glucose levels. Individuals with Type 1 Diabetes are dependent on insulin to keep their blood glucose levels within normal range (70-110 mg/dL). Insulin is given to them via multiple daily injections or insulin pump. On average, a person with Type 1 Diabetes will give 8 or more insulin injections a day or pump extra insulin into their body 8 or more times a day. Diet and exercise can aid in the control of the blood glucose levels of a person with Type 1 Diabetes but, they also need to have insulin in their bodies as well due to the pancreas not producing it. This type of diabetes affects 5% of the diabetes population. There is no known prevention method for Type 1 Diabetes.<sup>3</sup>
- 2) **Type 2 Diabetes** is sometimes also called adult-onset diabetes and develops with insulin resistance, a condition in which cells (e.g., liver, muscles) of the body do not use insulin properly. As the body resists its own insulin, the pancreas begins to lose the ability to make enough of it. A diagnosis of Type 2 Diabetes is normally obtained through a Hemoglobin A1C (HbA1C) test, fasting blood sugar test, or random glucose test. A positive diagnosis occurs when the individual has an A1C level of 6.5% or higher. Type 2 Diabetes can often be controlled with diet and exercise but individuals diagnosed may need to also take an oral medication and sometimes insulin injections. Type 2 Diabetes is most common in older persons, who are overweight, have a family history, or a history of

gestational diabetes. This type of diabetes accounts for 90 - 95% of the diabetes population.<sup>4</sup> However, with the proper education and motivation these individuals can manage their diabetes with diet and exercise alone.<sup>5</sup>

- 3) ***Prediabetes*** is a condition in which the body's glucose levels are elevated but not to the point of a diabetes diagnosis. A diagnosis of Prediabetes happens when the individual has an A1C level between 5.7% - 6.4%. In adults, type 2 diabetes accounts for approximately 90% - 95% of all diagnosed cases of diabetes. Individuals with prediabetes are generally at a higher risk of developing diabetes. These individuals typically have a history of diabetes in their family, gave birth to a child weighing more than 9 lbs., or are overweight. Public health professionals and primary care providers can educate this population and provide resources to developing diabetes.<sup>6</sup>
  
- 4) ***Gestational Diabetes*** is a type of diabetes that is first seen in a pregnant woman, usually around the 24<sup>th</sup> week, who did not have a diagnosis of diabetes prior to pregnancy. The gestational diabetes risk factors are similar to those for type 2 diabetes. Gestational diabetes requires treatment to lessen the risk of complications such as preterm births, larger babies requiring cesarean sections, preeclampsia, birth defects and increased risk of Type 2 Diabetes for both the mother and the child once she/he reaches adulthood. Often, gestational diabetes can be controlled through eating healthy foods and regular exercise. In some cases, insulin treatment may also be necessary for a woman with Gestational Diabetes.<sup>7</sup>

## Risk Factors for Diabetes

The risk factors vary by type of diabetes. Family history increases the risk for Type 1 Diabetes and some viral infections have been linked to the increased risk for Type 1 Diabetes.<sup>8</sup> Type 1 Diabetes is generally not considered preventable.

Type 2 Diabetes, however, is almost entirely preventable. Risk factors related to Type 2 Diabetes are primarily associated with lifestyle behaviors and genetics (Figure 1). Risk factors, such as, age and family history cannot be changed; others, such as being overweight, or obese, lack of physical activity, having high blood pressure and cholesterol and smoking, which significantly increases the risk of developing Type 2 diabetes, can be mitigated.

Non- Modifiable	Modifiable	Social Determinants
Age Ethnicity Gender Family History History of Gestational Diabetes Polycystic Ovarian Syndrome (PCOS)	Weight Gain Overweight or obesity Sedentary lifestyle Tobacco use High blood pressure High Cholesterol	Education level Income Geography

Figure 1: Risk Factors for Type 2 Diabetes

Those at high risk can implement changes to lower the risk for Type 2 Diabetes. For example, those at risk can begin a walking routine; the ADA suggests that just walking 30 minutes a day can lower ones risk of developing Type 2 Diabetes. Once someone has diabetes, of any type, these factors can make the impacts and consequences of diabetes more severe.

Some of the key modifiable risk factors for Type 2 Diabetes are—

- ❖ ***Tobacco Use:*** Smoking increases the risk for diabetes. According to the CDC, smokers are 30-40% more likely to develop type 2 diabetes than nonsmokers.<sup>9</sup> Furthermore, people with diabetes who smoke are more likely to have trouble with insulin dosing and controlling their disease.<sup>10</sup> Smoking can increase blood sugar levels and decrease the body’s ability to use insulin.
- ❖ ***Overweight/Obesity:*** Overweight and/or obesity refer to ranges of weight that are greater than what is generally considered healthy for a given height. Overweight and obesity ranges are determined by using a person’s weight and height to calculate a number called ‘body mass index’ (BMI).<sup>11</sup> An adult who has a BMI between 25 and 29.9 is considered overweight, while an adult who has a BMI of 30 or greater is considered obese.<sup>12</sup> People who are overweight or obese have added pressure on their body’s ability to use insulin to properly control blood sugar levels (a condition called ‘insulin resistance’), thereby increasing the risk of diabetes.<sup>13</sup> Obesity is one of the main risk factors associated with a Type 2 Diabetes Diagnosis.
- ❖ ***Physical Inactivity:*** Physical activity can help the blood glucose, stay within target range for those with diabetes.<sup>14</sup> A sedentary lifestyle increases risk of diabetes. Starting a physical activity program can help individuals with diabetes not only maintain a healthy weight but keep their blood glucose levels on target. Georgia adults with diabetes are

more likely to be inactive (42% vs. 29% for those without diabetes) and not meet either of the aerobic or muscle strengthening guidelines (53% vs. 40% for those without diabetes) than those without diabetes.<sup>15</sup>

