

# 2014 Data Summary

## Georgia Coverdell Acute Stroke Registry

### PROGRAM OVERVIEW

- The Georgia Coverdell Acute Stroke Registry (GCASR) is 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.
- GCASR is a partnership between the Georgia Department of Public Health (DPH), DPH Office of EMS, Emory University, American Heart Association, American Stroke Association, Georgia Medical Care Foundation, Georgia Hospital Association, CDC, and 64 participating hospitals.

### GOALS

- Reduce fatalities and disability due to stroke and the incidence of recurrent stroke in Georgia by:
  1. Monitoring and improving the quality of pre-hospital and hospital acute stroke care
  2. Encouraging collaboration among EMS providers, hospitals, and other institutions in Georgia concerned with stroke care quality improvement

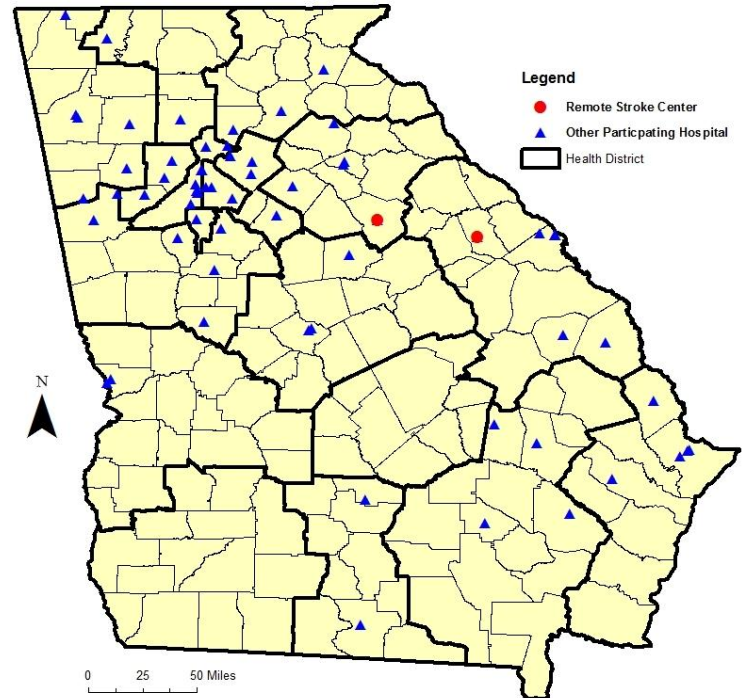
### PARTICIPATION

- Hospitals and EMS agencies join GCASR voluntarily.
- Currently, 64 hospitals participate in GCASR, of which 40 are Joint Commission or Det Norske Veritas (DNV)-certified comprehensive or primary stroke centers.
- Based on 2012 hospital discharge data, participating hospitals serve about 81percent of stroke admissions in Georgia.

### DATA COLLECTION

- Data on stroke patient characteristics and care received during their hospital stay are collected by participating hospitals for patients admitted with acute stroke or transient ischemic attack.
- The purpose of data collection is to monitor the quality of stroke care delivered at hospitals.

Georgia Coverdell Acute Stroke Registry Participating Hospitals (n=64), November 2014



### QUALITY IMPROVEMENT ACTIVITIES

Hospitals participating in GCASR receive:

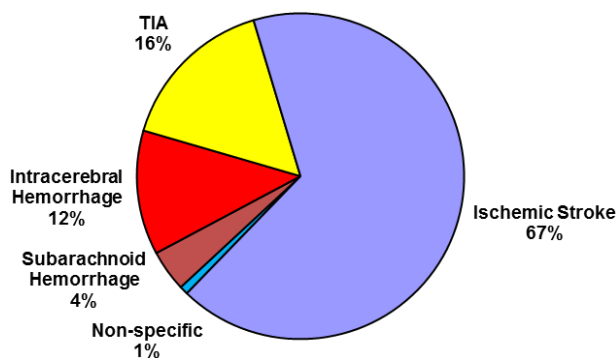
- Individualized stroke care quality improvement consultation
- Regular educational conference calls and newsletters to share best practices among participating hospitals and EMS providers
- Regular trainings to enhance skills and exchange best practices
- Organized mentorship among the participating facilities
- Acute Stroke Life Support training
- Quality improvement efforts focused currently on thrombolytic treatment for eligible stroke patients and door-to-needle time
- Development of tools to strengthen EMS-hospital communication



