Diabetes Prevention and Control Program

2007 Diabetes Report

Louisiana Department of Health and Hospitals

DIABETES PREVENTION & Control Program

LOUISIANA Department of HEALTH and HOSPITALS

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Secretary
Louisiana Department of Health and Hospitals

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Louisiana
Diabetes Report
2007 Edition

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State of Louisiana

Department of Health and Hospitals
Bureau of Primary Care and Rural Health

November 2009

The Louisiana Department of Health and Hospitals' Chronic Disease Prevention and Control Unit is pleased to present this publication of the *2007 Louisiana Diabetes Report*. The report, produced under the direction of the Louisiana Diabetes Prevention and Control Program, compiles up-to-date surveillance information, demographic data, vital statistics, and a wealth of other data and resources into a comprehensive document. By highlighting the burden of diabetes in this report, a valuable resource is created for use in the development and implementation of programs and initiatives that target individuals most impacted by diabetes.

The 2007Louisiana Diabetes Report is intended to provide partners and stakeholders with information on the statewide prevalence of diabetes and its effects on the citizens of Louisiana. The report provides a wealth of background on the disease as well as parish-level data to better address diabetes in Louisiana. This comprehensive view of diabetes will allow readers to gain insight on how this deadly disease is impacting the lives of so many individuals in our state.

Diabetes is a serious, common, and costly disease that cannot be taken lightly. As a state, we must utilize the data within this report to make informed decisions on ways to combat this disease. It will take a uniform effort to make such an impact and I hope this report provides us with the evidence needed to create innovative approaches to improve the health of our state.

Sincerely,

Matthew Valliere

Matthew Valliere, MPA
Director
Louisiana Department of Health and Hospitals
Chronic Disease Prevention and Control Unit

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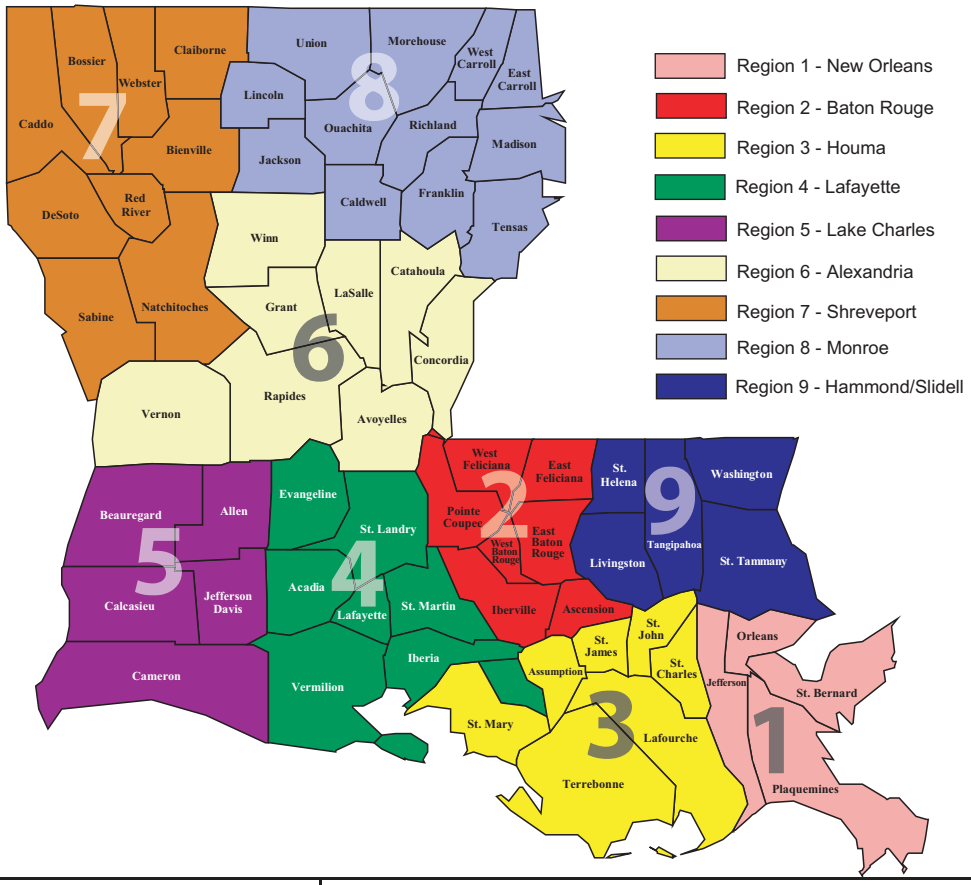
ACRONYMS

A1c	Hemoglobin A1c; measure of average glucose over the past three months
AADE	American Association of Diabetes Educators
ADA	American Diabetes Association
BG	Blood Glucose
BMI	Body Mass Index
BPCRH	Bureau of Primary Care and Rural Health
BRFSS	Behavioral Risk Factor Surveillance System
CDC	Centers for Disease Control and Prevention
CDE	Certified Diabetes Educator
CGMS	Continuous Glucose Monitoring System
CKD	Chronic Kidney Disease
CVD	Cardiovascular Disease
DDT	Division of Diabetes Translation
DHH	Louisiana Department of Health and Hospitals
DHHS	Department of Health and Human Services
DKA	Diabetic Ketoacidosis
DM	Diabetes Mellitus
DPCP	Diabetes Prevention and Control Program
DSME	Diabetes Self-Management Education
DSMT	Diabetes Self-Management Training
ESRD	End-Stage Renal Disease
FBS	Fasting Blood Sugar
GDM	Gestational Diabetes
HEDIS	Healthcare Effectiveness Data and Information Set
IFG	Impaired Fasting Glucose
IGT	Impaired Glucose Tolerance
IR	Insulin Resistance
JDRF	Juvenile Diabetes Research Foundation
LAHIDD	Louisiana Hospital Inpatient Discharge Data
LSM	Lifestyle Modification
MMSA	Metropolitan and Micropolitan Statistical Areas
MS	Metabolic Syndrome
NACDD	National Association of Chronic Disease Directors
NDEP	National Diabetes Education Program
NIDDK	National Institute for Diabetes and Digestive and Kidney Disease
NIDDM	Non-Insulin-Dependent Diabetes Mellitus
OGTT	Oral Glucose Tolerance Test
PCM/CCM	Planned Care Model/Chronic Care Model
RD	Registered Dietitian
Se'LADE	Southeast Louisiana Association of Diabetes Educators
UnDM	Undiagnosed Diabetes Mellitus

Louisiana Department of Health and Hospitals
Public Health Regions



Public Health Regions	Parishes
1: New Orleans	Jefferson, Orleans, Plaquemines, St. Bernard
2: Baton Rouge	Ascension, East Baton Rouge, East Feliciana, Iberville, Pointe Coupee, West Baton Rouge, West Feliciana
3: Houma	Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, St. Mary, Terrebonne
4: Lafayette	Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, Vermilion
5: Lake Charles	Allen, Beauregard, Calcasieu, Cameron, Jefferson Davis
6: Alexandria	Avoyelles, Catahoula, Concordia, Grant, La Salle, Rapides, Vernon, Winn
7: Shreveport	Bienville, Bossier, Caddo, Claiborne, De Soto, Natchitoches, Red River, Sabine, Webster
8: Monroe	Caldwell, East Carroll, Franklin, Jackson, Lincoln, Madison, Morehouse, Ouachita, Richland, Tensas, Union, West Carroll
9: Hammond/Slidell	Livingston, St. Helena, St. Tammany, Tangipahoa, Washington

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Executive Summary

Diabetes is a disease in which the body does not produce or properly use insulin resulting in a higher than normal presence of glucose (blood sugar) in the bloodstream. Uncontrolled diabetes, the prolonged presence of glucose and fats in the blood, can damage vital organs and cause serious complications such as heart disease, stroke, kidney disease, blindness (loss of eyesight) and amputation. Obesity, poor nutrition, physical inactivity, family history of diabetes and history of gestational diabetes during pregnancy are risk factors for developing certain types of diabetes. Genetic markers combined with environmental triggers are risk factors for Type 1 diabetes. African Americans, Hispanic/Latino Americans and Native Americans/American Indians have a higher risk for developing diabetes as compared to Caucasians (NIDDK, 2009).

Diabetes is a common, serious and costly disease affecting approximately ten percent (10.1%) of adults (18 and older) in Louisiana. In 2007, the total cost of diabetes for people in Louisiana was $2.431 billion. This includes $1.625 billion in direct medical costs and $806.2 million in indirect costs such as disability, work loss and premature mortality (ADA, 2008).

Diabetes is the fifth leading cause of death in Louisiana. The age-adjusted diabetes death rate for the state of Louisiana is 35.5 per 100,000, considerably higher than the national age adjusted death rate of 24.6 per 100,000 people (CDC WONDER, 2007). In the United States, diabetes is the leading cause of blindness in adults aged 20 to 74 and the most common cause of non-traumatic amputations (AOA, 2006). Diabetes also accounts for approximately 40% of new cases of end stage renal disease nationwide (CDC, 2007).

In 2001, approximately sixteen percent (16% - 93,000) of Louisiana hospital discharges and eighteen percent (18% - $1.5 billion) of the costs associated with these discharges were attributable to people of all ages with diabetes as the principal or secondary diagnosis (LAHIDD, 2001).

"Diabetes Mellitus" is a term first coined by Aretaeus the Cappadocian, a first century Greek physician. "Diabetes" means a siphon through which water runs, referring to the symptoms of great thirst and large volume of urine produced. "Mellitus" meaning "honey", to describes the sweet taste of the urine of a person with diabetes.

Source: Shen-Nong, 2006

National data suggests that for every two people diagnosed with diabetes, a third person is living with undiagnosed diabetes. Therefore, approximately one-third of all diabetes cases are undiagnosed.

The 2007 Louisiana Diabetes Report was developed to inform Louisiana stakeholders of the status of diabetes in Louisiana. The report features diabetes prevalence and information on health behaviors among persons with diabetes obtained from the Behavioral Risk Factor Surveillance System. In addition, vital statistics, Medicaid, Medicare and other essential sources were used to provide a comprehensive report on diabetes prevalence and trends in Louisiana. This report also highlights use of preventive care services and data on diabetes-related complications (i.e. heart disease and end-stage renal disease).

Diabetes Overview

Diabetes is a group of diseases marked by high levels of blood glucose that develops when the body does not produce or properly use insulin. Insulin, a hormone made in the pancreas, is used by the body to absorb glucose into the body's cells to convert into energy. People with diabetes have difficulty making enough insulin, the body does not properly use insulin or both. Untreated and poorly controlled diabetes can lead to serious complications and premature death (CDC, 2007). People with diabetes must receive the proper care, treatment and education to keep their diabetes in control and to prevent complications .

➢ Types of Diabetes

Type 1 Diabetes, formerly called juvenile-onset diabetes or insulin-dependent diabetes mellitus (IDDM), develops when the body's immune system destroys insulin-producing cells in the pancreas. People with Type 1 diabetes require daily delivery of insulin by injection or a pump and possibly another injectable medication to live. Type 1 diabetes makes up 5-10% of all diagnosed cases of diabetes among adults.

Type 2 Diabetes, formerly called adult-onset diabetes or non-insulin-dependent diabetes mellitus (NIDDM), is the most common form of diabetes and accounts for nearly 90-95% of all diagnosed diabetes cases. In Type 2 diabetes, the body is unable to make enough insulin or properly use insulin made in the pancreas. Type 2 diabetes is associated with a number of risk factors including obesity, family history of diabetes, age and physical inactivity. Type 2 diabetes among youth is rare. Yet, youth from American Indian, African American, Hispanic/ Latino American and Asians/Pacific Islander racial/ethnic groups are more frequently being diagnosed with this form of diabetes compared to youth from other racial/ethnic groups.

Gestational diabetes is the presence of high blood glucose levels during pregnancy in women with no prior diagnosis of diabetes. This condition occurs when the body is not able to make or use all insulin needed during pregnancy. Gestational diabetes is usually treated through proper medical care and treatment during pregnancy and after delivery. Gestational diabetes affects approximately 4% of all women in the United States (CDC, 2007).

Diabetes Signs and Symptoms

Type 1 Diabetes	Type 2 Diabetes
• Increased thirst and urination • Constant hunger • Weight loss • Blurred vision • Extreme fatigue Symptoms usually develop over a short period of time.	• Fatigue • Frequent urination • Increased thirst and hunger • Weight loss • Blurred vision • Slow healing of wounds or sores Symptoms develop gradually. Some people with Type 2 Diabetes may have no symptoms.

Source: Centers for Disease Control and Prevention, National Diabetes Fact Sheet, 2007.

➢ Risk Factors for Developing Diabetes

Risk factors for Type 1 diabetes may be genetic, autoimmune and environmental. There is currently no known way to prevent this type of diabetes (CDC, 2007). A significant body of scientific research is investigating possible preventions/interventions for Type 1 diabetes (Triolo et al, 2009).

Risk for developing Type 2 diabetes is highest among individuals who are overweight, have a family history of diabetes, poor nutrition, physically inactive, history of gestational diabetes during pregnancy, have Polycystic Ovarian Syndrome (PCOS) or received as a result of impaired fasting glucose or impaired glucose tolerance after previous testing for diabetes. African Americans, Hispanic/Latino Americans and Native Americans/American Indians, Asian Americans or Pacific Islander have a greater risk for developing diabetes compared to Caucasians (CDC, 2007; NIDDK, 2008)

➢ Diabetes Complications

Diabetes is a serious disease that affects nearly every part of the body. High blood glucose (blood sugar), left untreated or poorly controlled, can damage the heart, blood vessels, eyes and kidneys.

Diabetes complications may include:

- Hyperglycemia (high blood sugar)
- Diabetic ketoacidosis
- Hypoglycemia (low blood sugar)
- Heart disease and stroke
- Nephropathy (kidney disease)
- Retinopathy (vision loss)
- Nerve disease
- Lower-limb amputations
- Erectile dysfunction

➢ Diabetes Care and Treatment

There is no cure for diabetes but diabetes is controllable and can be managed by controlling blood glucose, blood pressure, and blood lipids to prevent or delay the onset of diabetes-related complications. People with diabetes should work with a physician-coordinated health care team to develop an individualized care plan based on evidence-based guidelines and nationally-recognized clinical practice standards (CDC, 2007).

Diabetes care guidelines are established by the American Diabetes Association (ADA), American Association of Clinical Endocrinologists/American College of Endocrinology (AACE/ACE), the American Geriatric Society (care standards for older adults with diabetes) and the American Association of Diabetes Educators.

National Diabetes Data

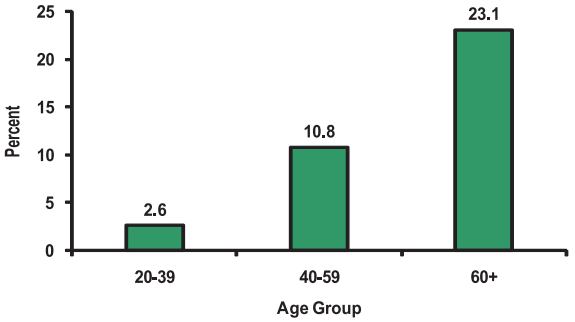
In the United States, 23.6 million children and adults, or 7.8% of the population, have been diagnosed with diabetes. Among this population, 17.9 million people have diagnosed diabetes and 5.7 million people are living with undiagnosed diabetes. Another 57 million people have pre-diabetes (CDC, 2007).

Diabetes prevalence is highest in Southern and Appalachian states (including Louisiana) and more commonly diagnosed in persons age 60 years of age and older and non-Hispanic African Americans compared to other age and racial/ethnic groups (Danaei et al, 2009).

National estimates suggest that twenty-three percent (23.1%) of all people aged 60 years or older, approximately 12.2 million people, have diabetes followed by persons aged 40-59 (10.8%) and aged 20-39 (2.6%).

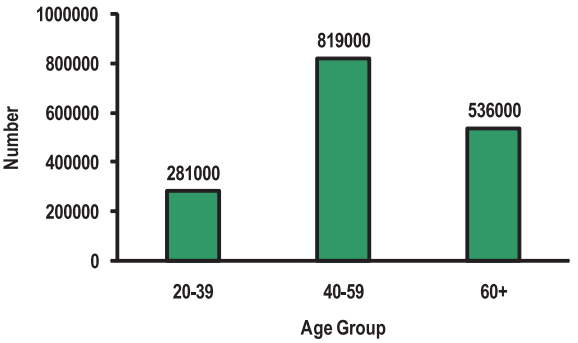
Non-Hispanic African Americans make up 12% of the U.S. population, yet African American adults age 20 and older are 1.8 times more likely to have diabetes compared to non-Hispanic Caucasians age 20 and older.

Estimated prevalence of diagnosed and undiagnosed diabetes in people aged 20 years or older, by age group, United States, 2007



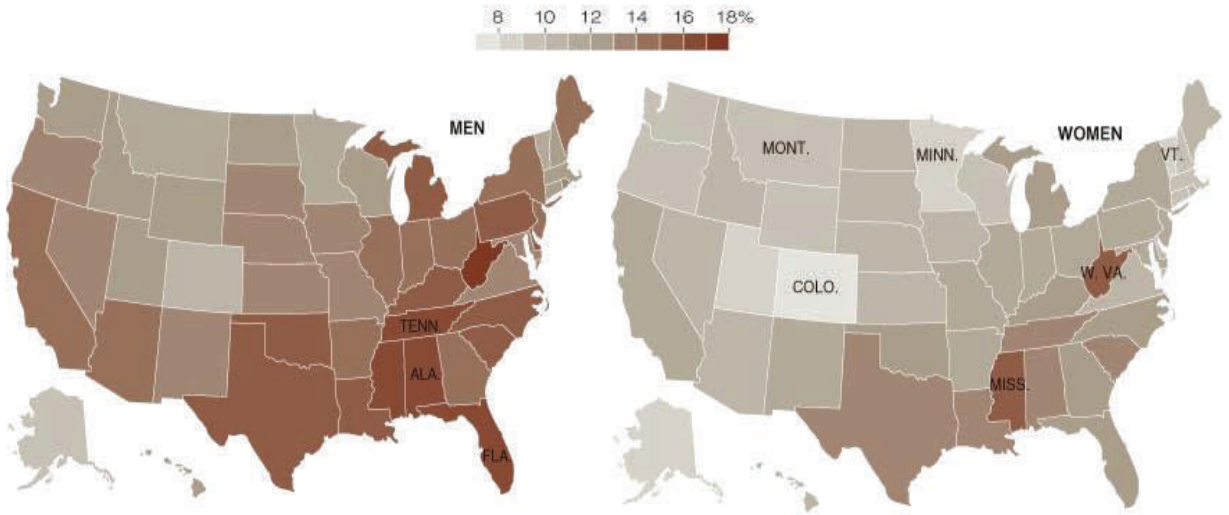
Source: CDC. National Diabetes Fact Sheet, 2007

Estimated number of new cases of diagnosed diabetes in people aged 20 years or older, by age group, United States, 2007



Source: CDC. National Diabetes Fact Sheet, 2007

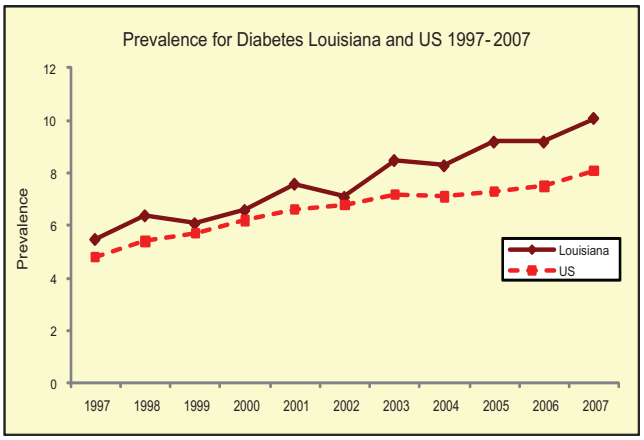
Estimated Prevalence of Diabetes among Women and Men age 30 and Older, 2003-2007



Source: New York Times, 2009; adapted from the study "Diabetes Prevalence and Diagnosis in US States: Analysis of Health Surveys" by Danaei et al. Population Health Metrics, 2009.

2007 Diabetes Prevalence in Louisiana

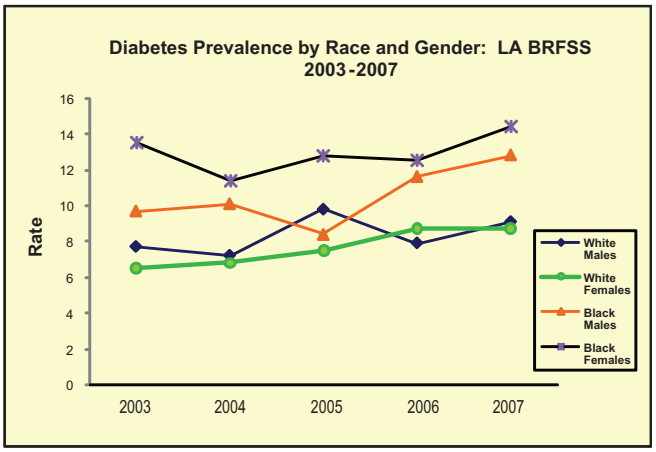
An estimated ten percent (10.1%) of the adult population (18 years of age and older) in Louisiana, approximately 329,632 adults have been diagnosed with diabetes. For every two people diagnosed with diabetes, a third person is living with undiagnosed diabetes. Therefore, the total diabetes population is estimated to be 434,870 adults, which includes 105,238 adults potentially living with undiagnosed diabetes.



Source: Louisiana Department of Health and Hospitals, Bureau of Primary Care and Rural Health, Chronic Disease Unit, BRFSS 2007

The age-adjusted percentage of adults with diabetes in Louisiana increased from 5.2% in 1997 to 10.1% in 2007; an increase of 4.9 percentage points and a 94% increase in diabetes prevalence over the past decade.

Diabetes is a common and serious disease affecting thousands of Louisiana residents. However, estimates suggest that minorities, older adults (65 years of age and older) and residents with low household income (less than $15,000 per year annual income) and low educational level (no high school diploma) possess higher rates of diabetes prevalence compared to other subpopulations.

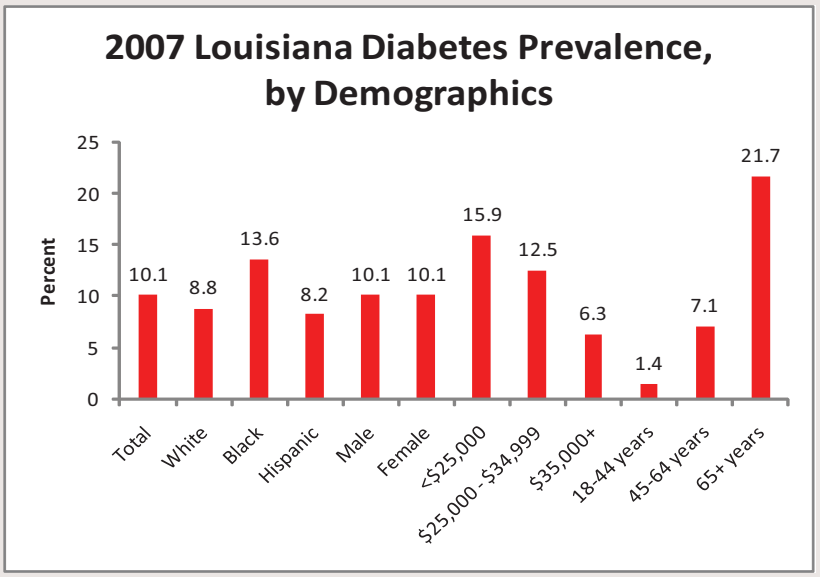


Source: Louisiana Department of Health and Hospitals, Bureau of Primary Care and Rural Health, Chronic Disease Unit, BRFSS 2007

In 2007, African American adults had the highest diabetes prevalence rate (13.6%) compared to Caucasians (8.8%) and Hispanics (8.2%).

Diabetes prevalence also increases with age. In 2007, adults age 65 years and older in Louisiana had the highest diabetes prevalence rate (24.5%) compared to adults under 45 years of age.

Diabetes prevalence is also higher among adults with lower total incomes and residents with less than a high school education. For persons living in households with a yearly income less than $25,000, the prevalence of diabetes is approximately fifteen percent (15.9%). This prevalence steadily decreases as yearly income rises. Diabetes prevalence is lowest (6.3%) among residents with an annual income of more than $35,000 (LA BRFSS, 2007).