- ❖ *High Cholesterol*: Cholesterol is a soft, waxy substance found in the blood stream and the body's cells. There are typically two types of cholesterol: 'good cholesterol' or HDL cholesterol of which the body needs in ample supply and 'bad cholesterol' (or LDL cholesterol) which should be kept at a minimum. Diabetes tends to reduce HDL cholesterol levels and increase LDL cholesterol levels, thereby increasing the risk for heart disease and stroke. When blood sugar remains high for a long period of time, the glucose can be stored as fats, causing an increase in cholesterol over time. Lifestyle changes, such as improving weight, eating a healthy diet and increasing physical activity can all help in lowering cholesterol levels. According to the 2013 Georgia Burden Report, Georgia adults with diabetes are more likely to have problems with high cholesterol than adults in Georgia without diabetes (67% vs. 34% for those without diabetes).<sup>16</sup>
- ❖ *High Blood Pressure*: Blood pressure is the force of blood flow inside the blood vessels. High blood pressure is defined as blood pressure  $\geq 140/90$  or  $\geq 130/80$  for those with diabetes.<sup>17</sup> The heart has to work harder to pump blood when the blood pressure is high, thereby increasing the risk for heart disease (and diabetes if not already present). Diabetes, which can thicken and harden blood vessels, increases the risk of high blood pressure. High blood pressure can be reduced by reducing sodium in diet, eating a healthy diet, quitting smoking, improving physical activity, and preventing weight gain. According to the 2013 Diabetes Burden Report (Embargoed for clearance), adults with diabetes in Georgia are more likely to have problems with high blood pressure than Georgia adults without diabetes (74% vs. 35% for those without diabetes).<sup>18</sup>
- ❖ *Heart Disease*. Coronary artery disease, also called ischemic heart disease, is caused by a hardening or thickening of the blood vessel walls that go to the heart. Diabetes increases this tendency of the blood vessel walls to harden and thicken. If blood sugar levels remain high over time, this can cause damage to the nerves and blood vessels including those leading to the heart, thereby increasing the risk of coronary artery disease. According to the 2013 Georgia Burden Report, Georgia adults with diabetes are more likely to have problems with angina/coronary artery disease than adults in Georgia without diabetes (14% vs. 3% for those without diabetes).<sup>19</sup> The risk of heart disease or complications of heart disease can be reduced through increased physical activity, better nutrition, improved control over blood pressure, and reduced tobacco use.



## Burden of Diabetes

Diabetes is a leading cause of death and disability in the U.S.<sup>20</sup> In 2012, there were 29.1 million Americans, or 9.3% of the population living with diabetes, which correlates to approximately 1 out of every 11 American.

In Georgia, from 2000 to 2010, the prevalence of diabetes in the state jumped from 6.8% to 9.7% which is a 43% increase over the last 10 years (Figure 2). As of 2013, approximately 1 in 10 Georgia adult were living with diabetes.<sup>21</sup>

