

North Central Texas Trauma Regional Advisory Council

Stroke Triage & Transport Guidelines

Approved by the Board of Directors

April 6, 2016



On April 6, 2016, the Board of Directors for the North Central Texas Trauma Regional Advisory Council (NCTTRAC) approved the regional **Stroke Triage & Transport Guidelines** for Trauma Service Area E.

These guidelines were developed by the NCTTRAC EMS Committee with input from all pre-hospital providers. The guidelines were then reviewed and recommended for approval by the Stroke Committee. The Physician Advisory Group (PAG) met over a seven month period to review the guidelines. The PAG included both EMS and Stroke Medical Directors from across the region.

Noteworthy, the Stroke Physician Advisory Group recommends EMS agencies use the LAMS score to detect Large Vessel Occlusions.

Key notes in the transport algorithm:

- Key priorities for Stroke patients are efficient scene times and rapid transport to an appropriate-level Stroke Center, unless immediate intervention (ABC's, Cardiac Arrest, etc.) is required.
- Cardiac Arrest patients should be transported to the closest appropriate hospital after receiving high-quality CPR on-scene per protocol.
- Pediatric patients should be triaged preferentially to a Pediatric Specialty Center.
- Ultimately, the final transport decision rests with the individual EMS personnel directing patient care at the scene, in consultation with local protocol and/or local medical direction.

The discussion surrounding the development of the Stroke Triage and Transport Guidelines was as robust as ever with an average of twenty Stroke and EMS Medical Directors attending each Physician Advisory Group (PAG) meeting over the course of seven months. NCTTRAC would like to thank all the coalition members for their hard work and dedication.

NCTTRAC thanks the following Agencies/Facilities for participating with the PAG:

Baylor S&W All Saints, Baylor S&W Waxahachie, Baylor S&W Garland, Baylor S&W McKinney, BUMC, JPS, MedStar/EPAB, Plaza Medical Center, Methodist Mansfield, THR Arlington, THR Huguley, Harris Methodist FW, Arlington Medical Center, University of Texas Southwestern Medical Center, UTSW/BioTel.

Please feel free to contact Winga Manning, Emergency Healthcare Systems Supervisor at 817-607-7011 or wmanning@ncttrac.org with any questions.

Attachment: 2016 NCTTRAC Stroke Triage & Transport Guidelines

North Central Texas Trauma Regional Advisory Council (NCTTRAC) 2016 Stroke Triage and Transport Guidelines

I. Introduction

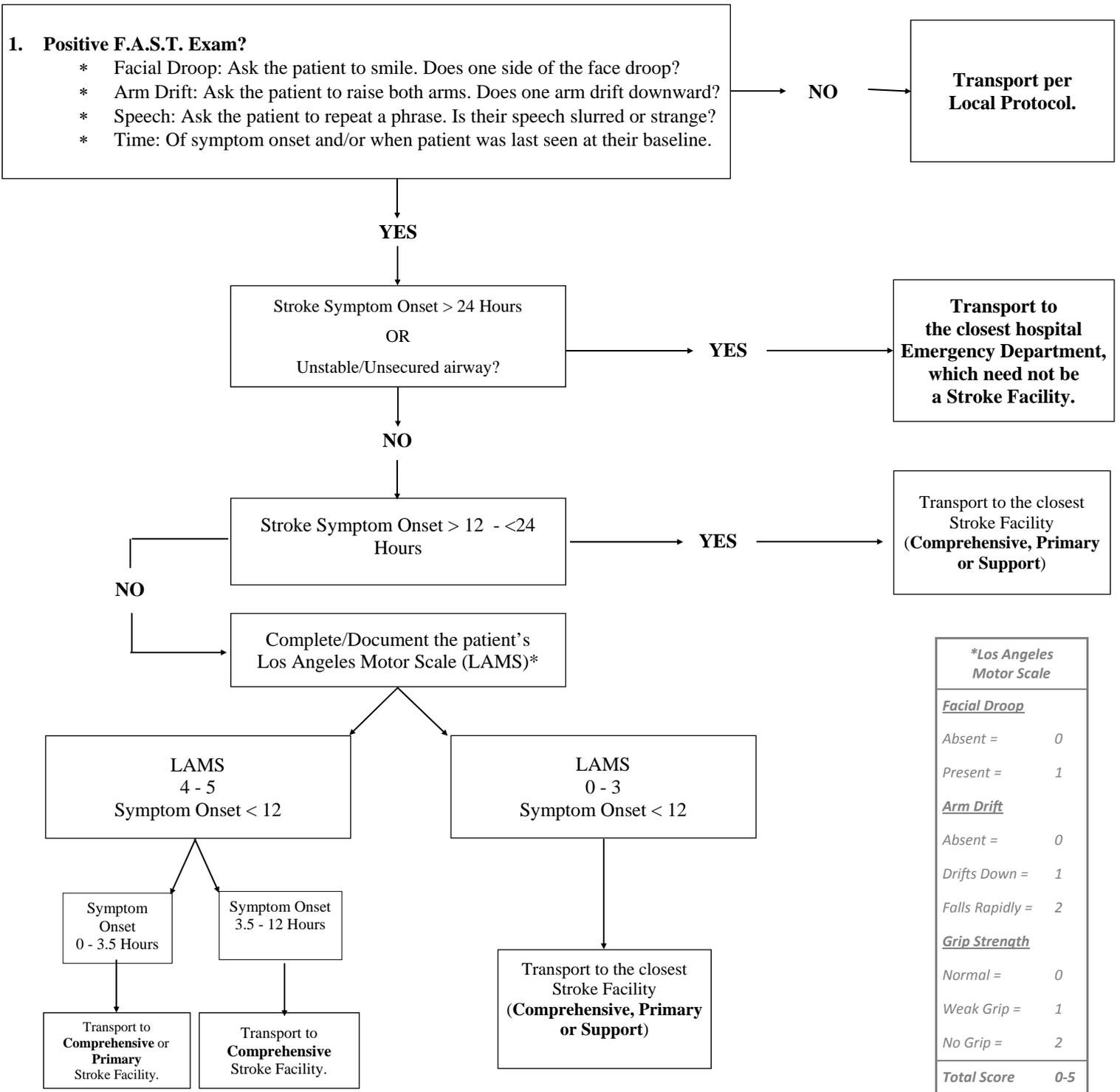
Texas Administrative Code, Title 25, Part 1, Chapter 157, Subchapter G, Rule §157.123 establishes the legal framework of the Emergency Medical Services (EMS) Trauma System in the State of Texas; which includes the creation of Regional Advisory Councils and their respective authority to develop an EMS/Stroke System plan based on standard guidelines for comprehensive system development, to include pre-hospital triage criteria, diversion protocols, bypass protocols, and regional trauma treatment guidelines. As such, the North Central Texas Trauma Regional Advisory Council (NCTTRAC) has developed, vetted, and approved the following Stroke Triage and Transport Guidelines for use by North Central Texas EMS providers licensed by the Texas Department of State Health Services (TDSHS).