Source: Louisiana Department of Health and Hospitals, Bureau of Primary Care and Rural Health, Chronic Disease Unit, BRFSS 2007

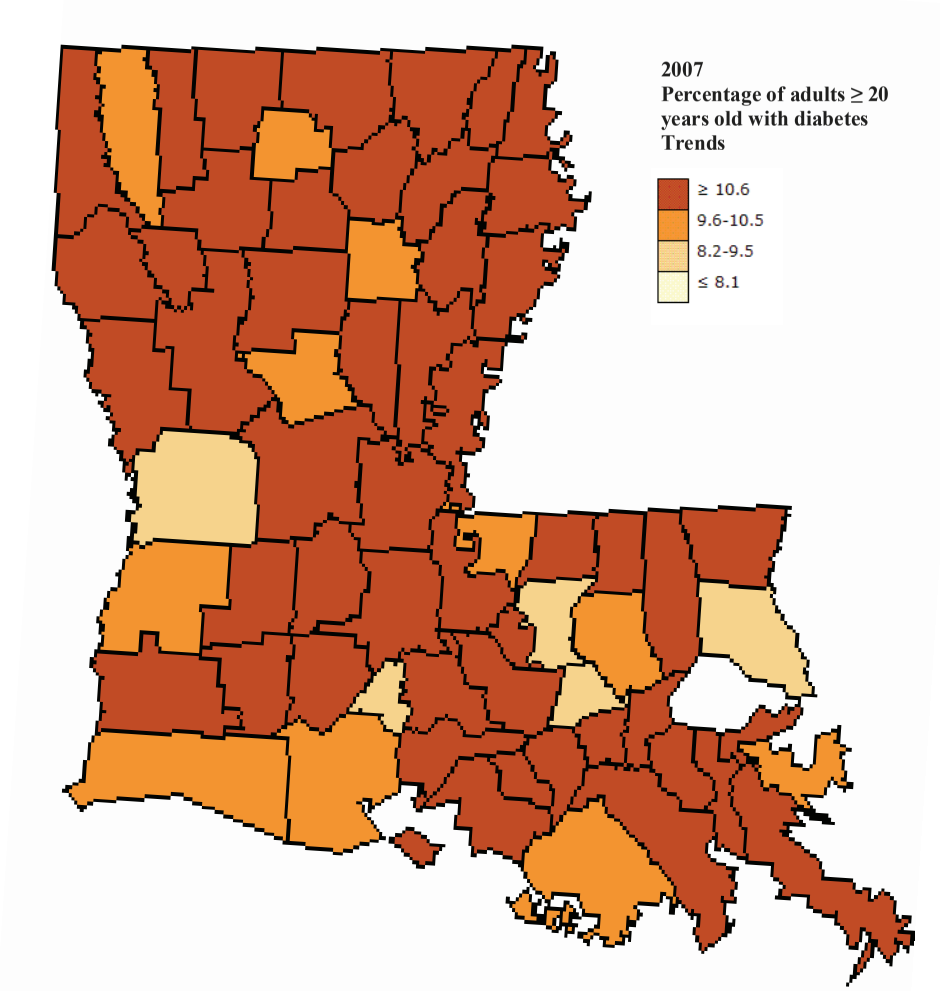
Diabetes Prevalence among Adults in Louisiana, 2007

	Residents with Diabetes		
Characteristic	**Sample Size**	**%**	**95% CI**
Total	866	10.1	[9.3-10.9]
Age			
18-24	1	0.2	[0-.47]
25-34	20	2.1	[1-3.2]
35-44	56	5.0	[3.3-6.6]
45-54	153	10.0	[8.2-11.9]
55-64	266	18.5	[16.1-20.9]
65+	370	24.5	[21.9-27.1]
Gender			
Male	301	10.1	[8.7-11.4]
Female	565	10.1	[9.2-11.1]
Race			
White	531	8.8	[7.9-9.7]
Black	256	13.6	[11.5-15.7]
Hispanic	19	8.2	[3-13.4]
Other	46	10.8	[7-14.7]

	Residents with Diabetes		
Characteristic	**Sample Size**	**%**	**95% CI**
Total	866	10.1	[9.3-10.9]
Education			
Did not graduate HS	200	17.6	[14.4-20.8]
Graduated from HS	285	10.6	[9-12.1]
Some college	211	10.1	[8.4-11.7]
Graduated college	165	6.5	[5.4-7.7]
Household Income			
<15,000	218	18.8	[15.3-22.2]
15,000-24,999	257	14.1	[11.5-16.6]
<$25,000-34,999	161	12.5	[9.5-15.4]
<35,000-$49,999	180	11.1	[8.3-14]
$50,000+	328	4.6	[3.7-5.5]
Health Insurance			
Yes	719	10.6	[9.6-11.5]
No	145	8.5	[6.7-10.2]

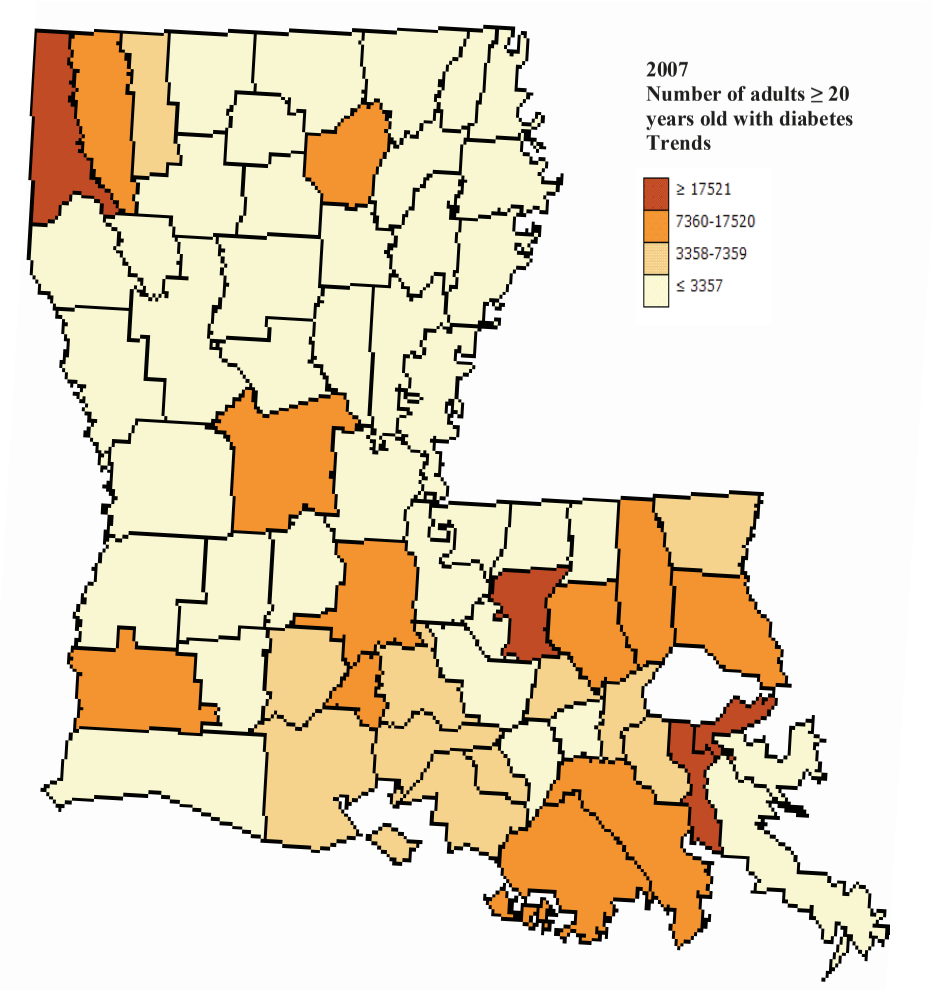
Source: Louisiana Department of Health and Hospitals, Bureau of Primary Care and Rural Health, Chronic Disease Unit, BRFSS 2007

2007 Estimates of the Percentage of Adults with Diagnosed Diabetes in Louisiana



Source: Centers for Disease Control and Prevention: National Diabetes Surveillance System. Available online at: http://www.cdc.gov/diabetes/statistics/index.htm. Retrieved 11/25/2009.

2007 Estimates of the Number of Adults with Diagnosed Diabetes in Louisiana



Source: Centers for Disease Control and Prevention: National Diabetes Surveillance System. Available online at: http://www.cdc.gov/diabetes/statistics/index.htm. Retrieved 11/25/2009.

Diabetes Prevalence Rate by Parish—Residents with Diabetes, BRFSS 2007

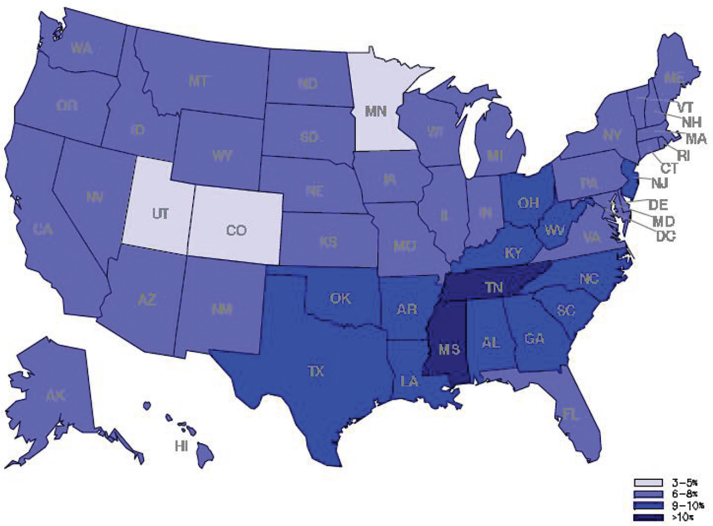
Parish	Estimated Percent (%)	Estimated Total (#)	Parish	Estimated Percent (%)	Estimated Total (#)
ACADIA	11.2	4,670	MADISON	12.1	976
ALLEN	12.2	2,312	MOREHOUSE	12.5	2,602
ASCENSION	9.0	6,143	NATCHITOCHES	11.7	3,216
ASSUMPTION	11.4	1,908	ORLEANS	11.3	20,830
AVOYELLES	10.7	3,271	OUACHITA	11.7	12,250
BEAUREGARD	10.5	2,647	PLAQUEMINES	11.3	1,731
BIENVILLE	12.4	1,352	POINTE COUPEE	12.8	2,106
BOSSIER	10.3	7,858	RAPIDES	11.7	10,900
CADDO	11.6	20,940	RED RIVER	11.9	766
CALCASIEU	10.7	14,100	RICHLAND	11.8	1,744
CALDWELL	10.3	796	SABINE	12.8	2,211
CAMERON	10.2	576	ST BERNARD	10.1	1,566
CATAHOULA	12.2	944	ST CHARLES	10.7	3,947
CLAIBORNE	11.9	1,469	ST HELENA	13.3	1,024
CONCORDIA	12.2	1,692	ST JAMES	12.4	1,893
DE SOTO	12.0	2,256	ST JOHN THE BAPTIST	11.1	3,591
EAST BATON ROUGE	9.4	28,650	ST LANDRY	12.9	8,258
EAST CARROLL	12.8	739	ST MARTIN	12.0	4,395
EAST FELICIANA	12.2	1,901	ST MARY	12.3	4,486
EVANGELINE	11.1	2,770	ST TAMMANY	8.5	13,720
FRANKLIN	11.5	1,669	TANGIPAHOA	11.0	8,926
GRANT	9.9	1,401	TENSAS	14.2	614
IBERIA	12.8	6,710	TERREBONNE	10.4	8,003
IBERVILLE	11.3	2,696	UNION	12.0	2,000
JACKSON	11.0	1,233	VERMILION	10.2	4,059
JEFFERSON	11.2	35,110	VERNON	9.3	2,901
JEFFERSON DAVIS	11.4	2,507	WASHINGTON	13.2	4,248
LAFAYETTE	9.0	13,100	WEBSTER	13.4	4,056
LAFOURCHE	11.4	7,684	WEST BATON ROUGE	11.0	1,784
LA SALLE	11.1	1,145	WEST CARROLL	12.9	1,120
LINCOLN	10.5	3,158	WEST FELICIANA	10.5	1,305
LIVINGSTON	10.1	8,262	WINN	10.7	1,250

Source: Centers for Disease Control and Prevention: National Diabetes Surveillance System. Available online at: http://www.cdc.gov/diabetes/statistics/index.htm. Retrieved 11/25/2009.

Louisiana Diabetes Fact Sheet, 2007

- As of 2007, an estimated 10.1% of the adult population within the state of Louisiana (329,632 residents) have been diagnosed with diabetes.
- The prevalence for diabetes in Louisiana has steadily increased from 5.2% in 1997 to 10.1% in 2007; an increase of 4.9 percentage points and 94% increase in diabetes prevalence.
- Diabetes is the fifth leading cause of death among Louisiana residents. Louisiana ranks first in the nation for having the highest diabetes mortality rate (35.5 / 100,000 persons) compared to other U.S. states.
- Age has a significant effect on diabetes prevalence; nearly one out of every four Louisiana residents aged 65 years and above is estimated to have diabetes.
- African-Americans have the highest prevalence rate (13.6%) for diabetes compared to other racial and ethnic groups.
- Low-income households (less than $15,000 per year) have higher prevalence rates for pre-diabetes and diabetes compared to other household income groups.

Diabetes Prevalence United States, BRFSS 2007

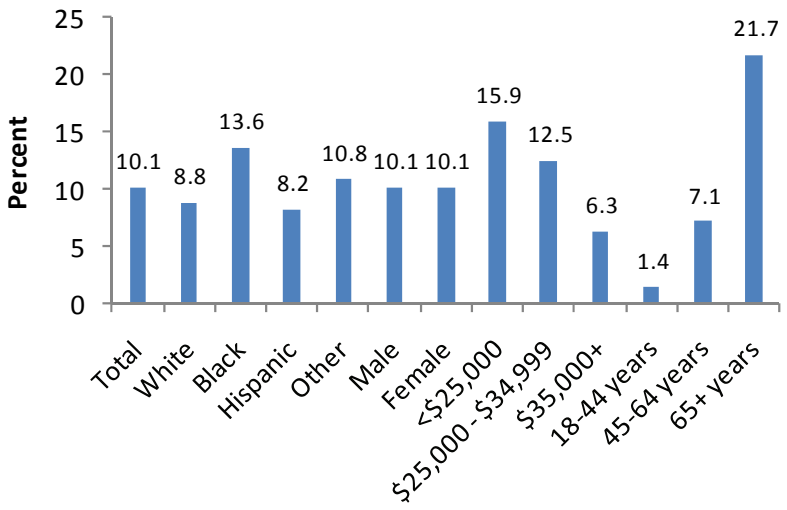


Source: CDC, National Diabetes Surveillance System, 2007

Tips for People with Diabetes

- Check blood glucose (sugar) levels on a daily basis.
- Have your eyes and feet checked by a doctor at least one time each year.
- Complete an A1C test at least once a year.
- High blood pressure and obesity increase the risk for developing diabetes complications. Reduce your risk by eating healthier foods, increase physical activity and schedule routine doctor visits.

2007 Louisiana Diabetes Prevalence, by Demographics



Source: Louisiana BRFSS, 2007

Definitions

***Prevalence*:** proportion of individuals in a population having a disease

***Rate*:** a measure of the frequency of an event or phenomenon

***A1C*:** a test that measures a person's average blood glucose level over the past 2 to 3 months.

The creation of this document was made possible by cooperative agreement DP09-901 from the Centers for Disease Control and Prevention / Division of Diabetes Translation/Collaborative Chronic Disease, Tobacco, Diabetes, BRFSS and Health Communities Initiative.

Diabetes During Pregnancy

In 2007, approximately one percent (0.8%) of adult women in Louisiana reported being diagnosed with gestational diabetes mellitus (GDM) by a doctor. GDM is a form of glucose intolerance that develops when the body is not able to make and use all the insulin it needs for pregnancy (CDC, 2007; ADA 2009). GDM affects nearly 4% of all pregnant women (ADA, 2009) and occurs more frequently among African Americans, Hispanic/Latino Americans and American Indians (CDC, 2007). Treatment for GDM is necessary during pregnancy to prevent complications for the mother and infant. In Louisiana, gestational diabetes was more prevalent among Caucasian women at a rate of 0.9% compared to African Americans (0.8%) and Hispanics (0.5%) (LA BRFSS, 2007).

Pre-Diabetes

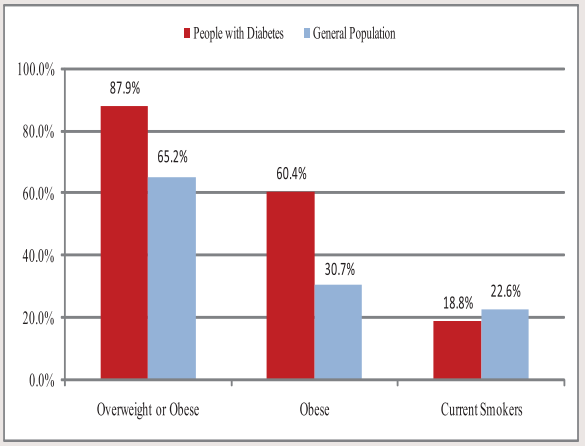
Pre-diabetes is the presence of higher than normal blood glucose (sugar), but not high enough to be considered diabetes (CDC, 2007). The Fasting Plasma Glucose (FPG) and 2-hour Oral Glucose Tolerance Test (OGTT) are used to test for pre-diabetes. Pre-diabetes testing is recommended for adults of any age with a body mass index greater than or equal to 25 kg/m^2 and one or more risk factors for diabetes (ADA, 2009). National estimates suggest that nearly 57 million adults age 20 years or older have impaired fasting glucose (CDC, 2007). In Louisiana, 0.6% of adults age 18 or older, are estimated to have pre-diabetes. Prevalence rates for pre-diabetes is highest among individuals in households with less than $15,000 per year annual income (1.7%) followed by households with $15,000-$24,999 (0.8%).

Diabetes Among Youth

In the United States, 186,300 or 0.2% of all people age 20 years of age and younger have diabetes (CDC, 2007). National estimates suggest that one in every 400 to 600 children and adolescents has Type 1 diabetes. Pre-diabetes affects nearly two million adolescents or 1 in every 6 overweight adolescents Type 2 diabetes among youth is rare but clinical data now suggests that youth and adolescents are more frequently being diagnosed with Type 2, particularly youth from minority groups (ADA, 2009). Statewide data for Type 1 and Type 2 diabetes incidence and prevalence among youth and adolescents is not available.

Risk Factors for Diabetes Complications

Prevalence of Diabetes Risk Factors for Complications among Adults with Diabetes, 2007



Source: CDC, National Diabetes Surveillance System, 2007

Health behaviors that can reduce the risk for developing diabetes-related complications include being physically active, maintaining a healthy diet, not smoking. Individuals who are overweight or obese and have diabetes can reduce their risk for developing complications through the same health behaviors coupled with achieving and maintaining a healthy weight. The Louisiana Behavioral Risk Factor Surveillance System (BRFSS) survey provides information on risk factors and health behaviors observed among Louisiana's adult diabetes population.

According to 2007 Louisiana BRFSS results, approximately eighty-eight percent (87.9%) of Louisiana's diabetes population are either overweight or obese. Among this group, sixty percent (60.4%) are estimated to be obese.

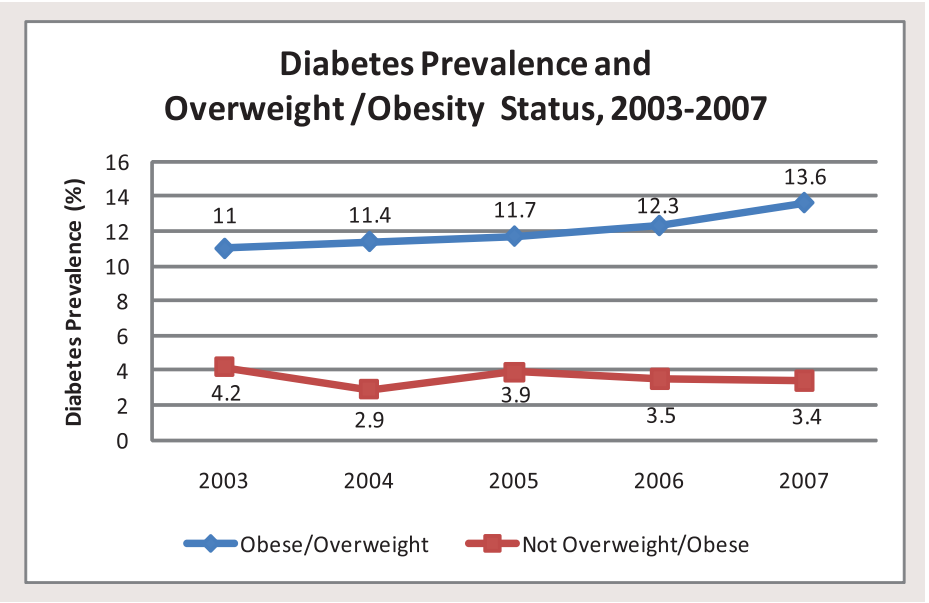
Approximately 88% of Louisiana's adult population (18 years of age and older) with diabetes are either overweight or obese—LA BRFSS, 2007

Adults in Louisiana with diabetes are also more likely to have high blood cholesterol (61.3%) and high blood pressure (73.0%) compared to the general population. Smoking prevalence among adults with diabetes is relatively equal to smoking prevalence among the general adult population.

Seventy-eight percent (78.4%) of adults with diabetes reported not consuming at least five servings of fruits and vegetables per week.

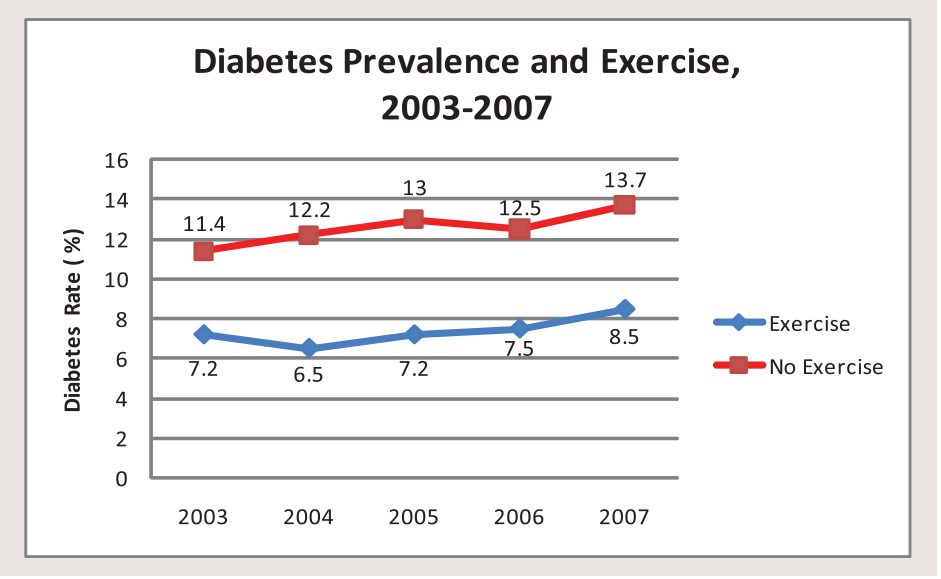
Approximately one out of every four (25.5%) adults in Louisiana with diabetes reported engaging in 30 minutes of physical activity at least five days per week or vigorous physical activity at least 20 minutes or more at least three or more days per week. Physical activity rates were highest among adults with diabetes age 18 to 44 years of age (31.0%) and adults with diabetes and an annual household income of $50,000 or more (38.1%).

Less than 25% of adults with diabetes in Louisiana consume at least five servings of fruits and vegetables per week.



Source: Louisiana Bureau of Primary Care and Rural Health, LA BRFSS, 2007

Data from the 2003-2007 Behavioral Risk Factor Surveillance System suggests that obesity rates among people diagnosed with diabetes in Louisiana increased from eleven percent (11%) in 2003 to thirteen percent (13.6%) in 2007 (LA BRFSS, 2007).



Source: Louisiana Bureau of Primary Care and Rural Health, LA BRFSS, 2007

Louisiana BRFSS data also suggests that only a small percentage of people with diabetes engage in physical activity (13.7% versus 8.5%), with prevalence among this population increasing from 11.4% in 2003 to 13.7% in 2007 (LA BRFSS, 2007).

