

LAC+USC MEDICAL CENTER POLICY

Subject: PRIMARY STROKE RECEIVING CENTER	Original Issue Date: 8/9/16	Policy # 937
	Supersedes: 8/23/19	Effective Date: 11/4/22
Departments Consulted: Department of Neurology Department of Neurosurgery Department of Emergency Medicine Department of Nursing Department of Quality Improvement	Reviewed & Approved by: Attending Staff Association Executive Committee Senior Executive Council	Approved by: (Signature on File) Chief Medical Officer (Signature on File) Chief Executive Officer

PURPOSE

To ensure timely evaluation and management of acute stroke patients in a manner consistent with expert consensus, the Joint Commission, Emergency Medical Services (EMS), and American Heart Association guidelines.

POLICY

LAC+USC Medical Center is available for emergent evaluation and management of acute stroke patients 24 hours a day, 7 days a week. The aim is to achieve a “door-to-needle” time of 60 minutes or less for acute ischemic stroke patients eligible for treatment with intravenous thrombolysis as per American Heart Association Guidelines. Also, appropriate stroke candidates for endovascular intervention will be identified, treated, or potentially transferred as available resources permit.

DEFINITIONS

Stroke: A stroke is defined by a new neurologic deficit attributed to an acute focal injury of the central nervous system by a vascular cause.

Stroke Team Activation: Simultaneous notification of stroke specialists, including Neurology, Neurosurgery, Radiology, Pharmacy, and the Stroke Coordinator to facilitate response at the bedside of an acute stroke patient (not all notified services expected to respond onsite).

GOALS

1. Initiate MD evaluation, history, lab work and determine last known well time in < 10 minutes²
2. Time from patient arrival to Stroke Team Activation < 15 minutes.
3. < 25-minute CT scan initiated
4. < in 45 minutes or less CT read done and documented, including results reported to treating clinicians; and labs reviewed, determining eligibility for tPA.
5. Time from arrival to thrombolysis < 60 minutes.

Subject: **PRIMARY STROKE RECEIVING CENTER**Effective Date:
11/4/22Policy #
937

All clinical staff members involved are expected to help expedite the care of the acute stroke patient.

PROCEDURE

1. **Stroke Team Activation**: The Base Station mobile intensive care nurse (MICN) will initiate a Stroke Team Activation based on Los Angeles County EMS Agency criteria, this being any patient with a positive modified Los Angeles Prehospital Stroke Screen (mLAPSS) and last known well time (LKWT) within 24 hours. Acute stroke patients presenting to ambulatory triage will be routed according to the attached workflows and then be brought directly to an Emergency Department (ED) bed if last known well time is 24 hours or less. The RN will notify the Emergency Flow Coordinator (EFC), the Charge Nurse, and the definitive ED provider of arriving acute stroke patients.
 - A member of the Stroke Team is expected to respond to the bedside within 5 minutes of Stroke Team activation. During weekday daytime hours, the Neurology attending or stroke fellow will be expected to respond to the Stroke Team Activation.
 - ED providers are expected to use the available stroke order sets in ORCHID to ensure compliance with stroke guidelines.
 - If stroke team is activated for a patient from the outpatient environment, the responders will activate the "Code Assist" protocol (MC Policy #918) and facilitate transporting the patient to Emergency Department Ambulance Triage, and then a new stroke team activation will be initiated from there.
 - If stroke is suspected of an existing in-patient, stroke team is activated by calling 111 according to the attached workflows.
2. **NIHSS**: The National Institute of Health Stroke Scale (NIHSS) must be documented in the medical chart by either the ED provider or Neurologist prior to administration of thrombolytics. A repeat NIHSS must be documented after administration of thrombolytics and/or if the patient's condition changes significantly.
3. **Imaging**: CT Head without Contrast should be performed within 25 minutes of arrival. The CT scan

Subject: **PRIMARY STROKE RECEIVING CENTER**Effective Date:
11/4/22Policy #
937

should be read within 45 minutes of arrival and documented in record, including reporting results to treating clinician. Imaging interpretation must be performed by a fellow or attending physician.