II. Overview

- A. For the Stroke patient, as for other critically ill patients, assessment is the foundation on which all management and transportation decisions are based.
- B. The survival of the Stroke patient is dependent upon rapid recognition of Stroke, management of life-threatening symptoms, and rapid transport to an appropriate facility, as outlined on Page 2 of this document. Scene times should be kept to a minimum with only the necessary interventions made to identify and/or correct immediate life threats. All secondary interventions should be performed en-route to an appropriate facility or while awaiting aeromedical evacuation.
- C. The first step in Stroke assessment is the **Scene Assessment** / Scene Size-Up. As you approach the scene, assure safety for yourself and the patient while taking BSI precautions. Rapidly identify the number/type of patients and request additional resources as appropriate.
 1. Additional resources (e.g. aeromedical evacuation, special rescue, additional ambulances) should be notified based off of dispatch information; and requested to proceed with arrival/landing on scene during scene assessment / scene size-up.
 2. Recognition of multi-patient incidents and mass-casualty incidents is critical. In these incidents, priority shifts from focusing all resources on the most critical patient to providing the greatest good to the greatest number of patients.
- D. Once a brief scene assessment / scene size-up has been performed, which may include rapid triage of multiple patients, attention should focus on evaluating individual patients. Individual patients should be assessed/treated based off of initial triage priority.
- E. The **Primary Assessment** begins with a simultaneous, or global, overview of the status of the patient's respiratory, circulatory, and neurological systems to identify obvious, significant problems with oxygenation, circulation, hemorrhage, or gross neurological deficit; followed by a rapid focused assessment of Airway, Breathing/Ventilation, Circulation/Bleeding, Disability, and Expose/Environment.
 1. Make immediate interventions to correct life-threats in the order found. Progress from BLS (least invasive) to ALS (most invasive), utilizing the most appropriate intervention warranted in a given situation.
 2. **Assess the Patient's Mental Status:** If unresponsive, check for a pulse. If no pulse, initiate CPR per local protocol.
 4. **Airway:** While simultaneously applying C-spine precautions (if able), the provider should establish/ensure a patent airway by opening (e.g. jaw-thrust), clearing (e.g. suction), assessing, and intervening (e.g. OPA/NPA, King LTD-S, ET Tube).
 4. **Breathing:** Ensure adequate oxygenation and ventilation of the lungs utilizing appropriate oxygen-delivery devices (e.g. NC, NRB, C-PAP, BVM). Expose the chest and obtain breath sounds. Treat abnormalities according to local protocol.
 5. **Circulation:** Observe the color, temperature, and moisture of the skin while rapidly assessing for the presence/location/quality of pulses (e.g. carotid, femoral, radial) to estimate Blood Pressure and/or perfusion.
 6. **Disability:** Rapidly assess Level of Consciousness, pupils, and motor/sensory responses. If trauma suspected, utilize appropriate devices to restrict spinal motion. Observe for increased ICP and signs/symptoms of impending brain-stem herniation (e.g. unequal pupils, bradycardia, hypertension, irregular respirations). Perform a rapid FAST exam.
 7. **Expose/Environment:** Rapidly extricate/remove patients from dangerous environments (e.g. fire, snow, pool, etc.). Remove patients clothing in order to fully assess for injury. After assessing, cover patient to maintain body heat.
- F. The **Secondary Assessment** begins after the recognition/management of life-threatening symptoms found in the Primary Assessment. The objective of the Secondary Assessment is to gather detailed information.
 1. Reassess/Confirm Airway, Breathing, and Circulation. Make appropriate interventions as necessary.
 2. Obtain full/detailed vital signs utilizing available equipment.
 3. Determine blood glucose level. If outside normal limits, treat according to local protocol.
 4. Complete a Los Angeles Motor Scale stroke evaluation/assessment/scale and document in detail.
 5. Obtain SAMPLE and OPQRST histories if able/applicable.
 6. Obtain vascular access and administer appropriate fluid boluses to restore/maintain a radial pulse and/or SBP > 90 mmHg.
 7. Administer appropriate medications and other interventions per local protocol.
 8. Do not routinely treat hypertension in the Stroke patient unless specifically directed by Medical Control.
 9. Perform a detailed head-to-toe physical examination
- G. Continuously **Reassess** airway, breathing, circulation, and disability. Document vital signs frequently. Make appropriate interventions as necessary.

