



State of Illinois
Illinois Department of Public Health

Illinois Diabetes State Plan

November 2014

TABLE OF CONTENTS

Message from the Director.....	3
Executive Summary.....	4
Types of Diabetes	6
Burden of Diabetes	9
Mortality of Diabetes in Illinois.....	164
Risk Factors for Diabetes	16
Complications of Diabetes.....	21
Economic Costs of Diabetes.....	23
Projected Prevalence of Trend	204
Illinois Diabetes Strategy Planning for Control and Prevention	25
Program Evaluation	32
Diabetes Plan Strategic Logic Model.....	33
Call to Action.....	34
Diabetes Commission	35
References	37

Dear Diabetes Partner:

I am pleased to present the 2013-2015 Illinois Diabetes State Plan, which outlines efforts of the Illinois Department of Public Health's Diabetes Prevention and Control Program, the Illinois Diabetes Commission and other state partners to identify and to improve services for persons with diabetes and their families. This plan provides a set of goals and strategies affecting all areas of diabetes care and prevention.

Diabetes is the eighth leading cause of death in Illinois and, according to the 2011 Illinois Behavioral Risk Factor Surveillance System, approximately 921,093 adults (18 years of age or older) in the state have diabetes. The estimated medical cost of diabetes in Illinois is \$8.98 billion, which includes \$6.6 billion in direct medical costs and \$2.4 billion in indirect costs, such as disability, work loss and premature mortality. Due to the medical costs associated with diabetes, 17.6 percent of persons living with diabetes in Illinois reported avoiding medical care in 2011.

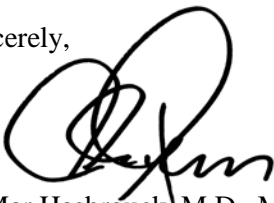
The Department, the commission and partners throughout the state are collaborating to ensure people with diabetes, especially those at greater risk for health disparities, achieve their optimal lifespan with the best possible quality of health. Those involved are working to encourage lifestyle changes that include moderate weight loss and exercise to prevent the onset of diabetes among those at high risk. The Department has gathered timely data essential to developing a better understanding of how diabetes affects different population groups and how quality of care can be improved.

The vision of this plan is to assist Illinois organizations with reaching Healthy People 2020 goals, including:

- Attaining high-quality, longer lives free of preventable disease, disability, injury and premature death.
- Achieving health equity, eliminating disparities and improving the health of all groups.
- Creating social and physical environments that promote good health.
- Promoting quality of life, healthy development and healthy behaviors across all life stages.

The Department encourages everyone to take an active role in implementation of the Illinois Diabetes State Plan and spread the message that diabetes prevention and control is a priority in Illinois.

Sincerely,



LaMar Hasbrouck, M.D., M.P.H.
Director
Co-Chair, Illinois State Diabetes Commission

PROTECTING HEALTH, IMPROVING LIVES

EXECUTIVE SUMMARY

Diabetes is a serious disease that affects young and old, all ethnic backgrounds and both genders. Regardless of the type of diabetes, the disease takes a toll on the body if not self-managed properly. Although type 1 diabetes may come on suddenly, type 2 may take years for symptoms to become apparent. Diabetes results in a lifelong impact to the patients and to their families.

Type 1 diabetes (insulin dependent) and type 2 (non-insulin dependent) diabetes are chronic diseases that can harm other body organs and cause kidney failure, blindness, heart attacks and strokes, and amputations. According to the U.S. Centers for Disease Control and Prevention (CDC), diabetes is the seventh leading cause of death in the United States. Approximately 8.3 percent of the U.S. population, or 25.8 million people (all ages), have diabetes. Of these, approximately 7 million people do not know they have diabetes; making them at risk to develop other health complications due to their unmanaged diabetes.

In Illinois, the number of persons diagnosed with diabetes has more than doubled, reaching approximately 800,000 in 2011, and an estimated 500,000 people who are not aware they have the disease, according to the state's Behavioral Risk Factor Surveillance System (BRFSS).

The prevalence of diabetes increases with age, according to the 2010 BRFSS. There are 11.4 percent of adults with diabetes between 45-64 years of age and 19.8 percent 65 years of age or older. The prevalence of diabetes is higher among females than males. Diabetes is more prevalent in certain population sub-groups. In 2010, the prevalence of diagnosed diabetes was higher among non-whites, as compared to whites. Hispanics/Latinos have a higher prevalence than non Hispanics/Latinos. In addition, people with a disability have a higher prevalence of diagnosed diabetes than those without a disability.

The major risk factors for pre-diabetes or developing diabetes include being overweight or obese; physically inactive; unhealthy diet; tobacco use; age; ethnicity; chronic conditions, such as high cholesterol; hypertension; and family history. Approximately 10 percent of Illinois adults over the age of 65 years have prediabetes. The risk for developing prediabetes also is higher for non-whites compared to whites, females compared to males, and non-Hispanics/Latinos compared to Hispanics/Latinos.

Health care disparities include persons with diabetes who are uninsured or underinsured, especially in Illinois rural communities. Diabetes increases the risk for additional chronic diseases. For example, the highest risk is high blood pressure at 71 percent in adults with diabetes versus 23 percent of adults without diabetes and high cholesterol at 61 percent in adults with diabetes versus 36 percent without diabetes. The American Diabetes Association (ADA) estimates medical expenses for people with diabetes are more than two times higher than for people without diabetes. In the United States in 2007, direct medical costs for diabetes were an estimated \$116 billion, with \$58 billion attributed to disability, work loss and premature mortality. Hospitalization rates in Illinois show that ketoacidosis, which is preventable with blood sugar management, is the single most major complication of both type 1 and type 2 diabetes.

The Illinois adult mortality rate for diabetes in 2007 (the most recent available data) was 23.7 per 100,000 compared to the U.S. rate of 22.2 per 100,000. African Americans in Illinois with diabetes have the highest mortality rate for both females (33.2 per 100,000) and males (30.2 per 100,000), according to the Illinois Department of Public Health's Center for Health Statistics. Death rates also vary by sex and race.

It is estimated that by 2020 the number of adults with diabetes will increase 43 percent nationally and 25 percent in Illinois. These projections emphasize the importance of access to medical care, to developing a healthy lifestyle and to the importance of self-management of diabetes and other chronic diseases. Many complications of diabetes can be prevented or delayed by controlling blood glucose, blood pressure and high cholesterol through lifestyle changes.

The Illinois Department of Public Health (Department) is committed to addressing the burden of diabetes by assuring the goals, objectives and strategies of this plan are achieved. Activities include developing and enhancing the state's chronic disease prevention and health promotion organizational structure to strengthen leadership, to enhance coordination and to collaborate across current chronic disease prevention activities, share best practices across multiple program areas, and to eliminate redundancies across chronic disease and health promotion programs. The Department supports collaborative approaches to public health policy, communication, surveillance and epidemiology, evidence-based strategies, evaluation and community mobilization; strengthening delivery and use of chronic disease related clinical and other preventive services; and effective chronic disease management.

The Illinois Diabetes State Plan is the result of efforts by statewide partners over the course of several years, beginning with statewide hearings conducted by the Diabetes Commission and continuing via the input of the commission and the Department's Chronic Disease Prevention and Control and Health Promotion team.

The state plan addresses a comprehensive set of policy and program recommendations that will have an impact on improving the quality of life for Illinois residents, particularly the most at-risk for and vulnerable to diabetes. This plan is intended to provide state and local agencies, health care providers, organizations, funding agencies, policy and decision makers and consumer's, direction and support for creating a system of prevention that proactively promotes a comprehensive and integrated approach to reducing the morbidity and mortality of diabetes.

Diabetes is a chronic, progressive condition and a disorder of metabolism – the way the body uses digested foods for growth and energy. Most of the food people eat is broken down into glucose, which is the form of sugar present in the blood. Glucose is the main source of fuel for the body. After digestion, glucose passes into the bloodstream, where it is used by cells for growth and energy. For glucose to get into cells, insulin must be present. Insulin is a hormone produced by the pancreas, a large gland behind the stomach.

When people eat, the pancreas automatically produces the right amount of insulin to move glucose from blood into cells. In people with diabetes, however, the pancreas either produces little or no insulin, or the cells do not respond appropriately to the insulin that is produced. Glucose builds up in the blood, overflows into the urine, and passes out of the body in the urine. Insulin also is needed to synthesize protein and to store fats. In uncontrolled diabetes, glucose and lipids (fats) remain in the bloodstream and, in time, damage the body's vital organs and contribute to heart disease, stroke, vision loss, kidney disease and nerve damage.

Type 1 Diabetes

Type 1 diabetes is sometimes called insulin-dependent, immune-mediated, or juvenile-onset diabetes and accounts for 10 percent of diabetes cases. It is caused by an autoimmune reaction where the body's defense system attacks the insulin-producing cells. People with type 1 diabetes produce little or no insulin. The disease can affect people of any age, but usually occurs in children or young adults. People with this form of diabetes need injections of insulin every day in order to control their blood glucose levels.

Although type 1 diabetes is most apt to develop in children and young adults, it can appear in individuals at any age. Symptoms of type 1 diabetes usually develop over a short period, although beta cell destruction can begin years earlier. Symptoms may include increased thirst and urination, constant hunger, weight loss, blurred vision and extreme fatigue. If not diagnosed and treated with insulin, a person with type 1 diabetes can lapse into a life-threatening diabetic coma, also known as diabetic ketoacidosis. Risk factors for type 1 diabetes may include autoimmune, genetic and environmental factors, possibly viruses.

Type 2 Diabetes

Type 2 diabetes results from insulin resistance (a condition in which the body fails to properly use insulin), usually combined with the body not producing enough insulin. Type 2 diabetes most often begins as insulin resistance, a disorder in which the pancreas produces enough insulin, but for unknown reasons the body's cells are not using the insulin properly. After several years, as the need for insulin rises, the pancreas gradually loses its ability to produce insulin. Type 2 diabetes accounts for 90 percent to 95 percent of diagnosed diabetes cases in the United States.