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Proportion of Adults with Diabetes who Consume Less than 5 Servings of Fruits and Vegetables Per Day, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	73	Data Not Available*	78.4
		[67.3-78.6]		[74.9-81.8]
Gender	Male	77.7		82.1
		[69.2-86.1]		[76.7-87.5]
	Female	68.6		75
		[61.2-76.1]		[70.6-79.4]
Race	Caucasian	75.6		79.6
		[68.5-82.7]		[75.6-83.7]
	African-American	70.6		78
		[60.5-80.7]		[71.1-84.8]
	Hispanic	nsf		53.9
				[25.7-82.1]
Age	18-44	71.7		73.5
		[53.8-89.7]		[60.8-86.3]
	45-64	79.7		79
		[72.5-86.9]		[74.4-83.6]
	65+	64.4		79.5
		[55.1-73.8]		[74.5-84.5]
Income	Less than $15,000	76.1		78
		[64-88.3]		[70.4-85.5]
	$15,000-$24,999	62.7		82.3
		[50.2-75.1]		[75.5-89.1]
	$25,000-$49,999	83.4		78.9
		[72.9-93.9]		[71.6-86.3]
	$50,000 or more	74.4		69.3
		[61.1-87.7]		[60.2-78.3]
Employment	Employed	69.2		73.6
		[58.6-79.8]		[66.4-80.7]
	Unemployed	63		86.7
		[28.3-97.7]		[69.6-100]
	Homemaker/Student	83.2		81.7
		[65.8-100]		[72.1-91.3]
	Retired	72.3		79
		[63.5-81.2]		[73.9-84.1]
	Unable to Work	81.8		84.1
		[72.1-91.5]		[77.6-90.6]
Education	Less than H.S. Grad	72.5		84.6
		[61.3-83.8]		[79.3-90.8]
	H.S. Graduate	76.5		82.5
		[67.3-85.7]		[76.6-88.4]
	Some College	68.7		73.7
		[55.5-81.9]		[66.3-81]
	College Graduate	68.5		71.5
		[54.8-82.2]		[63.2-79.8]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Proportion of Adults with Diabetes who Engage in 30 Minutes of Moderate Physical Activity Five or More Days per Week, or Vigorous Physical Activity for 20+ Minutes Three or More Days Per Week, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	24.6	Data Not Available*	25.5
		[18.7-30.5]		[21.7-29.3]
Gender	Male	24.8		29.1
		[15.3-34.4]		[22.8-35.3]
	Female	24.4		22.3
		[17.3-31.6]		[17.8-26.9]
Race	Caucasian	23.4		25.2
		[15.9-30.9]		[20.7-29.7]
	African American	24.0		27.1
		[14.3-33.7]		[19.3-34.8]
Age	18-44	42.0		31.0
		[20.9-63.1]		[17.4-44.7]
	45-64	18.9		25.0
		[12.0-25.8]		[19.9-30.2]
	65+	25.4		24.3
		[16.4-34.4]		[18.8-29.7]
Income	Less than $15,000	19.4		15.2
		[4.8-33.9]		[8.5-21.9]
	$15,000-$24,999	20.4		28.9
		[9.9-30.9]		[19.3-37.8]
	$25,000-$49,999	14.2		27.4
		[3.8-24.6]		[19.2-35.5]
	$50,000 or more	42.7		38.1
		[27.6-57.9]		[28.5-47.7]
Employment	Employed	27.1		30.3
		[16.5-37.7]		[23.0-37.6]
	Unemployed	18.4		49.2
		[0.0-50.1]		[22.5-75.9]
	Homemaker	47.9		14.2
		[24.1-71.6]		[6.0-22.4]
	Retired	22.0		26.8
		[13.5-30.6]		[21.0-32.5]
	Unable to work	19.8		13.7
		[6.2-33.4]		[7.1-20.4]
Education	Less than H.S.	17.7		20.7
		[4.7-30.7]		[13.1-28.4]
	H.S. Grad	19.1		23.2
		[11.0-27.1]		[16.4-30.0]
	Some college	23.6		29.3
		[11.5-35.8]		[21.6-36.9]
	College Grad	44.9		29.4
		[29.5-60.4]		[21.1-37.8]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Prevalence of Adults with Diabetes who Smoke, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	15.3	20.2	18.8
		[10.5-20.1]	[16.7-23.7]	[15.4-22.1]
Gender	Male	17.0	23.5	23.0
		[9.1-25.0]	[17.4-29.7]	[17.2-28.9]
	Female	13.7	17.5	14.8
		[8.1-19.2]	[13.7-21.2]	[11.3-18.4]
Race	Caucasian	17.5	20.1	17.7
		[10.5-24.45]	16.2-24.0]	[13.5-22.0]
	African American	13.6	20.6	17.8
		[6.5-20.7]	[13.6-27.6]	[11.8-23.8]
Age	18-44	28.8	37.2	26.9
		[10.2-47.5]	[24.8-49.7]	[15.3-38.5]
	45-64	18.7	20.3	24.2
		[11.5-25.8]	[15.6-25.0]	[18.8-29.6]
	65+	5.1	11.5	9.3
		[1.9-8.3]	[7.3-15.7]	[6.0-12.5]
Income	Less than $15,000	17.8	21.2	26.6
		[4.5-31.1]	[13.7-28.7]	[18.8-34.4]
	$15,000-$24,999	21.4	19.7	26.5
		[10.3-32.5]	[12.9-26.4]	[17.6-35.3]
	$25,000-$49,999	5.9	21.7	21.0
		[0.0-11.9]	[14.1-29.3]	[13.3-28.7]
	$50,000 or more	12.8	17.2	9.5
		[3.3-22.3]	[9.2-25.1]	[4.0-15.1]
Employment	Employed	12.3	22.5	18.1
		[5.0-19.6]	[16.0-29.0]	[12.0-24.2]
	Unemployed	34.4	34.6	42.6
		[1.2-67.8]	[10.0-59.1]	[16.8-68.4]
	Homemaker	30.6	24.3	15.5
		[9.0-52.2]	[12.8-35.8]	[6.1-24.8]
	Retired	6.1	10.4	12.0
		[1.9-10.3]	[6.6-14.2]	[8.2-15.9]
	Unable to work	9.7	27.4	31.8
		[14.7-43.6]	[18.9-35.9]	[22.0-41.6]
Education	Less than H.S.	15.0	26.4	22.9
		[3.5-26.5]	[19.0-33.8]	[15.3-30.4]
	H.S. Grad	21.8	22.2	21.5
		[12.8 -30.8]	[15.8-28.6]	[14.9-28.0]
	Some college	12.7	14.5	13.4
		[4.3-21.2]	[8.7-20.2]	[8.2-18.5]
	College Grad	7.5	14.1	17.0
		[0.0-15.2]	[7.0-21.1]	[9.5-24.4]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

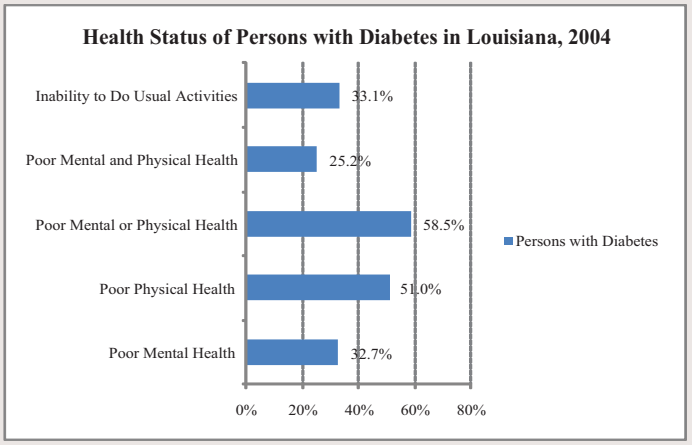
TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Prevalence of High Blood Pressure Among Adults with Diabetes, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	74.5	Data Not Available*	73.0
		[69.0-79.9]		[69.2-76.9]
Gender	Male	75.3		70.1
		[66.6-84.0]		[63.7-76.6]
	Female	73.6		75.7
		[67.0-80.3]		[71.3-80.2]
Race	Caucasian	73.4		70.0
		[66.5-80.4]		[65.2-74.7]
	African American	79.3		76.6
		[70.7-87.9]		[68.9-84.2]
Age	18-44	55.6		51.7
		[36.0-75.2]		[37.7-65.7]
	45-64	78.1		78.3
		[71.1-85.1]		[73.6-83.1]
	65+	77.3		76.3
		[69.5-85.2]		[71.0-81.5]
Income	Less than $15,000	75.4		84.0
		[63.6-87.0]		[78.3-89.9]
	$15,000-$24,999	66.8		74.1
		[54.9-78.7]		[65.7-82.5]
	$25,000-$49,999	75.0		74.9
		[62.3-87.7]		[67.4-82.5]
	$50,000 or more	75.5		64.0
		[63.0-88.1]		[54.9-73.1]
Employment	Employed	66.6		65.8
		[56.3-76.9]		(58.1-73.6]
	Unemployed	62.0		53.5
		[27.6-96.4]		[27.8-79.3]
	Homemaker	67.1		78.8
		[45.7-88.5]		[68.2-89.4]
	Retired	82.6		77.3
		[75.3-89.8]		[72.1-82.5]
	Unable to work	81.3		80.0
		[70.6-91.9]		[71.8-88.2]
Education	Less than H.S.	78.1		83.6
		[68.6-87.6]		[77.3-90.0]
	H.S. Grad	73.9		74.3
		[64.9-82.1]		[67.6-81.0]
	Some college	72.7		68.0
		[60.4-85.1]		[59.4-76.5]
	College Grad	75.0		66.3
		[62.3-87.7]		[58.0-74.6]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

Health Status among Adults with Diabetes



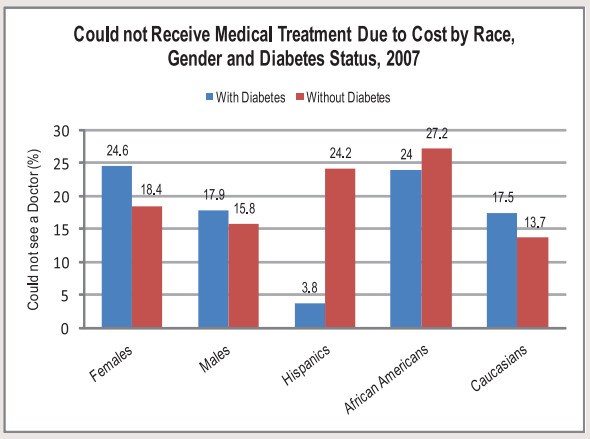
Source: CDC, National Diabetes Surveillance System, 2007

Over half (58.5%) of surveyed adults diagnosed with diabetes in Louisiana reported having either poor mental or physical health.

Diabetes can have dire effects on an individual's mental and physical health if not properly controlled with the assistance of a medical care team and a support network to help a person with diabetes learn how to manage the day-to-day aspects of the disease and everyday life. Data on health status among Louisiana adult diabetes population was obtained from the 2004 Louisiana Behavioral Risk Factor Surveillance System.

In 2004, over half (58.5%) of adults (age 18 and older) in Louisiana with diabetes reported having either poor mental or physical health[2]. Among the adult diabetes population, thirty-three percent (33.1%) reported an inability to do usual activities. Twenty-five percent (25.2%) reported having poor mental and physical health[2]. Over half of the adult population with diabetes reported having poor physical health. Thirty-two percent (32.7%) reported having poor mental health (CDC, National Diabetes Surveillance System, 2007).

Access to Care



Source: LA BRFSS, 2007

Access to health care is critical for people with diabetes. Inability to acquire medical treatment due to cost is a barrier that must be addressed to better meet the needs of Louisiana's diabetes population. In 2007, adults with diabetes experienced more difficulty accessing health care from a medical provider due to costs compared to adults without diabetes. Among racial/ethnic groups, Caucasians with diabetes were less likely to receive care compared to Caucasians without diabetes (LA BRFSS, 2007).

Footnote:
[2] Data obtained using the following question - "During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?". Data for mental health and physical health was combined to estimate the percentage of adults with diabetes having either poor mental or physical health as well as having both poor mental and physical health (CDC, National Diabetes Surveillance System, 2007)

Preventive Care Practices

Reducing risk for diabetes complications requires active and effective disease management, by the person diagnosed with diabetes and their care team. Following recommended preventive care practices and healthy behaviors (physical activity, healthy eating, no smoking, etc.) can help a person with diabetes maintain good health and quality of life as they age. Such practices include attending a diabetes self-management education class, monitoring blood glucose levels on a daily basis, annual eye exam, annual foot exam and vaccinations for both influenza and pneumonia.

A thorough understanding of diabetes is critical to knowing how to properly manage the disease. It is important for people diagnosed with diabetes to be consistent with care and up to date on the best practices for management. For this reason, it's recommended that people with diabetes and their loved ones attend a diabetes self-management class to learn how to best manage their diabetes. According to the 2007 Louisiana BRFSS report, an estimated 42.6% of Louisiana adults with diabetes, however, have not yet taken such a course (LA BRFSS, 2007).

Louisiana adults 65 years of age and older with diabetes, reported being least likely to complete a diabetes self-management course (43.9%) in comparison to other age categories. Almost one-fifth of people with diabetes age 18-44 years did not complete a self-management course (41.7%) in 2007. In addition, more Caucasians with diabetes (45.3%) than African Americans (40.8%) reported that they had never taken a class on how to manage their diabetes (LA BRFSS, 2007).

The most fundamental aspect of self-managing diabetes is keeping blood sugar levels within recommended range for people with diabetes based on evidence-based guidelines and nationally-recognized standards of care. One such recommendation is for people with diabetes to conduct daily blood glucose monitoring (ADA, 2009). This consists of using a blood glucose meter and glucose testing strips to monitor changes in blood glucose levels throughout the day and any bodily reaction to ingested foods and medications. Although people with diabetes are advised to monitor their blood glucose levels several times a day, 2007 BRFSS data reports that thirty-two percent (32.8%) of adults with diabetes in Louisiana fail to check their blood glucose levels at least once daily (LA BRFSS, 2007).

People with diabetes are more likely than people without diabetes to suffer from complications caused by influenza (flu). For this reason, people with diabetes are encouraged to get an annual flu shot/spray each year. In 2007, approximately sixty-two percent (61.8%) of adults with

diabetes in Louisiana reported receiving a flu shot or spray within the last year. In this same year, forty-six percent (46.3%) of African American adults with diabetes and thirty-three percent (33.4%) of Caucasian adults with diabetes reported that they did not receive a flu shot or spray within the past year. Approximately sixty-seven percent (66.8%) of people with diabetes 45 years of age and younger and forty-four percent (44.9%) of adults with diabetes age 45 to 64 reported that they did not receive a flu shot or spray (LA BRFSS, 2007).

Like the flu vaccine, pneumonia vaccinations are an important preventive care measure for people diagnosed with diabetes. In the United States, only one in three adults with diabetes receive a pneumonia vaccination. A pneumonia shot every 10 years is recommended for anyone aged two years or older or who may be at higher risk for getting pneumonia due to an existing chronic condition, such as diabetes. In 2007, forty-six percent (46.1%) of adults with diabetes reported never receiving a pneumonia vaccination. African American adults with diabetes were less likely to have ever received a pneumonia vaccination compared to Caucasian adults with diabetes (40.6% vs. 57.5%). Adults with diabetes and an annual household income of less than $25,000 were more likely to have had a pneumonia vaccination than adults with diabetes and an annual household income of $35,000 and more (LA BRFSS, 2007).

➢ Hemoglobin A1c (HgA1c)

The Hemoglobin A1c test is the most reliable method for determining average blood sugar levels over the three months prior to the test. People with diabetes are advised to have this test done once every three months. Health professionals use results of the A1c test to determine if provided care is working to keep the patient in control of their diabetes. Medical providers are encouraged to explain A1c test results to the patient. In 2007, sixty-two percent (62.1%) of adults with diabetes in Louisiana reported receiving at least one A1c test in the past 12 months. Approximately forty-eight percent (48.5%) of African American adults with diabetes and thirty-three percent (32.8%) of Caucasian adults with diabetes reported that they did not complete an A1c at least once in the previous year. Adults with diabetes and an annual household income of less than $25,000 are estimated to be the population most likely to not receive at least one A1c test each year as recommended (2007 prevalence rate - 42.7%). Adults with diabetes and an annual household income of $35,000 were most likely to receive an A1c in the prior year (22.3%). Among all adults with diabetes surveyed, twelve percent (12%) reported that they had never heard of an A1c test (LA BRFSS, 2007)

➢ Foot Examinations

People with diabetes are asked to check their own feet regularly and to have them checked by a health professional at least once a year. Self-examinations of the feet allow a person with diabetes to catch any sores or cuts that might progress if undetected. Medical professionals have the proficiency to, among other aspects of complications, detect signs of nerve damage and prescribe appropriate measures. In 2007, thirty-one percent (31.7%) of adults with diabetes in Louisiana reported that they had not received a foot exam in the past 12 months. Caucasian adults with diabetes reported being less likely to receive a foot exam compared to the foot exam rate for African Americans with diabetes (36.1% and 25.7%, respectively). Forty-nine percent (49.1%) of adults with diabetes age 18 to 44 reported that they had received a foot exam in the

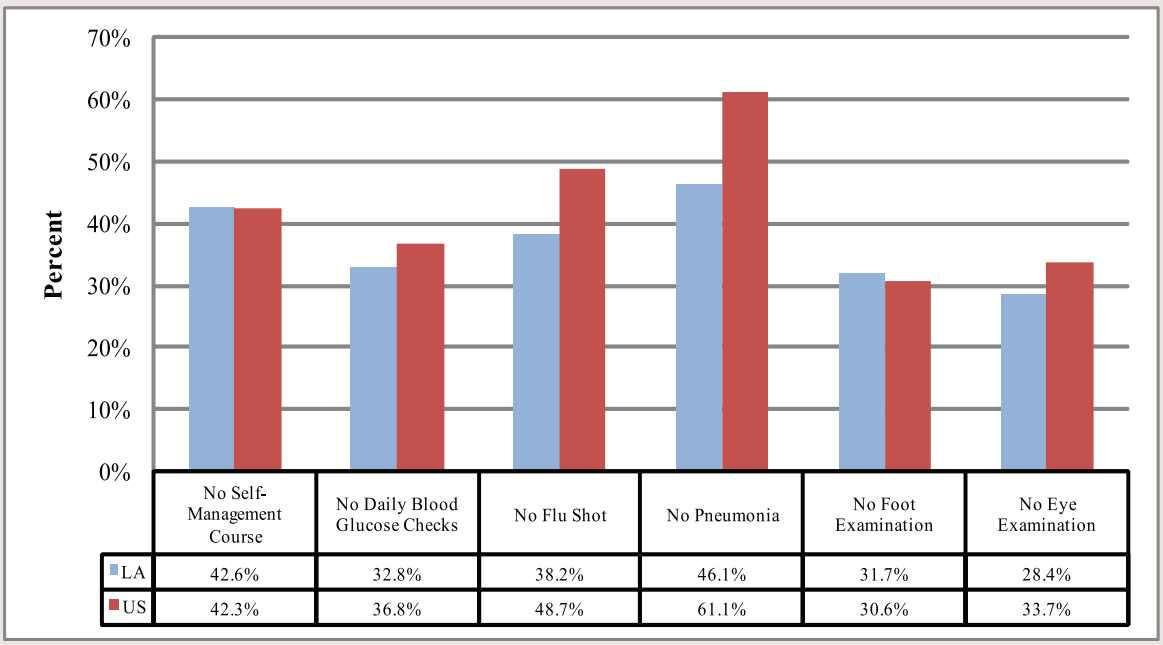
past year by a medical professional. Adults with diabetes and an annual household income of less than $25,000 were more likely to report not having their feet examined by a medical provider (34.5%) compared to adults with diabetes and an annual income between $25,000-$34,999 (28%) and adults with diabetes with an income of $35,000 or more (30.4%) (LA BRFSS, 2007).

➢ Eye Examinations

Diabetes is the leading cause of new cases of blindness in adults aged 20 to 74 years (AOA, 2006). Therefore, annual eye examinations performed by health care professionals can be used to detect early signs of retinopathy and allow appropriate measures to be taken.

In 2007, approximately twenty-eight percent (28.4%) of adults with diabetes did not complete and eye exam in the previous year. African Americans with diabetes (30.9%) were less likely than Caucasian adults with diabetes (27.6%) to have their eyes checked within the past year. Adults with diabetes aged 18 to 44 years were more likely to report not having their eyes checked within the past year (40.1%) compared to adults aged 45 to 64 years (35.2%) and adults with diabetes aged 65 years and older (24.4%). Adults with diabetes and an annual household income of less than $35,000 possessed a higher proportion of the percentage of adults that did not receive an eye exam (34.4%) compared to adults with diabetes and an annual household income of greater than $35,000 (19.5%) (LA BRFSS, 2007).

Self-Management Practices among Adults with Diabetes, US and LA, 2007



	No Self-Management Course	No Daily Blood Glucose Checks	No Flu Shot	No Pneumonia	No Foot Examination	No Eye Examination
LA	42.6%	32.8%	38.2%	46.1%	31.7%	28.4%
US	42.3%	36.8%	48.7%	61.1%	30.6%	33.7%

Source: LA BRFSS, 2007

Louisiana Diabetes Preventive Practices Highlights

No A1c Test in the past 12 months

- In 2007, an estimated 28.6% of the diabetes population within the state did not receive an A1c test to check the blood sugar level over the past year.

- Females with diabetes had a higher rate (32.2%) for not having an A1c test within a year compared to males with diabetes (23.8%).

- African Americans with diabetes had the highest rate (35.7%) for not receiving an A1c test within the past year.

- Residents with diabetes who also had health insurance (43.3%) were more likely to have an A1c test within the year compared to the diabetes population without insurance (25.1%).

Retinopathy (diabetes eye disease)

- The 2007 LA BRFSS report states that nearly one third of the persons with diabetes (34.1%) indicated being told by a doctor that diabetes has caused vision problems or were diagnosed with retinopathy.

Diabetes Self-Management Class

- Over half of Louisiana's diabetes population (58%) is estimated to have taken a class on how to manage their diabetes.

- Caucasians with diabetes (45.3%) had the highest rate for not taking a diabetes self-management course followed by African Americans (40.8%).

- Among the diabetes population, individuals with low income and low education levels had higher rates for not taking a diabetes self-management course compared to higher income and education levels.

- Half of the diabetes population (51.5%) without any form of health insurance never had a diabetes self-management class.

◊

Recommended Diabetes Preventive Care Practices

Every Doctor Visit

- ◊ Blood pressure check
- ◊ Foot check
- ◊ Weight check
- ◊ Review self-management skills, eating habits and physical activity
- ◊ Depression screening
- ◊ Smoking cessation counseling, if applicable

Daily

- ◊ Monitor blood glucose
- ◊ Take medication as prescribed
- ◊ Eat diabetes-friendly meals
- ◊ Get regular physical activity

Once a Year

- ◊ Cholesterol test
- ◊ Triglyceride test
- ◊ Urine and blood test to check for kidney problems
- ◊ Flu shot
- ◊ Dilated eye exam
- ◊ Complete foot exam
- ◊ Dental exam to check teeth and gums

2x Each Year (Biannually)

- ◊ Hemoglobin A1C test (May be checked more often if A1C is greater than 7)

Lifetime

- ◊ Pneumonia shot

U.S. DHHS National Diabetes Education Program, 2009

Use of Preventive Practices among Adults with Diabetes in Louisiana, 2007

	Residents with Diabetes			Never Taken Self-Management Class			No HbA1c Test Within Year			Diabetes Affected Eyes (Retinopathy)		
Characteristic	**Sample Size**	**%**	**95% CI**	**Sample Size**	**%**	**95% CI**	**Sample Size**	**%**	**95% CI**	**Sample Size**	**%**	**95% CI**
Total	866	10.1	[9.3-10.9]	382	42.6	[9.3-10.9]	240	28.6	[24.4-32.2]	278	34.1	[29.8-38.3]
Age												
18-24	1	0.2	[0-.47]	0	0	0.0	0	0	0.0	0	0	0.0
25-34	20	2.1	[1-3.2]	8	43.2	[17.4-69.1]	8	41.9	[15.8-68.1]	3	14.9	[0-31.6]
35-44	56	5.0	[3.3-6.6]	23	31.9	[17.7-46]	12	21.6	[7.3-35.9]	18	39.8	[22.4-57.2]
45-54	153	10.0	[8.2-11.9]	65	45.1	[35.4-54.8]	39	26.4	[17.7-35]	50	34.0	[24.8-43.3]
55-64	266	18.5	[16.1-20.9]	102	37.0	[30.1-43.8]	62	25.2	[18.7-31.7]	83	33.6	[26.6-40.6]
65+	370	24.5	[21.9-27.1]	184	48.4	[42.2-54.6]	119	32.0	[26.1-37.9]	123	34.1	[27.9-40.2]
Gender												
Male	301	10.1	[8.7-11.4]	136	42.9	[36.3-49.5]	168	23.8	[17.8-29.9]	105	37.5	[30.4-44.6]
Female	565	10.1	[9.2-11.1]	246	42.3	[37.4-47.2]	72	32.2	[27.3-37.1]	173	30.9	[26.1-35.6]
Race												
White	531	8.8	[7.9-9.7]	240	45.3	[40.2-50.5]	139	25.1	[20.6-29.6]	147	27.5	[22.9-32]
Black	256	13.6	[11.5-15.7]	145	40.8	[33.2-48.4]	80	35.7	[27.4-44]	104	41.9	[33.8-50.7]
Hispanic	19	8.2	[3-13.4]	12	24.5	[2.2-46.7]	5	17.2	[0-35.1]	5	53.9	[23-84.9]
Other	46	10.8	[7-14.7]	27	32.2	[17.7-46.7]	10	25.7	[10.4-41.1]	17	41.9	[24.9-58.8]
Education												
Did not graduate HS	200	17.6	[14.4-20.8]	111	53.2	[43.7-62.8]	72	39.2	[29.4-49]	70	39.6	[29.7-49.5]
Graduated from HS	285	10.6	[9-12.1]	123	43.1	[35.7-50.4]	84	30.6	[23.5-37.7]	95	32.6	[25.6-39.7]
Some college	211	10.1	[8.4-11.7]	82	36.9	[29.3-44.6]	42	20.1	[13.4-26.8]	65	34.7	[26.3-43.3]
Graduated college	165	6.5	[5.4-7.7]	63	37.2	[28.4-45.9]	40	25.0	[17-32.9]	48	29.8	[21.4-38.2]
Household Income												
<15,000	218	18.8	[15.3-22.2]	84	49.5	[40.4-58.6]	57	37.3	[28.1-46.5]	64	37.6	[28.8-46.4]
15,000-24,999	257	14.1	[11.5-16.6]	76	45.3	[36-54.7]	44	29.3	[19.9-38.8]	57	31.6	[23.3-39.9]
<$25,000-34,999	161	12.5	[9.5-15.4]	36	28.8	[18.9-38.7]	28	26.9	[15.7-38.2]	36	39.3	[26.8-51.8]
<35,000-$49,999	180	11.1	[8.3-14]	35	31.0	[19.2-42.7]	12	8.4	[3.1-13.6]	61	47.4	[33.4-61.4]
$50,000+	328	4.6	[3.7-5.5]	53	37.3	[28-46.6]	28	21.6	[13.6-29.6]	35	18.9	[11.4-26.4]
Health Insurance												
Yes	719	10.6	[9.6-11.5]	314	40.6	[36.1-45]	184	25.1	[21.2-29]	227	34.0	[29.3-38.6]
No	145	8.5	[6.7-10.2]	66	51.5	[41.1-62]	55	43.3	[31.9-54.6]	50	34.1	[24.3-43.9]

