

## **Southeast Pilot Stroke System**

Produced by the Alabama Department of Public Health  
Video Communications and Distance Learning Division

## **Faculty**

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### **Stroke Statistics**

- **Leading cause of serious long-term disability in the United States**
- **Fourth leading cause of death**
  - **795,000 strokes each year**
    - **600,000 are first attacks**
    - **143,579 die**

### **Stroke Statistics**

- **Three-fourths of all strokes occur in people over age 65**
  - **Risk doubles every decade after age 55**
  - **Strokes can, and do, occur at any age**
    - **More so in the South**
  - **Smoking doubles risk of ischemic stroke**

### **Stroke Statistics**

- **Each year 55,000 more women than men have strokes**
- **87% of strokes are ischemic**
  - **10% are intracerebral hemorrhage**
  - **3% are subarachnoid hemorrhage**

### **Why Do We Need a Stroke System?**

- **Ischemic strokes can be treated and sometimes completely reversed by use of the thrombolytic agent tissue plasminogen activator**
  - **tPA, activase / alteplase**

### **Why Do We Need a Stroke System?**

- This treatment must be given within 4.5 hours of the onset of symptoms
  - Is “Time Dependent”

### **Why Do We Need a Stroke System?**

- Patients with stroke symptoms must be rapidly transported to a hospital capable of immediately performing a rapid exam to determine type of stroke and then be able to treat with tPA if the stroke is ischemic and within the treatment window
  - Neuroimaging and interpretation is key

### **Stroke vs. Trauma**

- Both are “Time Dependent”
- Most smaller hospitals don’t have resources to treat trauma so patients need to be taken directly to a trauma center

### **Stroke vs. Trauma**

- Patients with stroke symptoms must be rapidly transported to a hospital capable of immediately performing a rapid exam to determine the type of stroke and then be able to treat with tPA if the stroke is ischemic and within the treatment window

### **Stroke vs. Trauma**

- Often there is not time to take the patient directly to a Level I or Level II stroke hospital and still be within the treatment window

### **Stroke vs. Trauma**

- Most smaller hospitals do have the capability to evaluate and begin initial (thrombolytic) treatment of stroke
  - The patient can be transferred to a higher level of stroke hospital after treatment is begun

### **What Are the Qualities of a Good Stroke System?**

- Network of hospitals with the commitment and the resources to care for stroke patients
- Organized plan to route patients with signs of stroke to the right hospital that is ready to care for them

### **What Are the Qualities of a Good Stroke System?**

- Constant monitoring of the system to correct problems, improve the system, and validate the quality of care provided

### **Southeast Pilot Stroke Plan**

- Voluntary participation by hospitals
  - Hospitals will be inspected and designated for the level of services they request and can provide

### **Southeast Pilot Stroke Plan**

- Stroke system patient routing is by a single high-tech communication center (Alabama Trauma/Stroke Communications Center) that coordinates patient transport to the appropriate facility initially and facilitates transfer of patients that require a higher level of care after initial treatment

### **Southeast Pilot Stroke Plan**

- Done with computer intranet system and 24/7 staff that maintain up-to-the-minute status of all hospitals and resources
- This allows hospitals to always be in control of when they are available to accept a new patient
- Everything is monitored by Quality-Improvement process

### **Who Is Entered into the Stroke System?**

- In the field, patients are evaluated by the EMS personnel (EMSP) and, if they meet criteria for a possible stroke (treatment protocol 3.32), they are entered into the stroke system by calling the Alabama Trauma / Stroke Communications Center (ATCC)

### **Who Is Entered into the Stroke System?**

- The patient will then be routed to the nearest appropriate stroke system hospital

### **Protocol for Entering Patient into the Stroke System**

- Patient should have an acute episode of neurologic deficit without any evidence of trauma
- There should be an acute abnormality in the FAST stroke scale

### **EMSP Discretion**

- If the EMSP is convinced that the patient is likely to have a stroke, which is not yet obvious, the patient may be entered into the system

### **EMSP Discretion**

- The following factors should raise suspicion:
  - Symptoms of stroke occurred and disappeared within a few minutes (TIA)
  - Patient is awake but cannot remember or understand what is said or able to express himself

### **Participating Hospitals**

- Hospitals can voluntarily join the stroke system
  - No hospital will be forced to join
    - Administration and staff must agree

### **Participating Hospitals**

- Participating hospitals will be surveyed to certify the level of trauma care they can provide
  - If not TJC certified

### **Participating Hospitals**

- Each participating hospital will determine when they are available to take a trauma patient
- Each decides when red (not ready) or green (ready)
  - Communication Center cannot override this
  - Patient can override system

### **Three Level System**

- **Level III: Acute Stroke Ready Hospital**
  - There are 11 Level III Stroke Centers
- **Level II: Primary Stroke Center Hospital**
  - There are 4 Level II Stroke Centers

### **Three Level System**

- **Level I: Comprehensive Stroke Center**
  - There are no Level I Stroke Centers

### **Level III: Acute Stroke Ready Hospital**

- Physician medical director for stroke services
- 24/7/365 ED availability
- 24/7/365 CT scan availability with final CT reading and report to treating physician done within 45 minutes

### **Level III: Acute Stroke Ready Hospital**

- Professional personnel with ability to rapidly triage and evaluate stroke patients to determine appropriateness of treatment with tPA

### **Level III: Acute Stroke Ready Hospital**

- Ability and willingness to administer tPA to all eligible patients
  - tPA stocked by pharmacy
  - Stroke protocols in place
- 24/7 neurology availability “on call” or by telephone / Telemedicine