4. Thrombolysis: The decision to thrombolyse will be made jointly between Neurology and the ED based on the patient's presentation. All cases will be discussed with the neurology attending. There is a 4.5-hour window of opportunity within which to begin administration of thrombolytic therapy.
5. Consent:
 - Informed Consent: Verbal informed consent should be obtained if it will not delay administration. If obtained, the provider should explicitly document the discussion of the thrombolytic therapy with the patient or representative in the medical record. If the patient is unable to consent and no family members or representatives are available, emergency exception for treatment should be applied and documented appropriately, provided there are no contraindications. In that circumstance, thrombolysis should be given as indicated and the provider should explicitly document the indication for treatment in the chart, why consent could not be obtained, and efforts made to obtain consent.
 - Informed consent for angiography with possible thrombectomy, angioplasty, stenting, and/or other interventions may be obtained and documented if it will not delay care, but the procedure otherwise may continue without consent as per the provisions for Immediate Exception to Informed Consent outlined in MC205 ("Consent for Care").
6. The Neurology team will be responsible for ordering and administering the thrombolytic agent. This should be performed in conjunction with ED Pharmacy and should be performed within the ED to avoid delays in care. If the patient is already in the inpatient environment, the pharmacist will assist in preparation, delivery, and administration of thrombolytic agent.
7. All acute stroke patients receiving thrombolytics should be admitted to the Intensive Care Unit. All other strokes may be dispositioned to a level of care commensurate with the patient's clinical presentation.
8. If endovascular therapy is considered, call Dr. Amar and consult neurosurgery. If endovascular therapy is not available at LAC+USC, Neurology and/or Neurosurgery will consider and assist in arranging transfer to USC Keck Hospital for acute ischemic strokes requiring endovascular intervention. The Keck Hospital Stroke Hotline is 323 442 6111. If deemed appropriate, transfer to Keck should be accomplished within 2 hours of the patient's arrival. If potential treatment at Keck hospital is not possible, Arcadia Hospital of USC is the first back-up and PIH Good Samaritan Hospital is the second back-up.
9. If an intracranial hemorrhage is identified, the ED provider will resuscitate the patient, administer reversal agents (when appropriate), and consult Neurosurgery.
10. If an ICU bed is not immediately available, Neurology or Neurosurgery will be responsible for periodic evaluation of the patient's neurologic status and for interval recommendations on the patient's care. Any sudden change in the boarding patient's status should be promptly communicated to the Neurology or Neurosurgery team.

Subject: **PRIMARY STROKE RECEIVING CENTER**Effective Date:
11/4/22Policy #
937**QUALITY IMPROVEMENT**

The Stroke Program Neurology and Neurosurgery Co-Directors will be responsible for ongoing Quality Improvement Program and oversight of the following:

1. All Stroke Team Activation cases will be reviewed, at least quarterly, by the Stroke Program Quality Improvement Committee and will be reported to the Network Quality Improvement Committee through the Department of Neurology at regularly scheduled quarterly meetings.
2. Pre-hospital Stroke Team Activation cases will be tracked, trended and evaluated for compliance with guidelines.
3. The Stroke Program Quality Improvement Committee will include, at a minimum, the following representatives:
 1. Stroke Program Neurosurgery Director
 2. Stroke Program Neurology Co-Director
 3. ED Physician Champion
 4. Stroke Program Manager and Coordinator(s)
 5. Prehospital Care Coordinator

RESPONSIBILITY

Department of Neurology
 Department of Neurosurgery
 Department of Emergency Medicine
 Hospital Administration
 Nursing

REFERENCES

1. American Heart Association Guidelines (2022).
2. Joint Commission Primary Stroke Center Guidelines. .
3. Department of Health Services County of Los Angeles. (2018). *Stroke patient destination reference no. 521*.

