Center for Health Statistics Study

Volume 7, Issue 4

November, 2008

CHRONIC DISEASE MORBIDITY:

FINDINGS FROM THE BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM SURVEY, 2007

INSIDE THIS ISSUE:

Chronic Disease Morbidity	1
Overview of BRFSS and Purpose of Study	2
Measures of Disease	2
Heart Disease and Stroke	3
Cholesterol Morbidity	4
Hypertension Morbidity	5
Diabetes Morbidity	6
Arthritis Morbidity	7
Asthma Morbidity	8-9
Socioeconomic Status and Morbidity	10

CHRONIC DISEASE MORBIDITY

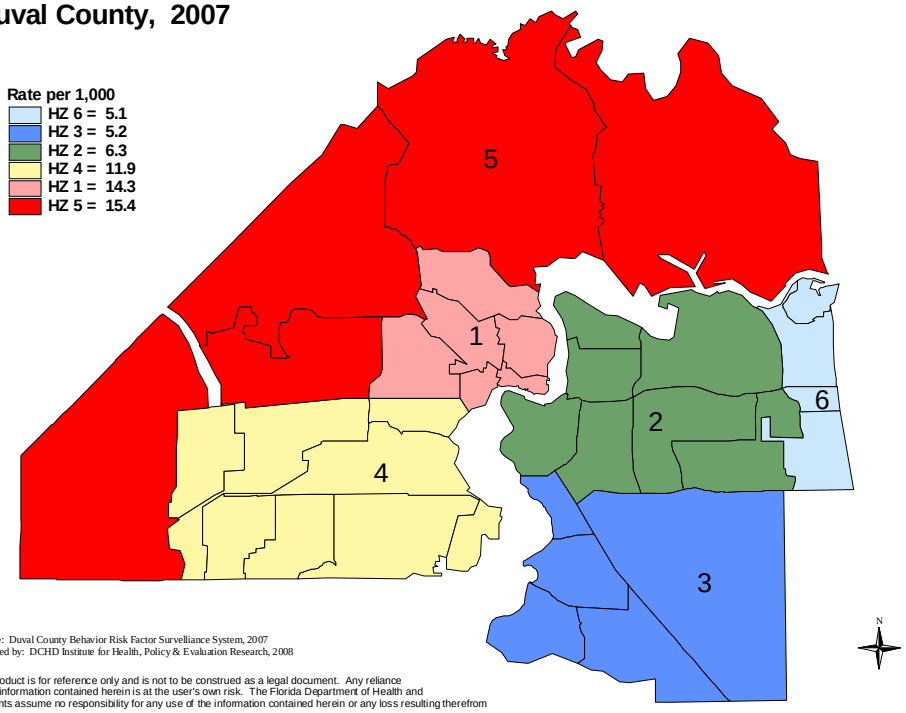
Chronic diseases are major causes of death, illness, and disability. Chronic diseases—such as cardiovascular disease (primarily heart disease and stroke), cancer, and diabetes—are among the most prevalent, costly, and preventable of all health problems. Some health behaviors are established in childhood and adolescence, such as poor nutrition and lack of physical activity, and are often carried into adulthood leading to a lifestyle that contributes to many of the chronic diseases that plague our society today, including obesity, diabetes, and heart disease.

In the U.S., 7 out of 10 people die each year of a chronic disease. The extended course of illness and disability from such chronic diseases results in extended pain and suffering and decreased quality of life for millions of Americans. In addition, chronic, disabling conditions cause major limitations in activity in 10% of all Americans. In addition, the medical care costs of people with chronic diseases account for more than 75% of the nation's $2 trillion medical care costs.[1]

Chronic diseases can be minimized or eliminated with prevention interventions as well as formal disease management. For example, physical activity has been shown to have significant benefits for people with arthritis, including reductions in pain and improvements in physical function, mental health, and quality of life.[2] In addition, maintaining a healthy weight substantially lowers the risk of having diabetes. The cost effectiveness of prevention is significant. Implementing a proven clinical smoking cessation intervention would cost an estimated $2,587 for each year of life saved, the most cost-effective of all clinical preventative services. For every $1 spent on preconception care programs for women with diabetes, health costs are reduced by up to $5.19 by preventing costly complications in both mothers and babies.[1]

Figure 1

Percent of Adults Diagnosed with Diabetes by Health Zone, Duval County, 2007



Source: Duval County Behavior Risk Factor Surveliance System, 2007
Prepared by: DCHD Institute for Health, Policy & Evaluation Research, 2008

Sources:

[1]National Center for Chronic Disease Prevention and Health Promotion, http://www.cdc.gov/nccdphp/overview.htm

[2]http://www.cdc.gov/nccdphp/publications/aag/arthritis.htm

http://www.cdc.gov/nccdphp/overview.htm#3

Overview of the BRFSS and Purpose of Study

This is the first of 3 studies by the Center for Health Statistics analyzing data from the 2007 Duval County Behavioral Risk Factor Surveillance System. This first study details chronic disease morbidity, the second study will highlight primary prevention and risk behaviors and the third study will emphasize secondary and tertiary prevention, such as screenings for diseases and management of diseases. The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based telephone survey administered to adults age 18 and over to assess various aspects of health related behavior, including health risk behaviors, preventive health practices, and health care access, primarily related to chronic disease and injury. People's behaviors can predict health outcomes as well as give insight into the attitudes, knowledge, and skills that play a part in influencing behavior. Behavioral factors have long been acknowledged as principle contributors to health throughout history. Behavior plays a major role in premature morbidity and mortality, particularly chronic diseases, and impact the health care system substantially.

The BRFSS was established by the Centers for Disease Control and Prevention (CDC) in 1984 and is currently administered in all 50 states. In addition, the CDC as well as some state health departments collect county level data. The BRFSS is the primary data source for all adult behaviors related to health. States use BRFSS data primarily to identify emerging health problems, establish and track health objectives, evaluate programs, and develop and evaluate public health policy. The BRFSS includes a set of core questions, modules that rotate between odd and even years, and state and county added questions.