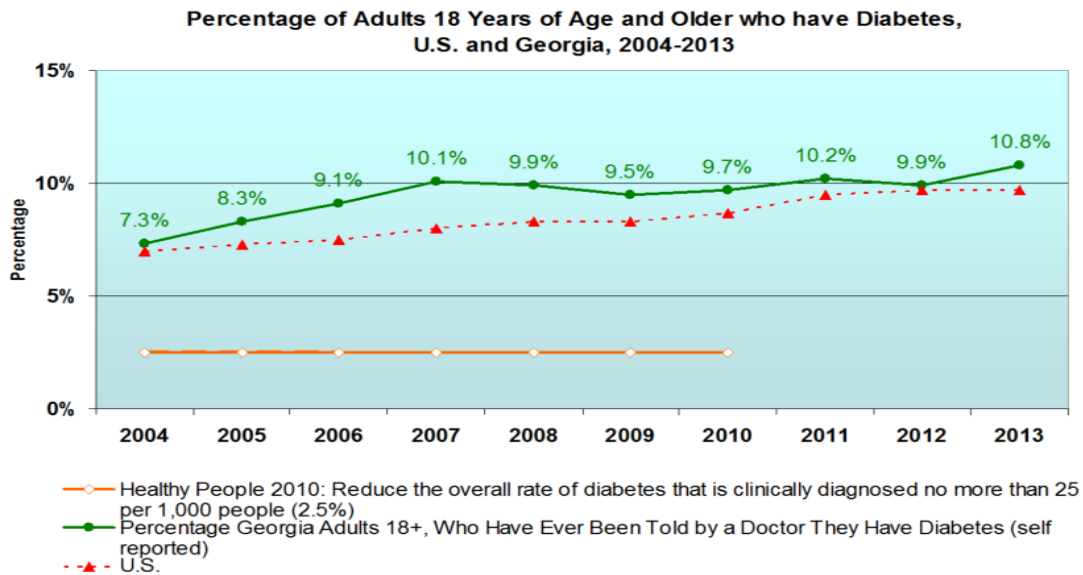


Figure 2: Prevalence of Diabetes among Georgia Adults by Year

As of 2010, an estimated additional 6.5% of Georgia adults had diabetes but had not yet been diagnosed. This means there were approximately 470,000 Georgians living with diabetes that are undiagnosed and not being treated (Figure 3). Those who are not receiving treatment for diabetes are at a higher risk of developing severe complications due to continuously elevated blood glucose levels, and being hospitalized or even dying.

Table 1. Prevalence of Diabetes among Georgia Adults, 2010

Diabetes Condition	Prevalence	Estimated Population
Diagnosed Diabetes	9.7%	703,289
Undiagnosed Diabetes*	6.5%	461,293
Prediabetes (Borderline Diabetes)	1.1%	79,720
Gestational Diabetes~	3.0%	3,782

\*Estimate is derived from the Centers for Disease Control and Prevention's Diagnosed and Undiagnosed Diabetes prevalence for adults 20 years of age and older only. For more information, see [http://www.cdc.gov/diabetes/pubs/pdf/ndfs\\_2011.pdf](http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf) --Estimate derived from 2010 Birth Certificate Data  
 Data Source: Behavioral Risk Factor Surveillance System (2010)

Figure 3: Prevalence of Diabetes Conditions among Georgia Adults, 2010

The map in Figure 5 represents the percent of diagnosed adults by health district within the State. As seen from the map, the East Central (6-0) and West Central (7-0) health districts have the highest percentage of individuals diagnosed with diabetes in the state. The state is working to bring awareness of diabetes and DSME programs into these areas so that the undiagnosed patients will become aware of the signs and symptoms of the disease and the individuals diagnosed with diabetes will know how to self-manage and reduce risk factors.

Black non-Hispanics were significantly more likely (13.7%) to have ever been diagnosed with diabetes than Hispanics (7.2%). The prevalence of diabetes was highest among adults aged 65 years and older (23.0%). Adults with a household income of less than \$15,000 were the most likely (15.7%) to ever have diabetes compared with adults from other income levels. Adults with less than a high school education (14.3%) were significantly more likely to ever have diabetes when compared to college graduates (7.6%).<sup>22</sup> (See Figure 6.)