Risk factors for type 2 diabetes include:

- Older age
- Obesity
- Family history of diabetes
- History of gestational diabetes
- Impaired glucose metabolism
- Physical inactivity
- Race/ethnicity

Native Americans, African Americans, Hispanic Americans, Asian Americans and Pacific Islanders are at a higher risk for type 2 diabetes as compared to other ethnicities. Type 2 diabetes is increasingly being diagnosed in children and adolescents. The onset of type 2 diabetes is typically gradual, with little or no symptoms initially. Symptoms may include fatigue, increased thirst or hunger, frequent urination, weight loss, blurred vision and slow healing of wounds or sores. Some people do not experience symptoms. The risk of developing type 2 diabetes may be reduced through healthy nutrition choices and physical activity to prevent obesity. Thirty minutes of moderate physical activity five-days-a-week, eating a variety of foods low in fat and reducing the amount of calorie intake each day are recommended by the CDC and the American Diabetes Association to prevent diabetes.

Gestational Diabetes

Gestational diabetes is a form of glucose intolerance diagnosed in some women during pregnancy, even though they have no known prior history of diabetes. Gestational diabetes is caused by the hormones of pregnancy or a shortage of insulin. Gestational diabetes affects the mother in late pregnancy, after the baby's body has been formed, but while the baby is busy growing. As with type 2 diabetes, gestational diabetes occurs more often in some ethnic groups, among women with a family history of diabetes and obese women. If not controlled, gestational diabetes can cause the baby to grow extra large and lead to delivery problems for the mother and the baby.

Gestational diabetes often can be controlled through diet changes and regular physical activity, but some women with gestational diabetes also must take insulin shots. In general, gestational diabetes requires treatment only during pregnancy. This form of diabetes usually disappears after the birth of the baby. Immediately after pregnancy, 5 percent to 10 percent of women with gestational diabetes are diagnosed with type 2 diabetes. Women who have had gestational diabetes have a 40 percent to 60 percent chance of developing diabetes in the next 5 – 10 years. The risk factors can be reduced by maintaining good nutrition and a healthy body weight.

Prediabetes

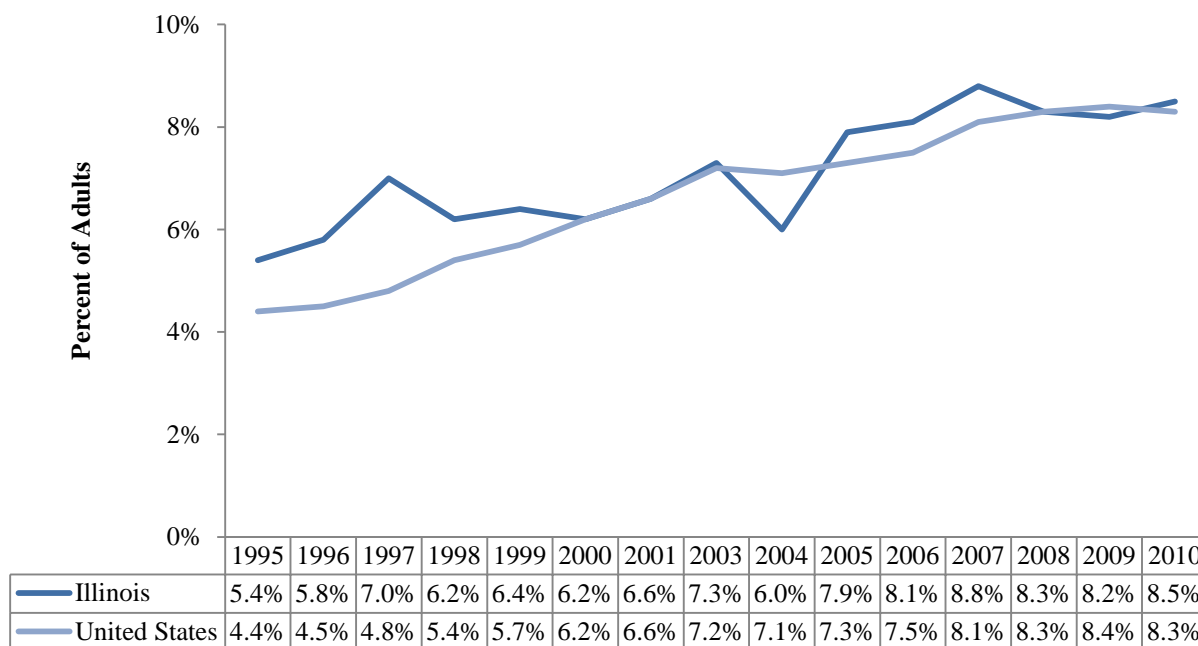
Prediabetes is a condition in which individuals have blood glucose levels higher than normal, but not high enough to be classified as diabetes. People with prediabetes have an increased risk of developing type 2 diabetes, heart disease and stroke. Progression to diabetes among those with prediabetes is not inevitable.

Studies have shown people with prediabetes who lose weight and increase their physical activity can prevent or delay diabetes and return their blood glucose levels to normal.

Prevalence of Diabetes in Illinois

The percentage of Illinois adults diagnosed with diabetes has risen from 5.4 percent in 1995 to 8.5 percent in 2010, an increase of nearly 60 percent in 15 years. Nationwide, the diabetes prevalence has nearly doubled during the same time period from 4.4 percent to 8.3 percent. An additional 464,520 Illinois adults (5.2%) have been told they have pre-diabetes.

Figure 1: Diabetes Prevalence in Adults, Illinois and the United States, 1995-2010

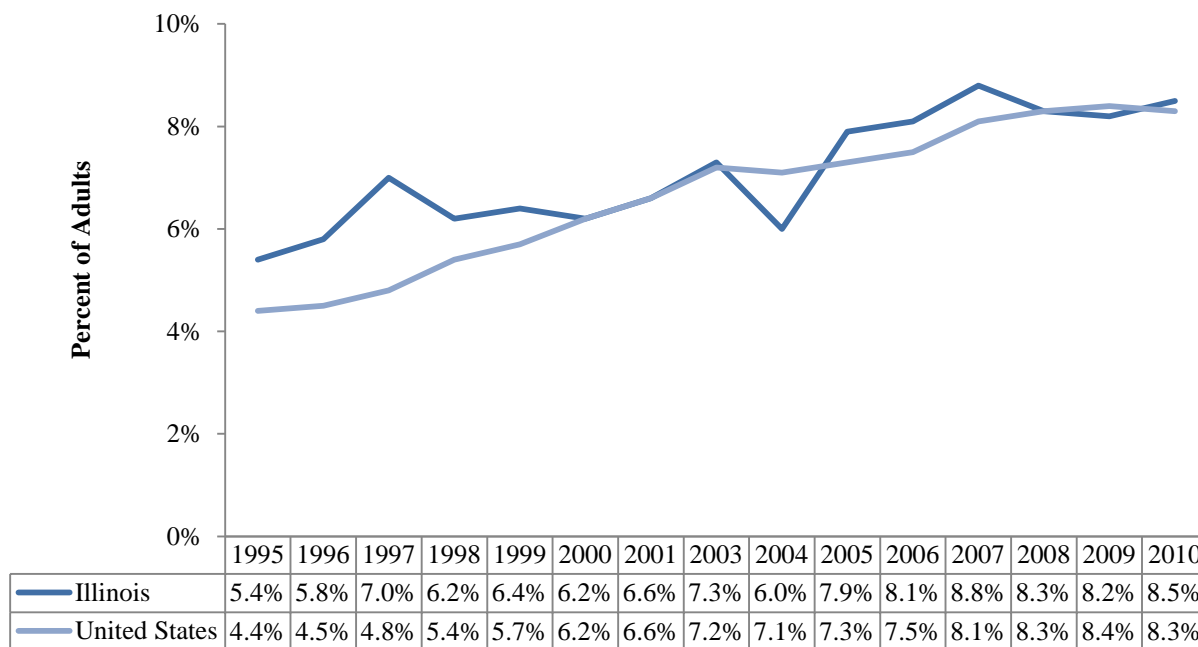


Source: Illinois and United States Behavioral Risk Factor Surveillance System, 1995-2010

Prevalence by Demographics

The prevalence of diabetes increases with age. Of Illinois adults with diabetes, 11.4 percent are between 45-64 years of age and 19.8 percent are 65 years of age or older. The prevalence of diabetes is higher among females (8.6%) than males (8.3%). Diabetes is more prevalent in certain population sub-groups. In 2010, the prevalence of diagnosed diabetes was higher among non-whites (11.0%), as compared to whites (7.4%). Hispanics/Latinos (10.2%) also had higher prevalence than non Hispanics/Latinos (8.3%). People with a disability have a higher prevalence of diagnosed diabetes than those without a disability (15.2% vs. 6.8%, respectively).

Figure 2: Percentage of Adults with Diabetes by Demographics, Illinois, 2010

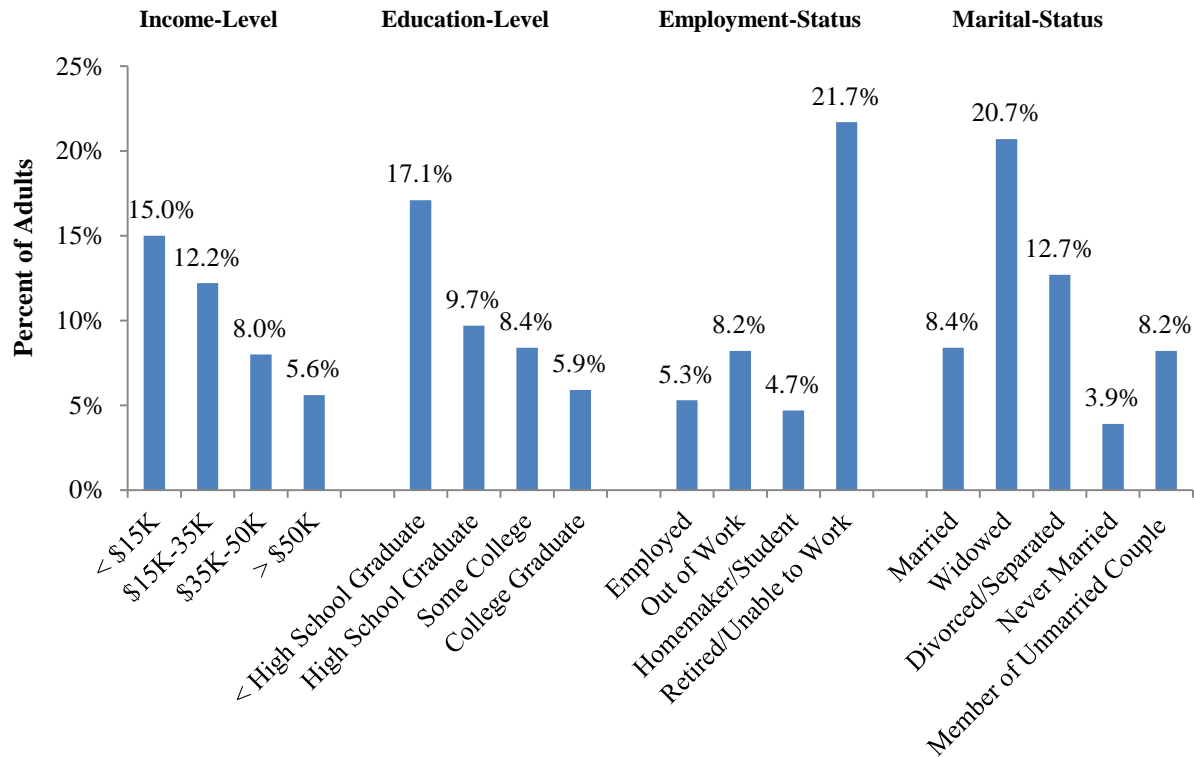


Source: Illinois and United States Behavioral Risk Factor Surveillance System, 1995-2010