The Florida Department of Health, with technical assistance from the Centers for Disease Control, collected county level data in 2007, the first since the initial effort in 2002. The 2007 county–level survey was developed in collaboration with state and local representatives and was designed to meet the individual needs of the counties by offering options to increase sample size and to add questions. With input and funding from the Duval County Health Department, in 2007, the Florida Department of Health collected a sample of 1,815 in Duval County, yielding the largest local sample ever conducted in the state of Florida. Data from Duval County were weighted in order to reduce bias due to sampling error. The data set is specifically weighted by population density, geographic region, number of residential telephone numbers, number of adults in the respondent's household, age, gender, race/ethnicity, and health zone.

Measures of Disease

Health-related data is reported using various measures, such as percentages, rates per 1,000, rates per 100,000, etc. Common morbidity measures such as sexually transmitted diseases, breast cancer incidence, and HIV incidence, as well as mortality measures such as heart disease death, unintentional injury death, and diabetes deaths are reported using a rate per 100,000 population. In addition, measures around infant mortality and infant related indicators are reported as a rate per 1,000 or a percentage. BRFSS reports percentages of people who respond to a question, typically, those that respond *yes* or *no* to a question. All missing values or those answering *refused* or *don't know* are considered missing in the analysis. When observing BRFSS morbidity data presented in this report and future reports, it is important to remember the translation from percentages to rates in making comparisons of disease indictors (see Table 1).

Table 1

Indicator	Percentage	Rate Per 100,000
People diagnosed with Asthma	7.1%	7,100
People diagnosed with Coronary Heart Disease/Angina	8%	8,000
People who ever had a Stroke	2.7%	2,700
People diagnosed with Diabetes	9.2%	9,200
People diagnosed with High Blood Pressure	27.3%	27,300
People diagnosed with High Cholesterol	35.6%	35,600
People diagnosed with some form of Arthritis	24.9%	24,900

HEART DISEASE AND STROKE

Heart Disease

For most of the last century, heart disease has been the leading cause of death in the United States.[1] Currently, it is the leading cause of death for both men and women.[2] The term "heart disease" encompasses several heart conditions and diseases of the heart. Nearly 30% of all deaths nationally are attributed to heart disease whereas 22% of deaths in Duval County last year were due to heart disease.[3] In the past, heart disease mortality data has been available but there was little information regarding prevalence data and morbidity. However, with the use of the BRFSS beginning in 2005, state-based prevalence estimates are now available.

The most common type of heart disease is coronary heart disease (CHD) which can result in a heart attack.[3] In 2007, 4.2% of U.S. adults reported a history of myocardial infarction (heart attack) and 4.1% had angina or CHD. Locally in Duval County, 4.5% of all adults reported a history of heart attack and 3.6% reported a history of angina or CHD; 8% of adults reported a history of a heart attack, angina, coronary heart disease, or all three (see Table 2). Whites had a higher percentage of heart attacks, 4.3%, versus blacks at 3.5%. Likewise, 4.1% of whites had angina or CHD and only 2.4% of blacks had the same history (see Figure 2). According to the BRFSS, there was a statistically significant difference between non-Hispanic white men in Duval county versus those statewide with men in Duval county faring better than those in the state. There was not a significant difference seen between men and women locally as there was nationally for those who had myocardial infarctions and/or coronary heart disease. Similar to many chronic diseases, the prevalence of one or more of the conditions increased as the age of the respondent increased.

Table 2

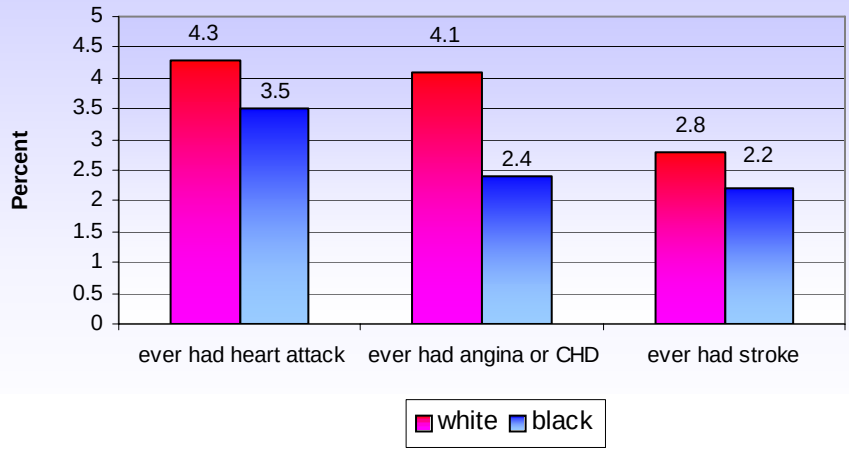
Indicator	Duval County	Florida	U.S.
Percent of adults who have been told they have had a heart attack, angina or Coronary Heart Disease	8.0%	9.3%	*8.3%
Percent of adults who have been told they have had a stroke	2.7%	3.1%	2.6%

Source: Behavioral Risk Factor Surveillance System, 2007

*Calculated different than Florida and Duval County

Heart disease was the primary diagnosis in 1,970 visits to emergency rooms and 12,389 hospitalizations in Duval County in 2006. The emergency room rate was 222.9 per 100,000 while the hospitalization rate was 1,401.7 per 100,000. Heart attacks were reported less often with an emergency room rate of 10.5 per 100,000 and a hospitalization rate of 158.6 per 100,000. Many emergency room visits and hospitalizations can be avoided because most people can reduce their risk of developing heart disease and subsequently experiencing a heart attack. One can lessen his/her risk by controlling modifiable risk factors such as high blood pressure, high cholesterol, diabetes, tobacco use, obesity, and physical inactivity.[4] Genetics and other factors that are not modifiable also play a role in morbidity as heart disease can run in families. Those who already have heart disease or have a family history of it especially need to be cognizant of risk factors which are changeable.

