Essentia Health- ST. JOSEPH'S MEDICAL CENTER
BRAINERD, MINNESOTA

**PROTOCOL:** STROKE ALERT

## PURPOSE

To establish a standard, well-coordinated and integrated approach to the recognition and treatment of any patient exhibiting signs and symptoms of acute stroke less than 8 hours in duration or arriving within 8 hours of waking up with stroke-like symptoms.

## INCLUSION CRITERIA

**Sudden onset** of any one of the following;

1. Numbness or weakness in the face, arms or legs, particularly on one side of the body
2. Confusion with aphasia (expressive and / or receptive)
3. Difficulty speaking or understanding what others are saying
4. Difficulty walking, loss of balance or coordination
5. Severe headache that does not have obvious or known cause
6. Nonspecific visual complaints **with** Partial, Complete or Bilateral visual field loss or double vision
7. Sudden onset of continuous vertigo and **ANY of the following**
    - 65 years of age or older
    - Younger than 65 with risk factors (i.e. Smoking, diabetes, HTN, etc.)
    - Posterior neck pain in setting of recent manipulation or injury (suggesting dissection).

## DEFINITIONS

Stroke ALERT – Consistent phrase used to identify all patients meeting inclusion criteria, regardless of the transportation destination.

**Team members:** Responsible Licensed Practitioner (RLP) or ED physician, ED RN, ED Technician, ED Ward Clerk, ICU RN, Lab Phlebotomist, CT Tech, Pharmacist.

## PROCEDURE

**1. Activation of Stroke Alert**

A. Ambulance Service may activate Stroke Alert protocol prior to arrival
   1. Notifies the ED that the patient en route meets inclusion criteria
   2. Nurse receiving report will notify Ward Clerk to activate Stroke Alert team and provide ETA
   3. Nurse will inform ED Provider and obtain direction re: timing of initial CT
   4. The ED will notify CT when the CT will be performed prior to going to ED exam room

B. Emergency Department activation:
   1. Activated by the triage nurse when inclusion criteria is met.
   2. Activated upon the direction of the emergency room provider.

C. Inpatient activation:
   1. Activated at the direction of the Rapid Response Team
      a. May be activated by ICU nurse in absence of MD
   2. Obtain a stat blood sugar
   3. Initiate O2 per nasal cannula at 4 liters
   4. Obtain vital signs

5. Notify the Emergency Department to activate the Stroke Alert
6. Obtain ED room assignment
7. Patient will be transported immediately to assigned ED exam room via hospital bed accompanied by primary nurse, RRT nurse and the RLP activating the Stroke Alert

**Physician** ***TIME GOAL:*** ***Stroke Alert initiated prior to arrival for patients that are identified in the field and meet inclusion criteria.***

**Stroke Alert initiated < 5 minutes after arrival and patient headed to CT < 10 minutes**

- Initial patient contact will occur in CT when EMS has been directed there
- Obtain history and review criteria for treatment
- Review initial info re: case with Neuro by phone if they are calling in and using video connection
- Order antihypertensive treatment if BP > 180 / 105
- Oversee that @ least 1 IV is started and blood drawn **before** patient leaves for CT **and** ensure 15-minute door to CT goal is achieved
- Perform NIH stroke scale in ER with Neuro via video or alone and finish it en route to CT

***TIME GOAL:*** **Drug ordered < 20 minutes**

**ED Ward Clerk** ***TIME GOAL:*** **Door / notification to page out < 5 minutes**

- Overhead page the Stroke Alert
- Alpha Page Stroke Alert group with location of stroke alert patient

***TIME GOAL:*** **Telestroke unit connected < 10 minutes**

- Call United Hospital Telestroke **#651-241-8400, specify request for Allina Health Telestroke service** to initiate telestroke. (Document time of calls). Provide information including patient name, hospital location, physician name (requesting provider), and ED call back number
- Initiate stroke alert initial eval and treatment order set (labs, CT, CTA, EKG, NIH neuro checks / VS)
- Find family for consent and bring to patient room for history – especially if using telestroke
- Provide MRI Questionnaire to family to complete
- Fax the following to 651-241-5398
    1. Neuro fax cover sheet
    2. Demographics sheet
    3. Request for neuro consult
- Notify CT to make copy of scans if patient is being transferred
- Notify United Patient Placement center if patient is to be transferred 651-241-4700 to obtain disposition

**RADIOLOGIST**

- Radiologist reading CT will call CT reading to the on-call Stroke Neurologist

**ED Nurse** ***TIME GOAL:*** **VS, abbreviated NIHSS, monitor, O2 < 5 minutes & door to drug < 30 minutes**

- Transport and set up Telestroke Unit - Camera should be at foot of stretcher on side opposite nurse working on VS/starting IVs.
    - Connect the unit
    - Turn on the unit
    - Activate connection to Omnijoin Telestroke site
- Take stretcher from planned exam room and move it to CT and wait for patient arrival if indicated
- Document using Stroke Alert section on the ED narrator to include vital signs, abbreviated NIHSS, pupil size and reaction, and dysphagia screening
- Finger stick glucose (if not done by EMS)