Prevalence by Socioeconomic Status and Other Status

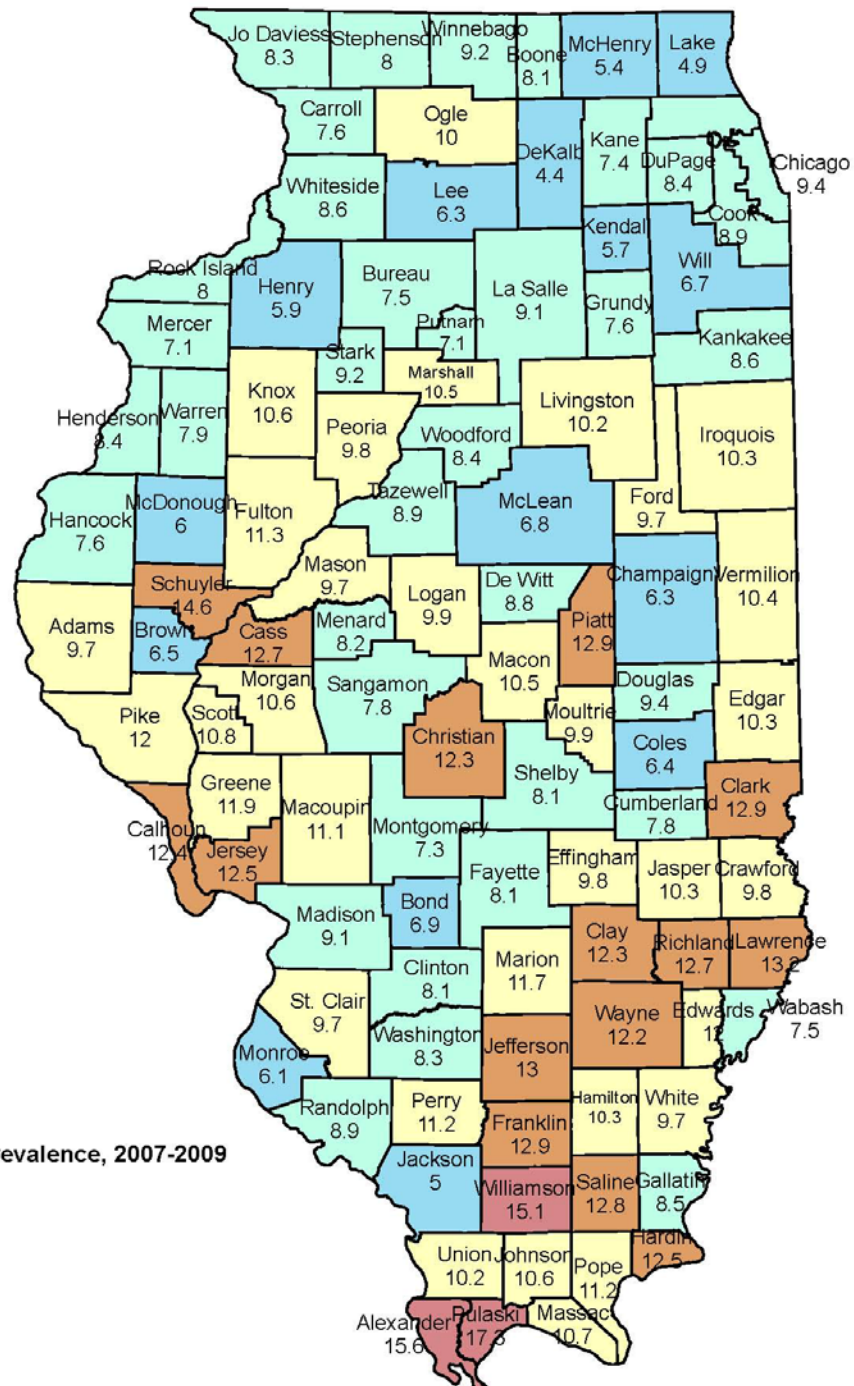
The prevalence of diabetes also is associated with socioeconomic factors, such as income and education. Fifteen percent of Illinois adults with household income less than \$15,000 have diabetes compared to 5.6 percent who have an income higher than \$50,000. The prevalence of diabetes is higher for adult Illinoisans with less than a high school degree (17.1%) compared to those who have graduated from college (5.9%). More retired adults have diabetes (21.7%) compared to those who are employed (5.3%). The prevalence is highest for widowed adults (20.7%) compared to the ones who are married (8.4%).

Figure 3: Percentage of Adults with Diabetes by Socioeconomic Status and Other Status, Illinois, 2010



Source: Illinois Behavioral Risk Factor Surveillance System, 2010

Figure 4: Percentage of Illinois Adults with Diabetes by County, Illinois, 2007-2009

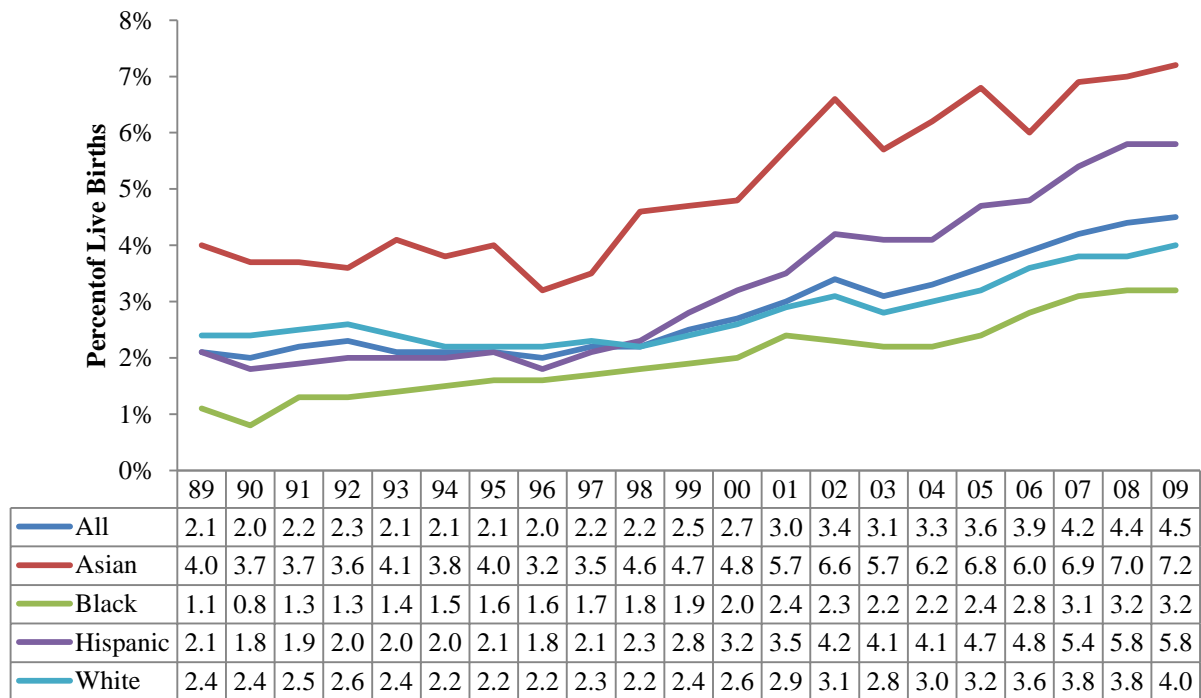


Source: Illinois Behavioral Risk Factor Surveillance System, 2007-2009

Gestational Diabetes

According to birth certificate data from the Illinois Adverse Pregnancy Outcomes Reporting System, the rate of gestational diabetes in Illinois has increased from 2.1 percent in 1989 to 4.5 percent in 2009, doubling over this 20-year time period. Gestational diabetes is more common among groups with a higher prevalence of diabetes overall. The prevalence rates, over this time period, were highest for Asians and Hispanics with each population group showing an increase of 80 percent and 176 percent respectively. Prevalence of diabetes increased by approximately 80 percent within the Asian population and more than doubled in the Hispanic population.

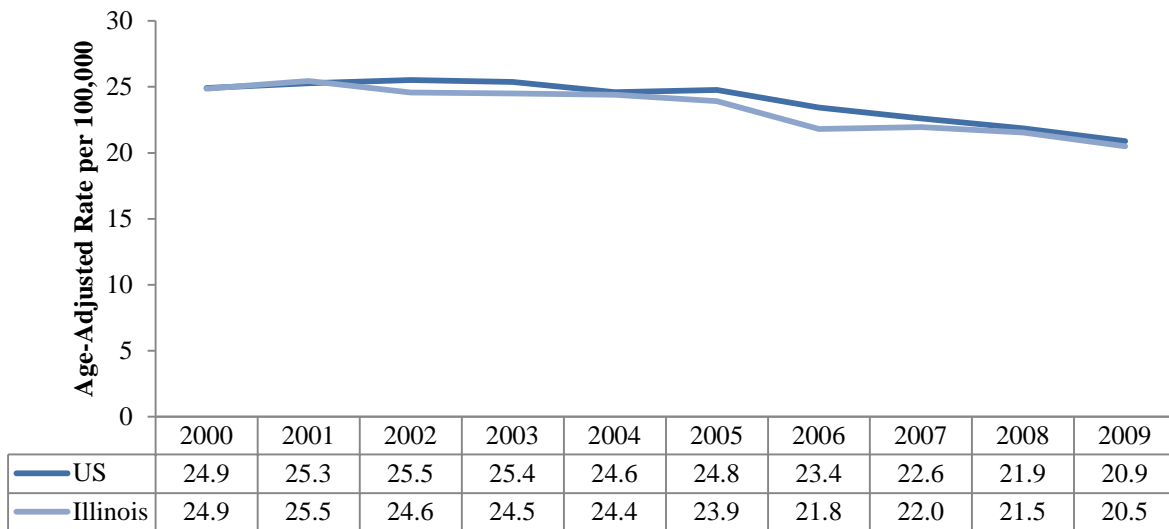
Figure 5: Percentage of Live Births with Diabetic Mothers by Race and Ethnicity, Illinois, 1989-2009



MORTALITY OF DIABETES IN ILLINOIS

In 2009, the diabetes mortality rate was 20.5 per 100,000 for Illinois compared to the national rate of 20.9 per 100,000, according to the National Center for Health Statistics. In the 10 year time period, 2000-2009, diabetes was the 8th leading cause of death and responsible for almost 3 percent of all deaths in Illinois and the U.S. Over this same time period, diabetes mortality rates significantly decreased in Illinois (2.3 percent) and nationally (2.1 percent).