Source: LA BRFSS, 2007
CI—Confidence interval

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Percentage of Adults with Diabetes that Completed at Least One A1c Test in the Past 12 Months, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	65.8	71.1	71.6
		[59.4-72.1]	[67-75.1]	[67.7-75.5]
Gender	Male	63	68.3	76.1
		[52.4-73.5]	[61.3-75.4]	[70-82.1]
	Female	68.4	73.3	67.7
		[61.3-75.6]	[68.9-77.8]	[62.8-72.6]
Race	Caucasian	66.1	73.2	74.8
		[57.6-74.5]	[68.6-77.9]	[70.3-79.3]
	African-American	68.2	68.9	64.2
		[58.1-78.3]	[61-76.9]	[55.9-72.5]
	Hispanic	nsf	62.7	82.7
			[37.5-87.9]	[64.8-100]
Age	18-44	69.9	60	73.4
		[50.3-89.5]	[46.7-73.2]	[60.6-86.2]
	45-64	67.6	76.1	74.2
		[58.9-76.4]	[70.9-81.2]	[68.9-79.5]
	65+	61.2	69.1	67.9
		[51.4-70.9]	[62.9-75.2]	[62-73.8]
Income	Less than $15,000	47.6	61.2	62.6
		[32.3-62.8]	[51.7-70.7]	[53.4-71.8]
	$15,000-$24,999	52.4	73.8	70.6
		[39.4-65.5]	[65.9-81.8]	[61.1-80]
	$25,000-$49,999	75.9	74.7	82.9
		[62.7-89.1]	[67.1-82.3]	[76.4-89.3]
	$50,000 or more	78.8	77.2	78.3
		[67.1-90.6]	[68.6-85.8]	[70.3-86.3]
Employment	Employed	70.3	77.4	72.9
		[60.2-80.5]	[70.9-83.9]	[65.7-80.1]
	Unemployed	86.1	55.3	68.7
		[66.4-100]	[29.1-81.4]	[41-96.4]
	Homemaker/Student	86.8	55.3	62.4
		[71.6-100]	[29.1-81.4]	[48.8-76.1]
	Retired	61	74.1	73.9
		[50.8-71.2]	[68.3-79.9]	[68.3-79.5]
	Unable to Work	55.4	62.7	67.7
		[39.7-71.1]	[52.7-72.7]	[58.3-77.1]
Education	Less than H.S. Grad	48.3	56.5	60.7
		[34.1-62.4]	[47.6-65.4]	[50.9-70.5]
	H.S. Graduate	69	73.3	69.3
		[59-79]	[66.5-80.1]	[62.2-76.4]
	Some College	64	79.7	79.8
		[50.2-77.8]	[72.8-86.7]	[73.1-86.5]
	College Graduate	83.5	76.9	74.9
		[73.1-94]	[68.6-85.1]	[67-82.9]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Percentage of Adults with Diabetes who Monitor Blood Glucose (Sugar) on a Daily Basis, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	69.7	67.1	70.6
		[63.5-76]	[62.9-71.3]	[66.6-33.3]
Gender	Male	60.6	60.4	66.4
		[50-71.2]	[53.2-67.5]	[59.6-73.3]
	Female	78.3	72.7	74.5
		[71.8-84.7]	[67.9-77.4]	[70.1-78.9]
Race	Caucasian	65.6	64.2	67.2
		[57.1-74]	[59.1-69.4]	[62.2-72.3]
	African-American	73.8	69.4	74.1
		[64-83.6]	[61.5-77.3]	[66.5-81.6]
	Hispanic	81.1	78.3	67.8
		[48-100]	[57.1-99.6]	[40.1-95.5]
Age	18-44	69.6	70.1	66.6
		[50.3-89]	[57.1-83.1]	[52.4-80.8]
	45-64	68.1	66.5	72
		[58.9-77.3]	[60.8-72.1]	[66.7-77.2]
	65+	71.8	66.6	70.7
		[62.7-80.9]	[59.8-73.4]	[64.7-75.7]
Income	Less than $15,000	63.7	71.4	72.9
		[48.3-79.1]	[62.5-80.4]	[64.8-81]
	$15,000-$24,999	71.1	71.9	79.6
		[58.7-83.5]	[63.9-80]	[72.5-86.6]
	$25,000-$49,999	67.8	64.3	73
		[52.1-83.4]	[55.5-73.1]	[64.8-81.1]
	$50,000 or more	80.1	62	60.9
		[68.1-92.2]	[51-73]	[51.2-70.6]
Employment	Employed	63.2	65.9	65.1
		[51.8-74.6]	[58.3-73.4]	[56.8-73.3]
	Unemployed	N/A	54.7	76.6
			[27.9-81.6]	[59.3-93.9]
	Homemaker/Student	80.1	66.9	75.5
		[61.5-98.6]	[53.1-80.7]	[63.5-87.4]
	Retired	69.5	65.2	71.4
		[59.6-79.4]	[58.3-72.2]	[65.4-77.5]
	Unable to Work	75.1	74.1	75.5
		[61.4-88.8]	[65.5-82.8]	[66.9-84]
Education	Less than H.S. Grad	69	64.9	77.4
		[55.6-82.4]	[56.2-73.5]	[70.5-84.3]
	H.S. Graduate	67.4	66.8	69.5
		[57-77.7]	[59.6-74.1]	[62.1-76.9]
	Some College	66.7	73.8	72.9
		[51.9-81.5]	[65.6-81.9]	[64.5-81.3]
	College Graduate	80.7	64.1	61.5
		[69.7-91.7]	[54.7-73.4]	[52.2-70.7]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Percentage of Adults with Diabetes that Received a Flu Vaccine within the Past Year, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	49	53	61.8
		[42.6-55.3]	[48.8-57.1]	[57.6-66]
Gender	Male	55.3	52.2	63.7
		[45.1-65.6]	[45.3-59]	[56.7-70.7]
	Female	43	53.7	60.1
		[35.4-50.6]	[48.6-58.7]	[55.2-65]
Race	Caucasian	54.9	56.2	66.5
		[46.6-63.2]	[51.2-61.2]	[61.7-71.4]
	African-American	40.1	46.9	53.6
		[29.5-50.8]	[39.1-54.8]	[45.6-61.6]
	Hispanic	nsf	nsf	nsf
Age	18-44	20.7	30.7	38.8
		[3.8-37.6]	[18.9-42.5]	[25.5-52.2]
	45-64	46.2	50.2	60.6
		[37.2-55.2]	[44.6-55.9]	[55.1-66.2]
	65+	64.8	67.9	72.7
		[55.7-74]	[61.8-74]	[67-78.5]
Income	Less than $15,000	40.8	55	61.9
		[26.5-55]	[46-64]	[53.1-70.6]
	$15,000-24,999	47.7	58.9	56.5
		[34.8-60.1]	[50.1-67.8]	[47.3-65.8]
	$25,000-49,999	43.3	54.1	61.9
		[27.7-58.3]	[45.7-62.4]	[52.6-71.3]
	$50,000 or more	57.5	44.4	67.7
		[43.2-71.8]	[34.1-54.7]	[58.8-76.6]
Employment	Employed	34.8	45.1	53.3
		[24-45.6]	[37.7-52.5]	[45.2-61.4]
	Unemployed	27.8	47.1	46.7
		[.7-55]	[22.3-71.9]	[21.1-72.3]
	Homemaker/Student	45	48.1	62.2
		[21.6-68.3]	[33.6-62.5]	[49.5-75]
	Retired	64.8	65.4	71.9
		[55.3-74.2]	[59.1-71.8]	[66-77.7]
	Unable to Work	54.8	49.3	59.8
		[40.4-69.3]	[40.2-58.4]	[50.3-69.3]
Education	Less than H.S. Grad	43.3	55.5	56.8
		[30.2-56.4]	[47.3-63.8]	[47.7-66.5]
	H.S. Graduate	50.5	48.1	59.5
		[40.1-60.9]	[40.9-55.2]	[52.1-66.9]
	Some College	48.1	59.1	64.8
		[34-62.1]	[50.3-67.9]	[56.6-73]
	College Graduate	57.6	52	67.5
		[43.6-71.6]	[42.7-61.2]	[59.1-75.9]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Percentage of Adults with Diabetes who Reported Receiving a Pneumonia Vaccination in the Past Year, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	52.4	54.9	53.8
		[45.9-58.9]	[50.7-59.2]	[49.4-58.1]
Gender	Male	53.7	52.5	54.7
		[43.2-64.1]	[45.5-59.5]	[47.5-61.9]
	Female	51.2	56.9	52.9
		[43.4-59.1]	[51.9-62]	[47.8-58]
Race	Caucasian	58.2	57.4	59.3
		[49.8-66.5]	[52.3-62.4]	[54.1-64.4]
	African-American	46	49.2	42.9
		[35-57.1]	[41.2-57.2]	[35.1-50.7]
	Hispanic	nsf	69.6	44.4
			[46.2-93]	[13.6-75.3]
Age	18-44	28.2	34.6	16.6
		[10.4-46]	[21.9-47.4]	[7.9-25.3]
	45-64	40.7	49.9	51.5
		[31.8-49.6]	[44.1-55.6]	[45.6-57.3]
	65+	77.7	71.8	71.4
		[70.3-85.2]	[65.9-77.8]	[65.4-77.5]
Income	Less than $15,000	44.5	64.1	55.2
		[29.8-59.3]	[55.6-72.6]	[46.2-64.2]
	$15,000-$24,999	67.4	63.3	54.7
		[55.3-79.5]	[54.7-71.8]	[45.3-64.2]
	$25,000-$49,999	46.1	50.8	54.1
		[30.6-61.7]	[42.3-59.3]	[44.6-63.5]
	$50,000 or more	39.2	45.5	44.4
		[25-53.4]	[34.7-56.4]	[34.7-54.2]
Employment	Employed	37.1	39.1	35.3
		[26.3-47.9]	[31.6-46.6]	[27.9-42.8]
	Unemployed	nsf	38.6	49.7
			[16.6-60.7]	[24-75.4]
	Homemaker/Student	39.8	59.6	51.2
		[16.5-63.1]	[45.5-73.6]	[38.1-64.4]
	Retired	73.4	68.3	70.7
		[64.7-82]	[62.2-74.5]	[64.6-76.7]
	Unable to Work	54.4	59.9	54.1
		[39.4-69.4]	[50.9-69]	[44.3-63.9]
Education	Less than H.S. Grad	52.5	55.6	47.4
		[38.7-66.3]	[47.1-64]	[38.1-56.6]
	H.S. Graduate	56.6	55.9	52.7
		[46.1-67.1]	[48.7-63.1]	[45.1-60.3]
	Some College	57.9	57.5	59.9
		[43.7-72.1]	[48.7-66.4]	[51.4-68.4]
	College Graduate	42.1	49.8	54
		[27.9-56.3]	[40.4-59	[44.9-63.1]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Percentage of Adults with Diabetes who Received at Least One Foot Exam Within the Past Year, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	61	64.2	68.2
		[54.7-67.2]	[60.2-68.2]	[64.3-72]
Gender	Male	58.9	63.9	69.8
		[48.7-69.1]	[57.2-70.7]	[63.7-75.9]
	Female	62.9	64.5	66.7
		[55.4-70.4]	[59.7-69.2]	[62-71.3]
Race	Caucasian	55.9	62.8	63.8
		[47.5-64.2]	[57.9-67.7]	[58.8-68.7]
	African-American	70.7	37.8	74.2
		[60.9-80.4]	[60.3-75.3]	[67.5-80.9]
	Hispanic	nsf	61	nsf
			[36.1-85.8]	
Age	18-44	61.8	54.5	65.3
		[41.8-81.9]	[41.4-67.5]	[52.8-77.9]
	45-64	60.9	68.5	71
		[52-69.8]	[63.4-73.7]	[65.8-76.1]
	65+	60.7	62.5	66.1
		[51.3-48.6]	[56.2-68.8]	[60.3-71.9]
Income	Less than $15,000	60.8	63.1	63.4
		[45.6-76]	[54.5-71.7]	[54.9-71.9]
	$15,000-$24,999	49.6	71.2	67.2
		[37.3-62]	[63.3-79]	[58.1-76.3]
	$25,000-$49,999	62.1	63.4	76.1
		[47-77.2]	[55.3-71.4]	[69.3-83]
	$50,000 or more	75.7	66.9	60.3
		[63.8-87.6]	[56.8-76.9]	[50.8-69.7]
Employment	Employed	66.9	62.7	68.2
		[56.6-77.1]	[55.4-70]	[61.1-75.2]
	Unemployed	66.3	54.4	52.9
		[34-9836]	[29.7-79.2]	[27.3-78.5]
	Homemaker/Student	66.4	59.4	68.9
		[44.3-88.5]	[45.5-73.3]	[57.1-80.7]
	Retired	61.8	65.8	72.1
		[51.9-71.7]	[59.5-72.1]	[66.7-77.4]
	Unable to Work	48.3	68.3	62.5
		[33.5-63]	[59.7-76.8]	[53-72]
Education	Less than H.S. Grad	57	59.7	63.6
		[43.4-70.6]	[51.4-68]	[55-72.3]
	H.S. Graduate	59.8	67.4	68
		[49.4-70.1]	[60.9-74]	[55-72.3]
	Some College	62.5	66.5	71.3
		[48.8-76.3]	[58-75]	[64.1-78.5]
	College Graduate	71.7	62.8	69
		[59.3-84.1]	[53.7-72]	[61.1-38.8]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Percentage of Adults with Diabetes who Received an Annual Eye Exam, 2005-2007

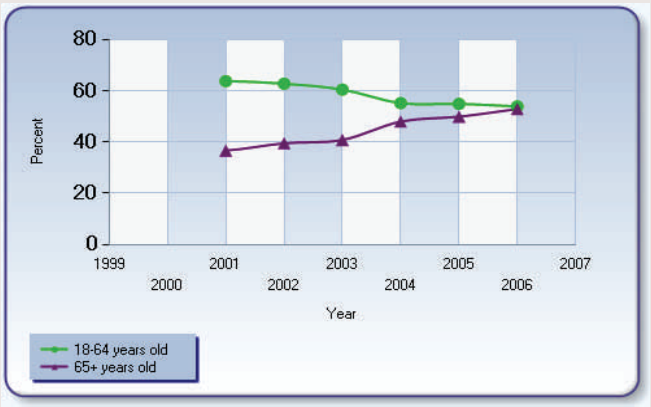
Demographic	Population	2005	2006	2007
Louisiana	Total	65	66.7	71.5
		[59.5-72]	[62.7-70.7]	[67.8-75.2]
Gender	Male	59.2	66.3	74.8
		[48.9-69.4]	[59.5-73.1]	[69-80.6]
	Female	71.9	67	68.5
		[64.7-79.1]	[62.3-71.6]	[62.8-73.2]
Race	Caucasian	61.3	67.9	72.3
		[53-69.7]	[63.1-72.6]	[67.8-76.8]
	African-American	74.8	65.3	69
		[65.8-84.2]	[57.7-72.9]	[61.7-76.3]
	Hispanic	nsf	nsf	nsf
Age	18-44	41.1	50.5	69.1
		[22.3-60]	[37.6-63.5]	[56.8-81.4]
	45-64	65.3	67.7	66.9
		[56.6-74]	[62.4-73]	[61.5-72.3]
	65+	76.7	73	77.9
		[68.5-85]	[67.2-78.8]	[72.8-93]
Income	Less than $15,000	58.8	65.5	70.9
		[43.4-74.2]	[57-74]	[62.9-78.9]
	$15,000-$24,999	62.3	72.9	63.4
		[49.5-75.1]	[65.2-80.6]	[54.1-72.7]
	$25,000-$49,999	66.9	66.3	73.2
		[52.4-82.5]	[58.1-74.5]	[65.4-81.1]
	$50,000 or more	74.5	66.3	80.5
		[61.7-87.2]	[58.1-74.5]	[73.3-87.6]
Employment	Employed	63.8	63.8	69.4
		[53.1-74.6]	[56.4-71.2]	[62.3-76.4]
	Unemployed	40.1	65.2	61.1
		[9-71.2]	[40.4-90]	[35.4-86.8]
	Homemaker/Student	86.1	60	66.4
		[70.4-100]	[46.3-73.7]	[53.7-79.1]
	Retired	73.9	73.7	78.7
		[64.9-82.9]	[67.8-79.7]	[73.6-83.9]
	Unable to Work	56.7	63.3	65.2
		[41.8-71.7]	[54.5-72.1]	[56.2-74.2]
Education	Less than H.S. Grad	67.7	57.9	67.8
		[54.4-81.1]	[49.5-66.2]	[59.4-76.2]
	H.S. Graduate	68.4	68.7	66.2
		[58.4-78.5]	[62-75.5]	[59.1-73.3]
	Some College	60.2	68.2	77.4
		[46.1-74.4]	[60-76.3]	[71.1-83.8]
	College Graduate	69.7	73.2	77.5
		[56.4-83]	[64.7-81.6]	[70-85]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

Diabetes Self-Management Education

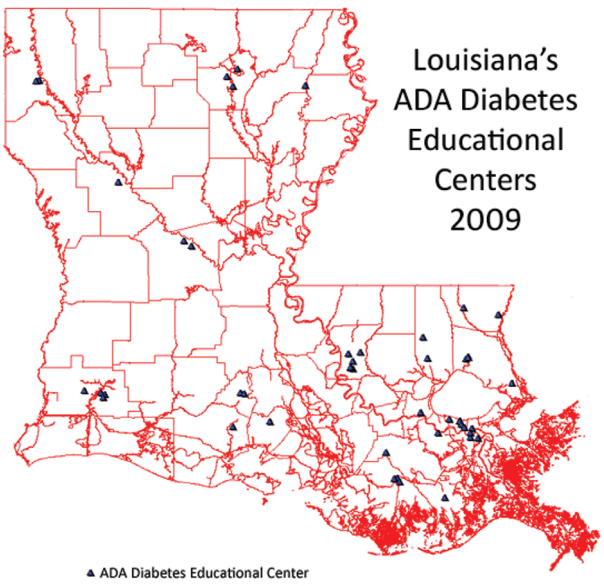
Diabetes self-management education (DSME) is the ongoing process of facilitating the knowledge, skills and ability necessary for diabetes self-care. DSME has been used since the 1930s (Norris et al, 2002) to help persons with diabetes become effective lifetime managers of their diabetes. The overall objectives of DSME are to support informed decision-making, self-care behaviors, problem-solving and active collaboration with the individual's health care team and to improve clinical outcomes, health status, and quality of life. Diabetes education can be effectively delivered by a multidisciplinary team with a comprehensive plan of care. DSME programs that incorporate behavioral and psychosocial strategies as well as cultural and age-appropriate approaches (i.e. lay health educators, community health workers) are also proven to effectively improve patient outcomes (Funnel et al, 2008).

Percentage of Adults in Louisiana with Diabetes to Ever Attend a Diabetes Self-Management Class, by Age, 2000-2006



Source: CDC, National Diabetes Surveillance System

DSME is provided through one-on-one and group facilitation led by health professionals with specialized diabetes and educational training beyond the standard academic preparation for their health profession. Educators can receive certification as a Certified Diabetes Educator (CDE) from the National Certified Board for Diabetes Educators (NCBDE) and the master's level Board Certification in Advanced Diabetes Management (BC-ADM), administered by the American Nurses Credentialing Center (ANCC).



The American Diabetes Association's Education Recognition Program is one of three certification programs acknowledged by the Centers for Medicare and Medicaid for Diabetes Self-Management Training. Louisiana has forty-eight (48) ADA Recognized Program sites.

In 2007, 42.6% of adults living with diabetes in Louisiana are estimated to have never attended a diabetes self-management course. Research is needed to determine strategies to increase

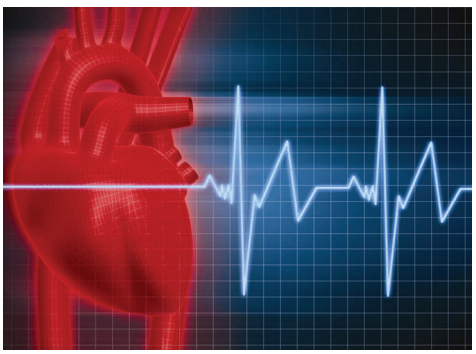
** Information in this section adapted from the National Standards of Diabetes Self-Management Education , American Diabetes Association Clinical Practice Recommendations. Diabetes Care, Vol. 32, Supplement 1, January 2009, unless otherwise noted.*

City	Facility	Program Name	Address	Zip	Phone
Abbeville	Abbeville General Hospital	Diabetes Self-Management Training Program	118 N. Hospital Drive	70510	337-898-6318
Alexandria	CHRISTUS St. Frances Cabrini Hospital	Diabetes Self-Management Education Program	3330 Masonic Drive	71301	318-448-6880
Baton Rouge	Our Lady of the Lake Regional Medical Center	Diabetes & Nutrition Center	5000 Hennessy Boulevard	70808	225-765-8399
Baton Rouge	The Baton Rouge Clinic AMC	The Diabetes Education Program	7373 Perkins Road	70808	225-246-9281
Baton Rouge	Woman's Hospital	Woman's Hospital Diabetes Center	9050 Airline Highway	70815	225-924-8550
Baton Rouge	Ochsner Clinic Baton Rouge	Diabetes Management and Self-Care Training Center	9001 Summa Avenue	70809	225-761-5586
Baton Rouge	Pennington Biomedical Research Center	Pennington Biomedical Research Center TAKE 5 Diabetes Education and Prevention Program	6400 Perkins Road	70808	225-763-0918
Baton Rouge	LSU HSC Earl K. Long Medical Center	Diabetes and Nutrition Center	1401 North Foster Drive	70806	225-987-9189
Bogalusa	Southeast Louisiana Home Health	Diabetes Self-Management Education Program	1406 Avenue F	70427	985-732-7104
Bogalusa	LSUHSC/Bogalusa Medical Center	Diabetes Self-Management Education Program	400 Memphis Street	70427	985-730-6700
Bossier City	Willis Knighton Health System	WK Bossier Outpatient Diabetes Education Program	2400 Hospital Drive	71111	318-212-4250
Covington	Egan Healthcare	Egan Healthcare Diabetes Center	1116 West 21st Avenue	70433	985-892-9541
Cut Off	Lady of the Sea General Hospital	Diabetes Education Program	200 West 134th Place	70345	985-632-8373
Delhi	Richland Parish Hospital	Diabetes Education Program	407 Cincinnati Street	71232	318-878-5171 ext 326
Gretna	Ochsner Medical Center - West Bank	Diabetes Management Center	2500 Belle Chasse Highway	70056	504-207-2654
Hammond	North Oaks Health System	North Oaks Health System Diabetes Education Program	15790 Paul Vega M.D. Drive	70403	985-230-5723
Houma	Terrebonne General Medical Center	Diabetes Self-Management Education Program	8120 Main Street, Suite 201	70360	985-850-6200
Houma	LSUHSC Leonard J. Chabert Medical Center	Diabetes Self-Management Education Program	1978 Industrial Boulevard	70363	985-873-1285
Houma	The Medical Team, Inc.	Outpatient Diabetes Center	4722 Hwy. 311	70360	985-872-6666
Kenner	Ochsner Medical Center - Kenner	Diabetes Self-Management Education Program	200 West Esplanade Avenue, Suite 107	70065	504-464-8646
Lafayette	LSU HSC University Medical Center	Diabetes Self-Management Education Program	2390 W. Congress Street	70506	337-261-6625
Lafayette	Lafayette General Medical Center	Diabetes Resource Center	1214 Coolidge Boulevard	70505	337-289-7329
Lafayette	Diabetes Self Management Center - Health Care Group	Diabetes Self Management Center - LHC GROUP Vermillion Parish	420 West Pinhook Road	70503	337-232-1717
Lake Charles	Lake Charles Memorial Hospital	Diabetes Education Center of LCMH	1801 Oak Park Boulevard	70601	337-494-6425

City	Facility	Program Name	Address	Zip	Phone
Lake Charles	LSU Health Sciences Center Moss Regional Medical Center	Diabetes Self-Management Education Program	1000 Walters Street	70607	337-475-8100 ext 8279
Lake Charles	CHRISTUS St. Patrick Hospital	Diabetes Management Center	524 Dr. Michael DeBakey Drive	70601	337-491-7532
Luling	St. Charles Community Health Center, Inc.	Diabetes Self-Management Education Program	843 Milling Avenue	70070	985-785-5800
Marrero	West Jefferson Medical Center	Diabetes Self-Management Education Program	1101 Medical Center Boulevard	70072	504-349-2222
Metairie	East Jefferson General Hospital	Diabetes Management Center	4320 Houma Boulevard, Suite 720	70006	504-849-8600
Metairie	Ochsner Medical Center, New Orleans	Ochsner Diabetes Management Program	2005 Veterans Memorial Blvd	70002	504-836-9820
Monroe	St. Francis Medical Center	The Diabetes & Nutrition Center	920 Oliver Road, Suite 1450	71201	318-966-5219
Monroe	The Arthritis and Diabetes Clinic	Arthritis & Diabetes Clinic	3402 Magnolia Cove	71203	318-388-5830
Monroe	LSUHSC-Shreveport, E.A. Conway Medical Center	E.A. Conway Diabetes Education Program	4864 Jackson Street	71202	318-330-7254
Natchitoches	Causey's Pharmacy	Diabetes Education Center	407 Bienville Street	71457	318-357-1303
New Iberia	Dauterive Hospital	Steppin' Up Diabetes Self-Management Program	600 North Lewis Street	70563	337-374-4137
New Orleans	LSU Interim Hospital & Clinics	Diabetes Self-Management Education Program	1450 Poydras Street, 3rd Floor	70112	504-903-1929
New Orleans	Rite Aid Corporation	Rite Aid Diabetes Education Center	3100 Gentilly Boulevard	70122	504-940-1480
New Orleans	Touro Infirmary	Touro Diabetes Center	3600 Prytania Street, Suite 18	70115	504-897-8813
New Orleans	Tulane Medical Center	Tulane Center for Diabetes	275 LaSalle Street, HC 57	70112	504-988-1500
Pineville	Veterans Affairs Medical Center	Diabetes Self-Management Education Program	2495 Shreveport Highway, 71 N	71360	318-473-0010 ext 2556
Shreveport	Willis Knighton Health System	WKHS Outpatient Diabetes Education Program	2551 Greenwood Road, Suite 340	71103	318-212-4250
Shreveport	Overton Brooks Veterans Administration Medical Center	Diabetes Self-Management Education Program	510 East Stoner Avenue, #120	71101	318-221-8411 ext 5189
Slidell	NorthShore Regional Medical Center	Diabetes Self-Management Education Program	100 Medical Center Drive	70461	985-646-5086
Sulphur	West Calcasieu - Cameron Hospital	Diabetes Self-Management Education Program	701 East Cypress Street	70663	337-527-4282
Thibodaux	Thibodaux Regional Medical Center	Diabetes Self-Management Program	602 North Acadia Road	70301	985-493-4765
West Monroe	Glenwood Regional Medical Center	Diabetes Management Program	102 Thomas Road, Suite 106	71291	318-329-4395 ext 4396
Westwego	Rite Aid Corporation	Rite Aid Diabetes Care Center	1082 Westbank Expressway	70094	504-340-4111 ext 3
Zachary	Lane Regional Medical Center	Diabetes Self-Management Education Program	6300 Main Street	70791	225-658-4000 ext 583

Diabetes Complications

Diabetes can increase a person's risk for serious complications such as heart disease, stroke, high blood pressure, loss of vision (due to retinopathy), kidney disease, amputations, nerve damage (neuropathy), dental disease, impotence, complications of pregnancy and susceptibility to infection (ADA, 2009). People living with diabetes can take control of their diabetes by controlling blood glucose, blood pressure and blood lipids which can prevent or delay the onset of diabetes complications (CDC, 2007).