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III. Transport Algorithm



- ◇ Key priorities for Stroke patients are efficient scene times and rapid transport to an appropriate-level Stroke Center, unless immediate intervention (ABC's, Cardiac Arrest, etc.) is required.
- ◇ Cardiac Arrest patients should be transported to the closest appropriate hospital after receiving high-quality CPR on-scene per protocol.
- ◇ Pediatric patients should be triaged preferentially to a Pediatric Specialty Center.
- ◇ **Ultimately, the final transport decision rests with the individual EMS personnel directing patient care at the scene, in consultation with local protocol and/or local medical direction.**

* Or any of the other validated Stroke Scale Scores

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IV. Special Considerations

- A. Air Medical Evacuation:** When requesting air medical assets, confirm the aircraft's present location and estimated time of arrival (ETA) to the scene. The ETA includes start-up, lift-off, and flight time(s) to the scene.
1. If the aircraft's ETA or the total time to definitive care by air exceeds the estimated ground transport time to the closest most appropriate facility, immediate ground transport should be considered.
 2. Air medical assets may be utilized to deliver higher echelons of care and/or specialty services when indicated (e.g. need for advanced airway management, surgical amputation teams).
 3. The purpose of air medical evacuation is to achieve getting the critical patient to the most appropriate definitive care hospital in the shortest amount of time. The air medical helicopter to be utilized is the closest medical helicopter to the scene appropriate for the patient's needs
- B. Cardiac Arrest:** If patients are found to meet one or more the following criteria, CPR may be withheld and the patient declared dead if in accordance with local protocol.
1. Pulseless and apneic in addition to signs incompatible with life (e.g. decapitation, dependent lividity, rigor mortis, and decomposition).
 2. No pupillary reflexes, no spontaneous movement, and no organized cardiac rhythm on the ECG greater than 40 complexes per minute.
- C. Obstetrics:** Consult Off-Line or On-Line Medical Control/Direction.
- D. Pediatrics:** Pediatric patients should be triaged preferentially to a Pediatric Specialty Center.
1. If the term "lethargic" is used by the caregiver, the term needs to be described.
- E. Transfer of Patient Care Info:** The regional standard for Patient Care Report (PCR/ePCR) handoff communication is as follows:
1. The receiving facility should be notified of patient and patient status prior to EMS arrival.
 2. At the time of transfer of patient care, at a minimum, verbal communication will occur, and a paper short-list and/or electronic draft-report will be delivered.
 3. A final written or electronic full care report will be available within one business day.
 4. *This regional standard expounds upon the minimum requirements set-forth in TDSHS EMS Rule §157.11(m).*
- F. Definition of Stroke Facility Designation:**
1. Comprehensive Stroke Facility (Level I) – Provides comprehensive care to the seriously ill patients with complex strokes and cerebrovascular disease; have the capability to provide specialized care including advanced neuroimaging capabilities, various types of cerebral angiography, neurosurgical and endovascular techniques.
 2. Primary Stroke Facility (Level II) – Provides complete care for most acute stroke patients; have the capability to stabilize, diagnose and either provides treatment with acute therapies or arranges for transfer to a higher level of stroke care.
 3. Support Stroke Facility (Level III) – Provides resuscitation, stabilization and assessment of the stroke victim and either provides the treatment or arranges for immediate transfer to a higher level of stroke care either a Comprehensive (Level I) Stroke Center or Primary (Level II) Stroke Center.