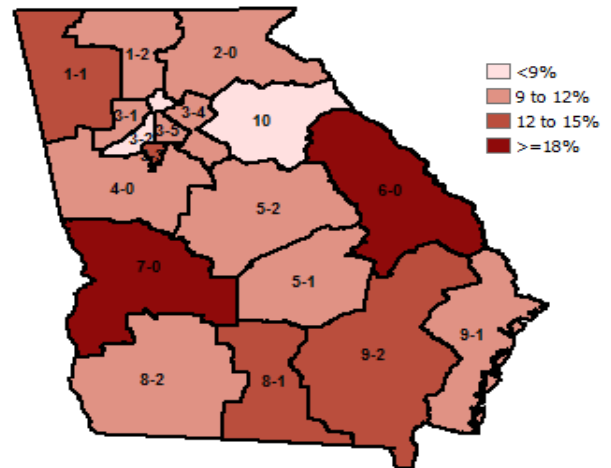
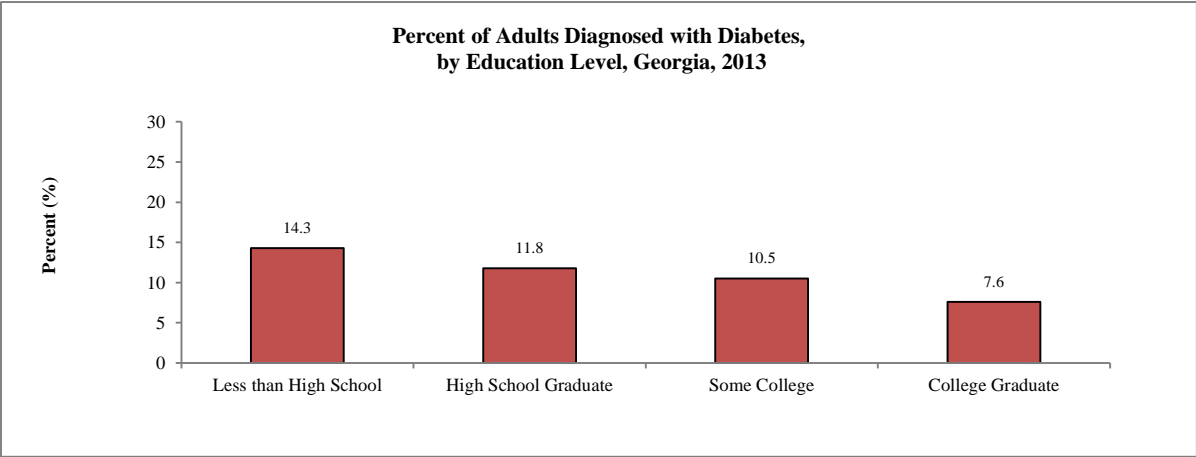
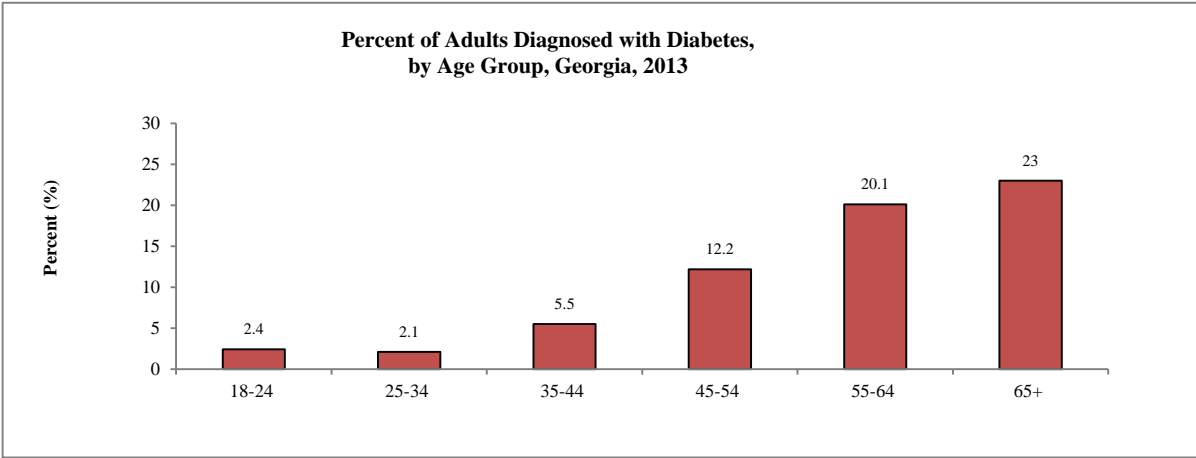
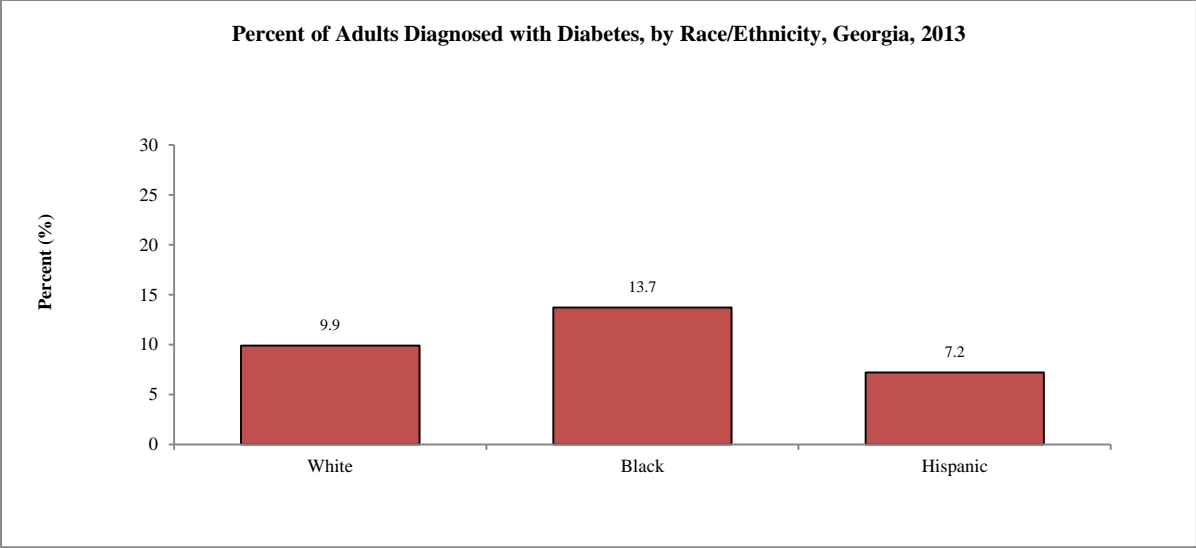


Figure 5. Diabetes Prevalence by District



**Figure 6: Percent of Adults Diagnosed with Diabetes**

## How Diabetes is Managed

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Individuals with diabetes need a healthcare team with expertise as well as the skills and tools to manage their own blood glucose levels daily. Controlling glucose levels is an important part of diabetes self-management. With uncontrolled glucose levels the individual has a higher risk of developing complications such as kidney failure, retinopathy that can lead to blindness, nerve damage of the feet and hands, cardiovascular disease, poor circulation, and slow healing wounds that may end up in amputations. People with Type 1 Diabetes manage their diabetes through insulin injections or a continuous insulin infusion pump. Type 2 Diabetes can be managed through diet and exercise but these individuals also may need to take oral medications and sometimes insulin through either injections or an insulin pump.