Risk factors for diabetes complications include use of tobacco products, high body fat content, physical inactivity and diet. Poorly controlled glucose levels, high blood pressure and high cholesterol can also cause diabetes complications.

Older adults 65 years of age and older with diabetes are more susceptible to having complications such as coexisting illnesses (hypertension, cardiovascular heart disease and stroke) compared to older adults 65 years and older without diabetes. Older adults with diabetes are also more likely to develop common geriatric syndromes such as polypharmacy, depression, cognitive impairment, urinary incontinence, injurious falls and persistent pain (ADA Clinical Standards, 2009).

➢ Stroke

Risk for stroke among adults with diabetes is 2 to 4 times higher than risk among people without diabetes (CDC, 2007). In 2007, eleven percent (11.1%) of adults with diabetes self-reported ever having a stroke. Prevalence for stroke was similar between males and females. Stroke prevalence was disproportionately evident among African Americans (12.5%) compared to Caucasians (7.5%). Prevalence of stroke was also more common among residents with diabetes and less than $15,000 per year annual income (19.9%) compared to residents in other income groups (LA BRFSS, 2007).

➢ High Blood Pressure

Based on U.S. diabetes prevalence data captured in 2003-2004, seventy-five percent (75%) of adults with self-reported diabetes also had blood pressure greater than or equal to 130/80 millimeters of mercury (mm Hg), or used prescription medications for hypertension (CDC, 2007).

➢ Loss of Vision (Due to Retinopathy)

Diabetic retinopathy is the Diabetes is the leading cause of new cases of blindness among adults aged 20-74 years of age (AOA, 2006). Diabetic retinopathy causes 12,000 to 24,000 new cases of blindness each year (CDC, 2007). According the American Optometric Association, people

with diabetes are forty-percent (40%) more likely to develop glaucoma and sixty-percent (60%) more likely to develop cataracts (AOA, 2006). In 2007, thirty-four percent (34.1%) of surveyed Louisiana adults with diabetes self-reported being told by a doctor that they have diabetic retinopathy. Prevalence for retinopathy was most common among Hispanics adults with diabetes (LA BRFSS, 2007).

➢ Nerve damage (neuropathy)

Approximately sixty to seventy percent (60%-70%) of people with diabetes have mild to severe forms of nervous system damage. Such damage can include impaired sensation or pain in the feet or hands, slowed digestion of food in the stomach, carpal tunnel syndrome, erectile dysfunction, or other nerve problems. Severe forms of diabetic nerve disease are a major contributing cause of lower-extremity amputations (CDC, 2007)

➢ Dental disease

People with diabetes are more likely to develop periodontal (gum) disease than people without diabetes. Young adults have twice the risk of developing this disease compared to young adults without diabetes. Poorly controlled diabetes (A1c > 9%) places a person at three times the normal risk of developing severe periodontitis compared to people without diabetes. People with diabetes are also at increased risk for developing severe periodontal disease with loss of attachment to the gums to the teeth measuring 5 millimeters or more (CDC, 2007).

➢ Amputations

According to the Centers for Disease Control and Prevention, diabetes accounts for more than sixty-percent (60%) of non-traumatic lower-limb amputations in people with diabetes.

Number of Amputations among Medicare Diabetes Recipients age 65 and over, 2007

Race/ Ethnicity	Gender	Total # of recipients with diabetes	Total # of Amputation Procedures	Amputation (number or recipients with claim for amputation – CPT Codes)		
				Femur (thigh region) and knee joint ICD-9 codes 84.16 & 84.17	Leg and ankle joint ICD-9 codes 84.14 & 84.15	Foot and toes ICD-9 codes 84.11 & 84.12
White	Male	29729	214	41	49	124
	Female	33903	134	37	29	68
Black	Male	11649	227	75	56	96
	Female	21227	218	77	60	81
Other	Male	690	2		1	1
	Female	830	4	2	2	
TOTAL		98028	799	232	197	370

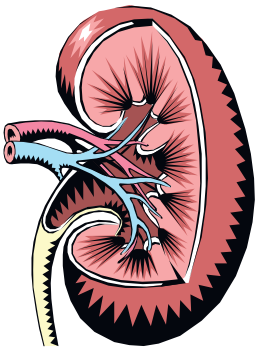
Source: Louisiana Health Care Review, 2009

About 71,000 non-traumatic lower-limb amputations were performed in people with diabetes (CDC, 2007). In Louisiana, 799 amputation procedures were performed for Medicare recipients diagnosed with diabetes. The most common amputation procedure performed was amputation of the foot and toes among 370 Medicare recipients. Twenty-nine percent (29%) of amputation procedures were amputations of the femur (thigh region) and knee joint, conducted among 232 Medicare recipients. The remaining twenty-four (24.6%) of procedures consisted of the leg and ankle joint procedure done for 197 Medicare recipients (LHCR, 2009). Among all amputations procedures done on Medicaid recipients with diabetes, African Americans received 445 amputation procedures, compared to 348 procedures conducted among Caucasian Medicare recipients (LHCR, 2009).

➢ Complications of Pregnancy

According to the American Diabetes Association, poorly treated or uncontrolled diabetes during the second and third trimester of pregnancy can cause the development of macrosomia or an excessively large or "fat" baby (CDC, 2007; ADA, 2009). Most infants born to mothers with poorly controlled diabetes have increased risk for breathing problems and becoming obese as children. Children are also at increased risk for developing Type 2 diabetes as adults (ADA, 2009)

➢ Kidney Disease



Diabetes is the leading cause of kidney failure, accounting for forty-four percent (44%) of new cases in 2005 (CDC, 2007). In Louisiana, diabetes is the second leading cause of end-stage renal disease, accounting for forty-percent (40%) of all residents living with end-stage renal disease. Diabetes is the top cause for chronic kidney failure accounting for more than forty-four percent (44%) of new cases of chronic kidney disease (CKD) each year. Complications from chronic kidney disease alone includes anemia, cardiac complications, bone loss and death. CKD affects individuals with Type 1 and Type 2 diabetes equally. Risk for developing CKD among people with diabetes increases with age. According to the End-Stage Renal Disease Network 13 2007 report, forty-three percent (43.1%) of the 2,240 patients diagnosed with end-stage renal disease were people diagnosed with diabetes at initiation of dialysis. As of December 31, 2007, forty-percent (40.2%) or 2,933 out of 7,287 patients were existing patients receiving dialysis for end-stage renal disease. Out of 1,666 deaths recorded for calendar year 2007 among patients receiving dialysis for end-stage renal disease, forty-six percent (46.6%), 777 of this population, were patients also diagnosed with diabetes (ESRD, 2007).

➢ Diabetes Complications among Louisiana's Medicare Population

Among the 78,448 Louisiana Medicare recipients with diabetes, kidney disease is the most prevalent complication, affecting eight-percent (8.2%) of this population, a total of 6,439 recipients. The second most prevalent complication, diabetic neuropathy, affects 1,950 Medicare recipients with diabetes, nephropathy affecting 790 recipients (LHCR, 2009).

Complications among LA Medicare Recipients with Diabetes, 2007

	Diagnosis Codes	# of Medicare Recipients with Diabetes
Neuropathy	250.6	1950
Cardiovascular Disease	250.70 – 250.73	413
Retinopathy	362.01 – 362.07	215
Cataract	366.41	1
Nephropathy	250.40 – 250.43 (583.81)	790
Kidney Disease	250.4 – 250.43 (585.1 – 585.9)	6439

Source: Louisiana Health Care Review, 2009

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Percentage of Adults with Diabetes who Received an Annual Eye Exam, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	65	66.7	71.5
		[59.5-72]	[62.7-70.7]	[67.8-75.2]
Gender	Male	59.2	66.3	74.8
		[48.9-69.4]	[59.5-73.1]	[69-80.6]
	Female	71.9	67	68.5
		[64.7-79.1]	[62.3-71.6]	[62.8-73.2]
Race	Caucasian	61.3	67.9	72.3
		[53-69.7]	[63.1-72.6]	[67.8-76.8]
	African-American	74.8	65.3	69
		[65.8-84.2]	[57.7-72.9]	[61.7-76.3]
	Hispanic	nsf	nsf	nsf
Age	18-44	41.1	50.5	69.1
		[22.3-60]	[37.6-63.5]	[56.8-81.4]
	45-64	65.3	67.7	66.9
		[56.6-74]	[62.4-73]	[61.5-72.3]
	65+	76.7	73	77.9
		[68.5-85]	[67.2-78.8]	[72.8-93]
Income	Less than $15,000	58.8	65.5	70.9
		[43.4-74.2]	[57-74]	[62.9-78.9]
	$15,000-$24,999	62.3	72.9	63.4
		[49.5-75.1]	[65.2-80.6]	[54.1-72.7]
	$25,000-$49,999	66.9	66.3	73.2
		[52.4-82.5]	[58.1-74.5]	[65.4-81.1]
	$50,000 or more	74.5	66.3	80.5
		[61.7-87.2]	[58.1-74.5]	[73.3-87.6]
Employment	Employed	63.8	63.8	69.4
		[53.1-74.6]	[56.4-71.2]	[62.3-76.4]
	Unemployed	40.1	65.2	61.1
		[9-71.2]	[40.4-90]	[35.4-86.8]
	Homemaker/Student	86.1	60	66.4
		[70.4-100]	[46.3-73.7]	[53.7-79.1]
	Retired	73.9	73.7	78.7
		[64.9-82.9]	[67.8-79.7]	[73.6-83.9]
	Unable to Work	56.7	63.3	65.2
		[41.8-71.7]	[54.5-72.1]	[56.2-74.2]
Education	Less than H.S. Grad	67.7	57.9	67.8
		[54.4-81.1]	[49.5-66.2]	[59.4-76.2]
	H.S. Graduate	68.4	68.7	66.2
		[58.4-78.5]	[62-75.5]	[59.1-73.3]
	Some College	60.2	68.2	77.4
		[46.1-74.4]	[60-76.3]	[71.1-83.8]
	College Graduate	69.7	73.2	77.5
		[56.4-83]	[64.7-81.6]	[70-85]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Prevalence of Heart Attack or Myocardial Infarction among People with Diabetes, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	17.6	14.2	17.7
		[12.4-22.8]	[11.4-16.8]	[14.3-21.0]
Gender	Male	22.9	17.4	19.3
		[14.2-31.7]	[12.7-22.2]	[13.5-25.1]
	Female	12.7	11.5	16.2
		[6.8-18.5]	[8.4-14.5]	[12.4-19.9]
Race	Caucasian	19.8	14.6	16.3
		[12.6-27.0]	[11.1-18.0]	[12.7-20.0]
	African American	14.7	5.4	15.9
		[6.6-22.7]	[6.8-15.0]	[10.4-21.4]
Age	18-44	11.2	1.0	15.4
		[0.0-26.8]	[0.0-2.3]	[3.0-27.8]
	45-64	18.1	13.8	17.5
		[10.7-25.6]	[10.1-17.5]	[12.9-22.1]
	65+	19.7	21.2	19.0
		[11.6-27.9]	[15.7-26.7]	[14.3-23.7]
Income	Less than $15,000	22.4	23.9	23.6
		[7.5-37.3]	[16.8-31.1]	[16.4-30.8]
	$15,000-$24,999	17.8	15.7	16.6
		[7.2-28.5]	[9.3-22.2]	[9.9-23.3]
	$25,000-$49,999	13.9	9.9	22.5
		[2.6-25.1]	[5.3-14.4]	[13.5-31.5]
	$50,000 or more	19.1	11.9	11.2
		[7.8-30.5[	[5.1-18.7]	[5.3-17.0]
Employment	Employed	11.7	7.6	13.9
		[4.0-19.3]	[3.4-11.3]	[6.9-20.8]
	Unemployed	20.4	13.2	29.1
		[0.0-48.0]	[0.4-25.9]	[7.9-50.3]
	Homemaker	4.9	7.9	10.9
		[0.0-14.2]	[0.0-17.0]	[3.7-18.0]
	Retired	19.9	21.1	17.5
		[11.8-28.0]	[15.6-26.6]	[12.8-22.2]
	Unable to work	28.3	17.2	26.6
		[13.3-43.2]	[11.2-23.2]	[18.3-35.0]
Education	Less than H.S.	18.3	16.7	23.0
		[5.8-30.8]	[10.9-22.4]	[13.5-32.6]
	H.S. Grad	21.6	13.1	15.7
		[12.4-30.8]	[8.9-17.4]	[10.9-20.5]
	Some college	10.4	12.4	14.9
		[1.4-19.4]	[6.6-18.1]	[9.3-20.5]
	College Grad	12.6	14.4	18.8
		[3.6-21.6]	[7.8-20.9]	[11.2-26.5]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Prevalence of Coronary Heart Disease Complications among Adults with Diabetes, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	17.8	17.5	17.2
		[12.9-22.7]	[14.4-20.6]	[13.7-20.6]
Gender	Male	23.1	17.3	19.2
		[14.5-31.7]	[12.3-22.3]	[13.3-25.1]
	Female	12.9	17.7	15.3
		[7.9-17.8]	[13.7-21.6]	[11.7-18.9]
Race	Caucasian	19.3	19.4	15.4
		[12.5-26.0]	[15.5-23.3]	[11.8-18.9]
	African American	12.6	13.4	15.3
		[5.9-19.3]	[7.8-19.0]	[9.7-20.9]
Age	18-44	5.6	5.1	8.7
		[0.0-13.4]	[0.0-12.3]	[0.0-20.0]
	45-64	22.1	18.2	19.0
		[14.6-29.7]	[13.8-22.7]	[14.1-24.0]
	65+	16.7	22.5	18.9
		[8.8-24.6]	[17.1-27.9]	[13.9-23.7]
Income	Less than $15,000	19.6	21.6	24.7
		[8.8-30.4]	[14.9-28.3]	[17.0-32.5]
	$15,000-$24,999	17.0	23.5	13.1
		[7.4- 26.7]	[15.7-31.5]	[6.9-19.3]
	$25,000-$49,999	13.0	13.2	21.4
		[2.4-23.7]	[6.9-19.5]	[12.5-30.3]
	$50,000 or more	26.6	14.2	14.4
		[13.8-39.4]	[7.4-21.0]	[7.7-21.0]
Employment	Employed	12.4	13.5	13.7
		[4.9-19.8]	[8.2-18.8]	[6.9-20.4]
	Unemployed	14.7	13.5	11.5
		[0.0-41.0]	[1.0-26.4]	[0.0-27.1]
	Homemaker	4.9	16.0	16.7
		[0.0-14.2]	[2.8-29.1]	[7.3-26.1]
	Retired	20.3	19.0	16.4
		[11.6-28.9]	[13.9-24.0]	[11.6-21.2]
	Unable to work	28.9	23.5	27.3
		[16.0-41.8]	[16.4-30.6]	[18.3-36.2]
Education	Less than H.S.	18.8	17.6	21.0
		[8.0-29.6]	[12.0-23.3]	[11.1-31.0]
	H.S. Grad	16.5	19.3	16.7
		[9.0-23.8]	[13.7-25.0]	[11.6-21.8]
	Some college	11.7	15.2	17.8
		[2.2-21.1]	[7.8-22.5]	[11.8-23.8]
	College Grad	22.0	16.4	13.1
		[10.0-34.1]	[9.7-23.1]	[6.5-19.8]

spc

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Prevalence of Stroke Complications among Adults with Diabetes, 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	10.3	10.2	11.1
		[6.6-14.0]	[7.8-12.5]	[8.3-13.9]
Gender	Male	7.3	10.6	10.7
		[2.0-12.6]	[6.7-14.5]	[5.7-15.8]
	Female	13.1	9.8	11.5
		[7.9-18.2]	[6.9-12.7]	[8.5-14.4]
Race	Caucasian	9.8	9.1	7.5
		[5.4-14.3]	[6.4-11.8]	[5.0-10.0]
	African American	10.4	10.5	12.5
		[3.3-17.6]	[6.1-14.8]	[8.2-16.8]
Age	18-44	5.3	3.4	11.9
		[0.0-12.6]	[0.0-8.1]	[0.0-24.1]
	45-64	7.5	10.4	11.4
		[3.4-11.6]	[6.9-13.9]	[7.7-15.1]
	65+	16.3	13.0	10.2
		[8.4-24.0]	[8.9-17.2]	[6.9-13.5]
Income	Less than $15,000	15.2	20.3	19.9
		[3.9-26.6]	[13.1-27.6]	[12.8-26.9]
	$15,000-$24,999	6.7	9.3	10.1
		[1.1-12.4]	[4.5-14.1]	[5.1-15.0]
	$25,000-$49,999	9.6	5.4	13.2
		[1.0-18.3]	[2.0-8.8]	[5.2-21.2]
	$50,000 or more	8.1	3.2	2.9
		[1.0-15.2]	[0.0-6.6]	[0.0-6.3]
Employment	Employed	1.3	3.6	8.8
		[0.0-3.3]	[1.1-6.2]	[2.4-15.0]
	Unemployed	21.4	2.1	5.1
		[0.0-49.5]	[0.0-5.3]	[0.0-11.3]
	Homemaker	10.9	6.5	6.1
		[0.0-25.5]	[0.1-13.0]	[1.2-10.9]
	Retired	16.1	12.0	10.2
		[8.0-24.1]	[7.9-16.1]	[6.6-13.8]
	Unable to work	15.9	21.1	21.7
		[6.4-25.4]	[13.7-28.6]	[14.2-29.3]
Education	Less than H.S.	18.1	14.9	18.9
		[7.3-28.9]	[9.3-20.5]	[9.8-28.0]
	H.S. Grad	8.8	9.1	7.2
		[3.6-14.0]	[5.1-13.2]	[4.0-10.5]
	Some college	8.2	9.4	11.0
		[1.0-15.7]	[4.7-14.2]	[6.5-15.6]
	College Grad	5.7	6.4	9.3
		[0.0-11.8]	[2.4-10.4]	[3.2-15.5]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Prevalence of Adults with Diabetes with a Disability (Diabetes May or May Not Be the Cause for Disability), 2005-2007

Demographic	Population	2005	2006	2007
Louisiana	Total	42.1	40.8	38.9
		[35.8-48.4]	[36.7-44.9]	[34.8-42.9]
Gender	Male	39.1	40.3	37.6
		[29-49.4]	[33.5-47.1]	[31.1-44.1]
	Female	44.7	41.2	40
		[37.1-52.4]	[36.2-46.2]	[35-44.9]
Race	Caucasian	44.8	41.1	42
		[36.5-53.1]	[36.2-46]	[36.9-47.2]
	African-American	38.6	40	31.9
		[28-49.3]	[32.2-47.8]	[24.8-39]
	Hispanic	nsf	51.4	44.4
			[26.7-76.1]	[16.3-72.5]
Age	18-44	41.1	29.8	20.7
		[21.1-61.1]	[18-41.5]	[10.8-30.6]
	45-64	45.2	48.1	45.4
		[36.3-61.1]	[42.4-53.7]	[39.5-51.2]
	65+	38.3	35.4	38.5
		[28.9-47.6]	[29.2-41.5]	[32.3-44.6]
Income	Less than $15,000	61.8	56.6	50.8
		[47.7-75.8]	[47.7-65.4]	[41.8-59.7]
	$15,000-$24,999	52.3	43.8	42.2
		[39.6-64.9]	[34.8-52.8]	[33.1-51.3]
	$25,000-$49,999	36.9	38.1	39.1
		[21.8-51.8]	[29.8-46.4]	[30.4-47.9]
	$50,000 or more	28.1	27.3	18.2
		[15.5-40.6]	[18.2-36.5]	[10.7-25.7]
Employment	Employed	21.4	24.4	18.5
		[12-30.9]	[17.8-30.9]	[12.8-24.2]
	Unemployed	44.2	26.5	46.5
		[10.2-78.3]	[9-44.1]	[21.7-71.4]
	Homemaker/Student	37.6	43.2	43.4
		[15.1-60.2]	[28.4-57.9]	[30.4-56.5]
	Retired	42.1	35.1	37.7
		[32.1-52.1]	[28.8-41.4]	[31.5-43.9]
	Unable to Work	80.8	78.1	77.6
		[70.2-91.3]	[70.8-85.4]	[69.6-85.7]
Education	Less than H.S. Grad	47.9	44.1	41.4
		[34.5-61.4]	[36-52.1]	[32.7-50]
	H.S. Graduate	46.7	43.7	38.8
		[36.2-57.2]	[36.5-51]	[31.7-45.8]
	Some College	39.9	40.1	40.4
		[26.5-53.2]	[31-49.3]	[32.3-48.6]
	College Graduate	26.1	32.4	34.2
		[14-38.3]	[24-40.7]	[25.4-43]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

TABLE LEGEND	
% - Percent	[CI] - Confidence Interval

Prevalence of Retinopathy among Adults with Diabetes, 2005-2007

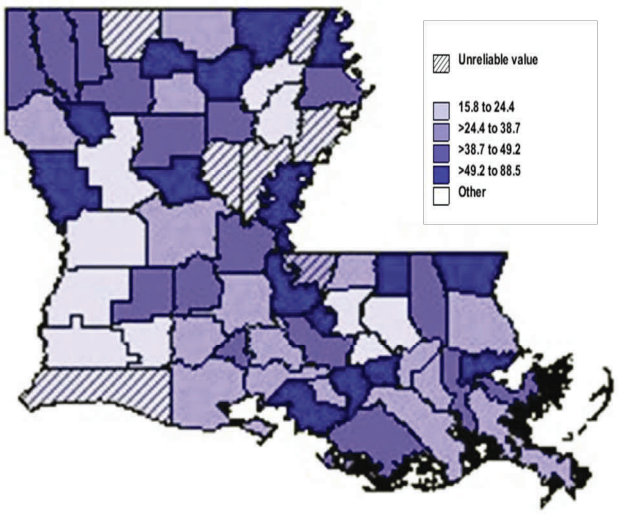
Demographic	Population	2005	2006	2007
Louisiana	Total	22.7	29.7	34.1
		[17.5-27.9]	[25.8-33.7]	[29.8-38.3]
Gender	Male	21.6	31.4	37.5
		[13.3-29.9]	[24.8-38.1]	[30.4-44.6]
	Female	23.8	28.4	30.9
		[17.5-30]	[23.6-33.1]	[26.1-35.6]
Race	Caucasian	21	27.5	27.5
		[14.6-27.5]	[22.7-32.2]	[22.9-32]
	African-American	23.9	35.9	41.9
		[14.9-32.9]	[28.3-43.5]	[33.8-50.1]
	Hispanic	nsf	38.1	53.9
			[13.8-62.4]	[23-84.9]
Age	18-44	21.4	27.6	34.8
		[6.3-36.4]	[15.2-39.9]	[20.3-49.4]
	45-64	21.1	33.2	33.8
		[14.1-28.2]	[27.5-38.8]	[28.2-39.4]
	65+	25.5	25.6	34.1
		[17-34]	[20.2-31.1]	[27.9-40.2]
Income	Less than $15,000	22.6	35.9	37.6
		[11.9-33.3]	[27-44.7]	[28.8-46.4]
	$15,000-$24,999	24.3	31.5	31.6
		[14.1-34.5]	[22.8-40.3]	[23.3-39.9]
	$25,000-$49,999	25.2	27.6	43.6
		[11.1-39.2]	[19.7-35.4]	[34-53.2]
	$50,000 or more	23	21.1	18.9
		[11-35]	[12.7-29.5]	[11.4-26.4]
Employment	Employed	16.5	26.9	31.3
		[8.4-24.7]	[19.6-34.2]	[22.8-39.5]
	Unemployed	25.4	30.1	36
		[0-54.2]	[6.2-53.9]	[12.8-59.2]
	Homemaker/Student	16.3	27	16.8
		[.51-32.2]	[13.6-40.4]	[7.9-25.7]
	Retired	22.8	25.9	37.3
		[14.5-31.1]	[20.4-31.5]	[30.9-43.7]
	Unable to Work	35.8	41.7	40.1
		[22.2-49.4]	[32.5-51]	[30.3-50]
Education	Less than H.S. Grad	32.3	36.4	39.6
		[20.3-44.2]	[28.4-44.3]	[29.7-49.5]
	H.S. Graduate	21.5	34.3	32.6
		[12.9-30.1]	[27-41.6]	[25.6-39.7]
	Some College	19.9	20.9	34.7
		[8.6-31.2]	[12.8-29.1]	[26.2-43.3]
	College Graduate	19.6	21	29.8
		[8.7-30.4]	[14-28]	[21.4-38.2]

Source: Louisiana Bureau of Primary Care and Rural Health, 2005-2007 Louisiana BRFSS
Data Not Available—question not asked during the stated year
nsf—insufficient sample size

Diabetes Mortality

According to national death certificate data, diabetes contributed to 233,619 deaths in 2005. The actual death toll related to diabetes could be potentially higher due to the underreporting of diabetes on death certificates (ADA, 2009).

