

## 2007 Georgia Program and Data Summary:

# CARDIOVASCULAR DISEASE



Cardiovascular disease is the **leading cause of death** in Georgia.

Cardiovascular disease (CVD) includes all diseases of the heart and blood vessels including ischemic heart disease, stroke, congestive heart failure, hypertension, and atherosclerosis. Currently, Georgia is taking a comprehensive approach to reducing illness, premature death, and disability from heart disease and stroke through three distinctive interventions: the



Cardiovascular Health Initiative; the Stroke and Heart Attack Prevention Program (SHAPP); and the Paul Coverdell Stroke Registry.

Funded by the Centers for Disease Control and Prevention (CDC), the **Cardiovascular Health Initiative (CVHI)** is part of a national effort to address heart disease and stroke prevention. The CVHI seeks to improve cardiovascular outcomes by employing strategies that result in system, policy and/or environmental change in four areas: healthcare, worksites, communities and schools.

The Initiative includes a focus on high blood pressure and cholesterol control, awareness of signs and symptoms of heart attack and stroke, improving emergency response, improving quality of care and eliminating health disparities between population groups. Because heart disease and stroke are also related to poor nutrition, physical inactivity, tobacco use, diabetes, and obesity, the Cardiovascular Health Initiative collaborates with other chronic disease prevention programs that specifically address these issues.

Some of our current awareness efforts include: **National Wear Red Day**. National Wear Red Day is a day when Americans nationwide wear red to show their support for women's heart disease awareness.



Annually, the Georgia CVHI makes more than 15 awards totaling approximately \$200,000 available to public health districts to implement population-based interventions at the local level that result in sustainable environmental and system changes.

Each year more than 700,000 Americans suffer from a stroke: about 25% of them die, and 15-30% remain permanently disabled. In response to this urgent public health need, Congress provided funding to implement state-based registries that measure, track, and improve the delivery and quality of stroke care. Congress further directed that this project be named the **Paul Coverdell Acute Stroke Registry**, in honor of the late U.S. Senator Paul Coverdell of Georgia, who suffered a fatal stroke in 2000 while serving in Congress. In June 2004, Georgia became one of four states funded to implement a registry. The mission is to establish a statewide registry with a sample of acute care hospitals in Georgia to monitor and improve the quality of acute stroke care. The stroke registry team works closely with hospitals to establish policies and procedures that will assist hospitals in successfully improving stroke care.

Funded in part by the Georgia General Assembly since 1974, the **Stroke and Heart Attack Prevention Program (SHAPP)** is an awareness, detection, treatment, and control program that targets low-income, uninsured, or underinsured patients with uncontrolled high blood pressure. The goal of the program is to reduce morbidity and mortality from cardiovascular disease associated with high blood pressure. SHAPP employs a population-based and clinical approach that allows for partnerships between public and private health care providers. This approach includes the coordination of medication and lifestyle modifications. SHAPP treatment clinics are not established in every county; however, its services are usually available in a nearby county within the same public health district. In 2005, an in-depth evaluation conducted by the Research Triangle Institute concluded that SHAPP is a successful, cost-effective program targeting an unfulfilled need for the state of Georgia.

## DEFINITIONS

**Atherosclerosis:** the hardening and narrowing of the arteries caused by deposits of cholesterol and other substances.

**Blood Pressure:** the force of the blood against artery walls. A blood pressure consists of systolic pressure measurement and diastolic pressure measurement.

**Cardiovascular Disease (CVD)** includes all diseases of the heart and blood vessels, including ischemic heart disease, stroke, congestive heart failure, hypertensive disease, and atherosclerosis.

**Diastolic Pressure:** blood pressure measurement between contractions, when the heart chambers are filling with blood.

**Hemorrhage:** severe bleeding.

**Hypertension:** high blood pressure, which is defined as above the 140/90 threshold.

**Infarct:** an area of dead tissue resulting from insufficient blood flow.

**Ischemic Heart Disease (IHD)** also known as coronary heart disease, refers to narrowing of the coronary arteries, which reduces blood flow and oxygen to the heart. IHD includes myocardial infarction (MI) and complications from a previous MI.