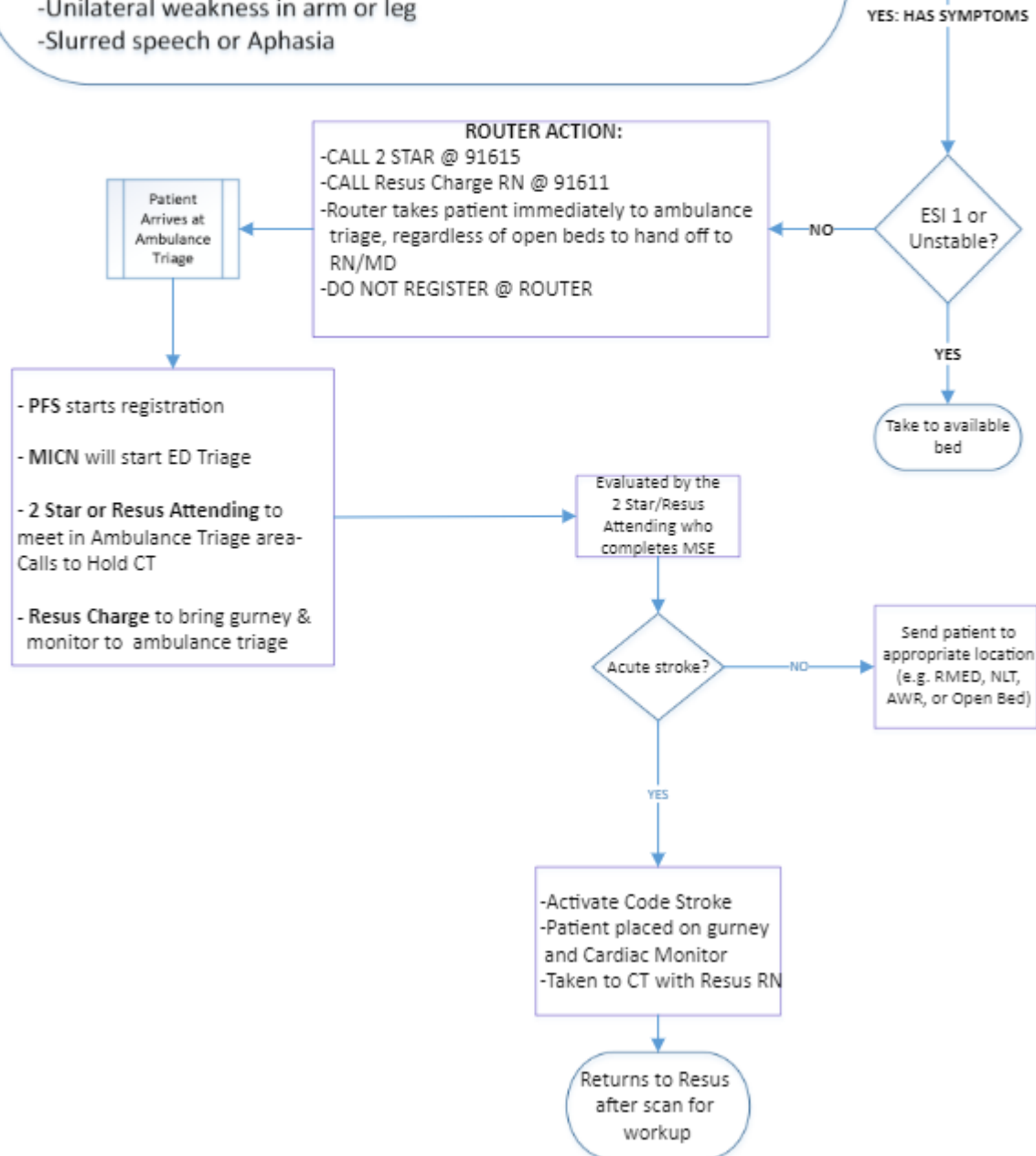
REVISION DATES

November 04, 2022

STROKE PROCESS FROM ER TRIAGE/ROUTER

Patient presents @ Router Triage station with Stroke Sx for 24 hours or less:

