2008 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 Georgia Coverdell Acute 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 CVHI collaborates with other chronic disease prevention programs that address these issues.

Annually, the Georgia CVHI makes over 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. Current efforts include *the North Central Health Education Task Force,* a faith-based network that improves health outcomes in minority communities by promoting healthy lifestyle changes. The task force includes over 20 churches that participate in monthly conference calls to share ideas on programs, training, and other initiatives for their health ministries. Ten churches have adopted written health policies covering healthy eating, physical activity, and tobacco cessation. The task force supports two comprehensive wellness centers in Hancock and Houston Counties that offer health screenings and exercise classes, healthy eating and cooking classes, and health education classes. *The Southwest Georgia Stroke Task Force* conducts train-the-trainer courses in Acute Stroke Life Support for hospital and EMS personnel. Approximately 350 individuals have been trained.

Each year about 780,000 Americans suffer from a stroke, about 150,000 die from stroke, and 15-30% are 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. The project is called the Paul Coverdell National Acute Stroke Registry, in honor of the late U.S. Senator Paul Coverdell of Georgia, who suffered a fatal stroke in 2000. Georgia is currently one of six funded states. The mission of the **Georgia Coverdell Acute Stroke Registry** is to establish a statewide registry with a sample of acute care hospitals 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 improve stroke care.

Funded partly by the Georgia General Assembly since 1974, the **Stroke and Heart Attack Prevention Program (SHAPP)** is an awareness, detection, treatment, and control program for low-income, uninsured, or underinsured patients with uncontrolled high blood pressure. The goal is to reduce morbidity and mortality from CVD associated with high blood pressure. SHAPP uses a population-based, clinical approach, allowing for partnerships between public and private health care providers, including the coordination of medication and lifestyle modifications. SHAPP clinics are not established in every county; however, its services are usually available in a nearby county in the same public health district. In 2005, an 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.[1]

[1] Rein DB, Constantine RT, Orenstein D, et al. A cost evaluation of the Georgia Stroke and Heart Attack Prevention Program. Prev Chronic Dis [Internet]. 2006 Jan; 3(1). Available from: http://www.cdc.gov/pcd/issues/2006/jan/05_0143.htm.

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 (**32%**) of deaths in Georgia, with **21,754** CVD deaths in 2006.
- In 2006, Georgia's CVD death rate was **9% higher** than the national rate.

Causes	# GA Deaths (2006)
Heart Disease	16,258
Stroke	3,826
Hypertension	1,099
Atherosclerosis	175
Other	396
Cardiovascular Disease Deaths (total)	**21,754**

HOSPITALIZATIONS

- Approximately **143,800** hospitalizations occurred among Georgia residents due to CVD in 2006.
- The average hospitalization length of stay for CVD was **5 days** in 2006.

ESTIMATED COSTS

- The average charge per CVD hospitalization in Georgia was **$30,700** in 2006.
- Total hospital charges for CVD increased by over **$1.6 billion** between 2002 and 2006, from **$2.8 billion** to **$4.4 billion**.

  The cost of CVD in Georgia in 2006 is estimated at **$10.5 billion**, which includes direct health care costs and lost productivity from morbidity and mortality (indirect costs).[2]

[2] 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 **3,826** stroke deaths in 2006.
- In 2006, strokes were responsible for **18%** of all cardiovascular deaths in Georgia.
- In 2006, Georgia's stroke death rate was **16% higher** than the national rate.

Stroke Death Type	# GA Deaths (2006)
Acute, ill-defined	2,174
Sequelae	333
Subarachnoid hemorrhage	167
Other hemorrhage	825
Occlusion	144
Other, ill-defined	183
Stroke Deaths (total)	**3,826**

HOSPITALIZATIONS

- Approximately **23,000** hospitalizations occurred among Georgia residents due to stroke in 2006.
- The average hospitalization length of stay for stroke was **6 days** in 2006.

ESTIMATED COSTS

- The average charge per stroke hospitalization in Georgia was **$26,900** in 2006.
- Total hospital charges for stroke in Georgia were **$618 million** in 2006.
- The cost of stroke in Georgia in 2006 is estimated at **$1.5 billion**, which includes direct health care costs and lost productivity from morbidity and mortality (indirect costs).[2]

ISCHEMIC HEART DISEASE (IHD) BURDEN

DEATHS

- Heart disease was the leading cause of death in Georgia, accounting for **24%** of all deaths, with **16,258** heart disease deaths in 2006. Of the deaths due to heart disease, **8,246** were attributable specifically to ischemic heart disease (IHD).
- In 2006, IHD was responsible for **51%** of all heart disease deaths in Georgia.
- In 2006, Georgia's IHD death rate was **21% lower** than the national rate.