**Myocardial Infarction:** also known as a heart attack, occurs when the heart muscle is damaged due to insufficient coronary blood supply.

**Stroke (Cerebrovascular Disease):** refers to an infarct or hemorrhage in the brain.

**Systolic Pressure:** blood pressure measurement during contraction of the heart, when blood is pushed through the arteries.

**Thrombus:** a clot that blocks blood flow in an artery or vein.

## CARDIOVASCULAR DISEASE (CVD) BURDEN

### DEATHS

- CVD accounted for one third (**34%**) of deaths in Georgia, with **21,873** CVD deaths in 2005.
- In 2004, Georgia's CVD death rate was **13% higher** than the national rate.

<b>Causes</b>	<b># GA Deaths (2005)</b>
Heart Disease	16,365
Stroke	3,793
Hypertension	1,028
Atherosclerosis	303
Other	384

**Cardiovascular Disease Deaths (total) 21,873**

### HOSPITALIZATIONS

- Approximately **142,000** hospitalizations occurred among Georgia residents due to CVD in 2005.
- The average hospitalization length of stay for CVD was **5 days** in 2005.

### ESTIMATED COSTS

- The average charge per CVD hospitalization in Georgia was **\$28,700** in 2005.
- Total hospital charges for CVD increased by over **\$1.6 billion** between 2001 and 2005, from **\$2.5 billion** to **\$4.1 billion**.
- The cost of CVD in Georgia in 2005 is estimated at **\$9.8 billion**, which includes direct health care costs and lost productivity from morbidity and mortality (indirect costs).<sup>1</sup>

<sup>1</sup>Derived from national estimates published by the American Heart Association. *Heart Disease and Stroke Statistics- 2004 Update*. Dallas, TX: American Heart Association; 2004.

## STROKE BURDEN

### DEATHS

- Stroke was the third most frequent cause of death in Georgia, accounting for **6%** of all deaths, with **3,793** stroke deaths in 2005.
- In 2005, strokes were responsible for **17%** of all cardiovascular deaths in Georgia.
- In 2004, Georgia's stroke death rate was **21% higher** than the national rate.

<u>Stroke Death Type</u>	<u># GA Deaths (2005)</u>
Sequelae	401
Subarachnoid hemorrhage	158
Other hemorrhage	775
Occlusion	147
Acute, ill-defined	2,119
Other, ill-defined	193
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<b>Stroke Deaths (total)</b>	<b>3,793</b>

### HOSPITALIZATIONS

- Approximately **22,600** hospitalizations occurred among Georgia residents due to stroke in 2005.
- The average hospitalization length of stay for stroke was **5 days** in 2005.

### ESTIMATED COSTS

- The average charge per stroke hospitalization in Georgia was **\$24,500** in 2005.
- Total hospital charges for stroke in Georgia were **\$555 million** in 2005.
- The cost of stroke in Georgia in 2005 is estimated at **\$1.4 billion**, which includes direct health care costs and lost productivity from morbidity and mortality (indirect costs).<sup>1</sup>

## ISCHEMIC HEART DISEASE (IHD) BURDEN

### DEATHS

- Heart disease was the leading cause of death in Georgia, accounting for **25%** of all deaths, with **16,365** heart disease deaths in 2005. Of the deaths due to heart disease, **8,446** were attributable specifically to ischemic heart disease (IHD).
- In 2005, IHD was responsible for **52%** of all heart disease deaths in Georgia.
- In 2004, Georgia's IHD death rate was **14% lower** than the national rate.

<u>Heart Disease Type</u>	<u># GA Deaths (2005)</u>
Ischemic Heart Disease	8,446
Hypertensive Heart Disease	1,028
Other Heart Disease	6,891
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<b>Heart Disease Deaths (total)</b>	<b>16,365</b>

### HOSPITALIZATIONS

- Approximately **47,261** hospitalizations occurred among Georgia residents due to IHD in 2005.
- The average hospitalization length of stay for IHD was **4 days** in 2005.

