Primary Stroke Center

Acute Stroke Transfer Guidelines

When to Consider a transfer:

<table>
<thead>
<tr>
<th>Hemorrhagic Stroke</th>
<th>Ischemic Stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Large volume intracerebral hematoma greater than 5cm on CT</td>
<td>• NIHSS ≥ 4</td>
</tr>
<tr>
<td>• Concern for expanding hematoma</td>
<td>• Signs &amp; symptoms consistent with large vessel occlusion (“Drip and Ship”)</td>
</tr>
<tr>
<td>• Hunt Hess Score ≥ 3</td>
<td>• Stroke in the young (&lt;55 years of age)</td>
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<tr>
<td>• Rapidly declining mental status, especially requiring intubation</td>
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</tr>
</tbody>
</table>

To Transfer a stroke patient:

If the patient is not admitted to your hospital then call the Alabama Trauma Communications Center (ATCC) at 1-800-359-0123 to arrange transfer for the potential stroke or stroke patient. Community hospitals in region 5 that are not a stroke hospital of any level can also utilize the ATCC to transfer patients to Level 2 or Level 3 hospitals.

If the patient is admitted to your hospital, then this will be a hospital to hospital transfer. Call Baptist Medical Center South at 334-288-2100 and have the admitting physician ask for the on-call neurologist to discuss the patient’s case.

http://baptistfirst.org/Services/Stroke-Center/Default.aspx

“The Golden Hour”
When preparing to transfer an acute stroke patient to Baptist Medical Center South’s Primary Stroke Center, please make every attempt to include the following information while awaiting EMS.

*However, do not delay transfer.

- Results of all diagnostic testing performed including lab results and imaging exams (See attached Radiology Images from Outside Facilities form)
- NIH Stroke Scale documentation to assess improvement or decline upon arrival to Baptist Medical Center South
- Time of symptom onset and source of this information
- Contact information of family members (Cell phone if available)
- Pertinent elements of patient’s past medical history, especially atrial fibrillation, warfarin therapy, congestive heart failure, diabetes, prior strokes, prior intracerebral hemorrhage, recent surgeries or instrumentation, and trauma
- Patient’s current medication list
- Brief documentation of ALL therapies initiated at your hospital
- If IV tPA is excluded, please document rationale

In no circumstances should acquisition of these items delay the transfer of the patient. Urgent transfer maximizing treatment within the “golden hour” is an absolute priority.
Primary Stroke Center

Acute Stroke Transfer Guidelines

1. Patient Name: _____________________________________ Date: ________________

2. Information/history from: (   ) Patient (   ) Family member (authorized to give consent)
   Name: _____________________________________ Phone: ________________

3. Last Known time patient was at baseline or deficit free and awake:
   Time: ___________________ Date: ________________

   **TIME OF SYMPTOM ONSET:** ________________ AM PM

   **STROKE TEAM ACTIVATION CRITERIA**

<table>
<thead>
<tr>
<th>YES</th>
<th>UNKNOWN</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Symptom duration less than 4.5 hours</td>
<td>( )</td>
</tr>
<tr>
<td>5.</td>
<td>Blood glucose between 60 and 400</td>
<td>( )</td>
</tr>
</tbody>
</table>

   If “Yes” is answered to #4&5, begin transfer process then complete remaining while awaiting EMS arrival

4. OBVIOUS ASYMMETRY

   Normal Right Left
   Facial: smile/grimace ( ) ( ) Absent/Lax ( ) Absent/Lax
   Grip ( ) ( ) Weak ( ) No grip ( ) Weak ( ) No grip
   Arm drift ( ) ( ) Drifts down ( ) Falls rapidly ( ) Drifts down ( ) Falls rapidly

   Based on exam, patient has **only unilateral** (not bilateral) weakness: Yes ( ) No ( )

5. Language

<table>
<thead>
<tr>
<th>Appropriate</th>
<th>Inappropriate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Able to repeat sentence ( ) ( )</td>
<td></td>
</tr>
<tr>
<td>Able to name objects (pen, watch) ( ) ( )</td>
<td></td>
</tr>
<tr>
<td>Speech clarity (evaluate for slurring) ( ) ( )</td>
<td></td>
</tr>
</tbody>
</table>

   Based on assessment, patient has new onset language/orientation deficit: Yes ( ) No ( )