Figure 2 Cardiovascular Disease Morbidity by Race, Duval County, 2007



CHD = Coronary Heart Disease

Source: Behavioral Risk Factor Surveillance System, 2007

Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, October 2008

Stroke

Stroke is the third leading cause of death in the United States. Each year 780,000 people are afflicted with a stroke and over 150,000 people die from it.[5] A stroke happens when the flow of blood to the brain is disrupted and brain cells begin to die due to lack of oxygen and nutrients. There are two main types of stroke: ischemic and hemorrhagic. An ischemic stroke occurs when a blood clot obstructs a blood vessel or artery from reaching the brain. On the other hand, a hemorrhagic stroke occurs when a blood vessel ruptures and bleeds in the brain. Of all diseases, stroke causes the most

(continued on page 11)

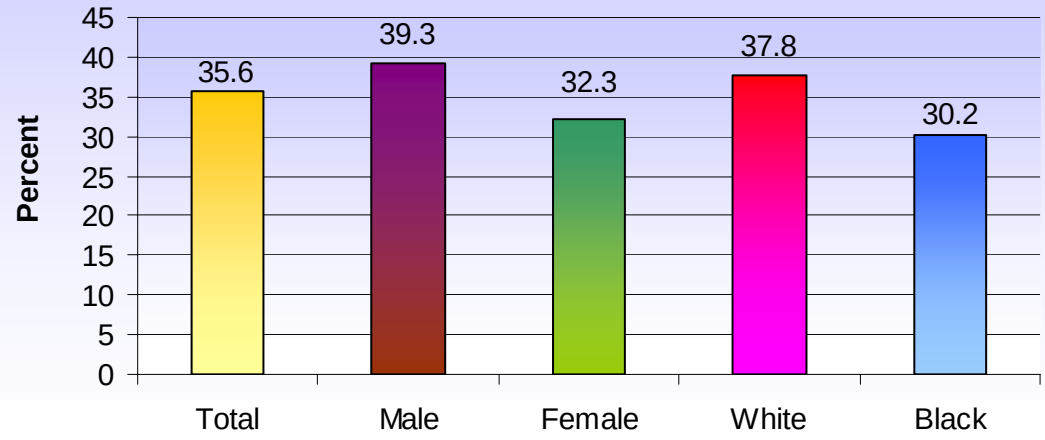
CHOLESTEROL MORBIDITY

Cholesterol is a fatty, wax-like substance made by the body or found in particular foods. It is essential for normal body functioning. However, too much cholesterol is bad for the body and is one of the main risk factors for heart disease and stroke. Like high blood pressure, high cholesterol often goes unnoticed although it is easily diagnosed.[1] There are 2 types of cholesterol: high density lipoprotein (HDL) and low density lipoprotein (LDL). HDL is considered to be "good" cholesterol and the most favorable level is 40 mg/dL or higher. On the other hand, LDL is considered to be "bad" cholesterol and is desired to be less than 100 mg/dL. The optimal level for total cholesterol is less than 200 mg/dL. Additionally, triglycerides are another type of fat found in the blood which should be monitored along with HDL, LDL, and total cholesterol levels. The desirable level for triglycerides is less than 150 mg/dL.[2]

High blood cholesterol levels can lead to the formation of plaque in the walls of the arteries. Once this occurs over an extended period of time, the arteries eventually harden and narrow resulting in a condition called atherosclerosis. Coronary arteries plagued with atherosclerotic plaques can diminish or stop the flow of blood to the heart which can lead to coronary heart disease, angina, and heart attack. Other chronic health conditions can also occur because of plaque in other parts of the body.[3]

Nationally, 17% of adults have total cholesterol of at least 240 mg/dL or "high" blood cholesterol and 37.5% have been diagnosed with high cholesterol at one time, but may have made lifestyle changes or taken medication to lower their cholesterol levels.[1] In Duval County in 2007, more than 35.6% of adults had been diagnosed with high blood cholesterol at some point in their past (see Table 3). Over 39% of males were diagnosed with high cholesterol compared to 32.3% of females; more whites than blacks had high cholesterol with 37.8% of whites reporting the condition compared to 30.2% of blacks (see Figure 3).

Figure 3 Adults Who Have Ever Been Told by a Health Professional They Had High Blood Cholesterol by Gender and Race, Duval County, 2007



Source: Behavioral Risk Factor Surveillance System, 2007
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, October 2008

Table 3

Indicator	Duval County	Florida	U.S.
Percent of adults who have been told by a health professional they had high blood cholesterol	35.6%	37.1%	37.5%

Source: Behavioral Risk Factor Surveillance System, 2007

Sources:

[1] Division for Heart Disease and Stroke Prevention, National Center for Chronic Disease Prevention and Health Promotion, http://www.cdc.gov/Cholesterol/

[2] Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance, http://www.cdc.gov/DHDSP/library/pdfs/fs_cholesterol.pdf

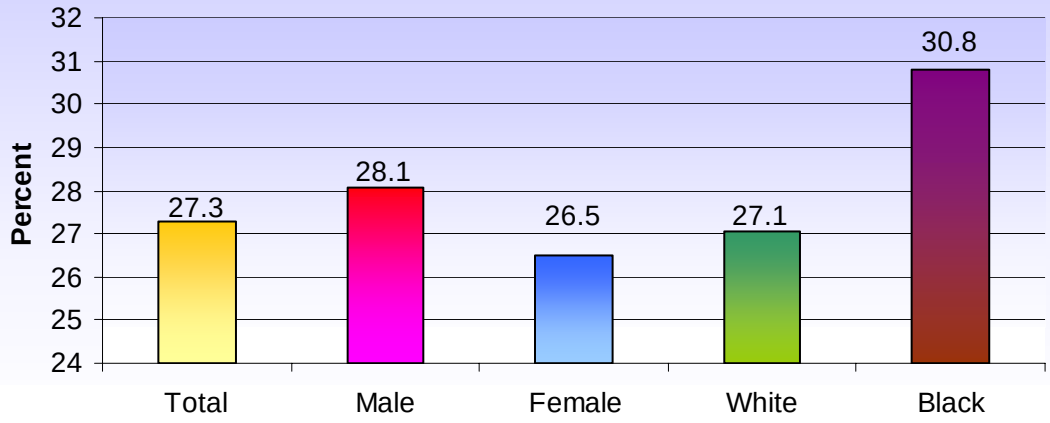
[3] National Heart Lung and Blood Institute, Diseases and Conditions Index, High Blood Cholesterol,http://www.nhlbi.nih.gov/health/dci/Diseases/Hbc/HBC_WhatIs.html

HYPERTENSION MORBIDITY

Blood pressure is a measure of the force of blood pushing against the walls of the arteries when the heart pumps blood out.[1] It is reported as two numbers, systolic pressure and diastolic pressure. When systolic blood pressure is greater than or equal to 140 mmHg and/or diastolic pressure is greater than or equal to 90 mmHg, then the blood pressure is considered to be "high." High blood pressure is also called "hypertension."