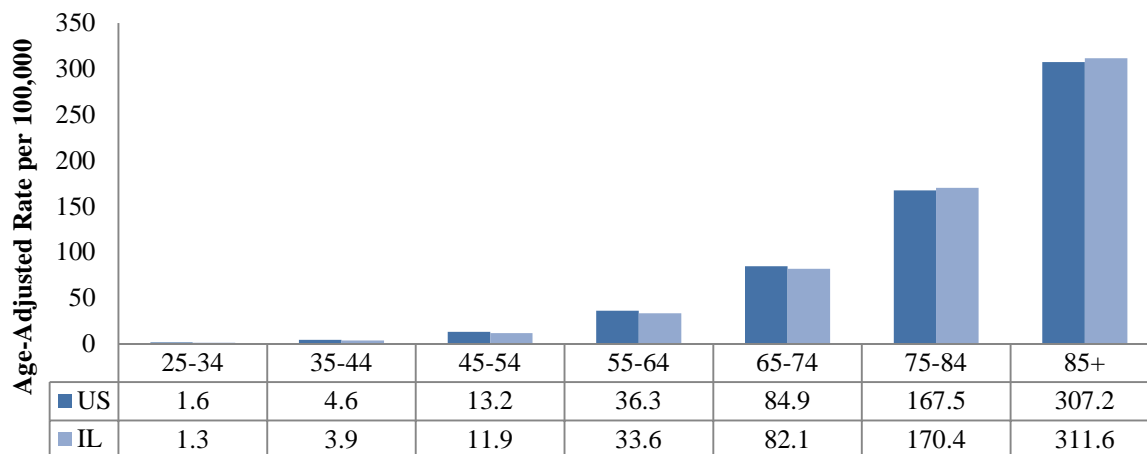
Figure 6: Age-Adjusted Diabetes Mortality Rate per 100,000, Illinois and United States, 2000-2009



Source: National Center for Health Statistics, Data Release April 2012

Diabetes mortality rates increase with age. The National Center for Health Statistics data indicates adults over the age of 85 years have the highest mortality rate for diabetes in Illinois (311.6 per 100,000) and the U.S. (307.2 per 100,000). The number of diabetes deaths for the 75-84 age group was higher for Illinois (170.4 per 100,000) compared to the U.S. (167.5 per 100,000). Diabetes mortality for all other age groups in Illinois was lower compared to the U.S.

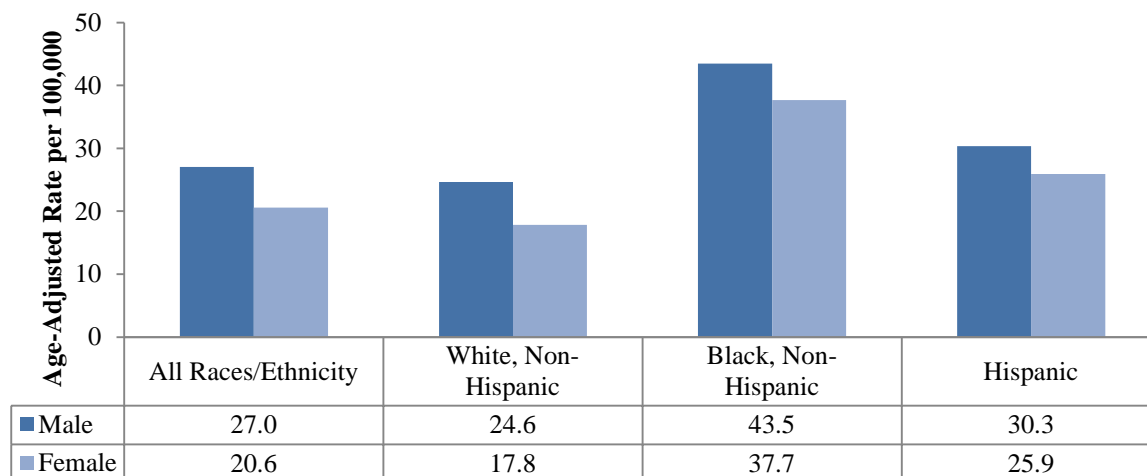
Figure 7: Age-Adjusted Diabetes Mortality Rate per 100,000 by Age, Illinois and United States, 2000-2009



Source: National Center for Health Statistics, Data Release April 2012

Diabetes mortality rates also vary by sex and race/ethnicity. Males (27.0 per 100,000) have a higher mortality rate than females (20.6 per 100,000). By race/ethnicity, black, non-Hispanics have the highest mortality rate for both males (43.5 per 100,000) and females (37.7 per 100,000). This is followed by Hispanic males (30.3 per 100,000) and females (25.9 per 100,000) and white, non-Hispanic males (24.6 per 100,000) and females (17.8 per 100,000).

Figure 8: Age-Adjusted Diabetes Mortality Rate per 100,000 by Sex and Race/Ethnicity, Illinois, 2000-2009

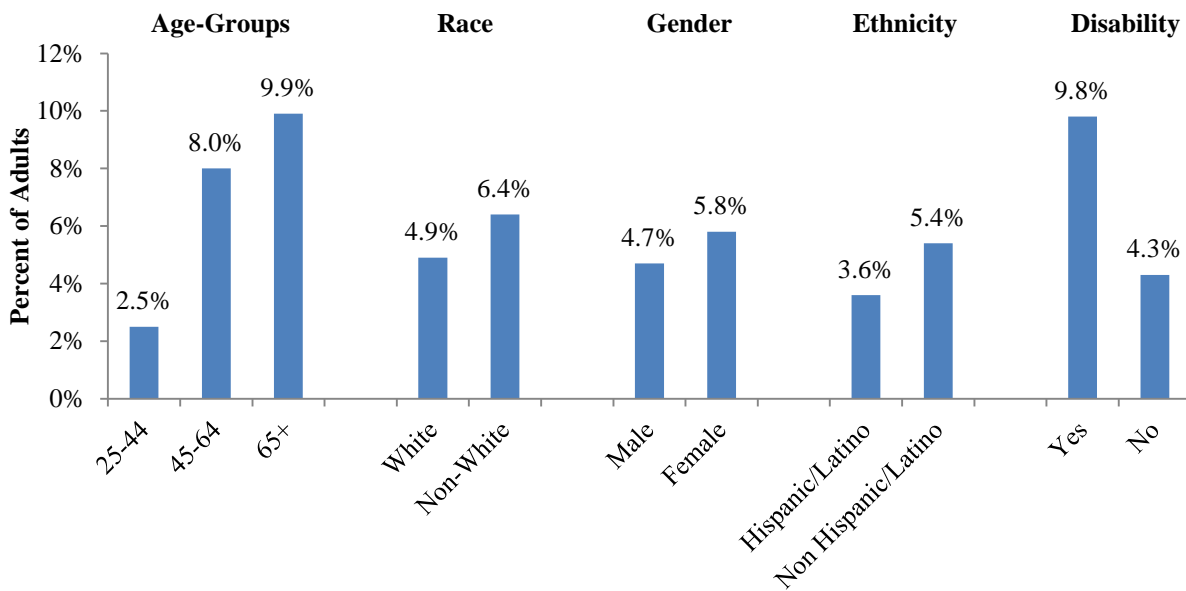


Source: National Center for Health Statistics, Data Release April 2012

Prediabetes

People with impaired glucose tolerance (IGT) and/or impaired fasting glucose (IFG) are known as prediabetic and have an increased risk of developing diabetes. People with prediabetes have glucose levels higher than normal, but not high enough to indicate diabetes. Most people with prediabetes are at a high risk of developing type 2 diabetes, heart disease and stroke. About 79 million American adults aged 20 years and above had prediabetes in 2010. According to the 2010 Illinois BRFSS, prediabetes increases with age and approximately 10 percent of Illinois adults over the age of 65 years have prediabetes. The risk of developing prediabetes also is higher for non-whites (6.4%) compared to whites (4.9%), females (5.8%) compared to males (4.7%), and non-Hispanics/Latinos (5.4%) compared to Hispanics/Latinos (3.6%). About 9.8 percent of adults with a disability have prediabetes. According to 2013 Illinois BRFSS, approximately seven percent of adults in Illinois, 525,000, have been diagnosed with pre-diabetes.