### **Level III: Acute Stroke Ready Hospital**

- **Written plan for those who require a higher level of stroke care**
  - Post tPA
- **Performance improvement and community education participation**

### **Level II: Primary Stroke Center Hospital**

- **Must be TJC certified as a primary stroke center or have available the following minimum resources:**
  - **Stroke services, medical director, and coordinator**
  - **Department of Neurology or Telemedicine system MOU**

### **Level II: Primary Stroke Center Hospital**

- **Vascular neurosurgery or transfer plan**
- **Stroke treatment protocols in place**

### **Level II: Primary Stroke Center Hospital**

- **Specialty availability upon notification of patient need:**
  - **Emergency medicine (10 minutes)**
  - **Neurology (within 15 minutes), a physician with experience and expertise in diagnosing and treating stroke, or Telemedicine contact with neurology**

### **Level II: Primary Stroke Center Hospital**

- **Vascular neurosurgery (or transfer plan)**
- **Consultants available (on call):**
  - **Internal medicine**
  - **Critical care**
  - **Cardiology**
  - **Neuroimaging**

### **Level II: Primary Stroke Center Hospital**

- **Resources**
  - **Ability / willingness to administer tPA to all eligible patients**
    - **tPA stocked by pharmacy**
    - **Stroke protocols in place**
    - **Plan for transfer of patients requiring it**

### **Level II: Primary Stroke Center Hospital**

- Operating suites staffed and ready within 30 minutes of stroke alert
- Recovery room
- ICU bed for stroke patients

### **Level II: Primary Stroke Center Hospital**

- Neuroimaging (interpretation immediately available)
  - In-house technician for CT imaging
  - Angiography (at least CTA, MRA)
  - Neurovascular sonography
  - CT
  - MRI

### **Level II: Primary Stroke Center Hospital**

- 24 hour on-call neurology or by telemedicine
- Rehabilitation services
  - Speech, physical, and occupational therapy
- Appropriate clinical lab services

### **Level II: Primary Stroke Center Hospital**

- CME
  - 8 hours, stroke related, provided annually for staff physicians, nurses, allied health personnel, community physicians
- Stroke prevention coordinator
- Performance improvement program

### **Level I: Comprehensive Stroke Center**

- Must be certified by The Joint Commission or meet the minimum personnel, resources, and plans as recommended by the Brain Attack Coalition for Comprehensive Stroke Centers

### **Timeline for Activation of Southeast Pilot Stroke System**

- All hospitals have been inspected
- System should be activated by May 2013
- Plan to pilot system for 9-12 months before expanding

### **Things to Be Completed Before Activating the System**

- All EMS personnel must be trained
- All Stroke Hospital Personnel must be trained on:
  - How to manage the computer resource monitor
  - How to manage the acute stroke patient

### **Things to Be Completed Before Activating the System**

- How to transfer patients for whom they cannot provide further care
- How to put patients who do not come by ambulance into the system

### **Things to Be Completed Before Activating the System**

- All non-participating hospital emergency personnel must be trained how to enter patients into the system for transfer

### **What About Patients that Don't Come by EMS?**

- They can be entered into the system by the Emergency Department staff
- Hospitals not participating in the stroke system can transfer patients with criteria for stroke by simply calling the ATCC
  - 1 – 800 – 359 – 0123

### **Stroke System Patient Routing**

- Each participating hospital will be connected to the Alabama Trauma Communications Center so that there is a constant monitoring of the status of all hospitals

### **Stroke System Patient Routing**

- When a patient meets criteria for the stroke system (protocol 3.32) the EMT will call the ATCC who will route the patient to the correct ready hospital
- During transport they will complete the thrombolytic checklist (protocol 8.04)



### Stroke System Patient Routing

- Transportation (air or ground) can be arranged by the ATCC if needed
- Transfer of patients from local hospitals to the correct stroke center can also be coordinated by the ATCC

### Computer Display

		Level														
Hospital	T	S	C	ED-T	ED	ANES	OR	X-RAY	TICU	TS	OS	NS	CT	SICU	NEURO	CC
A	1	1														
B	3	2														
C	3	2														
D	2	1														
E	1	2														
F	2	3														

ATCC phone number: 1 – 800 – 359 – 0123

### Computer Display

- Numbers are color-coded
  - Green: available
  - Yellow: resource unavailable (but still accepting some patients)
  - Red: not available

### Computer Display

- Hospital abbreviations are automatically color-coded for online status
  - Green: active
  - Yellow: resource unavailable (but still accepting some patients)
  - Red: unavailable

### Role of the ATCC

- When a patient is put into the system and the ATCC is called, the patient is given a number and the patient is routed to the nearest appropriate ready stroke hospital

### Role of the ATCC

- The ATCC will take information on the patient and fax to the receiving hospital
  - An alarm will sound “Incoming Patient”
- The ATCC will also call the hospital and notify them the patient is coming

### **ATCC ID Number**

- Patient's names will not be placed on the stroke reports
- Each patient will be given an ATCC ID number
  - Number should be placed on pre-hospital patient care report and the hospital record
  - How we track stroke patients

### **QA / QI**

- Eventually there will be a stroke registry but until funding is available the QA depends on the data placed on the stroke report by the receiving hospital
- 95% compliance is required for this data

### **QA / QI**

- Fax the report back to the ATCC within 48 hours
  - Fax number is on the form
- The information will then be entered into your computer by the ATCC

### **Questions?**

**ATCC Phone Number**  
**1 – 800 – 359 – 0123**