### ESTIMATED COSTS

- The average charge per IHD hospitalization in Georgia was **\$35,700** in 2005.
- Total hospital charges for IHD in Georgia were **\$1.7 billion** in 2005.
- The cost of IHD in Georgia in 2005 is estimated at **\$2.5 billion**, which includes direct health care costs and lost productivity from morbidity and mortality (indirect costs).<sup>1</sup>

# CARDIOVASCULAR DISEASE DISPARITIES

## SEX

- CVD death rates were **1.4 times higher** for men than women in 2005.
- Stroke death rates were **similar** for men and women in 2005.
- IHD death rates were **1.8 times higher** for men than women in 2005.

## RACE

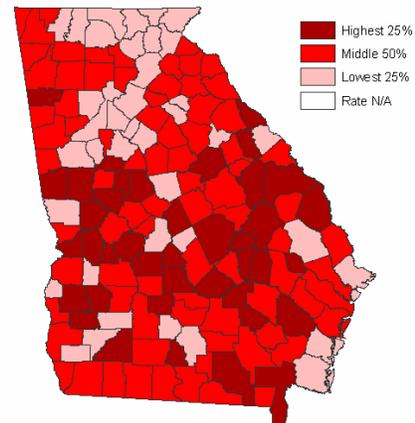
- CVD death rates were **1.3 times higher** for blacks than whites in 2005.
- Stroke death rates were **1.4 times higher** for blacks than whites in 2005.
- IHD death rates were **similar** for blacks and whites in 2005.

## AGE

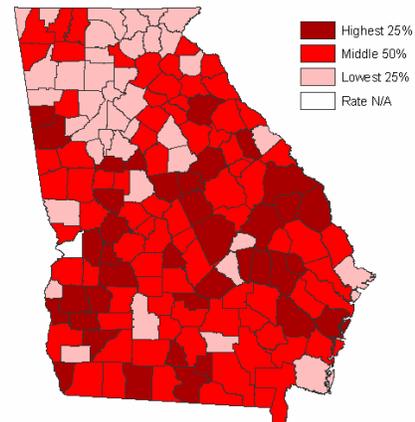
- CVD death rate increases with age but **1 in 4** persons who died from CVD in 2005 was less than 65 years of age.
- Black males are at particularly high risk for premature death from CVD. Almost **1 in 2** black males who died from CVD in 2005 was less than 65 years of age.
- **20%** of persons dying from stroke in Georgia in 2005 were less than 65 years old.
- **26%** of persons dying from IHD in Georgia in 2005 were less than 65 years old.

## GEOGRAPHIC

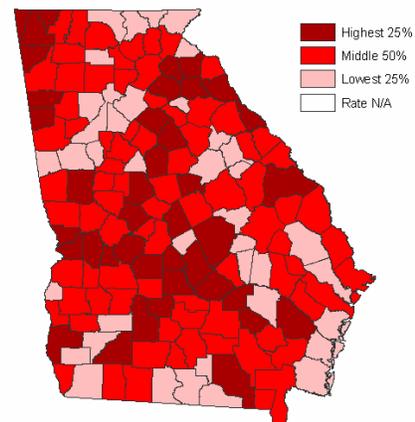
### CVD Death Rates by County, Georgia, 2000-2005



### Stroke Death Rates by County, Georgia, 2000-2005



### IHD Death Rates by County, Georgia, 2000-2005



# CARDIOVASCULAR DISEASE RISK FACTORS

## SMOKING

- **3,696** deaths due to CVD were attributable to smoking among adults ages 35 or older in 2005.
- Quitting smoking greatly reduces the risk for heart disease and stroke.
- In Georgia, **20%** of adults reported smoking cigarettes in 2006.

## LACK OF PHYSICAL ACTIVITY

- Lack of physical activity increases the risk for heart disease and stroke.
- Regular physical activity helps to maintain proper body weight and improves health.
- In 2005, **58%** of adults in Georgia did not meet the Centers for Disease Control's recommendations for physical activity.

## POOR EATING HABITS

- Poor eating habits such as a high-fat diet can lead to obesity, ischemic heart disease, stroke and other chronic diseases.
- Eating five or more servings of fruits and vegetables a day can help prevent heart disease, cancer, and other chronic conditions.
- The majority (**77%**) of adults in Georgia did not consume the recommended five or more daily servings of fruits and vegetables in 2005.