6. Items 4-7 all **Yes** (or unknown) = **Stroke Team Activation criteria met**

   | Onset of symptoms plus transport time <4.5 hours | Yes ( ) No ( ) |

   In no circumstances should acquisition of these items delay the transfer of the patient. Urgent transfer maximizing treatment within the “golden hour” is an absolute priority.
Transfer Algorithm

**Patient with sudden onset of stroke symptoms**

**Positive F-A-S-T**
- Facial droop, Arm weakness/drift, Speech disturbance, Time of symptom onset

**Glucose within 60-400**
**Glucose < 60 or > 400**
- Treat symptoms per your hospital’s policy and continue to monitor

- Establish time pt. last seen normal/ time of symptom onset
- If symptom onset < 3 hours or if up to 4.5 hours with four additional exclusion criteria and F-A-S-T positive:
  - Prepare for transfer to Baptist Medical Center South

*While waiting for EMS, complete the following:
- Stat non-contrast Brain CT
- Start two large bore IVs or verify IVs are patent
- Obtain PT/INR, PTT, CBC, CMP
- Obtain 12 lead EKG
- Check VS every 15 minutes
  - Maintain BP SBP <185 and DBP <110
- Complete NIH Stroke Scale, if able
- Keep patient NPO until swallow screen completed and passed and/or Speech Therapist evaluation

**Additional Exclusion Criteria**
1. Older than 80 years of age
2. On anticoagulant regardless of INR
3. Severe Stroke deficits (NIHSS >25)
4. Medical history of stroke and diabetes

The ED MD or Admitting MD to discuss patient’s case with on-call neurologist at 334-288-2100. Discussion should determine the administration of Activase, aka tPA, - will it be administered at patient’s current location then transfer (“drip & ship”) or transfer patient to have tPA administered at Baptist Medical Center South. Refer to Pre/During/Post tPA administration blood pressure frequency and parameters and neuro check frequency

In no circumstances should acquisition of these items delay the transfer of the patient. Urgent transfer maximizing treatment within the “golden hour” is an absolute priority.
Inclusion and exclusion characteristics of patients within 3 hours from stroke symptom onset:

**Inclusion criteria**
- Diagnosis of ischemic stroke causing measurable neurological deficit
- Onset of symptoms <3 hours before beginning treatment
- Aged ≥ 18 years

**Exclusion criteria**
- Significant head trauma or prior stroke in previous 3 months
- Symptoms suggest subarachnoid hemorrhage
- Arterial puncture at noncompressible site in previous 7 days
- History of previous intracranial hemorrhage
- Intracranial neoplasm, arteriovenous malformation, or aneurysm
- Recent intracranial or intraspinal surgery
- Elevated blood pressure (systolic > 185 mmHg or diastolic > 110 mmHg)
- Active internal bleeding
- Acute bleeding diathesis, including but not limited to Platelet count < 100000/mm3
- Heparin received within 48 hours, resulting in abnormally elevated aPTT greater than the upper limit of normal
- Current use of anticoagulant with INR >1.7 or PT>15 seconds
- Current use of direct thrombin inhibitors or direct factor Xa inhibitors with elevated sensitive laboratory test (such as aPTT, INR, platelet count, and ECT; TT; or appropriate factor Xa activity assays)
- Blood glucose concentration <50 mg/dl (2.7 mmol/L)
- CT demonstrates multilobar infarction (hypodensity >1/3 cerebral hemisphere)

**Relative exclusion criteria**
Recent experience suggests that under some circumstances- with careful consideration and weighing of risk to benefit-patients may receive fibrinolytic therapy despite 1 or more relative contraindications. Consider risk to benefit of IV rtPA administration carefully if any of these relative contraindications are present:
- Only minor or rapidly improving stroke symptoms (clearing spontaneously)
- Pregnancy
- Seizure at onset with postictal residual neurological impairments
- Major surgery or serious trauma within previous 14 days
- Recent gastrointestinal or urinary tract hemorrhage (within previous 21 days)
- Recent acute myocardial infarction (within previous 3 months)
Primary Stroke Center

Acute Stroke Transfer Guidelines

**Pre tPA Administration**

Verify the following prior to administration: measured weight, t-PA inclusion/exclusion criteria documented, informed consent has been obtained.