## QUALITY INDICATORS

- Quality of care received by stroke patients is measured by indicators representing care processes that have been included in clinical recommendations.
- Quality indicator calculations include identification of patients for whom a care process would have been recommended, and a determination of how many of those patients received the recommended care.
- The 13 GCASR Quality Indicators are:
  1. Administration of tissue plasminogen activator (tPA)
  2. Dysphagia screening
  3. Administration of antithrombotic medication within 48 hours
  4. Deep Vein Thrombosis (DVT) prophylaxis
  5. Prescription for lipid lowering medication
  6. Delivery of stroke education
  7. Smoking cessation counseling or treatment
  8. Rehabilitation assessment
  9. Prescription for antithrombotic medication at discharge
  10. Prescription for anticoagulant medication for patients with atrial fibrillation
  11. NIHSS Score recorded
  12. Door to Image time
  13. Intravenous tPA within 60 minutes of hospital arrival
- Defect-free care is defined as the delivery of care meeting all quality indicators for which a patient is eligible

**Figure 1. Types of Stroke, GCASR, 2013 (n=15,390)**



## STROKE REGISTRY DATA

- Analysis included data from 64,255 stroke patients admitted to GCASR participating hospitals from 2009 to 2013
- In 2013, 48 percent of stroke patients were brought to the hospital by EMS, 37 percent by private transportation, and 15 percent were transferred from one healthcare facility to another
- Hospitals received pre-notification for 64 percent of the patients brought by EMS
- Among hypertensive patients, 79 percent were on antihypertensive medication during the week prior to admission for acute stroke
- In 2013, two hundred twenty-eight (1.4 percent) of Georgia stroke patients were newly diagnosed with diabetes during admission for acute stroke
- A third of the total number of Georgia stroke patients (33 percent) previously had a stroke (28 percent) and/or TIA (9 percent)

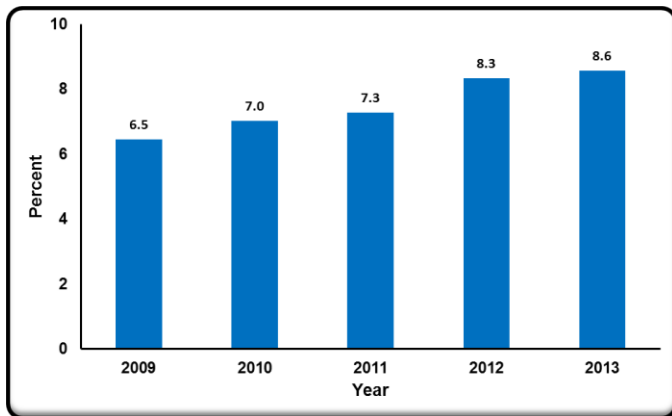
**Table 1. The most frequent co-morbidities among stroke patients, GCASR, 2013 (n=15,977)**

Co-morbidity	Percent
Hypertension	81%
Dyslipidemia	43%
Diabetes mellitus	35%
CAD/prior MI	23%
Atrial fibrillation/flutter	14%
Smoking	22%

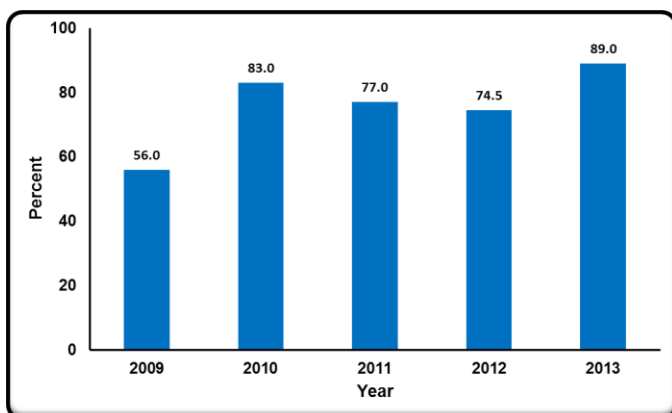
- For ischemic stroke patients, prompt thrombolytic treatment (such as tPA, if eligible) is critical for good recovery.
  - For ischemic stroke patients admitted in 2013, 36 percent (1,761/4,831) arrived at the emergency department within 2 hours from the last time they were known to be well