## OBESITY

- Obesity, which is present in **27%** of adults in Georgia, increases the risk for cardiovascular disease.

## HIGH BLOOD PRESSURE

- High blood pressure can be controlled through lifestyle changes such as physical activity and healthy diet and, if necessary, medications.
- The percentage of adults in Georgia who have been told that they have high blood pressure increased from 20% in 1995 to **27%** in 2005.

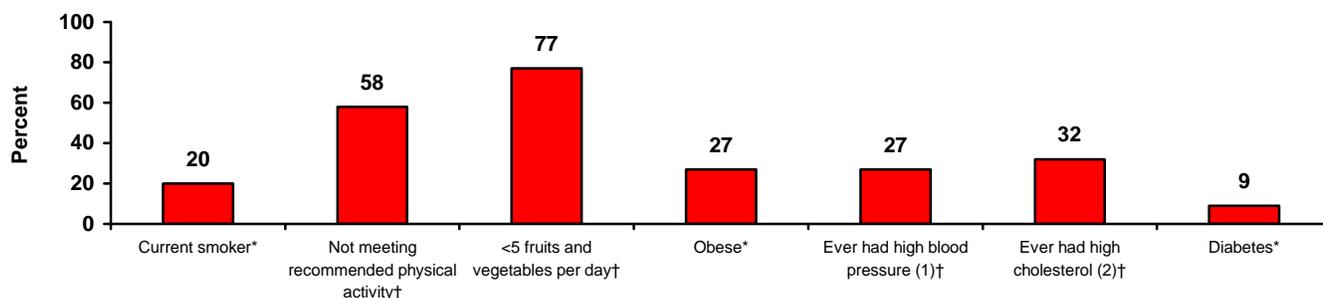
## HIGH CHOLESTEROL

- Many people can control high cholesterol by modifying their diet. For those who cannot, medication can lower blood cholesterol levels.
- The percentage of adults in Georgia who have been told that they have high cholesterol increased from 22% in 1995 to **32%** in 2005.

## DIABETES

- Diabetes can cause atherosclerosis, also known as hardening of the arteries.
- Diabetes increases the risk for CVD death.
- The percentage of adults who report having diabetes increased from 4% in 1995 to **9%** in 2006.

Prevalence of risk factors for cardiovascular disease among adults, Georgia, 2005 and 2006



(1) The percentage of Georgians who reported having been told they had high blood pressure

(2) Of persons who had their blood cholesterol level checked, the percentage told that they have high cholesterol

\* Data Source: Georgia Behavioral Risk Factor Surveillance System 2006

† Data Source: Georgia Behavioral Risk Factor Surveillance System 2005

# Stroke and Heart Attack Prevention Program (SHAPP)

**SHAPP is an awareness, detection, treatment, and control program that targets low-income, medically indigent patients who have or are at risk for hypertension.**

## OVERVIEW

- Funded by the Georgia General Assembly since 1974.
- An education and direct service program targeting low-income, uninsured, or underinsured patients with high blood pressure.
- The program seeks to identify people at risk and to teach them how to manage their lifestyle to prevent complications and avoid further illness.
- An in-depth evaluation conducted by the Research Triangle Institute for the Centers for Disease Control and Prevention concluded that SHAPP is a successful, cost-effective program targeting an unfulfilled need for the state of Georgia.<sup>2</sup>

## THE ROLE OF HIGH BLOOD PRESSURE MANAGEMENT IN STROKE AND HEART ATTACK PREVENTION

- Blood pressure is defined as “controlled” if the systolic and diastolic readings are below 140 and 90 mm Hg, respectively.
- Some people can control their high blood pressure by losing weight and engaging in physical activity.
- For those who are unable to decrease their blood pressure by lifestyle modification alone, medications prescribed by a physician can often control high blood pressure successfully.
- Adults with increased blood pressure have reduced life expectancy as well as more time spent living with cardiovascular disease. Life expectancy for those with controlled blood pressure is 5.1 years longer for men and 4.9 years longer for women compared to those with uncontrolled blood pressure.<sup>3</sup>

## SHAPP CLINICS

- There are **137** SHAPP clinics throughout Georgia.
- SHAPP clinics are present in **16** of the 18 health districts.