Figure 7 below shows the range of people nationally using different types of management approaches. Diabetes is an intensely individualized condition; every person has a different plan, medication levels, and eating and exercise plan; this is why Diabetes Self-Management is so important for those with diabetes. Knowing how to self-manage and how to problem solve makes an incredible difference in the management of this disease. There are approximately 6 million Americans who are on some sort of insulin regimen.<sup>23</sup>

	<b>Number of adults using diabetes medication*</b> (millions)	<b>Percentage using diabetes medication</b> (unadjusted)
<b>Insulin only</b>	2.9	14.0
<b>Both insulin and oral medication</b>	3.1	14.7
<b>Oral medication only</b>	11.9	56.9
<b>Neither insulin nor oral medication</b>	3.0	14.4

\*Does not add to the total number of adults with diagnosed diabetes because of the different data sources and methods used to obtain the estimates.

Source: 2010–2012 National Health Interview Survey.

**Figure 7: Treatment of Diabetes among people aged 18 years or older with diagnosed diabetes, United States, 2010-2012**

Diabetes Self-Management Education and Support (DSMES), sometimes called Diabetes Self-Management Training, is a proven way for people with diabetes to practice better techniques to manage their blood glucose levels and medications.<sup>24</sup>

These programs can go by many names. All consist of 7 self-management behaviors—

- 1) Healthy eating- Making healthy food choices and portion sizes.
- 2) Being active- Having daily physical activity is important for overall fitness, weight management, and blood glucose control.
- 3) Monitoring blood glucose levels- Daily monitoring can assist the individual on adjustments they may need to make to have better control over their diabetes and lower their risk of complications.
- 4) Problem Solving- Problem solving is crucial to the management of blood glucose levels by being able to make changes to daily activities regulate blood glucose levels

- 5) Taking medications as prescribed- Effective drug therapy and taking medications correctly can reduce the risk of developing complications as well as elevated blood glucose levels.
- 6) Coping in a healthy way- Coping with diabetes is sometimes difficult and can make self-management harder for the individual.
- 7) Reducing risks of developing complications- Risk reduction behavior such regular eye, foot, and dental examinations and regular blood glucose monitoring as well as smoking cessation can reduce the risk of complication development.

During the education program the participants are taught how to problem solve, make informed decisions, and reinforces self-care. After the program is completed the participant will be able to play an active role in their management of this disease.

In Georgia, accredited programs are eligible for reimbursement by Medicare and some private insurers. The 10 national standards for accredited programs are—

- 1) Internal Structure – the providers of DSME/T should document organizational structure, mission statement, and goals. Documentation of an organizational structure can lead to efficient and effective provision of DSM E/T.
- 2) External Input– providers of DSME/T should seek ongoing input from external stakeholders and experts in order to promote program quality.
- 3) Access—the providers of DSME/T should determine the populations to serve and how to best deliver diabetes education to that population and what resources can provide ongoing support for that population.
- 4) Program Coordination– a coordinator should be designated to oversee the program. The coordinator will have oversight responsibility for the planning, Implementation, and evaluation of the education services.
- 5) Instructional Staff— trained instructional staff need to be in place to provide DSME/T. At least one of the instructors must be responsible for designing and planning. At least one of the instructors will be a registered nurse (RN), registered dietitian (RD) or pharmacist with training and experience pertinent to DSME, or another professional with certification in diabetes care and education, such as CDE or BC-ADM. Other health workers can contribute to DSME and provide DSMS with appropriate training in diabetes with supervision and support.
- 6) Curriculum—programs must provide evidence of a written curriculum, reflecting current evidence and practice guidelines, with criteria for evaluating outcomes.
- 7) Individualization— needs of each participant must be assessed to develop an individualized educational plan of care focused on behavior change.
- 8) Ongoing Support— the participant and instructor(s) will together develop a personalized follow-up plan for ongoing self-management support.
- 9) Patient Progress— the DSME/T provider(s) will monitor whether participants are achieving their personal goals and other outcomes as a way to evaluate program effectiveness.
- 10) Quality Improvement—the DMSE/T providers should measure the effectiveness of the education and support and look for ways to improve any identified gaps in services.

The return on investment for self-management programs is high. For example, an economic analysis conducted in 2000 by Klonoff and Schwartz reported that for every \$1 spent on DSME/T, there was a net savings of \$0.44 to \$8.76.<sup>25</sup> Additional studies also found that (diabetes education (and disease management) was associated with decreased costs, cost savings, cost effectiveness, or positive return on investment.<sup>26</sup> In the commercially insured population, the gap between the cost of the diabetes education population and the non-education population increased over time.<sup>27</sup>

The cost-effectiveness of diabetes self-management programs in real-world community primary care settings has been proven effective for type 2 diabetes. One study found that self-management programs for type 2 diabetes are cost-effective from a health systems perspective when the cost savings due to reductions in long-term complications are recognized; the authors noted that these findings may justify increased reimbursement for effective self-management programs in diverse settings.<sup>28</sup> Overall, the case for accredited programs is also overwhelming. A 2011 study found that patients exposed to DSME/T programs showed lower cost patterns when compared with a control group of people with diabetes without DSME/T encounters. People with diabetes who had multiple DSME/T encounters were more likely to receive care in accordance with recommended guidelines and to comply with diabetes-related prescription regimens, resulting in lower costs and utilization trends. This analysis demonstrated that repeated DSME/T encounters over time result in a dose-response effect on positive outcomes.<sup>29</sup>

However, as of 2014, in Georgia there were just 69 ADA programs, 22 AADE programs, and 2 organizations (Metropolitan Atlanta YMCA and the Department of Human Services, Division of Aging Services) licensed to implement Stanford DSME. This number is insufficient to serve the population with diabetes and prediabetes in Georgia.