- Among these, 38 percent (666/1,716) were eligible, without contraindications, for tPA
- Among the tPA-eligible patients, 89 percent (593/666) received thrombolytic treatment within 3 hours after symptom onset
- 53 percent (314/593) of patients treated with a thrombolytic agent received IV tPA within an hour of arrival at the emergency department
- The median time to receive tPA for ischemic stroke patients arriving within two hours of symptom onset was 59 minutes in 2013

**Figure 2. Percentage of ischemic stroke patients receiving intravenous tPA treatment, GCASR, 2009-2013 (n=41,289)**



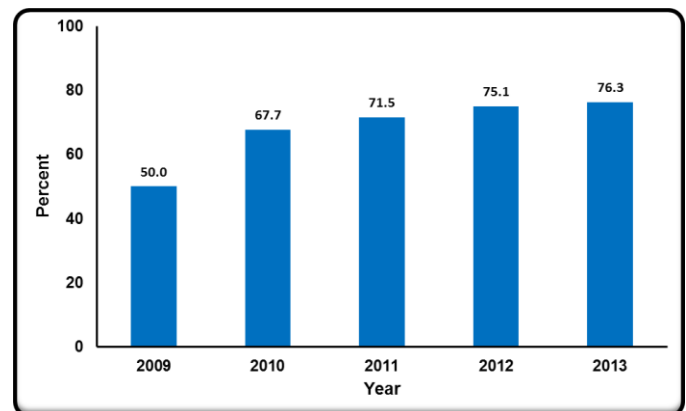
**Figure 3. Percentage of eligible ischemic stroke patients receiving intravenous tPA treatment, GCASR, 2009-2013, (n=2,869)**



## IMPROVEMENTS OVER TIME

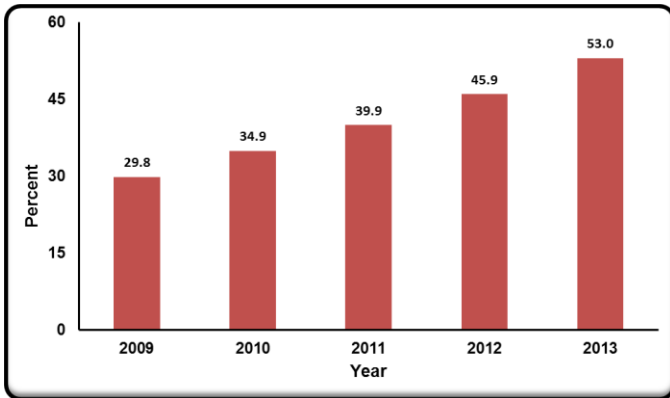
- Overall, tPA administration among ischemic stroke patients increased from 6.5 percent in 2009 to 8.6 percent in 2013 (Figure 2), and among eligible ischemic stroke patients, tPA administration increased from 56 percent in 2009 to 89 percent in 2013 (Figure 3)
- The percentage of patients who received defect-free care increased from 50 percent in 2009 to 76 percent in 2013 (Figure 4), indicating improvement in all ten performance measures
- The percentage of those who received IV tPA within 60 minutes of their arrival increased from 30 percent to 53 percent (Figure 5)

