# Coastal Bend Regional Advisory Council
# Trauma Service Area - U

# STROKE SYSTEM PLAN

**Reviewed/Revised/Approved: January 2022**

## BYPASS PROTOCOL FOR THE SUSPECTED STROKE PATIENT

**GOAL:** Rapidly identify and assess; using a pre-hospital stroke scale, and transport patients suspected of an acute stroke to the nearest stroke accredited hospital in an expeditious manner.

**Decision Criteria:** This bypass protocol is intended to ensure that patients with a witnessed acute stroke be transported to an **accredited stroke center**. *Exceptions to the bypass protocol requiring the patient to be transported to the NEAREST facility are:* Inability to establish and/or maintain an airway or in the event of a cardiac arrest.

- Rural:
  - LVO Suspected: Is CSC within 60 minutes max transport time?
    - YES - Transport to Comprehensive Stroke Center (CSC)
    - NO - Transport to nearest Primary Stroke Center (PSC) unless more than 30 minutes additional transport time past nearest Acute Stroke Ready Hospital (ASRH).
    - **If no stroke centers available within 60 minutes consider air medical transport per regional point of entry plan**
- Urban:
  - LVO Suspected?
    - YES – Transport to CSC
    - NO – Transport to nearest PSC or ASRH
- Suburban:
  - LVO Suspected
    - YES – Is CSC within 45 minutes max transport time?
      - YES – Transport to CSC
      - NO – Transport to nearest PSC or ASRH
    - NO – Transport to closest stroke center

**Patient Criteria for Activation of Bypass Protocol for the Confirmed Witnessed Acute Stroke Patient:**
The activation of the Bypass Protocol for the symptomatic acute stroke patient should be initiated upon the recognition of confirmed witnessed changes in patient condition as to **"Last Known Well"** in less than 24 hours.
*If "Last Known Well" temporarily unknown due to patient's inability to talk or the lack of a witness, activate a stroke alert*

**Air Ambulance/Hand-Off:**
Hand off of the acute stroke patient to advanced life support, mobile intensive care unit or air transport will be initiated in the following circumstances:

- Basic life support unit is first responder only and unable to leave service area
- If air transport/pick-up total time is less than ground transport time.

**Notes:**

- If there should be any questions regarding activation of treatment protocol, the receiving facility should be contacted regarding a decision for treatment.
- The receiving facility should be notified at the earliest possible time by EMS to provide the facility with the ability to activate a stroke alert.
- Patient's rights, choices and best interest will be respected in the determination of hospital destination.

## Recommended Pre-hospital Stroke Assessment Scale:

## Cincinnati Prehospital Stroke Scale (CPSS)

**Facial Droop** (have patient smile)
**Normal:** Both sides of the face move equally
**Abnormal:** One side of face does not move as well

**Arm Drift** (have patient hold arms out for 10 seconds)
**Normal:** Both arms move equally or not at all
**Abnormal:** One arm drifts compared to the other, or does not move at all

**Speech** (have patient speak a simple sentence)
**Normal:** Patient uses correct words with no slurring
**Abnormal:** Slurred or inappropriate words, or mute

## VAN Assessment Tool

If patient has **any weakness** **PLUS** any one of the below:

- Visual Disturbance (field cut, double, or blind vision)
- Aphasia (inability to speak or understand)
- Neglect (gaze to one side or ignoring one side)

***This is likely an LVO (large vessel occlusion) = VAN Positive***

**Thrombolytic (IV-tPA) Screening Exclusion Criteria in the Field:**

- Clearly defined onset of stroke symptoms 4.5 hours or greater or patient awakens with stroke symptoms
- History of intracranial hemorrhage, neoplasm, arteriovenous malformation, or aneurysm
- Recent (within 3 months) intracranial or intraspinal surgery or serious head trauma
- Active internal bleeding

(*If all exclusion criteria "NO" the patient is a potential candidate for IV-tPA*)

**EMS Treatment Guidelines:**

Refer to CBRAC Stroke Algorithm

**Hospital Treatment Guidelines for the Confirmed Stroke Alert Patient:**

- Door to Triage by Doctor – 10 minutes
- Door to CT Scan – 20 minutes
- Door to CT Read/Lab Results – 45 minutes
- **Door to Alteplase (t-PA) – 30 minutes**
- **Door to Puncture for LVO – 90 minutes**

**EMS Post-IV Alteplase (t-PA) Transfer Protocol:**

<u>All post t-PA patients should be sent by Critical Care Transport (MICU)</u>

- Document vital signs prior to transport and verify that SBP <180, DBP <105. *If BP above limits, sending hospital should stabilize prior to transport*
- Obtain contact method for family or caregiver (preferably cell phone) to allow contact during transport or upon patient arrival
- **Obtain and record Vital Signs and Neurological checks (CPSS) every 15 minutes via CBRAC EMS Inter-facility Transfer Thrombolytics Protocol form**
- Perform and record baseline GCS
- Continuous cardiac monitoring
- **Strict NPO – this includes all *PO* medications**
- Verify total dose and time of IV t-PA bolus (if t-PA is completed prior to transfer)
- If IV Alteplase (t-PA) dose administration will continue en route:

  -Verify estimated time of completion.
  -Verify with the sending hospital that the excess t-PA has been withdrawn and discarded (for example, if the total dose of t-PA to be given is 70mg, then verify the remaining 30cc has been wasted since a 100mg bottle of t-PA contains 100cc of fluid)
- If Alteplase (t-PA) dose completed en route, attach 50 ml Normal Saline and continue at the same rate of the Alteplase (t-PA) drip
- If SBP >180 or DBP >105, and if antihypertensive medication started at sending facility, then adjust as follows:

1. **If Labetalol IV drip started at the sending hospital, increase by 2mg/min every 10 minutes (to a maximum of 5mg/min) until SBP <180 and DBP <105; If SBP <150 or DBP <80 or HR <60, turn off drip and call receiving hospital for furtherinstructions.**

2. **If Nicardipine IV drip was started at the sending hospital, may increase dose by 2.5mg/hr every 5 minutes. To a maximum of 15mg/hr until SBP <180 and DBP <105; IfSBP <150 or DBP <80 or HR <60, turn off drip and call receiving hospital for further instructions.**

- **For any acute worsening of neurologic condition, if patient develops severe headache, acute hypertension or vomiting (suggestive of intracerebral hemorrhage), profuse bleeding not controlled bypressure, OR angioedema:**

    1. **Discontinue t-PA infusion (if still being administered)**
    2. **Call receiving facility for further instructions including decision to adjust blood pressure medication and/or divert to nearest hospital.**
    3. **Continue to monitor vitals and neuro checks every 15 mins.**

Reference:

Jauch, E. C., Schwamm, L. H., Panagos, P. D., Barbazzeni, J., Dickson, R., Dunne, R., . . . Yallapragada, A. (2021). Recommendations for regional stroke destination plans in rural, suburban, and urban communities from the Prehospital Stroke System of Care Consensus Conference: A Consensus Statement from the American Academy of Neurology, American Heart Association/American Stroke Association, American Society of Neuroradiology, National Association of EMS Physicians, National Association of State EMS officials, Society of Neurointerventional Surgery, and society of vascular and Interventional Neurology: Endorsed by the Neurocritical Care Society. *Stroke*, *52*(5). doi:10.1161/strokeaha.120.033228