- Apply continuous pulse oximetry monitoring device. Keep oxygen saturations >94%, apply supplemental oxygen as needed.
- Obtain or determine patient weight for alteplase dosing
- Notify physician if BP greater than 180 / 105
- Obtain medication list and allergies
- Verify 2nd IV is started, if not completed prior to CT. Must have 2 IV sites prior to alteplase administration.
- Administer antihypertensive treatment if needed (before or after CT)
- Remains available to provide status updates and lab results to stroke team.
- Ensure IV alteplase is started and infusing in a timely matter when instructed to do so.
    - Verify order to administer
    - Verify drug mixing – 1 mg/ml
    - Verify drug dosage is weight appropriate (0.9 mg/kg) and total dose not > 90 mg
    - 10% of total dosage given as bolus and remainder infused over next 60 minutes and then flush line with 50 mL NS
- Perform NIH abbreviated neuro check every 15 minutes after IV alteplase is started x 4
- If not a candidate for IV alteplase
    - Keep NPO until swallow evaluation has been completed
    - Perform bedside swallow evaluation and document results

**ED / ICU Assisting Nurse** ***TIME GOAL:*** **2 IVs < 15 minutes**

- Start IVs and ensure blood is drawn and orders are placed (if not done by EMS)
    - 2 functional IVs needed – with at least one 18-20 gauge
    - @ least one IV site prior to CT.
    - Verify 2nd IV is started upon return from CT (if not done prior)
- Accompany patient to CT
- Administer anti-hypertensives as ordered
- Monitor vital signs and patient status during imaging
- Provide an update of the patient's vital signs / status to the Stroke Team upon return from CT
- Insert Foley catheter if needed (either prior to alteplase or no sooner than 30 min post infusion)
- Administer IV alteplase when instructed to do so.
    - Verify order to administer
    - Verify drug mixing – 1 mg/ml
    - Verify drug dosage is weight appropriate (0.9 mg/kg) and total dose not > 90 mg
    - 10% of total dosage given as bolus and remainder infused over next 60 minutes and then flush line with 50 mL NS
- Perform abbreviated NIHSS every 15 minutes after alteplase given
- Keep NPO if given IV alteplase
- Assist as needed.

**Phlebotomist** ***TIME GOAL:*** **Creatinine resulted < 45 minutes**

- Draw 2 green top tubes, 1 blue top, 1 purple top and 1 red top tubes
- Notify the lab and immediately send tubes of blood to the lab

**EKG personnel**

- Complete EKG once patient has returned from CT

**CT Tech** ***TIME GOAL:*** **CT without contrast completed < 20 minutes**

- Clear table for stroke alert patient
- Perform CT
- Load results to PACS and send for stat read
- Enter Name and telephone number of Neurologist into system for Radiologist to call result
- Perform CTA (if ordered, must have one 18-20G IV, no dye allergy, renal status cleared)

**Pharmacist** ***TIME GOAL: Drug calculation done – ready to mix alteplase < 10 minutes***

- Deliver Stroke Alert Kit to treatment room
- Ensure the patients weight, real or estimated, has been entered in the EMR
- Complete calculation for mixing drug. ***Reminder:*** 1 mg/ml
- Await order from MD – alteplase will be mixed in the Emergency Department.
    - Hand off alteplase to nurse caring for patient when order to administer is verified

**Neurologist** ***TIME GOAL: To ED via video < 10 minutes and door to drug ≤ 30 minutes***

- Call ER to confirm page received and get initial info (patient name and record number if known).
    - Let staff know connecting via Telestroke.
    - For **stroke alerts,** ask staff to set up connection.
- Connect to Omnijoin
- Perform NIHSS while patient is getting IV started if they are still in ED or when back from CT
- Obtain history from family and ER physician if patient is in CT
- Review CT remotely with PACS
- Receive Radiologist CT reading
- Communicate CT results to ED MD
- Discuss case with physician and order mixing of the alteplase
- Review CTA when able
- Order administration of the alteplase if treatment is appropriate
- Start discussion with interventional neuroradiology if needed

## DOCUMENTATION REMINDERS

The Stroke Alert Treatment Record provides dual purpose and is essential to the review process

- Audit tool
- Worksheet / transfer record

## PHONE LIST - commonly used phone numbers during Stroke Alert

**Admitting:** ..... 7550
**CT Scan:** ..... 6208
**EMS Dispatch:** ..... 6512
**ER:** ..... 7555
**Lab:** ..... 7500
**Pharmacy:** ..... 6811
**X-ray Main:** ..... 7660

Telemedicine Allina Network: .....651-241-8400
United Patient Placement Center.....651-241-4700
Fax United ER: .....651-241-5398

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NEXT REVIEW: February 2021

**ADDENDUM A – ALTEPLASE TREATMENT RECOMMENDATIONS**
Alteplase Treatment Recommendations

**ADDENDUM B – STROKE ALERT WORKSHEET – AUDIT TOOL**
Stroke Alert Worksheet-Audit Tool.doc

**ADDENDUM C – ABBREVIATED STROKE NEURO ASSESSMENT**
Abbreviated Stroke Neuro Assessment.doc

**ADDENDUM D – PROVIDER STROKE NEURO ASSESSMENT**
Provider Stroke Neuro Assessment.doc