Figure 9: Percentage of Adults with Prediabetes by Demographics, Illinois, 2010

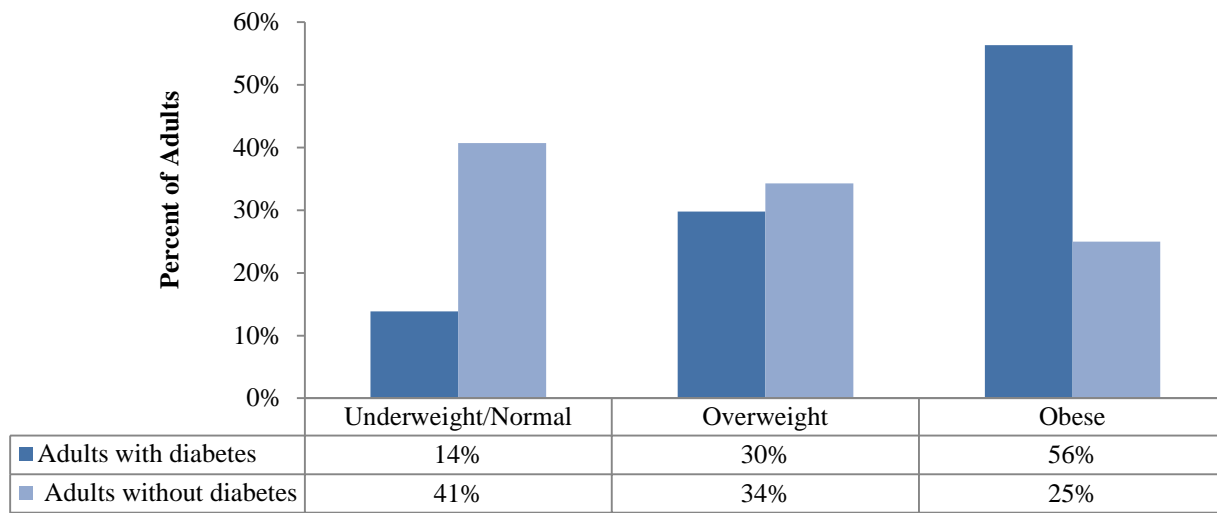


Source: Illinois Behavioral Risk Factor Surveillance System, 2010

Weight Status

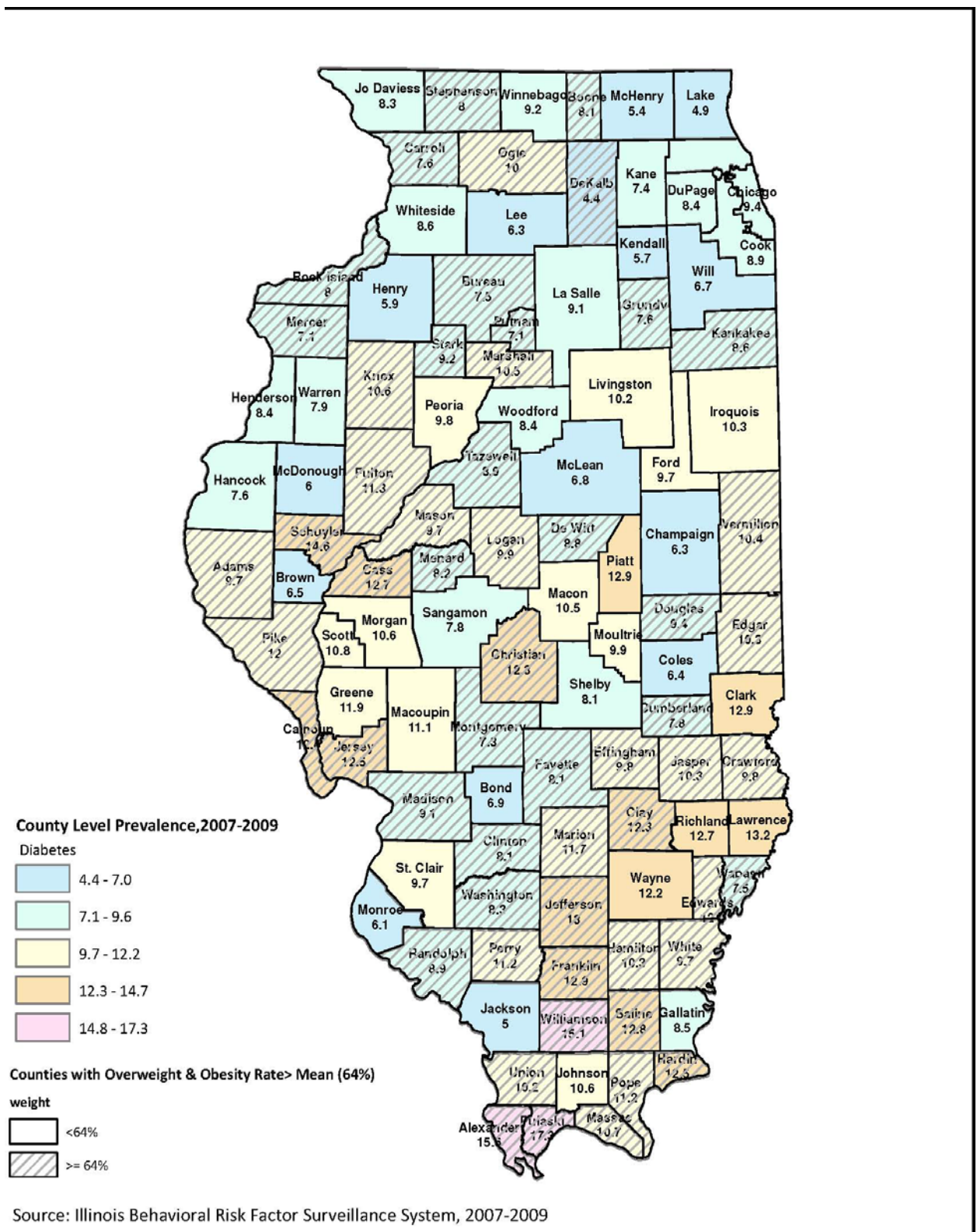
People who are obese and/or do not exercise regularly are at an increased risk of developing diabetes. Comparing Illinois adults with and without diabetes among the BRFSS respondents, the obesity rate among adults with diabetes (56%) is higher than among adults without diabetes (25.5%). The overweight status is similar for adults with diabetes (30%) and without diabetes (34%). A smaller percentage of adults with diabetes are categorized as underweight or normal weight (14%) compared to adults without diabetes (41%).

Figure 10: Weight Status of Adults With and Without Diabetes, Illinois, 2010



Source: Illinois Behavioral Risk Factor Surveillance System, 2010

Figure 11: Percentage of Illinois Adults with Diabetes with Overweight and Obesity Status by County, Illinois, 2007-2009

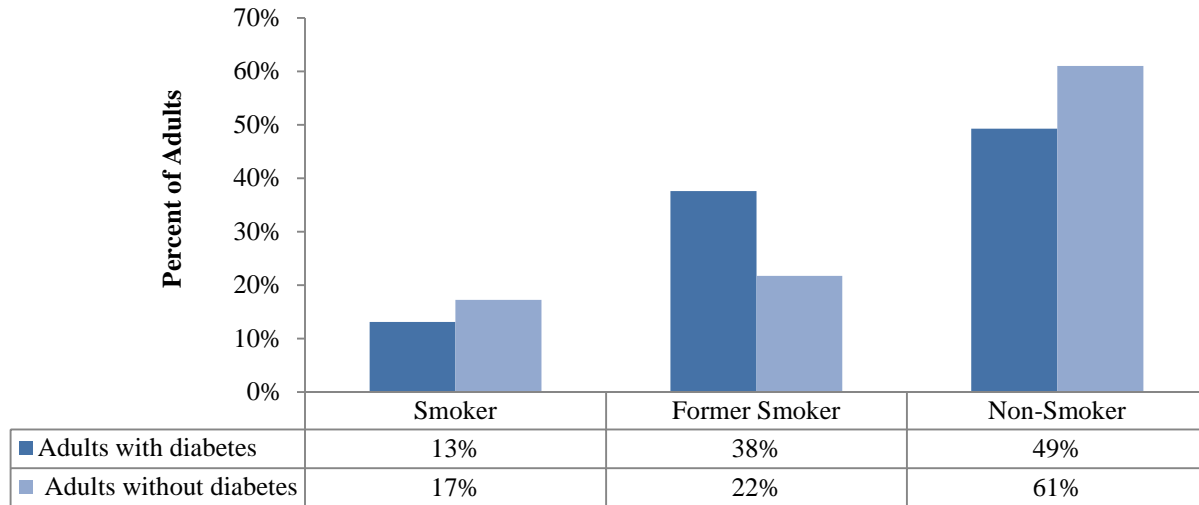


Source: Illinois Behavioral Risk Factor Surveillance System, 2007-2009

Tobacco Use

Tobacco usage increases the risk for developing diabetes, as it increases blood sugar levels that lead to insulin resistance and consequently diabetes. According to 2010 BRFSS data, 13 percent of Illinois adults with diabetes are current smokers and 38 percent are former smokers. The percentage of adults with diabetes who have never smoked (49%) is less than adults without diabetes (61%) who have never smoked.

Figure 12: Smoking Status of Adults With and Without Diabetes, Illinois, 2010

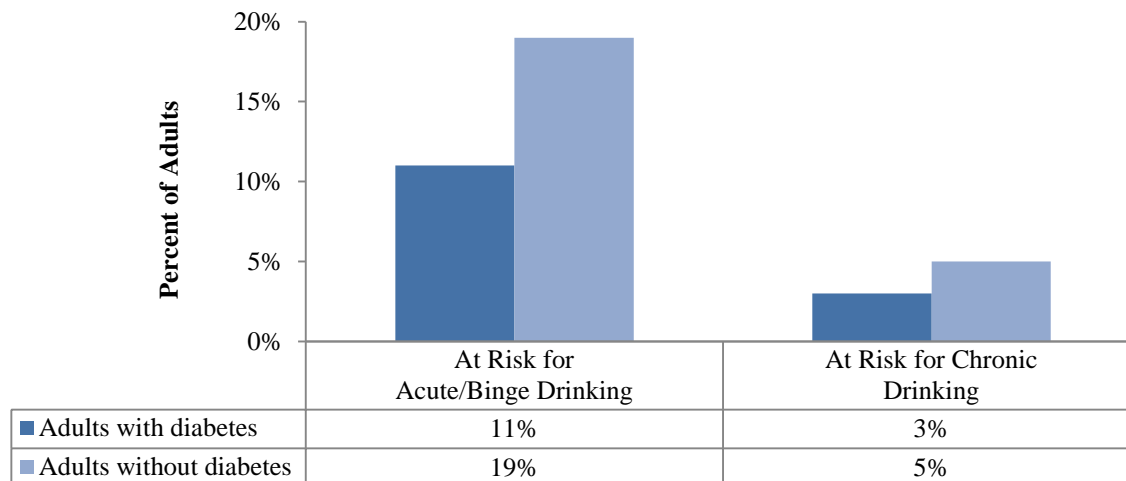


Source: Illinois Behavioral Risk Factor Surveillance System, 2010

Alcohol Consumption

Chronic alcohol use causes chronic inflammation of the pancreas (pancreatitis), which impairs its ability to secrete insulin, resulting in diabetes. A lower percentage of Illinois adults with diabetes report acute/binge drinking (11%) when compared to adults without diabetes (19%).