**Baseline Blood Pressure (pre-tPA bolus):**

- Use manual BP cuff and check bilateral arm BP
  - Notify neurologist immediately for BP treatment order if any of the following occur:
    - SBP ≥ 185mmHg, DBP ≥ 110mmHg, > 30mmHg difference in SBP between arms, and/or if unable to use one arm

- Documentation of baseline BP/ Document reason if BP could not be checked in one arm

  BP Right Arm ___/____  BP Left Arm ___/____

**During tPA administration**

**Maintain Blood Pressure 160-180/90-105-**

Notify Neurologist immediately if not within this range and change in neurological status.

**Time of tPA bolus (give over 1 minute):** __________  **Time tPA infusion started (infuse over 1hr):** __________

Document vital signs (Manual BP, HR, and RR) and Neuro Checks Q15 min x 4

1. BP___/____; HR___; RR___ & Neuro check  
2. BP___/____; HR___; RR___ & Neuro check  
3. BP___/____; HR___; RR___ & Neuro check  
4. BP___/____; HR___; RR___ & Neuro check

**Post tPA administration**

**Maintain Blood Pressure 160-180/90-105-**

Notify Neurologist immediately if not within this range and change in neurological status.

Document vital signs (Manual BP, HR, and RR) and Neuro checks

Q 15 minutes x4 then  Q 30 minutes x 6 hours then  Q 1 hour x 16 hours

NIHSS should be completed pre and post tPA administration & then 24 hours from bolus

Verify Non-contrast CT Brain is ordered 24 hours from tPA bolus
Radiology Images From Outside Facilities

Listings of Outside Facilities

These facilities have capabilities to send and receive images.

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Sent Via Computer to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama Orthopaedic Specialists</td>
<td>John Paul Jones Hospital</td>
</tr>
<tr>
<td>Andalusia Regional Hospital</td>
<td>Lake Martin Community Hospital</td>
</tr>
<tr>
<td>Auburn Spine &amp; Neurosurgery</td>
<td>Lanier Health Services</td>
</tr>
<tr>
<td>Baptist Health Systems (Receive Only)</td>
<td>Maxwell AFB (Prison Only)</td>
</tr>
<tr>
<td>Brookwood Medical Center</td>
<td>Medical Center Enterprise</td>
</tr>
<tr>
<td>Bullock County Hospital</td>
<td>Montgomery Open MRI</td>
</tr>
<tr>
<td>Children's Hospital</td>
<td>North East AL. Regional</td>
</tr>
<tr>
<td>Crenshaw County Hospital</td>
<td>River Region Health Center</td>
</tr>
<tr>
<td>Cullman Regional</td>
<td>Riverview Regional Medical Center</td>
</tr>
<tr>
<td>DCH Regional Medical Center</td>
<td>TechCare X-Ray (Tutwiler Prison)</td>
</tr>
<tr>
<td>East Alabama Medical Center</td>
<td>South East Alabama Medical Center</td>
</tr>
<tr>
<td>Flowers Hospital &amp; Breast Health Center</td>
<td>The Hughston Clinic Columbus (Georgia)</td>
</tr>
<tr>
<td>Gadsden Regional Medical Center</td>
<td>The Hughston Clinic, P.C. (Auburn)</td>
</tr>
<tr>
<td>Grove Hill Memorial Hospital</td>
<td>Troy Regional Medical Center</td>
</tr>
<tr>
<td>Houston County</td>
<td>UAB Hospital</td>
</tr>
<tr>
<td>Huntsville Hospital</td>
<td>University of South AL. Hospitals</td>
</tr>
<tr>
<td>Jackson Hospital</td>
<td>Vaughan Regional Medical Center</td>
</tr>
</tbody>
</table>

1. Call 286-5509 to contact the PACS Department to complete the process after sending images to SeeMyRadiology.

2. Received images will be viewable in the exceptions handler until resolved. Search for the patient by name.

These facilities have capabilities to send only.

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<tr>
<td>Kirklin Clinic</td>
<td>UAB HOSP</td>
</tr>
<tr>
<td>UAB Affiliated Physicians</td>
<td></td>
</tr>
<tr>
<td>UAB Hospital</td>
<td></td>
</tr>
</tbody>
</table>

Once this is complete you may let your contact know that the images have been sent to the PCS PACS and that if they have any issue locating the images to contact their PACS Admin.

Note: A member of the Baptist Health PACS Department can be contacted anytime for assistance for locating images by calling 286-5509.