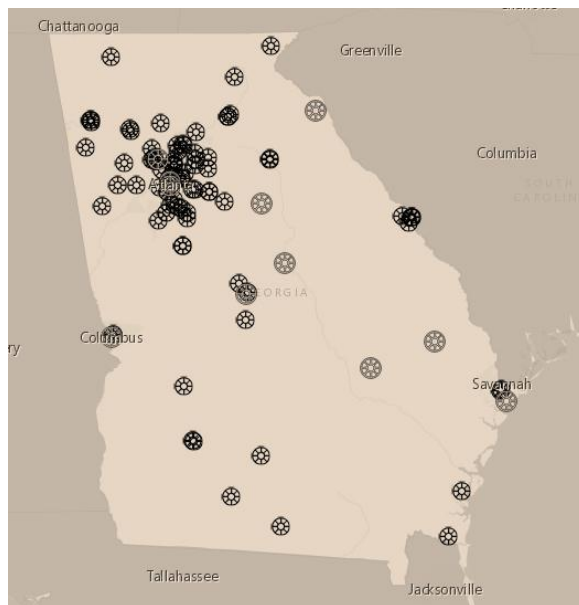


Figure 8: ADA and AADE Accredited Diabetes Self-Management Program Locations

## **The Financial Impact of Diabetes and its Complications**

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More than \$1 of every \$10 spent on health care in the U.S. goes directly toward diabetes and its complications, and more than \$1 of every \$5 spent on health care in the U.S. goes to the care of people with diagnosed diabetes.<sup>30</sup> People with diagnosed diabetes, on average, have medical expenditures that total approximately 2.3 times higher than expenditures would be in the absence of diabetes.<sup>31, 32</sup>

In 2012, diabetes cost the nation some \$245 billion with \$176 billion being direct medical costs and also reduced productivity by \$69 billion.<sup>33</sup> In the same year, in Georgia medical expenses attributable to diabetes totaled \$6.6 billion and indirect expenses, such as lost productivity and premature mortality, totaled more than \$2.4 billion.<sup>34</sup>

According to AARP, in 2009, 655,000 American adults entered the hospital because of diabetes. Common reasons for hospitalizations due to diabetes include strokes, heart attacks, ulcers and dehydration from elevated blood sugar levels.<sup>35</sup> Nearly 95 percent of these hospitalizations were among persons with Type 2 Diabetes.

The ADA estimates that the largest component of medical expenses attributed to diabetes is for hospital inpatient care at 43% of the total medical cost.<sup>36</sup> In 2012, the average hospitalization cost of a person with Type 2 Diabetes was \$28,083. And, the cost of hospital inpatient care for people with diabetes has risen from \$58 billion in 2007 to \$76 billion in 2012 in the U.S.<sup>37</sup>

In Georgia, hospital admissions from Georgia's Medicaid and State Health Benefit Plan cost the state approximately \$30 million in 2013<sup>38</sup> for 36,567 hospital admissions. And, there were also approximately 25,374 emergency department (ED) visits due to diabetes in 2013 costing \$20 million.<sup>39</sup>

These high numbers do not account for those undiagnosed with diabetes or those with pre-diabetes. Nationwide, the prevalence of pre-diabetes has been estimated at 35% of adults.<sup>40</sup>

## Diabetes Prevention

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Contrary to popular belief, children who are overweight or obese are not likely to outgrow their weight status as adults. Childhood obesity contributes to lifelong chronic diseases, such as Type 2 Diabetes, high blood pressure, arthritis and sleep apnea.<sup>41,42</sup>

Nationwide, 1 in 3 children are overweight or obese by their 5th birthday. In Georgia, the numbers are higher. More than one in three (35 percent) of children ages 2-19 are overweight or obese. More than 1 in 10 children become obese between the ages of 2 to 5; and 5 percent of 6- to 11-year-olds are severely obese. Georgia's lowest income children, even the ones who may live in a household that experiences food insecurity, are at greatest risk of being overweight or obese. Between 2008 and 2011, 18 states, including Georgia, and one U.S. territory experienced a decline in obesity rates among preschoolers from low-income families. While we have made progress recently, Georgia still has a higher percentage of children who are overweight or obese than the national average. And, racial and ethnic disparities in weight status emerge in childhood; black and Hispanics are significantly more likely than whites to be obese.

In addition, research over the past decade has consistently concluded that children who eat well and are physically active learn better. Conversely, poorly nourished, overweight, sedentary or hungry children tend to have weaker academic performance and score lower on standardized achievement tests over time.<sup>43</sup> Creating a healthy food environment and developing healthy eating and physical activity skills at a young age in Georgia's early care environments and schools will help to create a healthier population, reduce obesity and chronic disease, and allow children to develop, grow, learn, and have a healthy future.