Figure 13: Alcohol Consumption Status of Adults With and Without Diabetes, Illinois, 2010



Source: Illinois Behavioral Risk Factor Surveillance System, 2010

Other Chronic Conditions

People with high triglycerides, high blood pressure and high cholesterol are at an increased risk for developing diabetes. According to the 2010 Illinois BRFSS survey, adults with diabetes had a higher percentage of high blood pressure (71%) and high cholesterol (61%) compared to adults without diabetes. Similarly, there were relatively higher percentages of adults with diabetes who had a heart attack (14%), had chronic obstructive pulmonary disease-COPD (8%) and had a stroke (10%) compared to the adults without diabetes. A higher percentage of adults with diabetes had arthritis (47%) compared to adults without diabetes. Adults with diabetes also had marginally higher chances of having asthma (13%) and cancer (15%), when compared to adults without diabetes.

Table 1: Other Chronic Conditions of Adults With and Without Diabetes, Illinois, 2010

Chronic Conditions	Adults with Diabetes	Adults without Diabetes
Have High Blood Pressure	71%	23%
Have High Cholesterol	61%	36%
Have Chronic Obstructive Pulmonary Disease (COPD)	8%	4%
Had Heart Attack	14%	3%
Had Stroke	10%	2%
Currently have Asthma	13%	9%
Have Arthritis	47%	24%
Have Cancer	15%	7%

Source: Illinois Behavioral Risk Factor Surveillance System, 2010

Diabetes increases the risk for many serious health problems. Too much glucose in the blood can lead to serious irreversible health problems, including heart disease and damage to the nerves and kidneys. However, through early detection, improved delivery of care, better education and other lifestyle changes, the onset of these conditions can be delayed. Some of the common complications and health risks of diabetes are highlighted below.

Diabetic Nephropathy/Ketoacidosis (Kidney Damage)

Diabetes can damage the blood vessels in the kidneys so they can no longer filter out waste. This damage is called diabetic nephropathy. Diabetes is the most common cause of kidney failure, accounting for nearly 44 percent of new cases. In Illinois, the incidence of diabetes nephropathy or diabetes ketoacidosis increased by a 236 percent for uncontrolled Type 1 diabetes and by 90 percent for Type 2 diabetes between 2005-2010. Nearly 26 million people in the United States have type 2 diabetes and nearly 180,000 people are living with kidney failure as a result of diabetes. People with kidney failure must undergo dialysis, an artificial blood-cleaning process, or transplantation to receive a healthy kidney from a donor. In 2005, care for patients with kidney failure cost the United States nearly \$32 billion.

Diabetic Neuropathy (Nerve Damage)

Diabetic neuropathies are a family of nerve disorders caused by diabetes. People with diabetes can, over time, develop nerve damage throughout the body. Symptoms may include pain, tingling or numbness in the hands, arms, feet and legs. Nerve problems can occur in every organ system, including the digestive tract, heart and sex organs. In Illinois, the incidence of diabetic neuropathy increased by 64 percent for type 1 diabetes and by 80 percent for type 2 diabetes between 2005-2010. About 60 to 70 percent of people with diabetes have some form of neuropathy. People with diabetes can develop nerve problems at any time, but risk rises with age and longer duration of diabetes.

Diabetic Retinopathy (Eye Problems)

Diabetes can damage and weaken the small blood vessels in the retina. This damage is called diabetic retinopathy. When the blood vessels of the retina are damaged, fluid can leak from them and cause swelling. The swelling and fluid can cause blurry vision and make it hard to see. If retinopathy gets worse, it may lead to blindness. People who have diabetes should have an eye exam once a year.

Heart Disease and Stroke

People who have diabetes are at greater risk for heart disease and stroke. The risk is even greater for people who have diabetes and smoke, have high blood pressure, have a family history of heart disease or are overweight. Heart disease and stroke are the most common causes of morbidity and mortality among people with diabetes.

Amputations

In the U.S., more than 60 percent of non-traumatic lower limb amputations occur in people with diabetes. In 2006, about 65,700 non-traumatic lower limb amputations were performed in people with diabetes in the United States.

Dental Disease

Periodontal (gum) disease is more common in people with diabetes. Among young adults, those with diabetes have about twice the risk of those without diabetes. Adults aged 45 years or older with poorly controlled diabetes (A1c > 9%) were nearly three times more likely to have severe periodontitis than those without diabetes. Almost one-third of people with diabetes have severe periodontal disease with loss of attachment of the gums to the teeth measuring five millimeters or more.

Other Complications

Uncontrolled diabetes leads to biochemical imbalances that can cause acute life-threatening events, such as diabetic ketoacidosis and hyperosmolar (nonketotic) coma. People with diabetes are more susceptible to many other illnesses and, once they acquire these illnesses, often have worse prognoses. For example, they are more likely to die with pneumonia or influenza than people who do not have diabetes.

Diabetes contributes to a number of chronic complications and is associated with an increased utilization of health care services. With an increasing prevalence of diabetes and an aging population, the burden of diabetes in the nation and Illinois continues to grow.

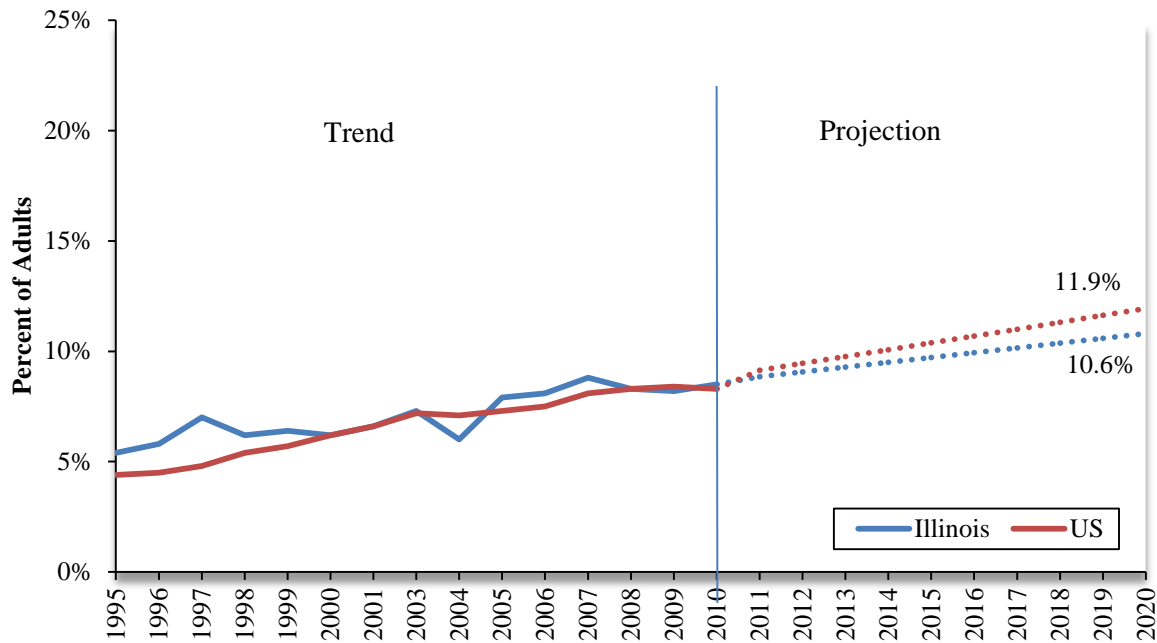
The American Diabetes Association's (ADA) Diabetes Cost Calculator estimates the costs of diabetes at the national and state levels. According to ADA, in 2012, medical expenses attributable to diabetes in Illinois totaled \$8.98 billion, and indirect expenses, such as lost productivity and premature mortality, totaled more than \$2.39 billion.

People with diagnosed diabetes, on average, have medical expenditures that total approximately 2.3 times higher than the expenditures would be in the absence of diabetes. Direct costs pertain to the medical expenditures incurred with treating and controlling the symptoms and the complications of diabetes. Indirect costs include increased factors, such as absenteeism, reduced productivity and lost productive capacity due to early mortality.

PROJECTED PREVALENCE AND TREND

Using the current prevalence data from the CDC National Diabetes Fact Sheet 2011 and the Illinois BRFFS survey (1995-2010), the projected diabetes prevalence in 2020 will be 11.9 percent nationally and 10.6 percent for Illinois; an estimated increase of 43 percent nationally and 25 percent for Illinois. These forecasts underscore the importance of health promotion and prevention strategies at the state and local levels to better prevent and to control the prevalence of this disease and its associated complications.

Figure 14: Forecast: Percent of Adults with Diabetes, Illinois and the United States, 2010-2020



Source: Illinois Behavioral Risk Factor Surveillance System, 1995-2010; Forecasts Analysis in SAS 9.1 Version

According to the CDC, chronic disease public health practitioners must make measurable contributions to the prevention and control of chronic disease – and by doing so, improve quality of life, increase life expectancy, improve the health of future generations, increase productivity and help control health care spending.

It is increasingly recognized that individual health depends on societal health and healthy communities. In addition to having strong medical care systems, healthy communities promote and protect health across the lifespan, across a variety of sectors and through a range of policies, systems and environmental supports that put health in the people’s hands and give Americans even greater opportunity to take charge of their health.

Transforming the nation’s health and providing Americans with equitable opportunities to take charge of their health requires work within four key domains.

Epidemiology and Surveillance

This domain will address the necessity of collecting and analyzing data and information in order to develop and to deploy effective interventions, identify and address gaps in program delivery, and monitor and evaluate progress in achieving program goals.

The data and information will be used routinely to inform decision makers and the public regarding the burden of diabetes and the associated risk factors, public health impact, effectiveness of preventive interventions and program delivery. Communication efforts will be data driven and focus on the translation and presentation of data findings to stakeholders, policy and decision makers, partners, funders and the public.

Goal: Improve and expand diabetes surveillance and monitoring throughout the state to assess the burden of diabetes and guide policy development and evaluation activities to inform, to prioritize, to deliver and to monitor diabetes interventions at state and community levels.

Strategy 1: Enhance the capacity of statewide surveillance to improve the collection, quality and scope of population-based diabetes-related data.

Action Steps

- Identify relevant data for future decision-making and evaluation; advocate for its continued collection and use.
- Promote use of surveillance data to influence decision-making at local and state levels.
- Identify sustainable funding streams for surveillance and evaluation.
- Implement a long-range plan to add optional modules and state questions to the BRFSS to measure diabetes risk factors and outcomes.