**Figure 4. Percentage of acute stroke patients who received defect-free care, GCASR, 2009-2013 (n=49,522)**

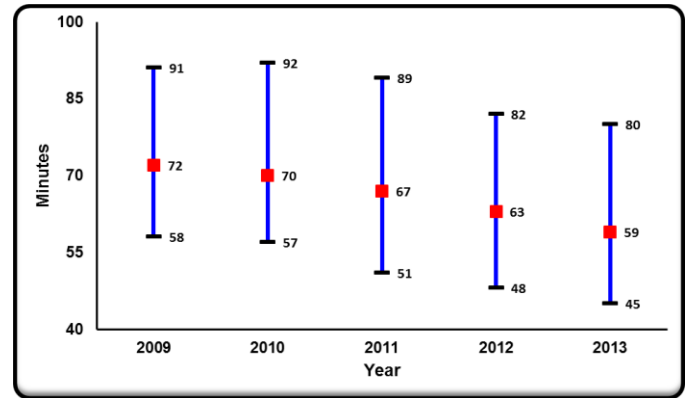


- The average time to administer tPA (door-to-needle time) was shortened from 72 minutes in 2009 to 59 minutes in 2013, a reduction of 18 percent (Figure 6)
- Hospital pre-notification by EMS increased from 47 percent in 2009 to 64 percent in 2013 (Figure 7)
- No improvement was documented in reducing the time elapsed from symptom onset to hospital arrival (Figure 8)

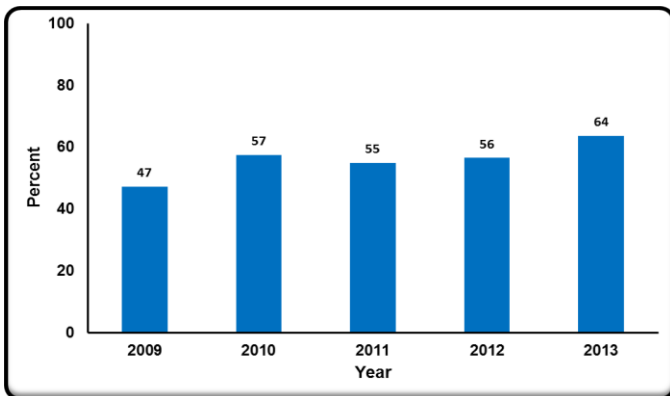
**Figure 5. Percentage of ischemic stroke patients treated with IV tPA within 60 minutes of hospital arrival, GCASR, 2009-2013 (n=2,193)**



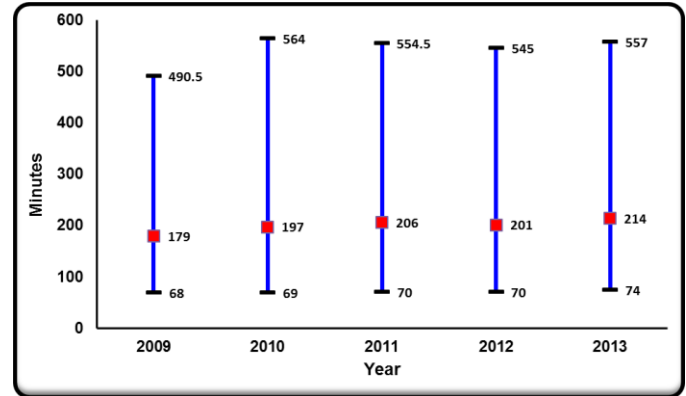
**Figure 6. Trend in median door-to-needle time among eligible ischemic stroke patients treated with IV tPA, GCASR, 2009-2013 (n=2,193)**



**Figure 7. Percentage of stroke patients transported by EMS with hospital pre-notification, GCASR, 2009-2013 (n=28,084)**



**Figure 8. Trend in median symptom onset to hospital arrival time among acute ischemic stroke patients, GCASR, 2009-2013 (n=41,290)**



## DEFINITIONS

- Stroke: brain tissue death; can be the result of a thrombus (blocked artery) or a hemorrhage (ruptured artery) which prevents blood flow to the brain
- Transient ischemic attack: temporary blockage of cerebral blood flow that causes a short-lived neurological deficit
- Deep Vein Thrombosis (DVT): blood clot located in a large vein; a potential complication of stroke
- Dysphagia: problems swallowing; a potential complication of stroke that can lead to pneumonia

- Antithrombotic: medication administered to prevent platelets or clotting factors in the blood from forming a blood clot
- Anticoagulation: administration of medications to prevent clotting of the blood
- Tissue plasminogen activator (tPA): a thrombolytic medication administered to eligible acute ischemic stroke patients to reestablish blood supply to the brain

**FOR MORE INFORMATION ON GCASR, PLEASE VISIT**  
<http://dph.georgia.gov/georgia-coverdell-acute-stroke-registry>