## SHAPP PATIENT DEMOGRAPHICS

- **15,718** patients were served by SHAPP during the 2006 fiscal year.
- **55%** of the patients were African American.
- **74%** of patients were less than 65 years old.

## SHAPP CONTROL RATES

- SHAPP clinics have varying blood pressure control rates, ranging from 52% to 84% with a median control rate for all clinics of **65%**.
- Private health plans in Georgia had a range of control rates from 47% to 68% with a median control rate of **60%** for patients treated in a private setting.<sup>4</sup>
- Nationally, **53%** of patients undergoing treatment for high blood pressure are controlled.<sup>5</sup>

## SHAPP COSTS

- The annual medication cost is approximately **\$12.76** per patient.
- Clinic visit costs range from **\$20 to \$55** per visit and patients are generally seen on a quarterly basis once blood pressure control is established.

<sup>2</sup>Rein DB, Constantine RT, Orenstein D, Chen H, Jones P, Brownstein JN, et al. A cost evaluation of the Georgia Stroke and Heart Attack Prevention Program. *Prev Chronic Dis* [serial online] 2006 Jan. Available from: URL:[http://www.cdc.gov/pcd/issues/2006/jan/05\\_0143.htm](http://www.cdc.gov/pcd/issues/2006/jan/05_0143.htm).

<sup>3</sup>Franco et al. Blood Pressure in Adulthood and Life Expectancy with Cardiovascular Disease in Men and Women. *Life Course Analysis. Hypertension*.2005; 46: 280-286.

<sup>4</sup>Based on performance indicators on the Health Plan Employer Data and Information Set (HEDIS), implemented by the National Committee for Quality Assurance.

<sup>5</sup>Hajjer, I, Kotchen TA. Trends in Prevalence, Awareness, Treatment, and Control of Hypertension in the United States, 1988-2000. *JAMA* 2003;290:199-206.

# Paul Coverdell Stroke Registry

The **Registry** is named in honor of **Paul C. Coverdell** who served the citizens of Georgia as a soldier, legislator, Peace Corps Director, and **United States Senator** until a massive stroke took his life on July 18, 2000.

## PROGRAM OVERVIEW

- Funded by the Centers for Disease Control and Prevention (CDC) as part of the Paul Coverdell National Acute Stroke Registry.
- Named in honor of the late Senator Paul Coverdell of Georgia who died of a massive stroke in 2000.
- First Established in 2001 as a prototype project involving **46** hospitals in Georgia.
- Full implementation and incorporation into the Georgia Department of Human Resources, Division of Public Health (DHR-DPH) began in 2005.
- Partnership between Georgia DHR-DPH, Emory University, American Heart Association/American Stroke Association, Georgia Medical Care Foundation, Georgia Hospital Association, CDC, and participating hospitals.

## GOALS

- Reduce stroke case fatality, disability due to stroke, and the incidence of recurrent stroke in Georgia by monitoring and improving the quality of acute stroke care in the hospital setting.
- Encourage collaboration between hospitals and between hospitals and other institutions in Georgia relating to stroke care quality improvement.

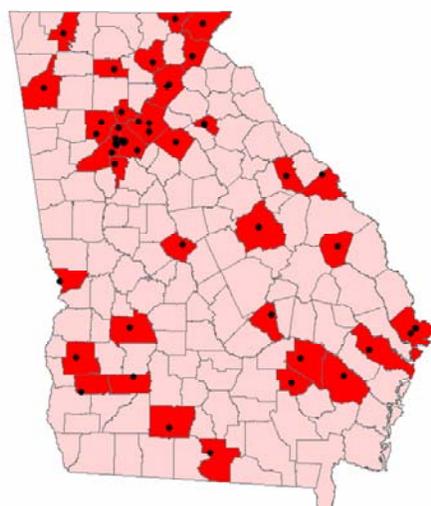
## QUALITY IMPROVEMENT ACTIVITIES

- Individualized hospital consultation by quality improvement consultants.
- Monthly registry-wide telephone conference calls and bimonthly newsletters sharing best practices between hospitals.
- Annual meetings to exchange best practices.
- Acute Stroke Life Support training using curriculum from the University of Miami.
- Focus of participating hospitals' quality improvement efforts during first year was on deep vein thrombosis (DVT) prophylaxis.