- Facilitate communication with health systems and encourage them to use data in promoting continuous quality improvement.

Strategy 2: Expand surveillance to enhance collection and analysis of data across the life span for those at higher risk for diabetes.

Action Steps

- Implement methods to improve the monitoring, assessment, translation and reporting of data on populations most at risk for developing type 2 diabetes.
- Increase availability and use of data to identify and to monitor health disparities, including those among people with disabilities.
- Utilize non-traditional data sources, such as Nielsen Claritas/Prime Location, Community Commons and GIS, to assist with developing policy approaches to address social determinants of health, identifying populations with greatest need, and achieving greatest reach and impact.
- Advocate for consistent and complete data collection and analysis across the life span for those at-risk for diabetes, including people who are overweight and obese.
- Implement methods to improve the monitoring, assessment, translation and reporting of data on populations most at risk for developing type 2 diabetes.
- Use data to identify populations with greatest need to bring about interventions that reduce health inequities.
- Effectively communicate diabetes-related data to stakeholders, policy-makers, partners, health professionals, and the public to strengthen informed policy and funding decisions.

Strategy 3: Develop and distribute diabetes surveillance, epidemiology and evaluation reports on a consistent basis.

Action Steps

- Maintain an epidemiology and surveillance section within the Department's Division of Chronic Disease Prevention and Control.
- Utilize numerous data sources in producing and disseminating a report on the burden of diabetes in Illinois.
- Review data and update annually or as new data becomes available.
- Produce and disseminate burden briefs and/or fact updates on diabetes.
- Create and distribute trend reports across BRFSS categories.
- Enhance existing partnerships with universities and other partners to evaluate data and the impact of diabetes interventions to disparate populations, including those with disabilities.
- Develop and implement a system to track, monitor and evaluate strategies that address priority areas within the Illinois Diabetes State Plan.

Strategy 4: Develop data collection activities for analyzing new data sources to monitor prediabetes.

Action Steps

- Explore new data sources to obtain and to monitor additional information on prediabetes.
- Encourage broader use of electronic medical records or similar methods that support new and innovative ways of collecting, monitoring and analyzing prediabetes data.
- Implement and evaluate the public health node in federally qualified health care centers and its effectiveness of promoting health.
- Receive, analyze and utilize findings from electronic surveillance data from electronic health records through outside sources, such as the Centers for Medicare and Medicaid Services' Meaningful Use requirement.

Environmental Approaches that Promote Health and Support and Reinforce Healthy Behaviors

This domain will address needed improvements in social and physical environments that make healthy behaviors easier and more convenient. A healthy society delivers healthier students to schools, healthier workers to businesses and employers, and a healthier population to the health care system. These types of interventions support and reinforce healthy choices and healthy behaviors and make it easier for people to manage their health. They have broad reach, sustained health impact and are the best approaches for public health.

Goal: Collaborate with communities to increase the number of evidence-based policies, systems and environmental change strategies to promote healthy lifestyles and improve diabetes management in schools, worksites and communities.

Strategy 1: Collaborate with partners to assess local needs and implement interventions (e.g., public education efforts, active transportation and environmental change policies) that are culturally appropriate and support healthy lifestyles and diabetes self-management skills.

Action Steps

- Nurture and support collaborative partnerships to leverage reach of diabetes programs.
- Provide training and guidance to providers, to health professionals, to local health departments and to community coalitions on evidence-based recommendations for programs and policies that promote population health and address pre-diabetes, gestational diabetes and type 1 and 2 diabetes.
- Identify and implement environmental change policies to promote healthy lifestyle behaviors and self-management of diabetes.
- Provide links to comprehensive Web-based resources for exploring best practice approaches to diabetes prevention and control.

- Implement evidence-based health communication strategies and messaging to reach people at increased risk of pre-diabetes and diabetes.

Strategy 2: Increase the number of environmental approaches (policy, system and environmental) addressing diabetes, promoting healthy lifestyles and reinforcing healthful behaviors in Illinois worksites.

Action Steps

- Provide links to worksite wellness training and technical assistance to communities and to employers.
- Promote the use of the CDC Worksite Health ScoreCard by employers and recognize businesses with exemplary worksite programs.
- Promote the development and effective implementation of comprehensive worksite wellness policies that include tobacco-free and breastfeeding-friendly environments, healthy food and beverage choices, physical activity opportunities, and coverage and use of preventive services, such as the CDC National Diabetes Prevention Program and Diabetes Self-management Education Program.

Strategy 3: Collaborate with communities, schools, early childcare providers and food service institutions to implement and evaluate policies and interventions to help prevent type 2 diabetes and to ensure safe and quality diabetes care across the life span.

Action Steps

- Collaborate with communities, schools, early childcare education centers and Illinois State Board of Education to facilitate and to support educational opportunities, resources and awareness materials on pre-diabetes and diabetes prevention and control.
- Provide resources and support to communities, schools and early childcare providers on joint use agreements, safe routes, complete streets and active transportation that will help establish healthy environments.
- Promote the establishment, improvement and accessibility and use of outdoor spaces, including streets, parks, recreation areas, trails and other public places that are safe, tobacco-free, appropriate and available for physical activity and play, and have healthy food policies.
- Promote the availability, accessibility and affordability of healthful eating by promoting the use of community gardens and farmers' markets, increasing the availability of fresh produce at convenience stores and locating grocery stores and markets that offer fruits and vegetables in underserved communities.

Health Systems Interventions

This domain addresses improving the effective delivery and use of clinical and other preventive services in order to prevent disease, to detect disease early, and to reduce or eliminate risk factors and mitigate or manage complications.

Health systems interventions improve the clinical environment to more effectively deliver quality preventive services and help Americans more effectively use and benefit from those services. The result: some chronic diseases and conditions will be avoided completely and others will be detected early, or managed better to avert complications and progression and improve health outcomes. Health system and quality improvement changes that include electronic health records with features to prompt clinicians and deliver feedback on performance can encourage providers and health plans to focus on preventive services. Effective outreach to consumers and reducing barriers to accessing these services is key, as coverage alone will not ensure use of preventive services.

Goal: Ensure health systems and providers promote and provide accessible preventive services so persons with diabetes and those at risk will receive appropriate screening to promote early detection of disease and complications, self-management education, and ongoing management to reduce risk of disease and complications.

Strategy 1: Improve the delivery of comprehensive diabetes prevention and control through the Department's Diabetes Prevention and Control Program resources, other culturally-appropriate and evidence-based tools to health systems, payers, health professionals and community partners.

Action Steps

- Promote and support patient-centered medical homes and a coordinated team approach for diabetes prevention and care.
- Build on successes through implementation of continuous quality improvement and share best practices that have been successful.
- Promote expansion of new partnerships for sharing new research, resources and strategies with professionals, providers, health and community organizations and other collaborative partners.
- Enhance use of technology advancements for improving coordination of care and quality improvement within health systems.

Strategy 2: Promote health professional education opportunities to enhance lifestyle modification and risk reduction, behavior change and disease management.

Action Steps

- Collaborate to finalize and implement the Illinois State Diabetes Plan.
- Share evidence-based research and offer opportunities for knowledge sharing and translation.
- Reinforce screenings and other clinical guidance when implementing public health interventions in community settings.
- Maintain an infrastructure for promoting referrals to the Illinois Tobacco Quitline for people with diabetes who smoke.
- Distribute prevention and awareness materials from the National Diabetes Education Program and the American Diabetes Association.

- Expand access to the National Diabetes Prevention lifestyle change programs and Chronic Disease Self-Management and Diabetes Self-Management Education Programs throughout the state with targeted health communication efforts to support these evidence-based interventions.

Strategy 3: Enhance partnerships and communication with providers, health and community organizations, payers and other relevant partners to support standards of care of diabetes.

Action Steps

- Promote coverage of comprehensive diabetes prevention and control services, including lifestyle behavior education, chronic disease and diabetes self-management education and support.
- Identify and seek out new partnerships to broaden reach and strengthen diabetes prevention and control opportunities.
- Share chronic disease burden data reports to partnering organizations and post on the Department’s website.
- Provide access to supportive educational messaging for diabetes prevention and control, healthy lifestyle behaviors and self-management programs.
- Identify communication strategies to inform partners of initiatives to increase diabetes prevention and control activities and share progress and outcome data.

Clinical Community Linkages

This domain addresses ensuring communities support and clinics provide referrals of patients to programs that improve management of chronic conditions.

Community-clinical linkages help ensure people with or at high risk of chronic diseases have access to community resources and support to prevent, to delay or to manage chronic conditions once they occur. These supports include interventions, such as clinical referral, community delivery and third-party payment for effective programs that increase the likelihood people with heart disease, diabetes or pre-diabetes and arthritis will be able to “follow the doctor’s orders” and take charge of their health. This includes improving their quality of life, averting or delaying onset or progression of disease, avoiding complications (including during pregnancy), and reducing the need for additional health care.

Goal: Ensure those with or at high risk for diabetes have access to quality community resources to best manage their conditions or to reduce disease risk.

Strategy 1: Enhance clinical-community awareness of availability of evidence-based interventions and process of referring patients to self-management education classes.

Action Steps

- Provide single point of access resource guide on evidence-based interventions that include diabetes self-management education and links to providers throughout Illinois.
- Encourage provider referral of self-management resources and tools.
- Increase community educational opportunities to support self-management skills.

- Provide technical assistance and support, planning, implementation and evaluation of strategies and interventions that can be adapted to meet local community needs in diabetes high prevalence areas.

Strategy 2: Ensure reliability, accuracy and cultural relevance of clinical-community access to patient education resources and information.

Action Steps

- Promote the National Diabetes Education Program (NDEP) and CDC websites as sources of reliable diabetes prevention and control information.
- Develop accurate data reports, such as Diabetes Burden Updates and post to the Department's website.
- Educate clinical community and consumers about the availability of current diabetes information.

Strategy 3: Increase the number of evidence-based interventions offered to at-risk populations in diabetes high prevalence areas.

Action Steps

- Increase referrals to the NDEP and Chronic Disease Self-Management and Diabetes Self-Management Programs through the Illinois Tobacco Quitline.
- Refer partners to CDC evidence-based online resources and guidelines and develop a single point of access for these resources through the Department's website.
- Provide technical assistance to clinical community utilizing information from the CDC recognized National Diabetes Prevention Lifestyle Change Program.
- Expand reach of American Diabetes Association (ADA) recognized, American Association of Diabetes Educators (AADE) accredited and or Stanford licensed diabetes self-management education programs.