Figure 4

Adults Who Have Ever Been Told by a Health Professional They Have High Blood Pressure by Gender and Race, Duval County, 2007



Source: Behavioral Risk Factor Surveillance System, 2007
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, October 2008

In the U.S., approximately 1 out of 3 adults have hypertension with 30% of those people not knowing they have it.[2] In Duval County, 27.3% of adults have been diagnosed with hypertension according to the BRFSS (see Table 4). Over 30% of blacks had hypertension compared to 27.1% of whites. Also, slightly more males than females had been diagnosed with hypertension (see Figure 4). Those 65 years and older in Duval county were more likely to have high blood pressure when compared to adults in the same age group in the state. Residents of Health Zone 5 had the highest percent of individuals with hypertension (33.6%) followed closely by those in Health Zone 1 with 33.4% of adults having a history of diagnosed hypertension. In Health Zone 3, 21.8% of adult residents had hypertension (see Figure 9).

Emergency room (ER) visits where hypertension is the primary diagnosis is considered an ambulatory care sensitive condition (ACSC). ACSCs are medical problems that are potentially preventable and do not require hospitalization or emergency care with proper treatment and management of care, which are most often associated with access to care limitations. In 2006, nearly 2,500 emergency room visits in the county were attributed to hypertension which equated to a rate of 282.2 per 100,000 residents. The same year there were 471 hospitalizations because of hypertension at a rate of 53.3 per 100,000.

Due to the fact people with hypertension can be asymptomatic, the condition has been called the "silent killer." It significantly increases a person's chance of developing heart disease, stroke, and other serious conditions.[3] Fortunately, hypertension is easily detectable and usually able to be controlled through life style changes such as increasing physical activity.[2]

Table 4

Indicator	Duval County	Florida	U.S.
Percent of adults who have been told by a health professional they had high blood pressure	27.3%	28.2%	27.5%

Source: Behavioral Risk Factor Surveillance System, 2007

Sources:

[1] National Heart Lung and Blood Institute, Diseases and Conditions Index, High Blood Pressure, http://www.nhlbi.nih.gov/health/dci/Diseases/Hbp/HBP_WhatIs.html

[2] Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System,http://www.cdc.gov/dhdsp/library/pdfs/fs_hbp.pdf

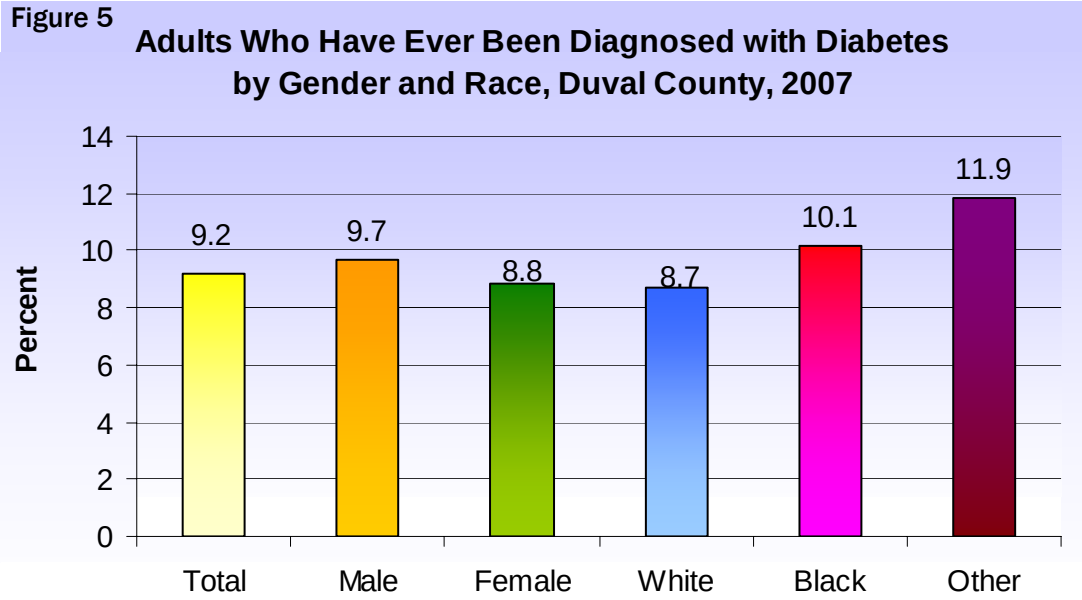
[3] Division for Heart Disease and Stroke Prevention, National Center for Chronic Disease Prevention and Health Promotion,http://www.cdc.gov/bloodpressure/index.htm

DIABETES MORBIDITY

Diabetes mellitus is a group of diseases characterized by high levels of blood sugar. It is a primary cause of cardiovascular disease, kidney disease, blindness, and lower extremity amputations.[1] Over 20 million Americans have diabetes and nearly 30% of those people are unaware that they have it.[1]

There are two major types of diabetes mellitus. Type 1 was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes. The other type, Type 2, is commonly called non-insulin dependent diabetes mellitus (NIDDM) or adult-onset diabetes.

Figure 5



*Other race includes: Asian, Native Hawaiian or Pacific Islander, American Indian or Alaska Native

Source: Behavioral Risk Factor Surveillance System, 2007 Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, October 2008

Accounting for roughly 90% - 95% of all diagnosed cases of diabetes,[2] Type 2 diabetes is often related to older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity, and race/ethnicity. Common treatment for Type 2 diabetes includes meal planning for blood sugar control, weight loss, high blood pressure control and exercise.

There are many complications of diabetes. Diabetes deaths in which complications are present are also called diabetes-related deaths. In 2007, in Duval County, the rate of diabetes deaths where diabetes was the primary cause of death was 32.4 per 100,000; the rate for diabetes related deaths, which includes deaths where diabetes was the primary causes of death in addition to deaths which list diabetes as a contributing cause or other significant condition, was 74.3 per 100,000. Heart disease and stroke account for about 65% of deaths in people with diabetes.[3] High blood pressure is another complication of diabetes and in most cases most people with diabetes have high blood pressure. Other complications include blindness, kidney disease, nervous system disease, amputations, and dental disease, all of which can be prevented in most cases.