Diabetes Age-Adjusted Mortality Rate in Louisiana, 2002-2006



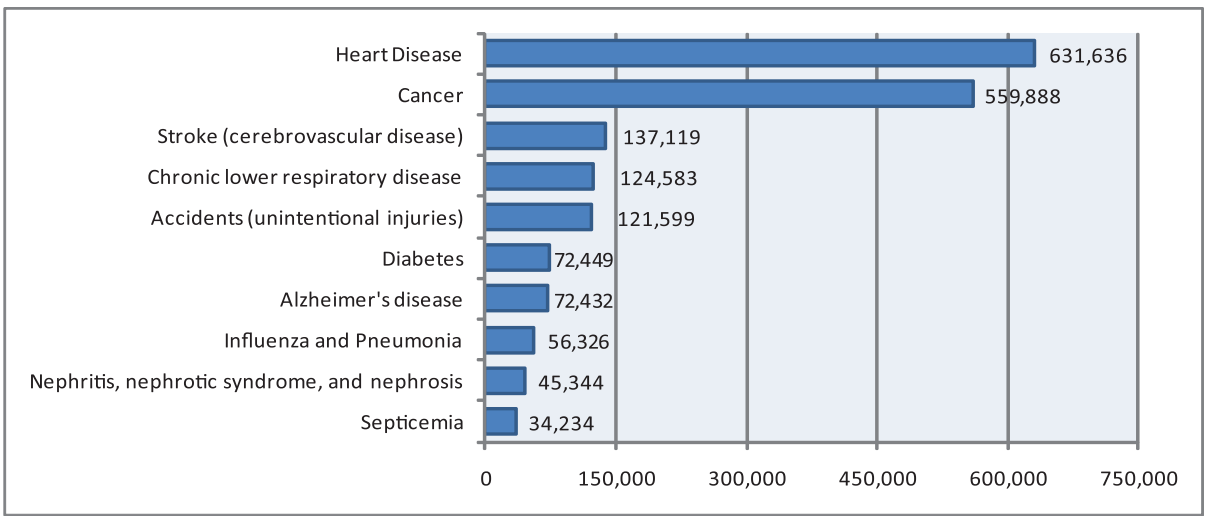
Source: National Center for Health Statistics, CDC, 2006

In 2006, national estimates established diabetes as the sixth leading cause of death. Over 72,000 death certificates identified diabetes as the underlying cause of death. CDC reports that the risk for death among people with diabetes is approximately twice the death rate of people without diabetes of similar age.

Diabetes is the fifth leading cause of death in Louisiana. Compared to all U.S. states, Louisiana has the highest mortality rate due to diabetes (35.5 per 100,000 population)

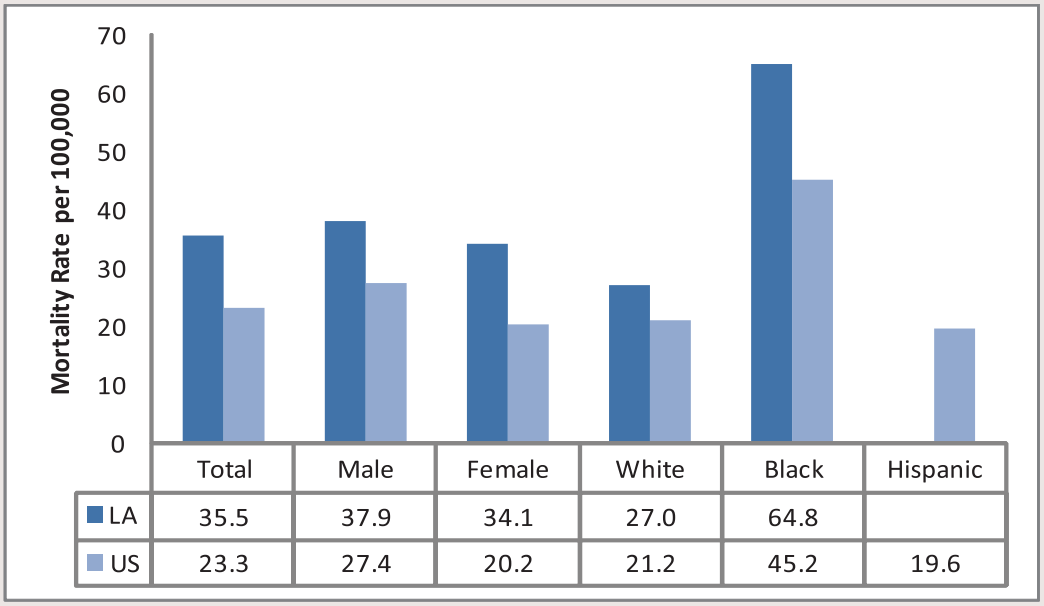
According to national vital statistics data, the age-adjusted death rates for males and females are relatively similar, yet, there is noted disparity in the death rate among racial/ethnic groups (National Center for Health Statistics, 2006).

Number of Deaths for Leading Causes of Death, 2006



Source: National Vital Statistics System, 2009

Age-Adjusted Diabetes Deaths per 100,000 Population, by Gender and Race/Ethnicity, 2006



	Total	Male	Female	White	Black	Hispanic
LA	35.5	37.9	34.1	27.0	64.8	
US	23.3	27.4	20.2	21.2	45.2	19.6

Source: U.S. DHHS CDC National Center for Health Statistics, 2006
Note: Age-adjusted rates per 100,000 U.S. Standard Population
Note 2: Data not sufficient to provide diabetes mortality rate for Hispanic populations in Louisiana

Louisiana ranks #1 in the country for highest diabetes mortality rate (35.5 per 100,000 population) - National Center for Health Statistics, 2009

In 2006, the age-adjusted death rate for African Americans in Louisiana was 64.8/100,000 population compared to 27.0/100,000 population for Caucasians. Such disparity was also observed at the national level between African Americans and Caucasians (National Center for Health Statistics, 2006).

Further research is needed to understand why Louisiana has the highest death rate in the country and to identify strategies to reduce the disparate gap in the diabetes

Number of Diabetes Deaths per 100,000 Population, 2006

State	Rate per 100,000	Rank
United States	23.1	-
Louisiana	**35.5**	**1**
West Virginia	33.1	2
District of Columbia	30.6	3
New Mexico	30.5	4
Oklahoma	30.3	5

Source: The Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, Division of Vital Statistics, National Vital Statistics Report Volume 57, Number 14, April 2009, Table 29. Available at http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_14.pdf.

Note: Age-adjusted rates per 100,000 U.S. standard population. Populations used for computing death rates are postcensal estimates based on the 2000 census. Since death rates are affected by the population composition of a given area, age-adjusted death rates should be used for comparisons between areas because they control for differences in population composition. Data are for 2006.

Age-Adjusted Diabetes Mortality Rate by Parish, 2006
Statewide Rate—35.5 per 100,000 population

Parish	Age Adjusted Rate (%)	Parish	Age Adjusted Rate (%)
ACADIA	17.5	MADISON	20.7
ALLEN	38.5	MOREHOUSE	81.3
ASCENSION	18.7	NATCHITOCHES	11.5
ASSUMPTION	35.7	ORLEANS	55.1
AVOYELLES	27.8	OUACHITA	99
BEAUREGARD	28.4	PLAQUEMINES	10.8
BIENVILLE	28.3	POINTE COUPEE	43.5
BOSSIER	43.2	RAPIDES	37.4
CADDO	49	RED RIVER	51.9
CALCASIEU	28.8	RICHLAND	13.2
CALDWELL	15.2	SABINE	39.2
CATAHOULA	2.7	ST BERNARD	33.1
CAMERON	8.9	ST CHARLES	16.9
CLAIBORNE	10	ST HELENA	50.6
CONCORDIA	42	ST JAMES	26.5
DESOTO	12.9	ST JOHN	29.4
EAST BATON ROUGE	24.4	ST LANDRY	31.8
EAST CARROLL	45.9	ST MARTIN	20.8
EAST FELICIANA	36.1	ST MARY	69.9
EVANGELINE	56.7	ST TAMMANY	42
FRANKLIN	9.3	TANGIPAHOA	46.1
GRANT	37.8	TENSAS	5.2
IBERIA	31.8	TERREBONNE	42.8
IBERVILLE	41.2	UNION	19.3
JACKSON	5.6	VERMILION	32.4
JEFFERSON	47.6	VERNON	6.7
JEFFERSON DAVIS	42.7	WASHINGTON	44.6
LAFAYETTE	61.6	WEBSTER	35.7
LAFOURCHE	35.9	WEST BATON ROUGE	36.1
LASALLE	12.6	WEST CARROLL	3.9
LINCOLN	65.9	WEST FELICIANA	15.7
LIVINGSTON	13.6	WINN	41

Source: Louisiana Vital Statistics

* Rate per 100,000 population
** Adjusted by age to U.S. 2000 standard million

Diabetes among Medicaid Recipients in Louisiana

The Louisiana Medicaid program is a federal-state entitlement program administered through the Louisiana Department of Health and Hospitals. Medicaid began in 1965 with Title XIX of the Social Security Act, enacted by the Social Security Amendment of 1965 and provides grants to states to implement and operate the Medicaid program. Medicaid covers medical expenses for eligible low-income children and adults and is financed from federal and state funds (DHH, 2001).

The following sections provides information on diabetes prevalence among the Louisiana Medicaid population as of December 31, 2007.

➢ Diabetes Prevalence among Medicaid Recipients—Age 0-17

Based on 2007 Medicaid enrollment data, 1,538 out of 619,000 Medicaid recipients age 0-17 (0.25%) are living with diabetes. Over half of this population (58%) has Type 1 diabetes. Forty-two percent (42%), or 650 recipients, are diagnosed with Type 2 diabetes.

Number of Medicaid Recipients, Age 0-17, Diagnosed with Diabetes, 2007

Age Group	# of Enrollees	# of Diabetes	# of Recipients with Type 1 Diabetes	# of Recipients with Type 2 Diabetes
Children Age: 0-17	619,047	1,538 (0.25%)	888 (58%)	650 (42%)

Source: ULM Outcomes Research & Evaluation, February 2009
Notes: Results based on December 2007 Medicaid enrollment data

Diabetes-Related Expenditures for Medicaid Recipients, 2007

Age Group	# of Recipients	# of Claims	Expenditure	Expenditure per Recipients
Age 0-17	1,267	38,480	$4,340,833	$3,426
Age 18-44	6,604	150,594	$15,911,002	$2,409
Age 45-64	20,117	514,339	$53,175,257	$2,643
Age 65+	20,467	337,824	$58,790,049	$2,872

Source: ULM Outcomes Research & Evaluation, February 2009
Notes: Results based on December 2007 Medicaid enrollment data

Diabetes Prevalence Rate by Parish for Medicaid Recipients 0-17 Years Old in 2007

Parish	Recipients with 1+ Month Eligibility	Diabetes Recipient Count	Age 0-17 Prevalence Rate
ACADIA	10667	22	0.21%
ALLEN	4281	15	0.35%
ASCENSION	11475	33	0.29%
ASSUMPTION	3631	9	0.25%
AVOYELLES	7918	23	0.29%
BEAUREGARD	5016	13	0.26%
BIENVILLE	2471	8	0.32%
BOSSIER	13066	40	0.31%
CADDO	41805	113	0.27%
CALCASIEU	28732	77	0.27%
CALDWELL	1803	2	0.11%
CAMERON	646	2	0.31%
CATAHOULA	1920	6	0.31%
CLAIBORNE	2551	13	0.51%
CONCORDIA	4070	11	0.27%
DESOTO	4110	10	0.24%
EAST BATON ROUGE	65195	176	0.27%
EAST CARROLL	2191	5	0.23%
EAST FELICIANA	2889	11	0.38%
EVANGELINE	6778	12	0.18%
FRANKLIN	4347	9	0.21%
GRANT	3313	13	0.39%
IBERIA	13718	23	0.17%
IBERVILLE	5735	16	0.28%
JACKSON	2160	8	0.37%
JEFFERSON	35929	82	0.23%
JEFFERSON DAVIS	5234	7	0.13%
LAFAYETTE	26138	52	0.20%
LAFOURCHE	13003	26	0.20%
LASALLE	1968	10	0.51%
LINCOLN	5992	17	0.28%
LIVINGSTON	16175	41	0.25%
MADISON	3063	5	0.16%
MOREHOUSE	6074	19	0.31%
NATCHITOCHES	6765	16	0.24%
ORLEANS	45861	84	0.18%
OUACHITA	26170	56	0.21%
PLAQUEMINES	2911	3	0.10%
POINTE COUPEE	3743	14	0.37%

Source: ULM College of Pharmacy, Office of Outcomes Research & Evaluation, February 2009

* For the numerator measures, the rate is the numerator divided by the diabetes recipient count.
* Recipients were enrolled in Medicaid for at least 1 out of 12 months in 2007
* Recipients' age was 0-17 (Note: HEDIS age definition for diabetes is 18-75)

Diabetes Prevalence Rate by Parish for Medicaid Recipients 0-17 Years Old in 2007

Parish	Recipients with 1+ Month Eligibility	Diabetes Recipient Count	Age 0-17 Prevalence Rate
RAPIDES	22481	73	0.32%
RED RIVER	1756	3	0.17%
RICHLAND	4048	7	0.17%
SABINE	3441	8	0.23%
ST. BERNARD	4094	7	0.17%
ST. CHARLES	6307	18	0.29%
ST. HELENA	1886	5	0.27%
ST. JAMES	3476	7	0.20%
ST. JOHN	8556	13	0.15%
ST. LANDRY	17670	32	0.18%
ST. MARTIN	8727	19	0.22%
ST. MARY	10371	32	0.31%
ST. TAMMANY	23174	52	0.22%
TANGIPAHOA	21508	49	0.23%
TENSAS	1208	1	0.08%
TERREBONNE	17054	37	0.22%
UNION	3648	24	0.66%
VERMILION	8023	15	0.19%
VERNON	6174	11	0.18%
WASHINGTON	8816	26	0.29%
WEBSTER	6535	31	0.47%
WEST BATON ROUGE	3079	15	0.49%
WEST CARROLL	2355	9	0.38%
WEST FELICIANA	1220	2	0.16%
WINN	2655	7	0.26%
Unknown	22528	43	0.19%

Source: ULM College of Pharmacy, Office of Outcomes Research & Evaluation, February 2009
* For the numerator measures, the rate is the numerator divided by the diabetes recipient count.
* Recipients were enrolled in Medicaid for at least 1 out of 12 months in 2007
* Recipients' age was 0-17 (Note: HEDIS age definition for diabetes is 18-75)

➢ Diabetes Among Medicaid Recipients Age 18 and Older

As of December 31, 2007, 52,261 adult (18-75 years of age) eligible Medicaid recipients have been diagnosed with diabetes. Type 2 diabetes is more common among the adult Medicaid population, affecting seventy-two percent (72%) of this population. Twenty-eight percent (28%), or 14,587 adults, have Type 1 diabetes.

Prevalence of Diabetes Among Adult Medicaid Recipients in Louisiana, 2007

Age Group	# of Enrollees	# of Diabetes	# of Type 1 Diabetes	# of Type 2 Diabetes
Adult Age 18 and older	372,900	52,261 (14.01%)	14,587 (28%)	37,674 (72%)

Source: ULM College of Pharmacy, Centers for Medicare and Medicaid Claims Data

According to parish-level diabetes prevalence data, East Baton Rouge has the highest number (3,360) of adult Medicaid recipients with diabetes, followed by Orleans (2,570) and Caddo (2,258) parishes.

In 2007, St. Charles Parish had the highest prevalence rate for number of adults with diabetes to receive a Hemoglobin A1c test at forty-seven percent (47.06%) and highest prevalence rate for adults with diabetes who received a LDL-C test at forty-five percent (45.33%). Approximately thirty-five percent (34.92%) of adults with diabetes received an eye exam in LaSalle Parish, the highest percentage reported for this service. Plaquemines Parish had the highest prevalence rate for nephropathy screening among adult Medicaid recipients with diabetes at fifty-four percent (54.89%).

2007 Louisiana Diabetes Data Report—Table Descriptions for Pages 60 - 67		
Population	**Pages**	**Description**
Adult (18 years of age and older) Medicaid recipients with diabetes and at least one month of eligibility within the 12-month study period.	58 - 59	Diabetes prevalence data by parish
	60 - 61	Completion rates for recommended diabetes preventive care and clinical practices
Adult (18-75 years of age) Medicaid recipients with diabetes and eleven months of eligibility within the 12-month study period.	62 - 63	Diabetes prevalence data by parish
	64 - 65	Completion rates for recommended diabetes preventive care and clinical practices

Diabetes Prevalence Rate by Parish for Medicaid Recipients 18+ Years Old in 2007

*** Recipients were enrolled in Medicaid for at least 1 out of 12 months in 2007**

Parish	Recipients with 1+ Month Eligibility	Diabetes Recipient Count	Age 18+ Prevalence Rate
ACADIA	7765	1255	16.16%
ALLEN	2963	524	17.68%
ASCENSION	6664	893	13.40%
ASSUMPTION	2694	454	16.85%
AVOYELLES	6666	1121	16.82%
BEAUREGARD	3041	467	15.36%
BIENVILLE	2160	316	14.63%
BOSSIER	7696	861	11.19%
CADDO	27411	3645	13.30%
CALCASIEU	16482	1954	11.86%
CALDWELL	1396	234	16.76%
CAMERON	319	32	10.03%
CATAHOULA	1516	220	14.51%
CLAIBORNE	2105	323	15.34%
CONCORDIA	2892	449	15.53%
DESOTO	2823	499	17.68%
EAST BATON ROUGE	40742	5024	12.33%
EAST CARROLL	1694	322	19.01%
EAST FELICIANA	2204	415	18.83%
EVANGELINE	5780	913	15.80%
FRANKLIN	3377	592	17.53%
GRANT	2292	336	14.66%
IBERIA	9057	1302	14.38%
IBERVILLE	4144	661	15.95%
JACKSON	1815	325	17.91%
JEFFERSON	24195	2753	11.38%
JEFFERSON DAVIS	3582	497	13.87%
LAFAYETTE	16492	2190	13.28%
LAFOURCHE	8952	1166	13.03%
LASALLE	1472	217	14.74%
LINCOLN	4432	528	11.91%
LIVINGSTON	8179	871	10.65%
MADISON	2086	250	11.98%
MOREHOUSE	4640	779	16.79%
NATCHITOCHES	4558	655	14.37%
ORLEANS	37540	4101	10.92%
OUACHITA	16459	2161	13.13%
PLAQUEMINES	1903	209	10.98%

Source: ULM College of Pharmacy, Office of Outcomes Research & Evaluation, February 2009

* For the numerator measures, the rate is the numerator divided by the diabetes recipient count.

* Recipients' age was 18+ (Note: HEDIS age definition for diabetes is 18-75)

Diabetes Prevalence Rate by Parish for Medicaid Recipients 18+ Years Old in 2007

*** Recipients were enrolled in Medicaid for at least 1 out of 12 months in 2007**

Parish	Recipients with 1+ Month Eligibility	Diabetes Recipient Count	Age 18+ Prevalence Rate
POINTE COUPEE	2840	464	16.34%
RAPIDES	15915	2339	14.70%
RED RIVER	1192	184	15.44%
RICHLAND	3190	567	17.77%
SABINE	2603	401	15.41%
ST. BERNARD	3130	257	8.21%
ST. CHARLES	3637	437	12.02%
ST. HELENA	1368	230	16.81%
ST. JAMES	2416	323	13.37%
ST. JOHN	5209	606	11.63%
ST. LANDRY	13284	2227	16.76%
ST. MARTIN	5524	766	13.87%
ST. MARY	6597	932	14.13%
ST. TAMMANY	13403	1437	10.72%
TANGIPAHOA	15487	2276	14.70%
TENSAS	984	149	15.14%
TERREBONNE	11539	1532	13.28%
UNION	2479	398	16.05%
VERMILION	5504	795	14.44%
VERNON	3713	497	13.39%
WASHINGTON	6497	1236	19.02%
WEBSTER	4848	741	15.28%
WEST BATON ROUGE	2130	312	14.65%
WEST CARROLL	1742	267	15.33%
WEST FELICIANA	821	131	15.96%
WINN	1988	311	15.64%
Unknown	16856	1819	10.79%

Source: ULM College of Pharmacy, Office of Outcomes Research & Evaluation, February 2009
* For the numerator measures, the rate is the numerator divided by the diabetes recipient count.
* Recipients' age was 18+ (Note: HEDIS age definition for diabetes is 18-75)

Diabetes Prevalence Rate by Parish for Medicaid Recipients 18+ Years Old in 2007

*** Recipients were enrolled in Medicaid for at least 1 out of 12 months in 2007**

Parish	HbA1c	Rate	Eye Exam	Rate	LDL-C	Rate	Nephropathy	Rate
ACADIA	345	27.49%	272	21.67%	325	25.90%	434	34.58%
ALLEN	167	31.87%	137	26.15%	150	28.63%	169	32.25%
ASCENSION	283	31.69%	204	22.84%	234	26.20%	373	41.77%
ASSUMPTION	159	35.02%	87	19.16%	140	30.84%	203	44.71%
AVOYELLES	287	25.60%	352	31.40%	288	25.69%	395	35.24%
BEAUREGARD	119	25.48%	78	16.70%	129	27.62%	158	33.83%
BIENVILLE	83	26.27%	69	21.84%	82	25.95%	128	40.51%
BOSSIER	282	32.75%	199	23.11%	224	26.02%	376	43.67%
CADDO	1038	28.48%	532	14.60%	797	21.87%	1670	45.82%
CALCASIEU	471	24.10%	454	23.23%	476	24.36%	838	42.89%
CALDWELL	67	28.63%	57	24.36%	49	20.94%	85	36.32%
CAMERON	8	25.00%	4	12.50%	9	28.13%	13	40.63%
CATAHOULA	41	18.64%	71	32.27%	37	16.82%	60	27.27%
CLAIBORNE	77	23.84%	83	25.70%	62	19.20%	136	42.11%
CONCORDIA	107	23.83%	93	20.71%	112	24.94%	153	34.08%
DESOTO	136	27.25%	96	19.24%	128	25.65%	212	42.48%
EAST BATON ROUGE	1377	27.41%	974	19.39%	1129	22.47%	2122	42.24%
EAST CARROLL	98	30.43%	63	19.57%	83	25.78%	130	40.37%
EAST FELICIANA	107	25.78%	83	20.00%	93	22.41%	174	41.93%
EVANGELINE	253	27.71%	240	26.29%	288	31.54%	344	37.68%
FRANKLIN	149	25.17%	120	20.27%	109	18.41%	188	31.76%
GRANT	79	23.51%	83	24.70%	74	22.02%	121	36.01%
IBERIA	447	34.33%	284	21.81%	402	30.88%	589	45.24%
IBERVILLE	214	32.38%	181	27.38%	166	25.11%	284	42.97%
JACKSON	100	30.77%	59	18.15%	76	23.38%	124	38.15%
JEFFERSON	959	34.83%	614	22.30%	924	33.56%	1318	47.88%
JEFFERSON DAVIS	122	24.55%	130	26.16%	113	22.74%	200	40.24%
LAFAYETTE	525	23.97%	377	17.21%	455	20.78%	837	38.22%
LAFOURCHE	409	35.08%	230	19.73%	334	28.64%	508	43.57%
LASALLE	38	17.51%	59	27.19%	40	18.43%	73	33.64%
LINCOLN	151	28.60%	109	20.64%	99	18.75%	182	34.47%
LIVINGSTON	237	27.21%	153	17.57%	241	27.67%	384	44.09%
MADISON	43	17.20%	61	24.40%	30	12.00%	83	33.20%
MOREHOUSE	214	27.47%	178	22.85%	177	22.72%	247	31.71%
NATCHITOCHES	200	30.53%	169	25.80%	183	27.94%	298	45.50%
ORLEANS	1202	29.31%	853	20.80%	1091	26.60%	1864	45.45%
OUACHITA	584	27.02%	420	19.44%	522	24.16%	911	42.16%
PLAQUEMINES	71	33.97%	45	21.53%	68	32.54%	106	50.72%
POINTE COUPEE	145	31.25%	112	24.14%	129	27.80%	206	44.40%

Source: ULM College of Pharmacy, Office of Outcomes Research & Evaluation, February 2009

* For the numerator measures, the rate is the numerator divided by the diabetes recipient count.