Children who are overweight or obese are likely to become overweight or obese adults. Obesity increases your risk of having pre-diabetes that can lead to type 2 diabetes. For this reason, in collaboration with statewide partners, Georgia Shape, the Governor's initiative to prevent childhood obesity, and the Georgia Department of Public Health Chronic Disease Prevention Section have developed resources to guide Georgia's early care educators and schools in the implementation of comprehensive wellness policies and practices. Resources include the Growing Fit Kit: Wellness Policies for Georgia's Early Care Environment; Farm to School materials; a School Nutrition and Physical Activity Tool Kit, and programs like Power Up for 30. All resources and associated trainings are available through the Chronic Disease Prevention Section website at [dph.georgia.gov/chronic-disease-prevention](http://dph.georgia.gov/chronic-disease-prevention).

Studies have also shown that among adults, Type 2 Diabetes can be prevented or delayed by adopting a few lifestyle changes. Worksite Health programs offered by employers and training programs for employers, such as Work@Health, that are offered by the Department of Public Health and many employers across Georgia, have been shown to reduce disease risk factors and improve nutrition and physical activity. Opportunities for active transportation and access to fresh fruits and vegetables, along with tobacco-free environments, can also help to reduce the burden of Type 2 diabetes in Georgia.

And, there are community -based programs that also have been shown to reduce the progression of pre-diabetes or diabetes risk factors to diabetes. The Diabetes Prevention Program (DPP), for



example, has been proven to lower the risk of developing Type 2 Diabetes by 58 percent. DPP is a diabetes program is a year-long program that, through a series of interactions, educates the individual about diabetes and the ways to make lifestyle changes to prevent diabetes. The program supports participants in making real lifestyle changes through education on healthy eating choices, increasing physical activity, coping skills, stress management, and problem solving.

DPP sessions are weekly for the first 6 months, followed by monthly sessions the remaining 6 months. Throughout the program, the participants follow a curriculum led by a trained “lifestyle coach” which follows the program standards. DPP is broken down into two sections: the 6 month weekly sessions and the 6 month monthly sessions. During the weekly sessions the participants will cover all of the topics in the left column of the following table. Each session will have one specific topic to discuss. After the first section of weekly sessions the participant will begin the monthly sessions. These sessions are meant to reintroduce topics to the participant for further understanding. The monthly sessions may be combined to be sure and cover all of the listed topics.

DPP may be delivered in person or via distance learning or telehealth. All sessions must include recording of the participant’s body weight. Goals should focus on moderate changes in both diet and physical activity to achieve modest weight loss over the first six months in the range of 5 to 10 percent of baseline body weight. Strategies used to achieve these goals must include a focus on self-monitoring of diet and physical activity, building of self-efficacy and social support for maintaining lifestyle changes, and problem-solving strategies for overcoming common challenges to sustaining weight loss.

## Recommendations/Action Plan

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Currently in Georgia there are no state funds outside of the Medicaid program specifically set aside for diabetes initiatives such as awareness, prevention, self-management or improving the quality of care for diabetes.

In July 2013, the Department of Public Health entered into a new cooperative agreement with the Centers for Disease Control and Prevention for the *State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health – FOA – DP13-1305* approach to preventing and to reducing the risk factors associated with childhood and adult obesity, diabetes, heart disease and stroke; and addressing the management of chronic diseases.

With the funds provided through this federal award, the Department of Public Health is currently working to—

- ✓ Promote awareness and screening for pre-diabetes among people at high risk of type 2 diabetes;
- ✓ Provide information to insurers and health systems regarding the return on investment for diabetes control initiatives;
- ✓ Promote participation in the Diabetes Prevention Program for people with risk factors for diabetes or pre-diabetes;
- ✓ Establish additional ADA-recognized, AADE-accredited, and/or state-accredited DSME programs in high need areas of the state;
- ✓ Partner with the Division of Aging to accredit these programs in the Area Agencies on Aging;
- ✓ Support quality improvement initiatives to improve A1C control and reporting of A1C control by healthcare providers; and,
- ✓ Increase the use of healthcare extenders in the community to support diabetes self-management programs.

In order to further control the costs of diabetes, the Department of Public Health and its partners recommend—

### **1) Enhancing Diabetes and Prediabetes Surveillance in Georgia**

To promote the use of data to influence decision-making at local and state levels, consistent and complete data collection and analysis for those at risk for diabetes is needed. Currently the Georgia Department of Public Health has access to behavior data and self-reported data about diabetes and its risk factors, as well as hospital claims data. However, there is no widely available source of primary care claims data for understanding diabetes and no reporting of A1C levels or diabetes diagnoses in Georgia. In order to better understand diabetes in Georgia, the state should—

- a. Evaluate the utility of requiring laboratories to report and gain access of A1C levels for all persons tested in order to better understand patterns of A1C testing and control of A1C levels in Georgia.