As with uncontrolled hypertension, ER visits where diabetes is the primary diagnosis is also considered an ambulatory care sensitive condition (ACSC). The ER rate for diabetes was 180 per 100,000 in 2006.

The total direct and indirect cost of diabetic care in the United States is over 130 billion. Diabetes costs can be reduced drastically through comprehensive primary or even secondary prevention.

Local prevalence data for diabetes is limited. However, 9.2% of adults in Duval

(continued on page 11)

Table 5

Indicator	Duval County	Florida	U.S.
Percent of adults who have been diagnosed with Diabetes	9.2%	8.7%	8.1%

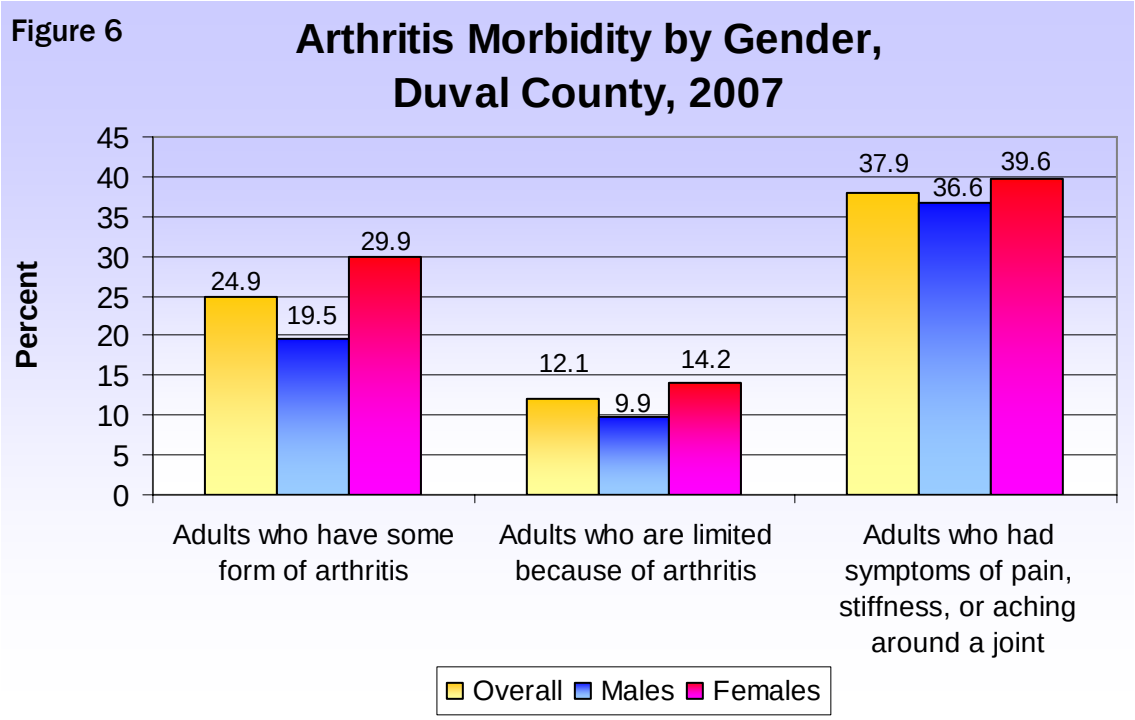
Source: Behavioral Risk Factor Surveillance System, 2007

ARTHRITIS MORBIDITY

The term "arthritis" refers to inflammation around the joint. Arthritis actually makes up about 100 different rheumatic diseases and conditions that affect joints, the tissues that surround the joint and other connective tissue. The pattern, severity, and location of symptoms can vary depending on the specific form of the disease. Rheumatic conditions are typically distinguished by pain and stiffness in and around one or more joints.[1] National data shows 21.6% of adults have self-reported doctor-diagnosed arthritis and 8.8% of all adults have arthritis-attributable activity limitation. In addition, the age-adjusted prevalence in women is significantly higher than in men (24.4% vs. 18.1%). Arthritis prevalence also shows an increase with age and is higher among women than men in every age group.[2] Data from the Duval County BRFSS reveal similar trends with 24.4% of adults having been told they have some form of arthritis (see Table 6). The rate for females with arthritis was 34.8% higher than for males. Twelve percent of Duval County residents are limited in some way in performing usual activities because of arthritis or chronic joint pain. Women are also more likely to be limited with 14.2% reporting a limitation compared to 9.9% of men. More than one-third of Duval County residents have had symptoms of pain, stiffness, or aching around a joint, potentially indicating a larger percentage of people have arthritis than have been diagnosed (see Figure 6).

Differences by race for adults who have been told they have some form of arthritis is not notable. Whites have a slightly higher percentage with 25.8% compared to 23.1% of blacks.

Figure 6



Source: Behavioral Risk Factor Surveillance System, 2007
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, October 2008

Sources:
[1]Centers for Disease Control and Prevention, http://www.cdc.gov/arthritis/arthritis/index.htm
[2]Hootman J, Bolen J, Helmick C, Langmaid G. Prevalence of doctor-diagnosed arthritis and arthritis-attributable activity limitation—United States, 2003-2005. *MMWR,* 2006;55(40):1089–1092.

Table 6 Indicator	Duval County	Florida	U.S.
Percent of adults who have been told they have some form of arthritis	24.9%	24.3%	27.5%

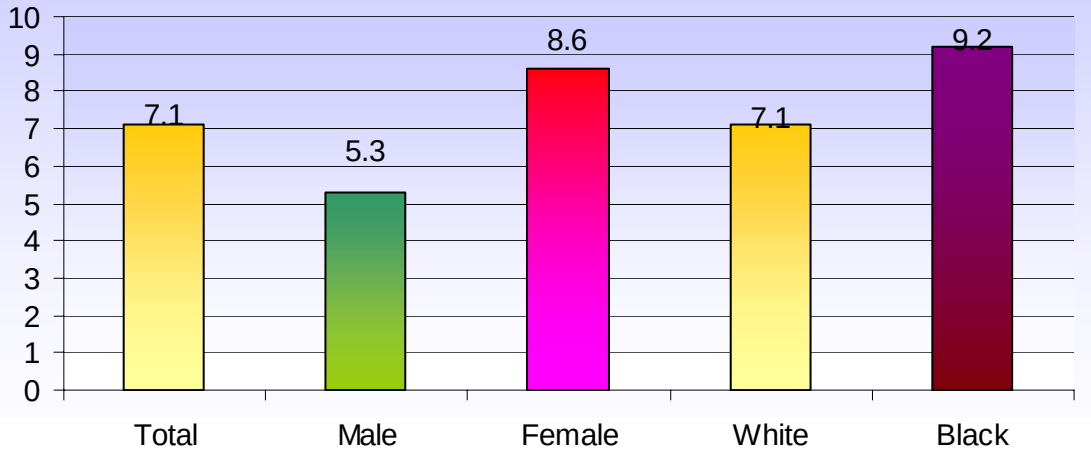
Source: Behavioral Risk Factor Surveillance System, 2007