Heart Disease Type	# GA Deaths (2006)
Ischemic Heart Disease	8,246
Hypertensive Heart Disease	1,099
Other Heart Disease	6,913
Heart Disease Deaths (total)	**16,258**

HOSPITALIZATIONS

- Approximately **46,800** hospitalizations occurred among Georgia residents due to IHD in 2006.
- The average hospitalization length of stay for IHD was **4 days** in 2006.

ESTIMATED COSTS

- The average charge per IHD hospitalization in Georgia was **$38,000** in 2006.
- Total hospital charges for IHD in Georgia were **$1.8 billion** in 2006.
- The cost of IHD in Georgia in 2006 is estimated at **$2.7 billion**, which includes direct health care costs and lost productivity from morbidity and mortality (indirect costs).[2]

CARDIOVASCULAR DISEASE DISPARITIES

SEX

- CVD death rates were **1.4** times **higher** for men than women in 2006.
- Stroke death rates were **similar** for men and women in 2006.
- IHD death rates were **1.8** times **higher** for men than women in 2006.

RACE

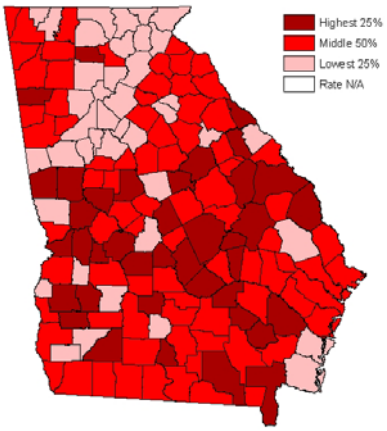
- CVD death rates were **1.3** times **higher** for blacks than whites in 2006.
- Stroke death rates were **1.4** times **higher** for blacks than whites in 2006.
- IHD death rates were **similar** for blacks and whites in 2006.

AGE

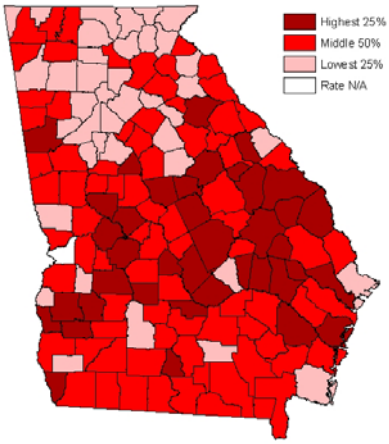
- CVD death rate increases with age but **1 in 4** persons who died from CVD in 2006 was less than 65 years of age.
- Black males are at particularly high risk for premature death from CVD. Almost **1 in 2** black males who died from CVD in 2006 was less than 65 years of age.
- **23%** of persons dying from stroke in Georgia in 2006 were less than 65 years old.
- **27%** of persons dying from IHD in Georgia in 2006 were less than 65 years old.

GEOGRAPHIC

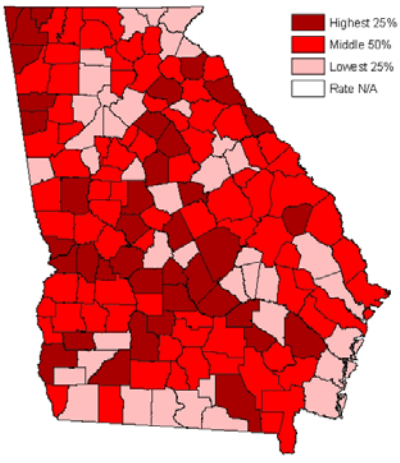
CVD Death Rates by County, Georgia, 2001-2006



Stroke Death Rates by County, Georgia, 2001-2006



IHD Death Rates by County, Georgia, 2001-2006



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CARDIOVASCULAR DISEASE RISK FACTORS

Nearly 2.3 million Georgia adults (33%) do not know the modifiable risk factors for cardiovascular disease.[3]

SMOKING

- **3,289** deaths due to CVD were attributable to smoking among adults ages 35 or older in 2006.
- Quitting smoking greatly reduces the risk for heart disease and stroke.
- In Georgia, **19%** of adults ages 35 or older reported smoking cigarettes in 2007.

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 2007, **25%** of adults in Georgia had no leisure time physical activity in the last 30 days.[4]

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 (**75%**) of adults in Georgia did not consume the recommended five or more daily servings of fruits and vegetables in 2007.

OBESITY

- Obesity, which is present in **29%** 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 21% in 1997 to **30%** in 2007.