- b. Obtain and analyze Medicare and Medicaid claims data to obtain annual beneficiaries data (state and county level) including: beneficiaries diagnosed with diabetes, hospitalization data to assess opportunities to improve the quality of care for diabetes in Georgia.
- c. Facilitate communication with health systems and encourage broader use of electronic medical records and health information exchanges or similar methods that support new and innovative ways to share data among clinicians and public health to improve the diagnosis and quality of care for diabetes.

## **2) Reimbursement for Evidence-Based Prevention and Control Services for Diabetes**

Diabetes is a serious chronic condition. One type of diabetes can be prevented entirely through weight loss, physical activity, and good nutrition. Pre-diabetes can be reversed in some individuals through these same methods. And, all types of diabetes can be better control and hospitalizations can be avoided through proven methods of self-management education. However, neither prevention programs nor self-management programs are widely reimbursed. Medicare reimburses for self-management programs through accredited providers. Some private insurers and self-funded plans also reimburse for the Diabetes Prevention Program. While there are no national recommendations as of the date of this report to screen all people for diabetes, it is anticipated that there will be national guidelines within the next several years that recommend screening all persons over the age of 45 for diabetes. The U.S. Preventive Services Task Force (USPSTF) recommends screening for abnormal blood glucose as part of cardiovascular risk assessment in adults aged 40 to 70 years who are overweight or obese. Clinicians should offer or refer patients with abnormal glucose to intensive behavioral counseling interventions to promote a healthful diet and physical activity. (B recommendation)<sup>44</sup> In order to reduce the costs of diabetes in Georgia, the state and its partners could—

- a. Ensure access to diabetes screening, treatment and self-management services across the state, especially in high need areas such as those with higher than expected rates of hospitalization for Type 2 diabetes. Partnerships between primary care and public health and/or telehealth, where feasible, may increase access. However, significant additional resources are needed to equip public health with the training and resources to implement nurse protocols and prevention programs that address this complex condition.
- b. Provide access to and reimbursement for the Diabetes Prevention Program, Diabetes Self-Management Services, and medical nutrition therapy services particularly for persons on Medicaid. At this time Medicaid does not reimburse for Diabetes programs. An approval process must take place as well as funding to reimburse for Diabetes programs.
- c. Provide professional development opportunities for primary care providers around billing and coding for diabetes self-management education, tobacco cessation services, and the opportunities to refer patients to these programs or operate the

programs through mid-level or physician and non-physician clinicians or providers.

- d. Encourage self-funded health insurance plans within Georgia to offer the Diabetes Prevention Program, Diabetes Self-Management, and Worksite Wellness supports for all employees and their dependents.

### **3) Ensuring Provider Professional Education for Diabetes**

Primary care providers in Georgia, particularly in rural areas, see a wide range of conditions. Professional education for these providers, including physicians, nurses, and public health professionals can help Georgia to identify pre-diabetes and diabetes early and support healthier lifestyles. Specifically, providers have indicated they would benefit from—

- a. Information on Medicaid and Medicare reimbursement policies, as well as, coding for diabetes, pre-diabetes, and gestational diabetes.
- b. Clinical information and resources for early detection of diabetes and prevention of type 2 diabetes and management of diabetes and associated conditions, such as hyperlipidemia.
- c. Rapid access to information related to local community resources to support patients and families in achieving healthier weights and better nutrition.
- d. Quality improvement tools and strategies to ensure use of tools such as electronic health record data to management patients with complex chronic conditions, like diabetes, in their busy daily practices.

### **4) Support Self-Management Supports at the Community Level**

Self-management supports in community settings, not only in clinical settings, are critical to managing and controlling diabetes. People need access to diabetes self-management information and experts in their homes, schools, workplaces, and churches. To support the development and offering of high quality self-management support, Georgia communities could—

- a. Promote awareness the need for screening and early detection of diabetes.
- b. Ensure that persons newly diagnosed with diabetes, or those needing assistance managing diabetes, are referred to Diabetes Prevention Programs and Diabetes Self-Management Education programs.
- c. Establish and/or maintain accredited and evidence-based Diabetes Prevention Programs and Diabetes Self-Management Education programs in community settings, such as churches, hospitals, community centers, and senior centers.

- d. Establish a Commission on Health Disparities to prepare comprehensive recommendations to the Department of Public Health and the Legislature that examines health disparities.

### **5) Promoting Quality Improvement in Health Systems**

Health systems that include primary care providers, hospitals and specialists offer a unique opportunity to demonstrate opportunities to improve prevention and the quality of care for individuals with the risk factors for diabetes or diabetes itself. In order to support health systems in Georgia in combating the diabetes epidemic, the state and its partners could—

- a. Increase the number of health care providers participating in continuous quality improvement initiatives related to quality measures for diabetes care, such as National Quality Forum Measure 59.
- b. Support local partnerships and communications between employers, payors, physicians, other healthcare providers, health and community organizations, and other relevant partners to create community-level approaches to addressing diabetes.
- c. Offer examples of, or create opportunities for consensus around, guidelines, standards, protocols and best practices for improving risk behaviors and risk factors as well as pre-diabetes care and promote the adoption and implementation of these standards, protocols and best practices.
- d. Develop or support the development of tools for use in electronic health records systems that help to identify, flag, notify, and refer those with high glucose levels and ensure adequate follow-up.

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