- Acute dizziness + Acute onset of ataxia/imbalance, difficulty ambulating
- Facial Droop + CNS concern (Rule out Bell's Palsy)
- Unilateral weakness in arm or leg
- Slurred speech or Aphasia



EMS to CT Process for STROKE TEAM ACTIVATION

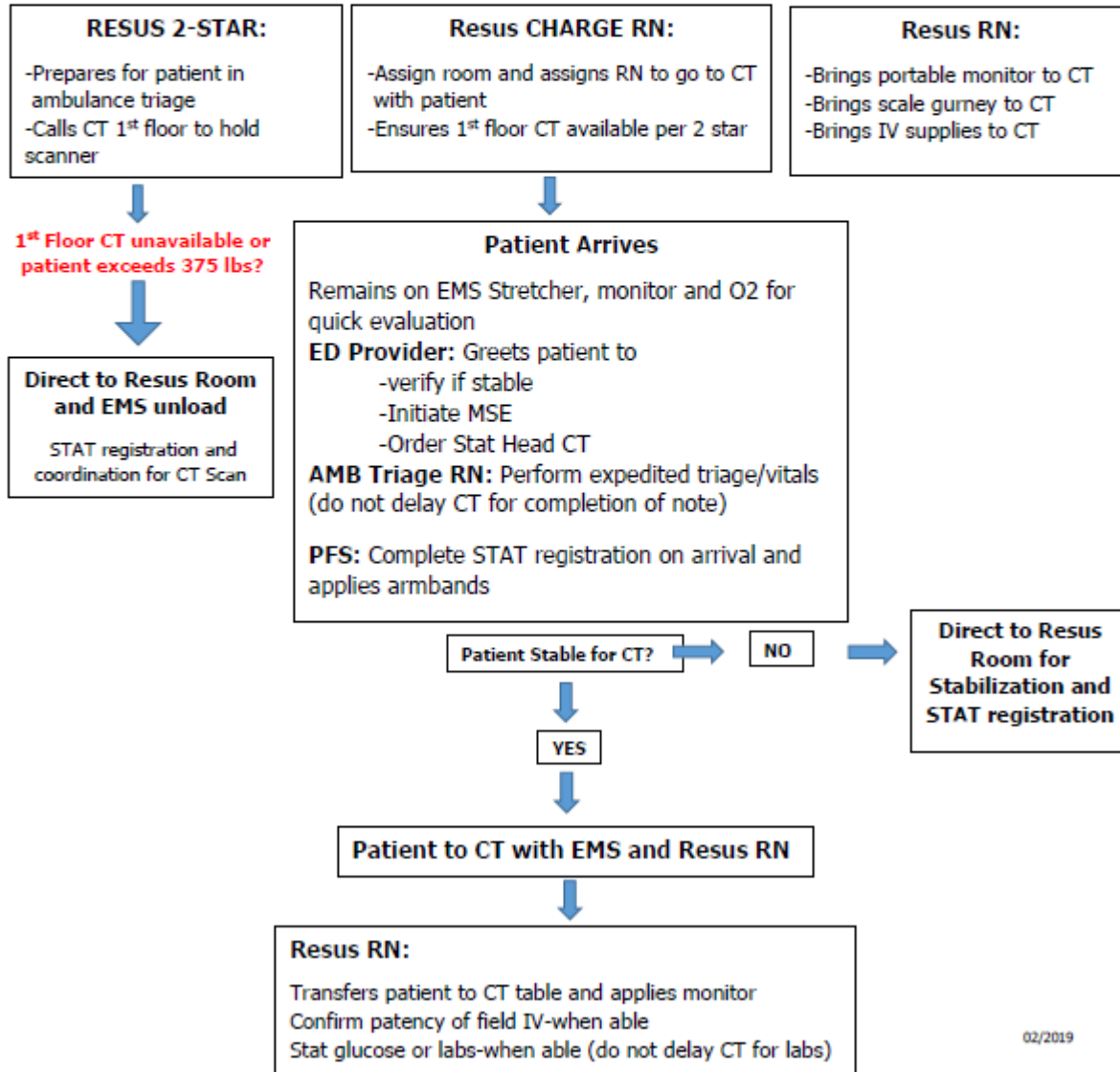
Patient meets criteria for Stroke Team Activation from Pre-Hospital report