* Recipients' age was 18+ (Note: HEDIS age definition for diabetes is 18-75)

Diabetes Prevalence Rate by Parish for Medicaid Recipients 18+ Years Old in 2007

*** Recipients were enrolled in Medicaid for at least 1 out of 12 months in 2007**

Parish	HbA1c	Rate	Eye Exam	Rate	LDL-C	Rate	Nephropathy	Rate
RAPIDES	631	26.98%	681	29.12%	531	22.70%	880	37.62%
RED RIVER	54	29.35%	27	14.67%	40	21.74%	68	36.96%
RICHLAND	125	22.05%	89	15.70%	99	17.46%	186	32.80%
SABINE	90	22.44%	68	16.96%	77	19.20%	128	31.92%
ST. BERNARD	85	33.07%	43	16.73%	69	26.85%	107	41.63%
ST. CHARLES	161	36.84%	94	21.51%	151	34.55%	193	44.16%
ST. HELENA	78	33.91%	41	17.83%	66	28.70%	105	45.65%
ST. JAMES	96	29.72%	66	20.43%	83	25.70%	143	44.27%
ST. JOHN	185	30.53%	120	19.80%	182	30.03%	247	40.76%
ST. LANDRY	582	26.13%	641	28.78%	542	24.34%	1007	45.22%
ST. MARTIN	198	25.85%	143	18.67%	182	23.76%	305	39.82%
ST. MARY	324	34.76%	122	13.09%	286	30.69%	401	43.03%
ST. TAMMANY	374	26.03%	240	16.70%	401	27.91%	556	38.69%
TANGIPAHOA	686	30.14%	458	20.12%	603	26.49%	1030	45.25%
TENSAS	40	26.85%	35	23.49%	31	20.81%	57	38.26%
TERREBONNE	513	33.49%	386	25.20%	444	28.98%	672	43.86%
UNION	118	29.65%	53	13.32%	86	21.61%	155	38.94%
VERMILION	195	24.53%	225	28.30%	185	23.27%	299	37.61%
VERNON	158	31.79%	126	25.35%	129	25.96%	172	34.61%
WASHINGTON	374	30.26%	198	16.02%	359	29.05%	542	43.85%
WEBSTER	193	26.05%	192	25.91%	176	23.75%	290	39.14%
WEST BATON ROUGE	94	30.13%	68	21.79%	83	26.60%	130	41.67%
WEST CARROLL	76	28.46%	45	16.85%	57	21.35%	87	32.58%
WEST FELICIANA	41	31.30%	20	15.27%	30	22.90%	47	35.88%
WINN	81	26.05%	92	29.58%	73	23.47%	103	33.12%
Unknown	508	27.93%	391	21.50%	453	24.90%	761	41.84%

Source: ULM College of Pharmacy, Office of Outcomes Research & Evaluation, February 2009

* For the numerator measures, the rate is the numerator divided by the diabetes recipient count.

* Recipients' age was 18+ (Note: HEDIS age definition for diabetes is 18-75)

Diabetes Prevalence Rate by Parish for Medicaid Recipients 18-75 Years Old in 2007

*** Recipients were enrolled in Medicaid for at least 11 out of 12 months in 2007 as defined by HEDIS**

Parish	Recipients with 11+ Month Eligibility	Diabetes Recipient Count	Age 18-75 Prevalence Rate
ACADIA	4522	815	18.02%
ALLEN	1658	358	21.59%
ASCENSION	3831	582	15.19%
ASSUMPTION	1645	310	18.84%
AVOYELLES	4014	710	17.69%
BEAUREGARD	1640	296	18.05%
BIENVILLE	1106	186	16.82%
BOSSIER	4354	554	12.72%
CADDO	15913	2258	14.19%
CALCASIEU	8759	1193	13.62%
CALDWELL	763	132	17.30%
CAMERON	163	25	15.34%
CATAHOULA	922	138	14.97%
CLAIBORNE	1194	189	15.83%
CONCORDIA	1614	283	17.53%
DESOTO	1463	307	20.98%
EAST BATON ROUGE	24563	3360	13.68%
EAST CARROLL	1063	211	19.85%
EAST FELICIANA	1255	273	21.75%
EVANGELINE	3633	639	17.59%
FRANKLIN	1826	332	18.18%
GRANT	1339	233	17.40%
IBERIA	5337	889	16.66%
IBERVILLE	2663	445	16.71%
JACKSON	983	193	19.63%
JEFFERSON	14059	1876	13.34%
JEFFERSON DAVIS	1903	293	15.40%
LAFAYETTE	9129	1366	14.96%
LAFOURCHE	5036	713	14.16%
LASALLE	732	126	17.21%
LINCOLN	2346	311	13.26%
LIVINGSTON	4309	563	13.07%
MADISON	1221	149	12.20%
MOREHOUSE	2642	474	17.94%
NATCHITOCHES	2486	423	17.02%
ORLEANS	20261	2570	12.68%
OUACHITA	9086	1319	14.52%
PLAQUEMINES	1048	133	12.69%
POINTE COUPEE	1699	269	15.83%

Source: ULM College of Pharmacy, Office of Outcomes Research & Evaluation, February 2009

* For the numerator measures, the rate is the numerator divided by the diabetes recipient count.

* Recipients' age was 18+ (Note: HEDIS age definition for diabetes is 18-75)

Diabetes Prevalence Rate by Parish for Medicaid Recipients 18-75 Years Old in 2007

*** Recipients were enrolled in Medicaid for at least 11 out of 12 months in 2007 as defined by HEDIS**

Parish	Recipients with 11+ Month Eligibility	Diabetes Recipient Count	Age 18-75 Prevalence Rate
RAPIDES	9894	1573	15.90%
RED RIVER	620	107	17.26%
RICHLAND	1778	332	18.67%
SABINE	1376	241	17.51%
ST. BERNARD	1768	167	9.45%
ST. CHARLES	2064	289	14.00%
ST. HELENA	781	147	18.82%
ST. JAMES	1433	197	13.75%
ST. JOHN	3255	414	12.72%
ST. LANDRY	7974	1451	18.20%
ST. MARTIN	3126	453	14.49%
ST. MARY	3872	655	16.92%
ST. TAMMANY	6938	866	12.48%
TANGIPAHOA	9432	1546	16.39%
TENSAS	588	88	14.97%
TERREBONNE	6865	1008	14.68%
UNION	1289	223	17.30%
VERMILION	2995	453	15.13%
VERNON	2008	316	15.74%
WASHINGTON	3837	844	22.00%
WEBSTER	2742	453	16.52%
WEST BATON ROUGE	1348	220	16.32%
WEST CARROLL	893	153	17.13%
WEST FELICIANA	465	80	17.20%
WINN	1098	182	16.58%
Unknown	8711	1078	12.38%

Source: ULM College of Pharmacy, Office of Outcomes Research & Evaluation, February 2009
* For the numerator measures, the rate is the numerator divided by the diabetes recipient count.
* Recipients' age was 18+ (Note: HEDIS age definition for diabetes is 18-75)

Diabetes Prevalence Rate by Parish for Medicaid Recipients 18-75 Years Old in 2007

*** Recipients were enrolled in Medicaid for at least 11 out of 12 months in 2007 as defined by HEDIS**

Parish	HbA1c	Rate	Eye Exam	Rate	LDL-C	Rate	Nephropathy	Rate
ACADIA	284	34.85%	190	23.31%	278	34.11%	303	37.18%
ALLEN	139	38.83%	95	26.54%	128	35.75%	121	33.80%
ASCENSION	225	38.66%	149	25.60%	199	34.19%	260	44.67%
ASSUMPTION	142	45.81%	69	22.26%	126	40.65%	143	46.13%
AVOYELLES	248	34.93%	240	33.80%	241	33.94%	278	39.15%
BEAUREGARD	101	34.12%	65	21.96%	111	37.50%	110	37.16%
BIENVILLE	69	37.10%	45	24.19%	71	38.17%	84	45.16%
BOSSIER	232	41.88%	145	26.17%	189	34.12%	261	47.11%
CADDO	825	36.54%	384	17.01%	655	29.01%	1081	47.87%
CALCASIEU	369	30.93%	346	29.00%	392	32.86%	552	46.27%
CALDWELL	52	39.39%	37	28.03%	39	29.55%	53	40.15%
CAMERON	7	28.00%	3	12.00%	8	32.00%	11	44.00%
CATAHOULA	35	25.36%	48	34.78%	32	23.19%	41	29.71%
CLAIBORNE	63	33.33%	56	29.63%	54	28.57%	90	47.62%
CONCORDIA	86	30.39%	71	25.09%	90	31.80%	112	39.58%
DESOTO	108	35.18%	71	23.13%	104	33.88%	148	48.21%
EAST BATON ROUGE	1123	33.42%	763	22.71%	955	28.42%	1510	44.94%
EAST CARROLL	87	41.23%	45	21.33%	75	35.55%	95	45.02%
EAST FELICIANA	95	34.80%	62	22.71%	83	30.40%	124	45.42%
EVANGELINE	224	35.05%	170	26.60%	254	39.75%	262	41.00%
FRANKLIN	110	33.13%	75	22.59%	81	24.40%	113	34.04%
GRANT	67	28.76%	65	27.90%	61	26.18%	87	37.34%
IBERIA	373	41.96%	199	22.38%	345	38.81%	429	48.26%
IBERVILLE	180	40.45%	146	32.81%	145	32.58%	217	48.76%
JACKSON	79	40.93%	46	23.83%	63	32.64%	83	43.01%
JEFFERSON	803	42.80%	488	26.01%	783	41.74%	962	51.28%
JEFFERSON DAVIS	97	33.11%	88	30.03%	98	33.45%	123	41.98%
LAFAYETTE	421	30.82%	281	20.57%	367	26.87%	526	38.51%
LAFOURCHE	323	45.30%	176	24.68%	272	38.15%	332	46.56%
LASALLE	31	24.60%	44	34.92%	31	24.60%	46	36.51%
LINCOLN	121	38.91%	76	24.44%	81	26.05%	116	37.30%
LIVINGSTON	194	34.46%	122	21.67%	199	35.35%	265	47.07%
MADISON	37	24.83%	41	27.52%	20	13.42%	58	38.93%
MOREHOUSE	174	36.71%	115	24.26%	148	31.22%	156	32.91%
NATCHITOCHES	174	41.13%	127	30.02%	162	38.30%	208	49.17%
ORLEANS	939	36.54%	637	24.79%	881	34.28%	1235	48.05%
OUACHITA	450	34.12%	303	22.97%	393	29.80%	607	46.02%
PLAQUEMINES	56	42.11%	35	26.32%	56	42.11%	73	54.89%
POINTE COUPEE	115	42.75%	73	27.14%	103	38.29%	137	50.93%

Source: ULM College of Pharmacy, Office of Outcomes Research & Evaluation, February 2009

* For the numerator measures, the rate is the numerator divided by the diabetes recipient count.

* Recipients' age was 18+ (Note: HEDIS age definition for diabetes is 18-75)

Diabetes Prevalence Rate by Parish for Medicaid Recipients 18-75 Years Old in 2007

*** Recipients were enrolled in Medicaid for at least 11 out of 12 months in 2007 as defined by HEDIS**

Parish	HbA1c	Rate	Eye Exam	Rate	LDL-C	Rate	Nephropathy	Rate
RAPIDES	533	33.88%	525	33.38%	469	29.82%	634	40.31%
RED RIVER	45	42.06%	18	16.82%	30	28.04%	45	42.06%
RICHLAND	99	29.82%	69	20.78%	82	24.70%	117	35.24%
SABINE	74	30.71%	47	19.50%	67	27.80%	87	36.10%
ST. BERNARD	69	41.32%	32	19.16%	58	34.73%	74	44.31%
ST. CHARLES	136	47.06%	73	25.26%	131	45.33%	148	51.21%
ST. HELENA	57	38.78%	31	21.09%	53	36.05%	68	46.26%
ST. JAMES	73	37.06%	45	22.84%	62	31.47%	89	45.18%
ST. JOHN	152	36.71%	101	24.40%	157	37.92%	182	43.96%
ST. LANDRY	504	34.73%	458	31.56%	472	32.53%	694	47.83%
ST. MARTIN	157	34.66%	108	23.84%	149	32.89%	197	43.49%
ST. MARY	267	40.76%	94	14.35%	240	36.64%	293	44.73%
ST. TAMMANY	285	32.91%	183	21.13%	310	35.80%	359	41.45%
TANGIPAHOA	562	36.35%	346	22.38%	506	32.73%	718	46.44%
TENSAS	34	38.64%	20	22.73%	26	29.55%	41	46.59%
TERREBONNE	414	41.07%	297	29.46%	373	37.00%	479	47.52%
UNION	88	39.46%	37	16.59%	68	30.49%	97	43.50%
VERMILION	155	34.22%	136	30.02%	156	34.44%	194	42.83%
VERNON	125	39.56%	96	30.38%	110	34.81%	123	38.92%
WASHINGTON	314	37.20%	155	18.36%	312	36.97%	370	43.84%
WEBSTER	156	34.44%	135	29.80%	147	32.45%	182	40.18%
WEST BATON ROUGE	79	35.91%	50	22.73%	74	33.64%	98	44.55%
WEST CARROLL	56	36.60%	32	20.92%	41	26.80%	52	33.99%
WEST FELICIANA	28	35.00%	12	15.00%	21	26.25%	32	40.00%
WINN	64	35.16%	60	32.97%	61	33.52%	67	36.81%
Unknown	399	37.01%	272	25.23%	352	32.65%	488	45.27%

Source: ULM College of Pharmacy, Office of Outcomes Research & Evaluation, February 2009

* For the numerator measures, the rate is the numerator divided by the diabetes recipient count.

* Recipients' age was 18+ (Note: HEDIS age definition for diabetes is 18-75)

Diabetes among Older Adults

CDC estimates that twenty-three percent (23.1%) of all adults in the United States age 60 years and older, approximately 12.2 million individuals, have been diagnosed with diabetes. The prevalence of diagnosed and undiagnosed diabetes is highest in this age group. In Louisiana, diabetes is also most prevalent among residents age 65 years and older (24.5%) compared to adults ages 55-64 (18.5%) and adults ages 45-54 (10.0%).

Medicare is a federal health insurance program coordinated through the U.S. Department of Health and Human Services' Centers for Medicare and Medicaid Services. Medicare provides hospital insurance, medical insurance and prescription drug coverage to people age 65 or older, people under age 65 with certain disabilities and people of all ages with End-Stage Renal Disease (U.S. DHHS CMS, 2009).

As of December 31, 2007, fifteen percent (15%) or 78,448 Medicare recipients, had a diagnosis of diabetes. Diabetes prevalence among the Louisiana Medicare population was highest among Caucasians followed by African Americans. Prevalence data broken by race/ethnicity and gender shows that African American females have the highest diabetes prevalence among all Medicaid recipients with diabetes (64.6%), Caucasian females account for fifty-three percent (53.3%) (LHCR, 2007).

Louisiana Medicare Population Living with Diabetes, 2007

	TOTAL POP.	Diabetes Population		MALE		FEMALE	
	# of all Medicare Recipients	Total # of all Medicare recipients with diabetes	A1C Test Rate (%)	# of Recipients	Ratio (%)	# of Recipients	Ratio (%)
AGE							
65+	519199	78448	81.95%	31936	40.7%	46512	59.3%
RACE/ ETHNICITY							
White	472995	63632	82.25%	29729	46.7%	33903	53.3%
Afr. American	174236	32876	79.12%	11649	35.4%	21227	64.6%
Other	12847	1520	80.86%	690	45.4%	830	54.6%

Source: Louisiana Health Care Review, 2007 CMS Data

In 2007, approximately eighty-two percent (81.9%) of Medicare recipients with diabetes received a Hemoglobin A1c test, fifty-five percent (55.8%) received an annual eye exam and seventy-five percent (75.2%) completed an LDL screening (LHCR, 2009).

Number and Ratio of Medicare Diabetes Recipients age 65 and over that Received Preventive Care Services, 2007

	# of Recipients	Ratio (%)	White	Black	Other
No. of patients with diabetes	78448		54014	23244	1190
Annual A1c test (1+ HgA1c test)	64286	81.9%	44744	18566	976
Annual Eye Exam	43762	55.8%	31073	12105	584
Annual Foot Exam	N/A				
LDL Screening	58967	75.2%	41714	16363	890
Quantitative Urine Protein	N/A				

Source: Louisiana Health Care Review, Centers for Medicare and Medicaid 2007 Claims Data

Poorly controlled diabetes in older adults can cause acute complications such as dehydration and poor healing wounds to hyperglycemic hyperosmolar coma (ADA, 2009).

Diabetes-related Expenditure among Medicare Diabetes Recipients by Diagnosis, 2007

Diagnosis (ICD-9-CM Code)	Discharges (#)
Diabetes (250.0)	43149
Ketoacidosis (250.1)	327
Hypersomolar coma (250.2)	106
Diabetes other coma (250.3)	27
Renal changes (250.4)	1405
Retinopathy background (250.5)	630
Neurological manifestation (250.6)	3541
Peripheral circulatory disorder (250.7)	608
Hypoglycemia (250.8)	2348
Unspecified complication (250.9)	480
Total	52621

Source: Louisiana Health Care Review, Centers for Medicare and Medicaid 2007 Claims Data

In 2007, over 3,000 (3,541) hospital discharges were related to diabetes complications caused by neurological manifestations; 2,348 were attributed to hypoglycemia and 1,405 discharges due to renal changes.

Pages 68 and 69 provide parish-level data on diabetes prevalence among Louisiana's Medicare population. The tables also provides Hemoglobin A1c testing rates and gender-specific prevalence number and ratios. In Louisiana, East Baton Rouge parish has the highest prevalence of Medicare recipients diagnosed with diabetes (7,031), followed by Caddo (6,457) and Jefferson (6,233) parishes (LHCR, 2009).

Medicare Recipients with Diabetes in Louisiana, by Parish, 2007

	TOTAL POP.	Diabetes Population		MALE		FEMALE	
Parish	# of all Medicare recipients	Total # of all Medicare recipients with diabetes	A1C Test Rate (%)	# Recipients	Ratio (%)	# Recipients	Ratio (%)
Acadia	9666	1876	85.34	868	46.27%	1008	53.73%
Allen	3765	733	83.08	313	42.70%	420	57.30%
Ascension	10496	1398	80.19	650	46.49%	748	53.51%
Assumption	3681	621	86.80	266	42.83%	355	57.17%
Avoyelles	7834	1331	79.86	554	41.62%	777	58.38%
Beauregard	5636	1108	85.02	519	46.84%	589	53.16%
Bienville	3205	522	83.72	212	40.61%	310	59.39%
Bossier	14407	2293	84.17	1017	44.35%	1276	55.65%
Caddo	41864	6457	80.77	2614	40.48%	3843	59.52%
Calcasieu	29282	5185	83.36	2369	45.69%	2816	54.31%
Caldwell	2034	419	87.59	181	43.20%	238	56.80%
Cameron	613	104	82.69	51	49.04%	53	50.96%
Catahoula	2237	398	77.14	171	42.96%	227	57.04%
Claiborne	2917	500	81.00	190	38.00%	310	62.00%
Concordia	3718	688	72.67	286	41.57%	402	58.43%
De Soto	4655	839	76.40	355	42.31%	484	57.69%
E Baton Rouge	56509	7031	81.33	2897	41.20%	4134	58.80%
East Carroll	1444	312	84.94	125	40.06%	187	59.94%
East Feliciana	3324	511	74.56	225	44.03%	286	55.97%
Evangeline	6422	1095	71.60	508	46.39%	587	53.61%
Franklin	3942	761	82.92	325	42.71%	436	57.29%
Grant	3327	598	81.27	271	45.32%	327	54.68%
Iberia	11873	2249	86.31	968	43.04%	1281	56.96%
Iberville	5304	731	80.57	277	37.89%	454	62.11%
Jackson	3198	546	80.40	250	45.79%	296	54.21%
Jefferson	69876	6233	82.32	2643	42.40%	3590	57.60%
Jefferson Davis	5383	1003	81.66	430	42.87%	573	57.13%
La Salle	2668	428	59.35	195	45.56%	233	54.44%
Lafayette	26888	4359	78.89	1913	43.89%	2446	56.11%
Lafourche	13637	2187	85.37	953	43.58%	1234	56.42%
Lincoln	5995	920	81.30	400	43.48%	520	56.52%
Livingston	13515	1563	83.49	719	46.00%	844	54.00%

Source: Louisiana Health Care Review, Centers for Medicare and Medicaid 2007 Claims Data

Medicare Recipients with Diabetes in Louisiana, by Parish, 2007

	TOTAL POP.	Diabetes Population		MALE		FEMALE	
Parish	# of all Medicare Recipients	Total # of all Medicare recipients with Diabetes	A1C Test Rate (%)	# Recipients	Ratio (%)	# Recipi-ents	Ratio (%)
Madison	1811	336	66.67	137	40.77%	199	59.23%
Morehouse	5872	997	76.93	414	41.52%	583	58.48%
Natchitoches	6268	1021	77.38	417	40.84%	604	59.16%
Orleans	36529	3835	79.19	1472	38.38%	2363	61.62%
Ouachita	22470	3944	78.96	1647	41.76%	2297	58.24%
Plaquemines	2777	266	79.32	122	45.86%	144	54.14%
Pointe Coupee	3933	588	83.84	240	40.82%	348	59.18%
Rapides	23447	4059	83.67	1677	41.32%	2382	58.68%
Red River	1547	223	77.13	93	41.70%	130	58.30%
Richland	3800	824	76.33	323	39.20%	501	60.80%
Sabine	4627	802	72.19	367	45.76%	435	54.24%
St Bernard	3138	350	77.71	164	46.86%	186	53.14%
St Charles	6281	755	82.78	309	40.93%	446	59.07%
St Helena	1195	234	81.62	98	41.88%	136	58.12%
St James	3511	526	67.30	200	38.02%	326	61.98%
St John Baptist	5992	869	78.83	339	39.01%	530	60.99%
St Landry	16585	3000	78.73	1312	43.73%	1688	56.27%
St Martin	6899	1271	80.80	541	42.56%	730	57.44%
St Mary	9233	1659	88.19	741	44.67%	918	55.33%
St Tammany	32205	3355	82.18	1513	45.10%	1842	54.90%
Tangipahoa	17869	2939	79.24	1284	43.69%	1655	56.31%
Tensas	1111	188	78.19	67	35.64%	121	64.36%
Terrebonne	17300	2771	86.29	1329	47.96%	1442	52.04%
Union	4362	718	78.69	300	41.78%	418	58.22%
Vermilion	8971	1494	81.99	651	43.57%	843	56.43%
Vernon	5720	1229	84.13	567	46.14%	662	53.86%
West Baton Rouge	3133	403	81.14	172	42.68%	231	57.32%
Washington	8846	1829	80.81	780	42.65%	1049	57.35%
Webster	8663	1415	81.84	588	41.55%	827	58.45%
West Carroll	2403	413	83.05	197	47.70%	216	52.30%
West Feliciana	1410	217	80.18	88	40.55%	129	59.45%
Winn	2571	483	75.98	200	41.41%	283	58.59%
XMISSING	194	16	68.75	4	25.00%	12	75.00%

Source: Louisiana Health Care Review, Centers for Medicare and Medicaid 2007 Claims Data

Diabetes Economic Costs

According to a 2007 report published by the American Diabetes Association, diabetes costs the United States nearly $174 billion in medical costs and lost productivity. This same study reported that in this same year, Louisiana spent $1.625 billion in direct medical costs and $806.2 million in indirect costs, such as disability, lost productivity and premature mortality (ADA, 2008).

Economic Cost of Diabetes in the US and LA, 2007

	United States	Louisiana
Medical	$116,000,000,000	$1,625,000,000
Indirect (Lost Productivity)	$58,000,000,000	$806,200,000
TOTAL	**$174,000,000,000**	**$2,431,000,000**

Source: American Diabetes Association, 2007

Note: Page 81 of this report provides information on estimated costs for diabetes-related medical tests, medications and supplies.

➢ Diabetes Costs in the Medicaid Program

A total of $132 million was spent in 2007 for diabetes-related medical costs incurred among the 48,455 children and adult Medicaid recipients living with diabetes. The highest portion of costs was spent among adults age 45-64, in which a little over $53 million was spent to fulfill over 500,000 claims in 2007. Per recipient expenditure range from $2,409 per recipients 18 to 44 years of age to $3,426 for Medicaid recipients age 0-17 (ULM Outcomes and Research & Evaluation, 2009).

Diabetes-Related Expenditures for Medicaid Recipients, 2007

Age Group	# of Recipients	# of Claims	Expenditure	Expenditure per Recipients
Age 0-17	1,267	38,480	$4,340,833	$3,426
Age 18-44	6,604	150,594	$15,911,002	$2,409
Age 45-64	20,117	514,339	$53,175,257	$2,643
Age 65+	20,467	337,824	$58,790,049	$2,872

Source: ULM Outcomes Research & Evaluation, February 2009
Notes: Results based on December 2007 Medicaid enrollment data

In 2007, African American Medicaid recipients of all ages claimed the highest expenditure on diabetes-related costs, compared to Caucasians and other racial/ethnic groups. Over $69 million was spent in 2007 to fill 595,000 claims for African American Medicaid recipients, compared to $48 million expended for 335,000 claims among Caucasians.