ASTHMA MORBIDITY

Asthma related morbidity and mortality continues to increase despite advances in our understanding of bronchial asthma and the availability of improved diagnostic and treatment options. Asthma has emerged as one of the most common chronic illnesses of childhood, and is a leading cause of school absenteeism and hospitalization in children. Over the last three decades asthma has emerged as a growing public health concern. National data from the 2005 National Interview Survey (NIS) show an estimated 7.7% of people currently have asthma.[1] Prevalence among blacks, American Indians, and Alaska Natives was 25% higher than whites. There is variation in the prevalence rate among racial and ethnic groups, which likely reflects differences in genetic, environmental, social and cultural influences. The 2005 NIS found the prevalence of asthma to be 7.6% in whites and 9.9% in blacks.

Figure 7

Adults Who Currently Have Asthma by Gender and Race, Duval County, 2007



Source: Behavioral Risk Factor Surveillance System, 2007
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, October 2008

The prevalence among whites has remained relatively unchanged since 2001, but has increased 15% in blacks. Prevalence rates were higher in children, as well as in inner city and economically disadvantaged populations (see Figure 12).[1]

While asthma related mortality data in Duval County is not reliable due to small numbers, emergency room (ER) and BRFSS data is notable. The rate for asthma related ER visits in 2006 was 538.3 per 100,000. As noted with hypertension and diabetes, asthma is considered an ACSC. Females were more likely to visit the ER due to asthma than males and blacks were more likely to visit the ER for asthma than whites.

In addition, BRFSS data reveals that 7.1% of Duval County residents currently have asthma. This rate is 14.5% lower than for Florida but also 14.5% higher than for the United States (see Table 7). Similar to ER visits, disparities are notable in terms of asthma related morbidity. The rate for females with asthma was 62.3% higher than for males and the rate for blacks was 29.6% higher than for whites (see Figure 7).

BRFSS data for asthma shows differences by-geographic areas of the county. (see Figure 8). Data reveals the rate of adults diagnosed with asthma is highest in Health Zone 1 (17.2%). This rate is 129.3% higher than the next highest Health Zone, Health Zone 4

(continued on page 9)

Table 7

Indicator	Duval County	Florida	U.S.
Percent of adults who have been told by a health professional they had asthma	13.2%	10.7%	13.1%
Percent of adults who currently have asthma	7.1%	8.3%	6.2%

Source: Behavioral Risk Factor Surveillance System, 2007

Asthma Morbidity (Continued from page 8)

(7.5%). Secondary prevention of asthma attacks is critical to prevent hospitalization and death. Preventing an asthma attack or exacerbation begins with recognition of the early symptoms followed by early treatment. Adults and older children with asthma can manage milder exacerbations at home.[2] Asthmatics may be able to avoid unnecessary hospital visits through self-monitoring of symptoms and lung functioning and with proper medication or treatment.[3] Likewise, through avoidance of particular environmental exposures such as tobacco smoke, pet dander, and household dust, an asthmatic may be able to avoid missing work, school, or running to the emergency room.[4]

Sources:

[1] National Center for Health Statistics, National Health Interview Survey, Centers for Disease Control and Prevention, 2005

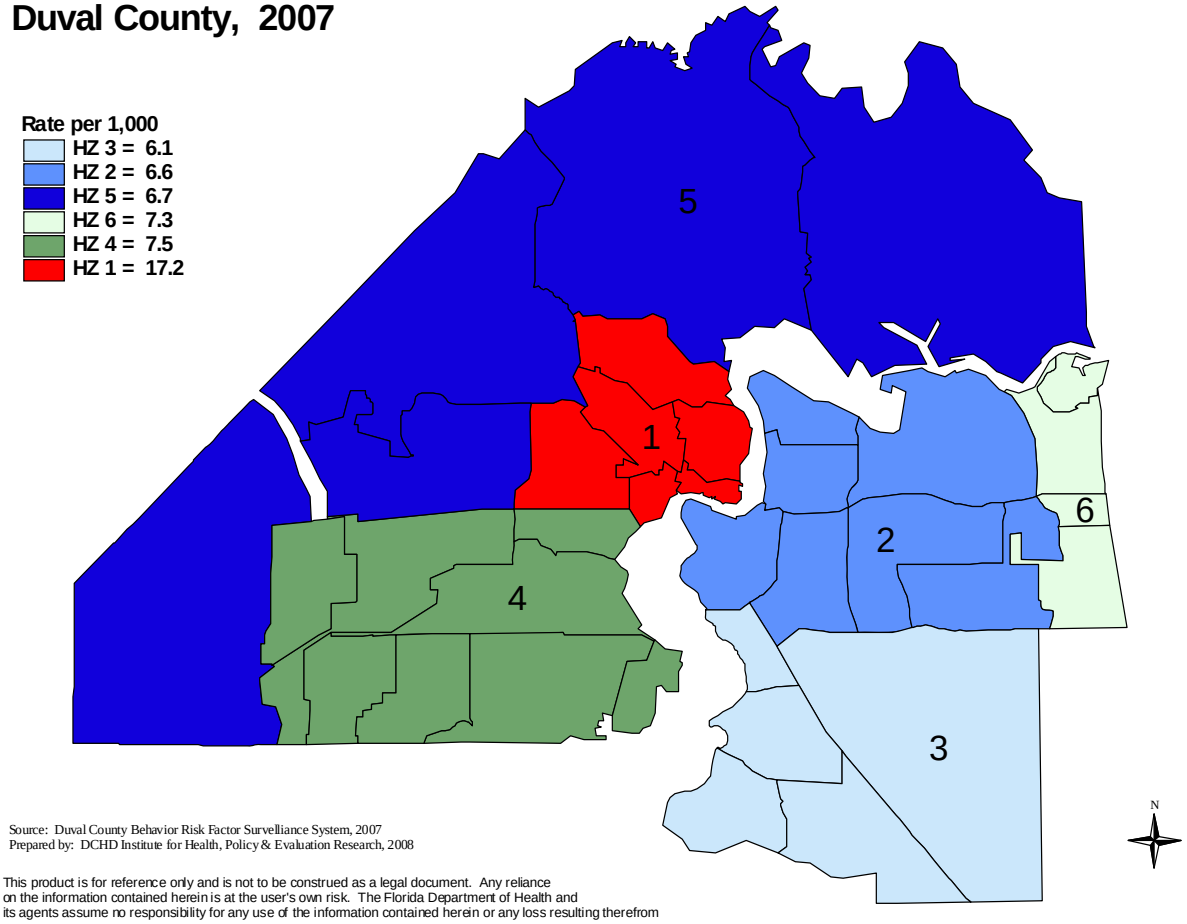
[2] National Asthma Education and Prevention Program Panel. (2007). Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma. National Heart, Lung, and Blood Institute. www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf

[3] Mayo Clinic. (2006). Asthma: Causes. htttp://www.mayoclinic.com/health/asthma/DS00021/DSECTION=3

[4] Joseph, C.L.M., William, L.K., Ownby, D.R., Saltzgaber, J., Johnson, C.C. (2006). Applying epidemiologic concepts of primary, secondary, and tertiary prevention to the elimination of racial disparities in asthma.

Figure 8

Percent of Adults Diagnosed With Asthma by Health Zone, Duval County, 2007



Source: Duval County Behavior Risk Factor Surveliance System, 2007
Prepared by: DCHD Institute for Health, Policy & Evaluation Research, 2008

Socioeconomic Status and Morbidity

Poor health has been identified as one of the major problems associated with low income. Income allows for meeting health related needs and enables healthier choices. Income also allows people to purchase goods and services, such as health care, healthy housing, or a car to drive to work.[1] Lack of money prevents people from getting regular health screenings, exercising and eating nutritiously. Often low socioeconomic status (SES) does not allow for savings to cover expenses related to an emergency or catastrophic illness. Without financial reserves people with low incomes find themselves in more stressed situations leading to more health problems. This kind of instability can also lead to homelessness.[1] In addition, better educated people have fewer health problems, tend to live longer and have less disease than those with lower education levels.[1] The mechanisms by which education influences health are complex and are likely to include (but are not limited to) interrelationships between demographic and family background indicators, effects of poor health in childhood, greater resources associated with higher levels of education, a learned appreciation for the importance of good health behaviors, and one's social networks.[2]

Data from the 2007 BRFSS reveals a significant difference between those with annual incomes less than $25,000 and those who make $50,000 or more across all selected morbidities except for high blood pressure (see Table 8). The most notable differences in chronic disease morbidity are seen in stroke where those with lower incomes are 6 times more likely to have had a stroke than those with higher incomes and heart disease where those with lower incomes are almost 4 times more likely to have had a heart attack or been diagnosed with coronary heart disease (CHD) than those with higher incomes.

There was only one significant difference found in regard to education. Data indicates that those with less than a high school education are significantly more likely to have had a heart attack or be diagnosed with CHD than those with 4 or more years of college education. Although not statistically significant, the rates for the selected morbidities are higher in those with less education, except for asthma.

Sources:

[1]Bell, J. and V. Rubin, Why Place Matters: Building a Movement for Healthy Communities, PolicyLink.org, 2007.

[2]David M. Cutler, Policy Brief #9: Education and Health, National Poverty Center, 2007

Table 8

Income and Education Level by Selected Morbidities, Duval County, 2007

	Arthritis	Asthma	Stroke	Heart Attack / Coronary Heart Disease (CHD)	High Blood Cholesterol	High Blood Pressure	Diabetes
	Income Level						
Annual Income less than $25,000	33.4*	13.4*	4.5*	13.7*	42.0	41.2*	16.6*
Annual Income $50,000 or more	19.8*	5.6*	0.7*	3.7*	32.1	21.8*	5.7*
	Education Level						
Education less than high school	28.4	6.1	5.2	16.8*	45.7	35.4	19.0
4 or more years of college	23.1	7.2	2.2	6.8*	34.4	25.7	8.0

*Indicates a statistically significant difference. Statistical significance was determined using 95% confidence intervals. Confidence Intervals provide statistical markers to gauge real trends verses differences that are more likely to reflect insignificant variation of data from year to year or between groups.

Heart Disease & Stroke

(continued from page 3)

serious long-term morbidity. A wide range of disability can result including chronic pain, paralysis, and cognitive problems. Like heart disease, alterable risk factors for stroke include high blood pressure, high cholesterol, smoking and diabetes. Heart disease itself is also a risk factor for stroke.[6]

According to the BRFSS, 2.7% of adults in Duval County had a prior history of stroke. More women than men had previously experienced a stroke with a prevalence of 3.1% compared to 2.3%. Approximately 2.8% of whites had a history of stroke compared to 2.2% of blacks. Locally in 2006, the rate of emergency room visits attributed to stroke was 39.1 per 100,000 of the population and the hospitalization rate was 327 per 100,000. The following year, 2007, 5% of all deaths in Duval county were due to stroke.