- Meets mLAPSS criteria and has LKWT within 24 hours
- MICN Calls 111 for Stroke Team Activation
- MICN Notifies the Resus Charge, 2-Star and Attending
- MICN Notifies PFS in Ambulance Triage

Patient Unstable on EMS report:

Direct to Resus Room for Stabilization and STAT registration

Patient Stable for Amb. Triage evaluation (as per EMS report):
See below for role



02/2019

Subject: **PRIMARY STROKE RECEIVING CENTER**Effective Date:
11/4/22Policy #
937

LAC+USC Medical Center In-Patient Stroke Team Activation Process

Purpose:

To rapidly deploy a system of care for patients in the in-patient setting discovered to have new onset of acute neurological symptoms concerning for stroke.

Procedure:

1. Patient is found by physician or nursing staff to have new acute neurological findings concerning for stroke; "stroke team activation" is called by dialing extension 111
2. Communications operator will determine, based on room location, and determine if the patient location is in-patient vs outpatient (Department of Emergency Medicine) and page appropriate team
3. In-patient stroke team activation response team will include:
 - a. "Rapid Response Nurse (RRT)" will respond to the patient with RRT bag (limited supplies).
 - b. ED pharmacy will respond during the hours of **0700-1900**. In collaboration with CCU satellite pharmacist, it will be determined who should respond based on workload, volume, or staffing. During hours of **1900-0700** the ED pharmacist together with inpatient pharmacy will determine who will respond.
 - c. Internal transportation is notified via pager system, additionally the team via receives notification via landline. Transportation should arrive to patient location in 10 minutes or less to help facilitate transporting patient to CT scanner. Inpatient stroke patients will normally be transported to the 3rd floor scanner to complete needed diagnostics.
 - d. Stroke team members who respond include RRT Nurse, Neurology Stroke Resident, Stroke Coordinator (if on campus).
 - e. Patient Flow Coordinator should respond to patient location or be in telephone contact with RRT Nurse to help facilitate transfer of patient to higher level of care if needed.

Roles:

1. Communications will be notified via extension 111, communications are able to determine notification to inpatient providers via paging system.
2. Stroke Resident will respond to patient bedside and accompany patient to CT scanner and will stay with patient until a decision made to administer thrombolytics, upgrade level of care, and provide patient handoff to receiving provider receiving patient.
3. Rapid Response Nurse will respond to the bedside and assist in monitoring of patient
4. Transportation is expected to respond to the patient location within 10 minutes or less, and will facilitate transport of patient to CT scanner along with RRT Nurse, and MD.
5. In-patient strokes that occur from 0700 to 1900 the ED Pharmacist will receive the page and will contact the CCU satellite pharmacist to bring tPA (Alteplase®). Collaboratively the ED Pharmacist and the CCU Pharmacist will determine who should respond. If the in-patient stroke activation occurs from 1900 to 0700 then the ED pharmacist and in-patient pharmacy will determine who will respond to provide medication.
6. Stroke neurology resident will be responsible to administer tPA bolus, the RRT nurse will be responsible for hanging tPA infusion. RRT nurse will also monitor the patient's neurological status and vital signs in accordance with policy until a definitive bed assignment is given and handoff to ICU nurse has been completed.
7. Patient flow coordinator should be contacted to help facilitate coordination of new bed assignment if deemed necessary.

In-Patient Stroke Team Activation Flow For RRT Nursing

RRT Nurse is not expected to respond to outpatient areas, these are managed by Code Assitst Team.