Diabetes-Related Expenditures for Medicaid Recipients by Race, 2007

Race Group	# of Recipients	# of Claims	Expenditure	Expenditure per Recipients
White	16,263	335,963	$48,246,770	$2,967
Black	26,697	595,367	$69,675,084	$2,610
Other	5,495	109,907	$14,295,287	$2,602

Source: ULM Outcomes Research & Evaluation, February 2009
Notes: Results based on December 2007 Medicaid enrollment data

Regional claims data shows that the Region 4 (Lafayette and surrounding areas) had the highest number of recipients and medical expenditures in 2007 at $20 million, or $2,660 per recipient. The least amount was spent in Region 5 (Lake Charles and surrounding area) at $6.4 million, or $2,348 per recipient (ULM Outcomes Research & Evaluation, 2009).

Diabetes-Related Expenditures for Medicaid Recipients by Region, 2007

Race Group	# of Recipients	# of Claims	Expenditure	Expenditure per Recipients
Region 0	1,405	27,967	$3,075,871	$2,189
Region 1	5,556	110,410	$12,551,848	$2,259
Region 2	6,283	130,749	$19,010,729	$3,026
Region 3	4,315	92,456	$10,751,131	$2,492
Region 4	7,645	163,450	$20,334,498	$2,660
Region 5	2,761	61,240	$6,483,761	$2,348
Region 6	4,434	103,700	$14,564,338	$3,285
Region 7	6,030	119,595	$16,191,925	$2,685
Region 8	5,157	123,186	$16,820,099	$3,262
Region 9	4,869	108,484	$12,432,940	$2,553

Source: ULM Outcomes Research & Evaluation, February 2009

➢ Diabetes Costs in the Medicare Program

By December 31, 2007, diabetes-related expenditures among Medicare beneficiaries totaled more than $1.346 billion, with $1 billion alone attributed to hospital stays related to a diabetes diagnosis. Complications due to neurological manifestations contributed to the second largest expense (over $101 million), followed by hypoglycemia ($61 million).

In 2007, African American males made up only 12% of the total Medicare population diagnosed with diabetes yet possessed the highest expenditure per recipient at $8,198. African American females ($6,648) possessed the second highest expenditure per recipient, followed by Caucasian males ($6,235). Caucasian females had the highest overall expenditure at $206 million.

Diabetes-Related Expenditure among Medicare Diabetes Recipients by Gender and Race/Ethnicity, 2007

Race/ Ethnicity	Gender	# of Recipients (Medicare recipients with diabetes)	# of Recipients with diabetes with INPATIENT CLAIMS	# of Claims	Expenditure ($)	Expenditure per Recipients ($)
White	Male	29729	29706	40376	$185,365,703	$6235
	Female	33903	33885	47357	$206,946,015	$6104
Black	Male	11649	11643	17424	$95,501,393	$8198
	Female	21227	21222	30199	$141,120,255	$6648
Other	Male	690	690	918	$3,985,417	$5775
	Female	830	830	1054	$4,031,920	$4857

Source: Louisiana Health Care Review, Centers for Medicare and Medicaid 2007 Claims Data

Diabetes-Related Expenditure among Medicare Diabetes Recipients by Diagnosis, 2007

Diagnosis (ICD-9-CM Code)	Discharges (#)	Charges ($)	Average Cost Per Hospital Stay ($)
Diabetes (250.0)	43149	$1,063,664,137	$24651
Ketoacidosis (250.1)	327	$9,066,193	$27725
Hypersomolar coma (250.2)	106	$2,374,037	$22397
Diabetes other coma (250.3)	27	$856,325	$31716
Renal changes (250.4)	1405	$49,463,570	$35205
Retinopathy background (250.5)	630	$19,561,937	$31051
Neurological manifestation (250.6)	3541	$101,211,635	$28583
Peripheral circulatory disorder (250.7)	608	$23,169,291	$38107
Hypoglycemia (250.8)	2348	$61,114,356	$26028
Unspecified complication (250.9)	480	$15,595,388	$32490
Total	52621	$1,346,076,870	$25581

Source: Louisiana Health Care Review, Centers for Medicare and Medicaid 2007 Claims Data

Conclusion

Diabetes prevalence in Louisiana increased from 5.2% in 1997 to 10.1% in 2007; an increase of 4.9 percentage points over the past decade. Statewide data estimates provided by the Louisiana Behavioral Risk Factor Surveillance System suggests that the majority (87.9%) of adults in Louisiana with diabetes are either overweight or obese. Approximately seventy-eight percent (78.4%) of adults with diabetes in Louisiana do not consume at least five servings of fruits and vegetables per week and only twenty-five percent (25.5%) engage in 30 minutes of physical activity at least five days per week. Rates for high blood pressure (73.0%) and high blood cholesterol (61.3%) are also higher among adults with diabetes compared to the general population (LA BRFSS, 2007).

In 2007, Louisiana paid an estimated $2.431 billion in diabetes-related medical costs and lost productivity (ADA, 2008). If present trends continue, Louisiana can expect to continue to see such dramatic increases in diabetes prevalence and costs.

Diabetes self-management education is a critical component to any comprehensive clinical care plan; yet, forty-two percent (42.6%) of adults with diabetes in Louisiana reported never attending a diabetes self-management course. Steps to increase access to education services must be addressed, with educational needs identified and provided to a variety of target audiences. This can include, but is not limited to:

- General public: Public education on what diabetes is and to become more knowledgeable of diabetes signs and symptoms; provide more opportunities for family members with loved ones living with diabetes to be educated on the disease as well.
- People with diabetes: Increase access to quality diabetes self-management education (DSME) or diabetes self-management training (DSMT) to help people diagnosed with diabetes become better lifetime managers (Funnel, 2008) of their diabetes.
- Medical providers: Establish education systems to ensure that medical providers remain current on evidence-based best practices and nationally-recognized clinical guidelines.
- Systems level changes: Investigate approaches to increase access to and use of diabetes education services, such as providing or increasing reimbursement for diabetes education services, offering education services in multiple languages, use of telecommunication, etc.

Approximately fifty-eight percent (58%) of surveyed adults with diabetes reported having either poor mental or physical health. Support for individuals living with diabetes can be medical and non-medical. Mental health should be regarded as being just as essential to diabetes control as physical health. Social support provided by medical facilities, academic groups, nonprofits, faith-based groups, etc., can help establish support networks for people with diabetes and re-enforce health messages conveyed by the medical provider. This also provides an individual with the ability to build a social network that can assist them through the figurative and literal highs and lows of living with diabetes.

Diabetes is a serious, costly and common disease that can be controlled with by eating healthier foods, moderate physical activity, proper medical care, diabetes education and diabetes support networks. At this time, data estimates suggest that Louisiana's adult diabetes population is not engaging in such behaviors and possess high prevalence rates for risk factors attributed to diabetes complications. Investments should be made to increase access to public health programs and implement policies that promote healthier behaviors to reverse this trend and reduce the morbidity and mortality of diabetes in the state of Louisiana.

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APPENDIX

Louisiana Diabetes Prevention and Control Program Overview

The Louisiana Diabetes Prevention and Control Program (DPCP) is a division of the Louisiana Department of Health and Hospitals' Bureau of Primary Care and Rural Health, Chronic Disease Prevention and Control Unit. The mission of the Louisiana DPCP is to reduce the morbidity and mortality of diabetes in Louisiana.

The Louisiana Diabetes Prevention and Control Program is responsible for the following:

- Monitor the prevalence and incidence of diabetes and available care and education opportunities
- Inform the public of diabetes prevalence and available resources
- Provide technical assistance on how to use existing resources as efficiently and effectively as possible
- Identify and strengthen weak points in the diabetes care system

The Louisiana Diabetes Program began in 1996 as a component of the Office of Public Health Community Health Promotion and Chronic Disease Program. In October 2006, the Community Health Promotion and Chronic Disease Program transferred to the Bureau of Primary Care and Rural Health and was renamed the Louisiana Chronic Disease Prevention and Control Unit. The Unit includes the Diabetes Prevention and Control Program, Tobacco Control Program, Heart Disease and Stroke Prevention Program, Asthma Program and the Behavior Risk Factor Surveillance System. The DPCP maintains constant communication and collaboration with all programs and continues to actively support Office of Public Health initiatives, including but not excluded to the Louisiana Council for Obesity Prevention and Management.

The Louisiana Diabetes Prevention and Control Program (DPCP) serves as the Louisiana affiliate for the Centers for Disease Control and Prevention's (CDC) Division of Diabetes Translation (DDT) National Diabetes Program. This initiative is funded in all fifty-nine U.S. states and territories.

The CDC DDT National Diabetes Program has four goals:
Goal 1: Prevent diabetes
Goal 2: Prevent complications, disabilities and burden associated with diabetes
Goal 3: Eliminate diabetes-related health disparities
Goal 4: Maximize organizational capacity to achieve the National Diabetes Program goals

The Louisiana DPCP is funded through a cooperative agreement with the Centers for Disease Control and Prevention and a required state match.

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Louisiana Diabetes Prevention and Control Program (DPCP) 2009-2014 Activities

Administration, Management and Leadership

- Diabetes State Plan: Louisiana DPCP staff will convene diabetes stakeholders (i.e. people living with diabetes, medical professionals, academic institutions, hospitals, nonprofit organizations, associations, etc.) to develop a statewide strategic plan to reduce diabetes morbidity and mortality among people living with diabetes and prevent or reduce onset of diabetes among residents at risk for developing diabetes.

- Statewide Diabetes Council: Re-implementation and management of Senate Concurrent Resolution No. 49, Louisiana Diabetes Advisory Council, 2003 Louisiana State Legislative Session.

Surveillance, Analysis and Evaluation

- Annual Behavioral Risk Factor Surveillance System (BRFSS): Secure and provide funds to include the Diabetes and Pre-Diabetes Modules in the statewide BRFSS questionnaire at least every other year.

- Diabetes Fact Sheet: Annual report developed by diabetes program staff.

- Louisiana Diabetes Data Report: Report developed by diabetes program staff for national and statewide diabetes data collected in 2007, 2009 and 2011.

Promoting Social, Environmental, Policy and Systems Approaches at the State and Community Levels

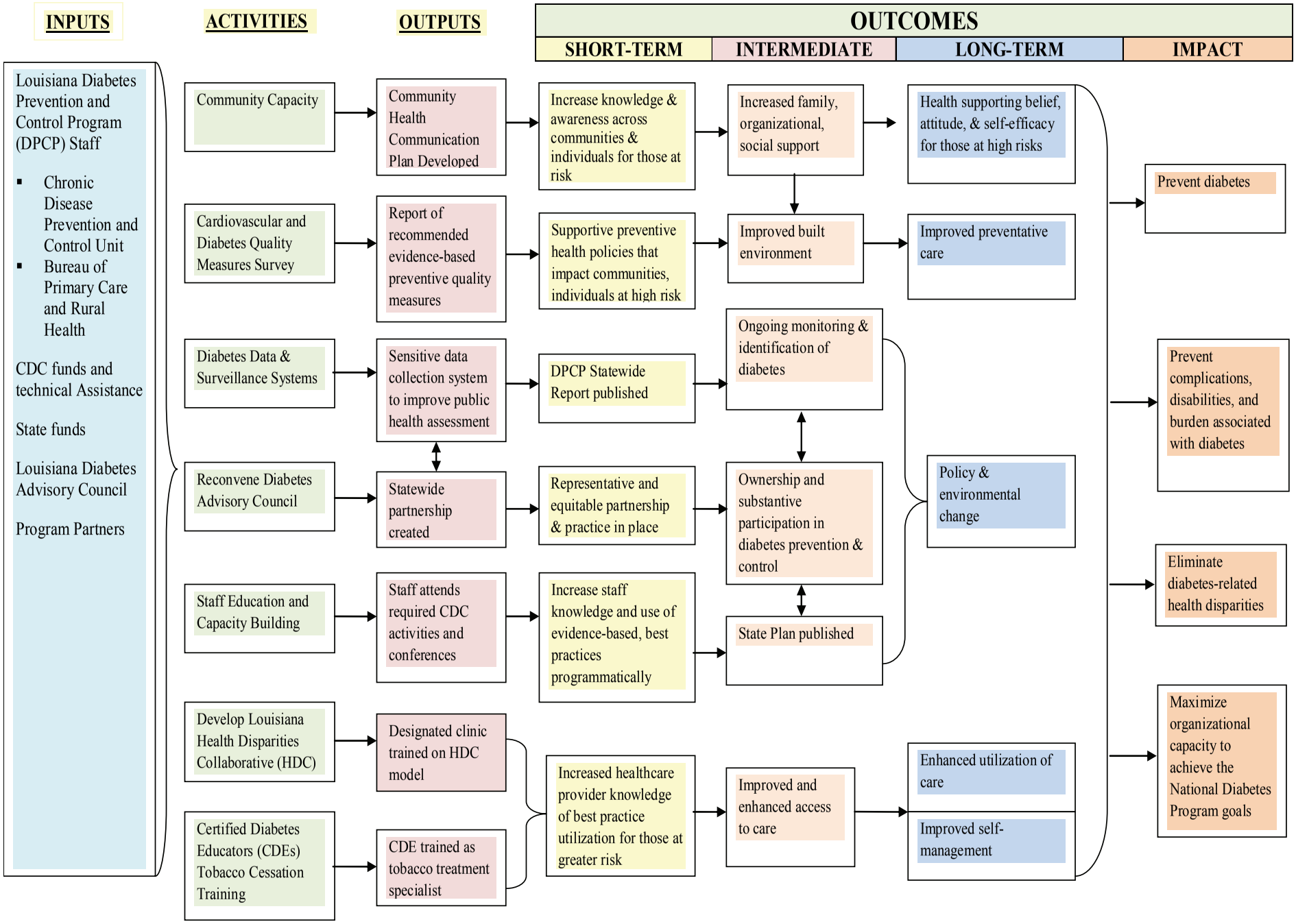
- Diabetes Preventive Services Utilization Report (to be completed by April 2010): Louisiana DPCP partnership with the Louisiana Heart Disease and Stroke Prevention Program (HDSP) and Louisiana Association of Health Plans to conduct the Cardiovascular and Diabetes Quality Measures (CDQM) Survey among Louisiana's top health insurers. The CDQM Survey provides a baseline for measuring diabetes and cardiovascular qualitative indicators utilized by health insurers. The Louisiana DPCP and HDSP staff will use the report to provide formal recommendations to the participating health insurers.

Interventions in Health Care Systems

- Louisiana Health Disparities Collaborative: The Louisiana Health Disparities Collaborative aims to build capacity among Louisiana-based federally qualified health centers and rural health clinics to provide quality chronic disease care and reduce health disparities, particularly among patients diagnosed with diabetes and cardiovascular disease. This statewide initiative is managed by the Louisiana Primary Care Association and co-monitored by the Louisiana DPCP and Louisiana Heart Disease and Stroke Prevention Program. Essential partners include the Louisiana Tobacco Control Program, DHH Bureau of Primary Care and Rural Health Practice Management Division, Xavier University of Louisiana College of Pharmacy's Center for Health Disparities Research and Education (evaluation), Louisiana Rural Health Association and the Louisiana Health Care Quality Forum.

- Fax-to-Quit Training for Diabetes Providers: Louisiana DPCP partnership with the Louisiana Tobacco Control Program to increase use of the Fax-to-Quit Louisiana program among diabetes medical providers and increase use of the Louisiana Quitline among people living with diabetes.

LOUISIANA DIABETES PREVENTION AND CONTROL PROGRAM— PROGRAM LOGIC MODEL



Program Evaluation – Dr. Leonard Jack Jr., Xavier University of Louisiana, School of Pharmacy, Center for Health Disparities

*Cost of Diabetes Tests, Medications and Supplies**

TEST	COST	ADDITIONAL INFO
Glycosylated hemoglobin A1C	± $25	± $30 (Home Test)
Eye Exam - New Patient	$50 - $155	
Eye Exam - Established Patient	$50 - $135	
Lipid panel	± $35	
Microalbuminuria		$20-25 (Home Test)
Foot exam - Initial	$85 - $225	
Foot Exam - Follow Up	$45 - $55	
X-RAYS (foot)	$35 - $45/foot	
DIABETES MEDICATION	**COST**	**ADDITIONAL INFO**
Diabetes medication	Varies	Check with your doctor or local pharmacy for information on medication cost and prescription assistance.
DIABETES SUPPLIES	**COST**	**ADDITIONAL INFO**
Glucose meter	$0 - $75	
Strips (typical quantity per container 50-300)	Approximately less than $1 per strip	Low cost = $0.36-$0.50 per strip
		More Expensive = $0.70 - $0.80 cents per strip
Lancets	Price varies depending on type and quantity	± $8-10 for 100
		± $12-15 for 200
Syringes (depends on gauge; estimate based on 28 gauge needle)	Price varies depending on type and quantity	± $11 for 100
		± $60-75 for 500
Insulin	Varies	Check with your doctor or local pharmacy for information on medication cost and prescription assistance.
Insulin Pump	$3,500 - $6,000	Prices vary depending upon manufacturer.
Insulin Pump Supplies	$300 - $600 monthly	Prices vary upon supply usage.
Diabetic Shoes	$60 - $275	
Diabetic Socks	$5 - $35	

* Basic list created using information obtained from the American Diabetes Association, physician offices, websites, pharmaceutical companies and local and national pharmacy chains. This is not an absolute list on diabetes-related costs.

Technical Notes

➢ Louisiana Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is a randomized telephone survey of adults ages 18 years and above. Established in 1984 by the Centers for Disease Control and Prevention (CDC), the BRFSS is a state-based system of health surveys that collects information on health risk behaviors, preventive health practice, and health care access primarily related to chronic disease and injury. For many states, the BRFSS is the only available source of timely, accurate data on health-related behaviors.

Currently, data is collected monthly in all 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. More than 350,000 adults are interviewed each year making the BRFSS the largest telephone health survey in the world. States use BRFSS data to identify emerging health problems, establish and track health objectives, and develop and evaluate public health policies and programs. Many states also use BRFSS data to support health-related legislative efforts. For more information about the BRFSS, visit the CDC's BRFSS website at http://www.cdc.gov/brfss.

➢ Louisiana Medicaid Data

Diabetes data for Louisiana Medicaid recipients was provided by the University of Louisiana at Monroe College of Pharmacy Office of Outcomes Research & Evaluation. Medicaid claims data was reviewed from the selected study period of January 1, 2007 to December 31, 2007 with a 6-month completion period based on paid and adjusted Louisiana Medicaid claims. For diabetes related expenditures, recipients needed to meet the following criteria:

- Recipients who were dispensed insulin or oral hypoglycemics/antihyperglycemics during the measurement year or year prior to the measurement year (January 2006—Dec. 2008).
- Recipients who had two face-to-face encounters with a diagnosis of diabetes on different dates of service in an outpatient setting or non-acute inpatient setting, or one face-to-face encounter in an acute inpatient or ED setting during the measurement year or the year prior to the measurement of year (Jan 2006-Dec 2007).
- Exclude recipients who had diagnosis of gestational diabetes (648.8), polycystic ovaries (256.4), steroid induced diabetes and cancer.
- A claim with primary or secondary diagnosis of Diabetes (diagnosis code list) or diabetes related pharmacy claims were counted toward related cost
- The diabetes related drug list based on HEDIS 2008.

➢ Louisiana Hospital Inpatient Discharge Database

Louisiana Department of Health and Hospitals' Office of Public Health staff reviewed Year 2001 hospitalizations indicating the ICD-9 diagnosis code for diabetes (250) as the principal diagnosis or up to the eleventh secondary diagnosis were collected and analyzed. Additional

information collected for analysis included parish of residence, diagnosis codes, procedure codes, age, race, gender, length of stay, and cost of hospitalization. Hospitalization rates for people living with diabetes in Louisiana was calculated using hospital discharge data, number of discharges, cost of hospitalization, and length of hospital stay. The Behavior Risk Factor Surveillance System data was used to determine the prevalence of diabetes and the actual number of people with diabetes in the state. Both databases were combined to determine rate of hospitalizations, average cost, and incidence rate of amputation. In order to make comparisons based on these two datasets, however, analysis of Louisiana Hospital Discharge Data was limited to patients over the age of eighteen. Using a combination of the Louisiana Hospital Discharge Database and the Behavior Risk Factor Surveillance System, discharges for black and white people with diabetes were studied for disparities in the rate of hospitalization and average costs.

- **Medicare Data**

Medicare data provided by the Louisiana Health Care Review, Incorporated (LHCR). LHCR serves as the Medicare Quality Improvement Organization (QIO) for the state of Louisiana. Louisiana data for Medicare recipients with diabetes was extracted from the Centers for Medicare and Medicaid Services database. Analysts reviewed Medicare claims data to determine diabetes prevalence, rate of utilization of preventive care practices (A1c, eye exams, LDL, etc.) and medical expenditures incurred during the study period of January 1, 2007 to December 31, 2007 for Medicare beneficiaries diagnosed with Type 2 diabetes.

GLOSSARY

The following list provides definitions of common diabetes terms. The majority of the list was developed using the National Institute of Health's National Institute of Diabetes, and Digestive and Kidney Disease (NIDDK)'s Diabetes Dictionary available online at http://diabetes.niddk.nih.gov/index.htm and other sources.

A1c: A test that measures a person's average blood glucose level over the past 2 to 3 months. Hemoglobin (HEE-mo-glo-bin) is the part of a red blood cell that carries oxygen to the cells and sometimes joins with the glucose in the bloodstream. Also called hemoglobin A1C or glycosylated (gly-KOH-sih-lay-ted) hemoglobin, the test shows the amount of glucose that sticks to the red blood cell, which is proportional to the amount of glucose in the blood.

Beta Cell: A cell that makes insulin. Beta cells are located in the islets of the pancreas.

Blood Glucose: The main sugar found in the blood and the body's main source of energy. Also called blood sugar.

Blood Glucose Monitoring: Checking blood glucose level on a regular basis in order to manage diabetes. A blood glucose meter (or blood glucose test strips that change color when touched by a blood sample) is needed for frequent blood glucose monitoring.

Body Mass Index (BMI): A measure used to evaluate body weight relative to a person's height. BMI is used to find out if a person is underweight, normal weight, overweight, or obese.

Cardiovascular Disease: Disease of the heart and blood vessels (arteries, veins and capillaries).

Confidence Interval: The plausible range for the true value, computed from the sample data and has a given probability that the unknown true value is located within the interval (Fink, 2003).

Diabetes Mellitus (MELL-ih-tus): A condition characterized by hyperglycemia resulting from the body's inability to use blood glucose for energy. In type 1 diabetes, the pancreas no longer make insulin and therefore blood glucose cannot enter the cells to be used for energy. In type 2 diabetes, either the pancreas does not make enough insulin or the body is unable to use insulin correctly.

Diabetic Ketoacidosis (KEY-toe-ass-ih-DOH-sis) (DKA): An emergency condition in which extremely high blood glucose levels, along with severe lack of insulin, result in the breakdown of body fat for energy and an accumulation of ketones in the blood and urine. Signs of DKA are nausea and vomiting, stomach pain, fruity breath odor, and rapid breathing. Untreated DKA can lead to coma and death.

Diabetic Retinopathy: Diabetic eye disease; damage to the small blood vessels in the retina. Loss of vision may result.

Dilated (DY-lay-ted) Eye Exam: A test done by an eye care specialist in which the pupil (the black center) of the eye is temporarily enlarged with eye drops to allow the specialist to see the inside of the eye more easily.

Glucose: One of the simplest forms of sugar.

Fasting Blood Glucose Test: A check of a person's blood glucose level after the person has not eaten for 8 to 12 hours (usually overnight). This test is used to diagnose pre-diabetes and diabetes. It is also used to monitor people with diabetes.

Hyperglycemia: Excessive blood glucose.

Hypertension: A condition present when blood flows through the blood vessels with a force greater than normal. Also called high blood pressure.

Insulin: A hormone that helps the body use glucose for energy. The beta cells of the pancreas make insulin. When the body cannot make enough insulin, insulin is taken by injection or through use of an insulin pump.

Insulin Resistance: The body's inability to respond to and use the insulin it produces. Insulin resistance may be linked to obesity, hypertension, and high levels of fat in the blood.

Lipid: A term for fat in the body. Lipids can be broken down by the body and used for energy.

Metabolic Syndrome: The tendency of several conditions to occur together, including obesity, insulin resistance, diabetes or pre-diabetes, hypertension, and high lipids.

mg/dL: Milligrams (MILL-ih-grams) per deciliter (DESS-ih-lee-tur), a unit of measure that shows the concentration of a substance in a specific amount of fluid. In the United States, blood glucose.

Nephropathy: Disease of the kidneys. Damaged kidneys can no longer remove waste and extra fluids from the bloodstream.

Obesity: A condition in which a greater than normal amount of fat is in the body; more severe than overweight; having a body mass index of 30 or more.

Oral Glucose Tolerance Test (OGTT): A test to diagnose pre-diabetes. The oral glucose tolerance test is given by a health care professional over an overnight fast. A blood sample is taken, then the patient drinks a high-glucose beverage. Blood samples are taken at intervals for 2 to 3 hours. Test results are compared with a standard and show how the body uses glucose over time.

Overweight: An above-normal body weight; having a body mass index of 25 to 29.9.

Polycystic Ovarian Syndrome (PCOS): An accumulation of many incompletely developed follicles in the ovaries. This condition is characterized by irregular menstrual cycles, scanty or absent menses, multiple small cysts on the ovaries (polycystic ovaries), mild hirsutism (excessive hair), and infertility. Many women who have this condition also have diabetes with insulin resistance.

Pre-diabetes: A condition in which blood glucose levels are higher than normal but are not high enough for a diagnosis of diabetes. Other names for pre-diabetes are impaired glucose tolerance and impaired fasting glucose.

Prevalence: The number of people in a given group or population who are reported to have a disease or specified condition.

Rate: A quantity or amount or measure considered as a proportion of another quantity or amount or measure such as "the literacy rate" (Princeton University, 2009).

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