Strategy 4: Enhance the ability of state and local providers to establish a reimbursement mechanism for implementation of evidence-based interventions.

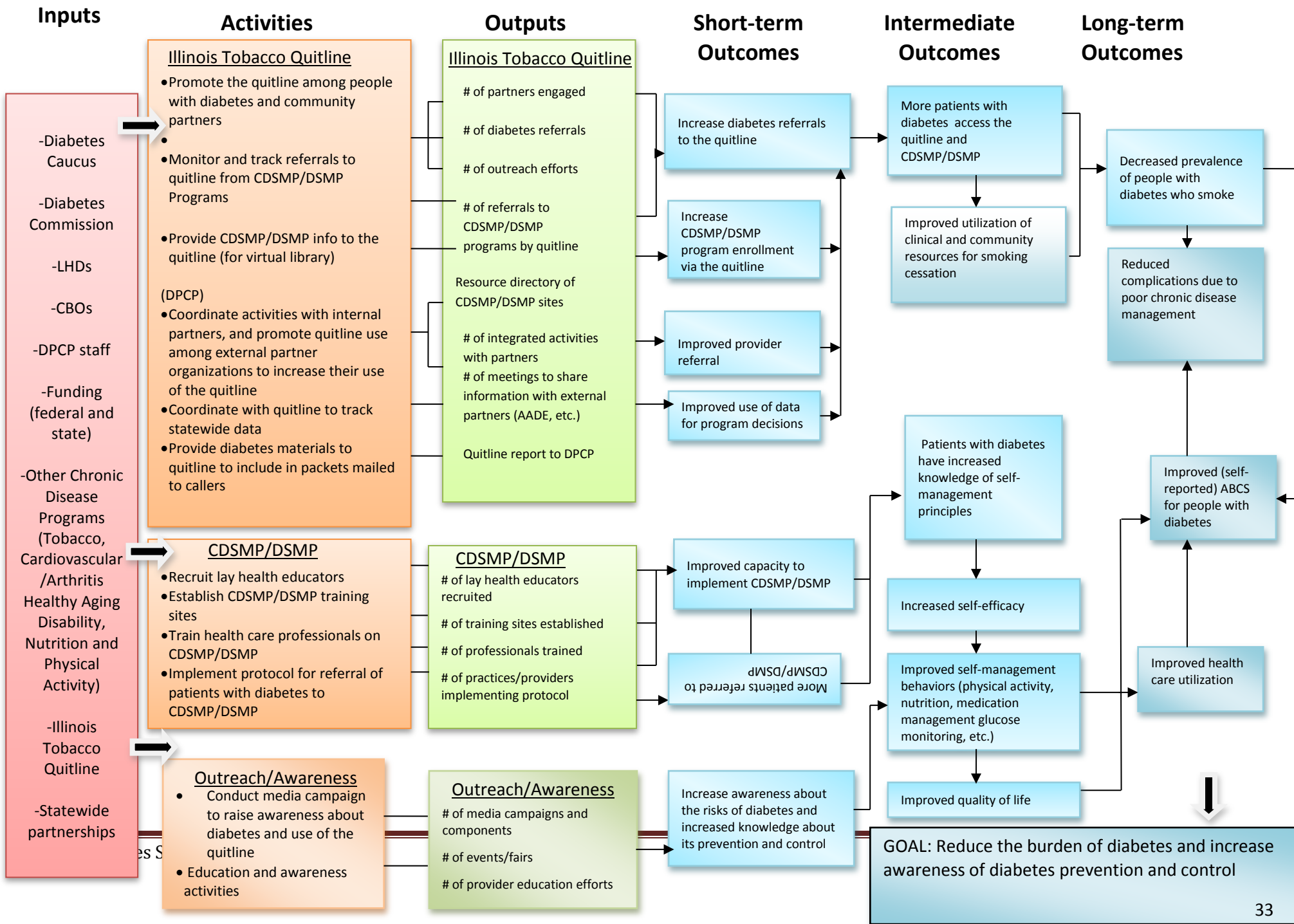
Action Steps

- Provide technical assistance to organizations throughout Illinois, including providers/healthcare settings, community-based organizations, local health departments, faith-based organizations and worksites looking to establish diabetes self-management education (DSME) programs and obtain recognition/accreditation/licensure for their program.
- Support new and/or enhanced models of DSME reimbursement to facilitate health care coordination and reduce disparities in cost and quality of care for individuals with third party providers.
- Collaborate with ADA and AADE to research funding opportunities to fund future DSME locations within diabetes high prevalence areas.

The evaluation plan will involve two components: 1) assessment of how the Department, local health entities and stakeholders utilize the Diabetes State Plan; and 2) assessment of goals and objectives outlined in the plan.

The Diabetes State Plan will be disseminated to the Illinois Diabetes Commission and partners involved in the plan's development. The distribution list also will include a broad range of state and local chronic disease professionals representing academic, government, public health, non-profit, business and advocacy organizations that represent people affected by diabetes and related risk factors. An online survey will be developed by the Department's Epidemiology and Surveillance Team and sent to state and local partners to assess the use and effectiveness of the state plan. The Department's Diabetes Prevention and Control Program will collect and analyze results and provide feedback to partners. Findings, including barriers and lessons learned, will be used to adjust program efforts and to assure continuous quality improvement. Accomplishments will be shared through Department communications and state and local success stories, and will be reported during regularly scheduled Diabetes Commission meetings.

The finalized goals, strategies and action steps will be evaluated based on identified criteria to assess level of accomplishment and impact. The Department's Epidemiology and Surveillance Team will conduct data analysis and report findings to the Department's Diabetes Prevention and Control Program, Diabetes Commission and partners.



The Illinois Diabetes State Plan is a call to action, urging everyone to take a role in reducing the burden of diabetes in Illinois.

Future Challenges

While diabetes is currently a serious health issue, the prevalence is expected to grow each year as the population diversifies and ages, and as the number of overweight and obese people increases. It is estimated that by 2020 the number of adults with diabetes will increase 43 percent nationally and 25 percent for Illinois. These projections emphasize the importance of access to medical care, to developing a healthy lifestyle, and to the importance of self-management of diabetes and other chronic diseases. Many complications of diabetes can be prevented or delayed by controlling blood glucose, blood pressure and high cholesterol through lifestyle changes.

How to Get Involved

In order to achieve the goals of the Illinois Diabetes State Plan, it will take:

- Action of many partners applying different and creative solutions to change environments, systems, communities and individual behaviors.
- Active involvements by public and private partners in communities to assure diabetes priority areas are addressed.
- Statewide groups working to achieve policy changes at the state and national level that support strategies and actions plans noted in this plan.
- Individual residents taking action to change their own environments and lifestyle behaviors as a result of efforts made to support this plan.
- Review of the goals, strategies and action plan; and identifying specific items you and/or your organization may get involved with or have plans to address.
- Partnering with the Illinois Diabetes Commission or working with the Department's Diabetes Prevention and Control Program to prevent and control diabetes.
- Partnering with other organizations and the local health department in your community to share your goals and strategies for preventing and controlling diabetes.

In accordance with Public Act 094-0788, the Illinois State Diabetes Commission was created in 2006 to:

- Hold public hearings to gather information from the general public on issues pertaining to the prevention, treatment and control of diabetes.
- Develop a strategy for the prevention, treatment and control of diabetes.
- Examine the needs of adults, children, racial and ethnic minorities, and medically underserved populations who have diabetes.

The Department has managed oversight and support of the 14-member commission since July 2010 when the duties and responsibilities for the state's diabetes prevention and control program were transferred by Executive Order 10-06 and legislation from the Illinois Department of Human Services. Over the past four years, the priorities of the commission have been to restructure objectives and goals to help reduce the burden of diabetes among Illinois residents.

The commission consists of physicians, who are board certified in endocrinology, have expertise and experience in the treatment of childhood diabetes and the treatment of adult onset diabetes; health care professionals with expertise and experience in the prevention, treatment and control of diabetes; representatives of organizations or groups that advocate on behalf of persons suffering from diabetes; legislators; and members of the public who have been diagnosed with diabetes.

The commission meets three times per fiscal year. The commission made progress with outreach of public awareness to reduce diabetes, addressing the Burden of Diabetes in Illinois report and convened workgroups to develop goals for the five-year Illinois Diabetes State Plan.

Members:

LaMar Hasbrouck, M.D., M.P.H., Illinois Department of Public Health, Co-Chair

Thomas L. Pitts, M.D., Northwestern University Feinberg School of Medicine, Co-chair

Kimbra Bell, M.D., Northwestern University Feinberg School of Medicine

State Representative Tom Cross, 84th District

Jay Gandhi, PharmD, C.D.M., Fidelis Senior Care Inc.

Fil Guipoco, M.A., American Heart Association

Neil Horsley, M.D., Rosalind Franklin University of Medicine and Science

State Senator Mattie Hunter, 3rd District

Rosemary F. Jaffe, American Diabetes Association, Representing the Public with Diabetes

Mary Kreiter, M.D., Pediatric Endocrinologist

Rev. David O. Kylo, Rehabilitation Institute of Chicago

Luis Munoz, M.D., Illinois Hispanic Physicians Association

Marla C. Solomon, R.D., LD/N., C.D.E., University of Chicago

Fred Wendler, Physical Therapist, Representing the Public with Diabetes

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Nora Kelly, Data Analyst, Division of Chronic Disease Prevention and Control

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 - American Diabetes Association, Diabetes Cost Calculator: <http://www.diabetesarchive.net/advocacy-and-legalresources/cost-of-diabetes.jsp>
 - SEARCH for Diabetes in Youth: <http://www.searchfordiabetes.org/>
 - National Center for Health Statistics: <http://www.cdc.gov/nchs>
 - National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK): <http://www2.niddk.nih.gov/>
 - National Institute of Health (NIH); U.S. Department of Health and Human Services: <http://www.nih.gov/>
 - National Diabetes Education Program; U.S. Department of Health and Human Services: <http://www.ndep.nih.gov/>
 - International Diabetes Federation (IDF): <http://www.idf.org/>
 - American Diabetes Association, Diabetes Cost Calculator: <http://www.diabetes.org/>
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- National Diabetes Information Clearinghouse: <http://diabetes.niddk.nih.gov/>
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