## HOSPITAL SAMPLING AND PARTICIPATION

- Randomly selected hospitals invited to participate to represent state as a whole.
- Volunteer hospitals also welcomed to participate.
- **49** currently participating hospitals, representing over half of stroke admissions in Georgia.

### Georgia Coverdell Hospital Locations, July 2007



## DATA COLLECTION

- The purpose of data collection is to monitor the quality of stroke care delivered at hospitals in the state and guide quality improvement efforts.
- Data relating to stroke patient characteristics and care received during the hospital stay are collected by participating hospitals on patients admitted with an acute stroke or transient ischemic attack.
- Data are entered into a Coverdell-modified version of the American Heart Association/American Stroke Association's "Get With the Guidelines" stroke patient management tool.

## REGISTRY STROKE CASE DATA

- Data were received for **5,132** stroke hospitalizations during the first full year of registry operation (11/1/2005 through 10/31/2006).
- Analysis to date includes data from **19** randomly selected hospitals and **7** volunteer hospitals that participated in the registry during year 1.

## KNOW THE SIGNS AND SYMPTOMS OF HEART ATTACK AND STROKE

Heart attack and stroke are life-threatening emergencies. Call 9-1-1 if you experience these symptoms.

### Heart Attack

**Chest discomfort.** Most heart attacks involve discomfort in the center of the chest that lasts more than a few minutes, or that goes away and comes back. It can feel like uncomfortable pressure, squeezing, fullness, or pain.

**Discomfort in other areas of the upper body.** Symptoms can include pain or discomfort in one or both arms, the back, neck, jaw, or stomach.

**Shortness of breath.** This feeling often accompanies chest discomfort. But it can occur before the chest discomfort.

**Other symptoms** may include nausea, lightheadedness, or breaking out in a cold sweat.

### Stroke

**Sudden numbness or weakness** of the face, arm, or leg, especially on one side of the body.

**Sudden confusion, trouble speaking or understanding.**

**Sudden trouble seeing** in one or both eyes.

**Sudden trouble walking, dizziness, loss of balance or coordination.**

**Sudden, severe headache** with no known cause.

### Cardiac arrest

**Sudden loss of responsiveness.** No response to gentle shaking.

**No normal breathing.** The victim does not take a normal breath when you check for several seconds.

**No signs of circulation.** No movement or coughing.

If cardiac arrest occurs, **call 911 and begin CPR immediately.** If an automated external defibrillator (AED) is available and someone trained to use it is nearby, involve him or her.

Source: The American Heart Association

## REDUCE YOUR RISK OF HEART DISEASE AND STROKE

**Small changes can reduce your risk.**

- **Eat healthy.** A healthy eating plan is one that emphasizes fruits, vegetables, whole grains, and fat-free or low-fat milk and milk products; includes lean meats, poultry, fish, beans, eggs, and nuts; and is low in saturated fats, trans fats, cholesterol, salt (sodium), and added sugars.
- **Be active.** Participating in regular physical activity can help to reduce many risk factors associated with chronic diseases including obesity and high blood pressure.
- **Be smoke free.** Quitting smoking lowers the chance of having a heart attack or stroke and improves overall health and well-being, regardless how long a person has been smoking.
- **Get checked.** Undergoing routine physical check-ups and screenings can prevent some chronic diseases and detect other chronic diseases earlier when treatment may be more effective.
- **Be positive.** A positive attitude contributes to your overall well being.

Following these guidelines can greatly reduce the chances of developing a chronic disease, leading to an improved quality of life and reduced healthcare costs. For more information, visit [www.livehealthygeorgia.com](http://www.livehealthygeorgia.com).



Date updated: July 2007

Publication number: DPH07.099HW

Visit <http://www.health.state.ga.us/epi/cdiee/cardio.asp> for more information about cardiovascular disease in Georgia.