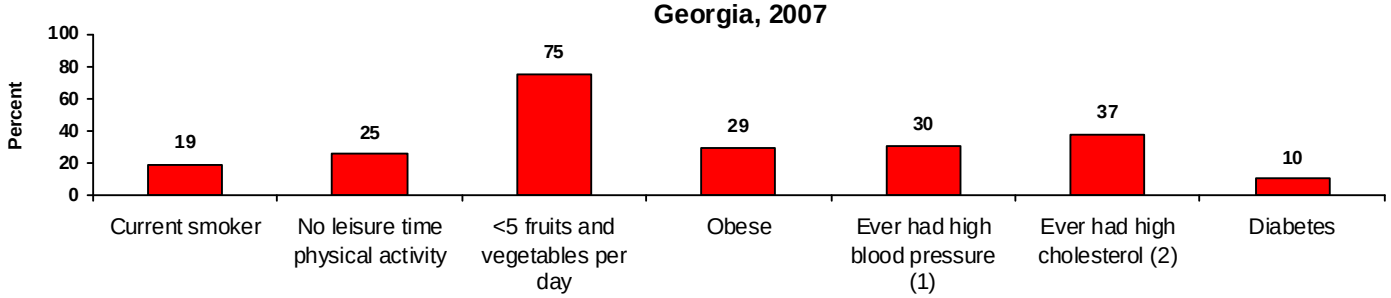
HIGH CHOLESTEROL

- 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 24% in 1997 to **37%** in 2007.

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 1997 to **10%** in 2007.

Prevalence of risk factors for cardiovascular disease among adults, Georgia, 2007



(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 2007

[3] Data Source: 2006 Georgia Stroke and Heart Attack Awareness Survey
[4] The 2007 fact sheet contained a misprint and should state that in 2006, 25% of adults in Georgia had no leisure time physical activity.

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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.[1]

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.[5]

SHAPP CLINICS

- There are **135** SHAPP clinics throughout Georgia.
- SHAPP clinics are present in **16** of the 18 health districts.

SHAPP PATIENT DEMOGRAPHICS

- **10,855** patients were served by SHAPP during the 2007 fiscal year.
- **56%** of the patients were African American.
- **82%** of patients were less than 65 years old.

SHAPP CONTROL RATES

- SHAPP clinics have varying blood pressure control rates, ranging from 40% to 86% 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.[6]
- Nationally, **53%** of patients undergoing treatment for high blood pressure are controlled.[7]

SHAPP COSTS

- The annual medication cost is approximately **$17.50** per patient.

[5] 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.
[6] Based on performance indicators on the Health Plan Employer Data and Information Set (HEDIS), implemented by the National Committee for Quality Assurance.
[7] 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 ACUTE STROKE REGISTRY

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 (DHR), Division of Public Health (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 fatalities and disability due to stroke and the incidence of recurrent stroke in Georgia by monitoring and improving the quality of acute stroke care in hospitals
- Encourage collaboration between hospitals and between hospitals and other institutions in Georgia relating to stroke care quality improvement

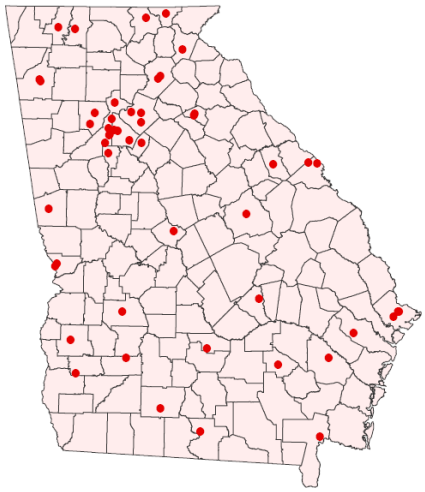
QUALITY IMPROVEMENT ACTIVITIES

- Individualized stroke care quality improvement consultation for participating hospitals
- Monthly registry-wide telephone conference calls and bimonthly newsletters sharing best practices between hospitals
- Annual meetings to exchange best practices in conjunction with the American Heart Association/American Stoke Association
- Acute Stroke Life Support training using curriculum from the University of Miami
- Focus of participating hospitals' quality improvement efforts during first two years was on deep vein thrombosis (DVT) prophylaxis, and is now on dysphagia screening

HOSPITAL SAMPLING AND PARTICIPATION

- Randomly selected hospitals actively invited to participate and volunteer hospitals also welcomed
- Hospitals recruited in three stages:
  -First group (cohort 1) started on 11/1/05
  -Second group (cohort 2) started during 10/1/06-3/30/07
  -Third group (cohort 3) started during 3/1/08-4/30/08
- 50 currently participating hospitals, representing over half of stroke admissions in Georgia

Georgia Coverdell Acute Stroke Registry
Participating Hospitals, June 2008



DATA COLLECTION

- Data on stroke patient characteristics and care received during the hospital stay are collected by participating hospitals for 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
- The purpose of data collection is to monitor the quality of stroke care delivered at hospitals in the state and to guide quality improvement efforts

REGISTRY STROKE CASE DATA

- Data received for **12,783** stroke hospitalizations during 11/1/05 through 10/31/07
- Analysis to date includes data from 24 cohort 1 hospitals and 21 cohort 2 hospitals

KNOW THE SIGNS AND SYMPTOMS OF HEART ATTACK AND STROKE

Over 1.3 million Georgia adults (19%) do not know the signs of heart attack, and over 2.7 million (39%) do not know the signs of stroke.[3] 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.

Live healthy Georgia

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