Sources:

[1] National Center for Health Statistics, Health, United States, 2007 with Chartbook on Trends in the Health of Americans, http://www.cdc.gov/nchs/data/hus/hus07.pdf; [2] Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, http://www.cdc.gov/DHDSP/ library/pdfs/fs_heart_disease.pdf; [3] Centers for Disease Control and Prevention, Heart Disease, http://www.cdc.gov/heartdisease/index.htm; [4] Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report, Racial/Ethnic and Socioeconomic Disparities in Multiple Risk Factors for Heart Disease and Stroke United States, 2003, http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5405a1.htm; [5] Division for Heart Disease and Stroke Prevention, National Center for Chronic Disease Prevention and Health Promotion, http://www.cdc.gov/DHDSP/library/pdfs/fs_stroke.pdf; [6] National Institute of Neurological Disorders and Stroke, U.S. Department of Health and Human Services, Know Stroke, http://www.stroke. ninds.nih.gov/documents/ninds_ks_english_4x9_brochure.pdf

Diabetes Morbidity

(continued from page 6)

County have been diagnosed with diabetes (see Table 5). The rate of diabetes for males is 9.3% higher than for females. People identified as "other" race have the highest rate with 11.9% followed by blacks with 10.1% (see Figure 5). In addition, the diabetes prevalence rate in Duval County was 5.4% higher than for Florida and 12% higher than for the United States. Disparities also exist in terms of geographic location. Duval County residents living in Health Zone 5 have the highest rate of diabetes with 15.4% followed by Health Zone 1, with 14.3% (see Figure 1).

Sources:

[1]CDC. National Diabetes Fact Sheet United States, 2005; [2]http://www.cdc.gov/diabetes/pubs/factsheet05.htm; [3]http://www.cdc.gov/diabetes/pubs/factsheet05.htm

Acknowledgements

Contributions to this report of the following individuals for their knowledge and support is acknowledged:

Advisor:

David Wood, MD, MPH, Associate Professor of Pediatrics, Co-Director, Center for Health Equity and Quality Research (CHEQR)

Director, JaxHATS: Jacksonville, Health And Transition Services, University of Florida, College of Medicine-Jacksonville, Department of Pediatrics

Katryne Lukens-Bull, MPH, Research Administrator, University of Florida, Office of Research Affairs

Editor:

Rebecca T. Filipowicz, MPH, MS, CHES, Coordinator, Center for Health Statistics, Institute for Health, Policy and Evaluation Research, DCHD

Assistant Editor and Data Analyst:

Elena Reuter, MPH, Research Assistant, Center for Health Statistics, Institute for Health, Policy and Evaluation Research, DCHD

Editorial Review:

Thomas Bryant III, MSW, Administrator, Institute for Health, Policy and Evaluation Research, DCHD

William Livingood, Ph.D. Director, Institute for Health, Policy and Evaluation Research, DCHD

Kathleen Stansell, Administrative Assistant, Institute for Health, Policy and Evaluation Research, DCHD

Statistical and Mapping Analysts:

Morris Jackson, M.P.A. Research Assistant, Center for Health Statistics, Institute for Health, Policy and Evaluation Research, DCHD

Luminita Razaila, M.S. Research Associate, Center for Health Statistics, Institute for Health, Policy and Evaluation Research, DCHD

Center for Health Statistics Study

Duval County Health Department
Institute for Health, Policy & Evaluation Research
900 University Blvd. North, Suite 604 (MC-99)
Jacksonville, Florida 32211

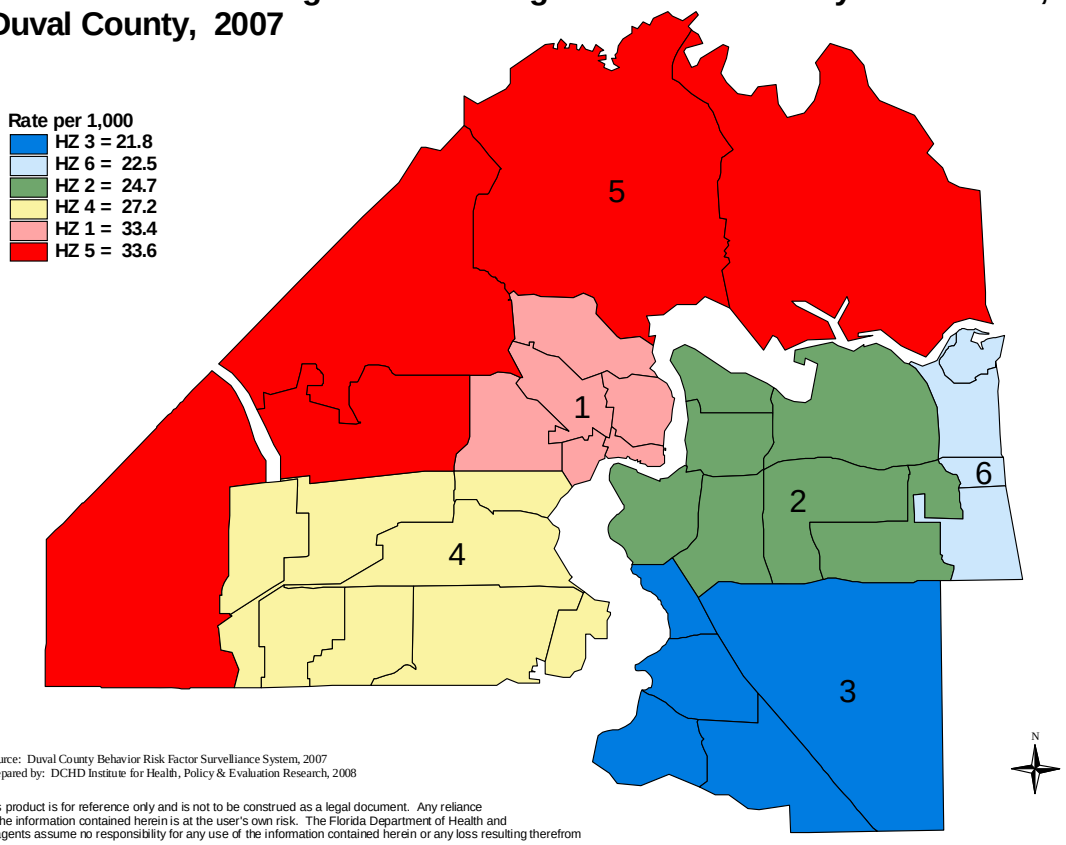
Phone: 904-253-1370
Fax: 904-253-2480

If you would like to receive this report by email, please send an email to **DCHD_DataReports@doh.state.fl.us**

Visit our website!
www.dchd.net

Figure 9

Percent of Adults Diagnosed With High Blood Pressure by Health Zone, Duval County, 2007



Source: Duval County Behavior Risk Factor Surveillance System, 2007
Prepared by: DCHD Institute for Health, Policy & Evaluation Research, 2008