Policies & Procedures **Department owner: ED**
Glendive Medical Center Applies to: ER

SUBJECT: STROKE PRESENTATION TO THE EMERGENCY DEPARTMENT

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Approved By:

POLICY: Glendive Medical Center staff will use a systematic approach to provide a timely assessment, triage, evaluation, and treatment of the patient with suspected stroke in the emergency room.

PURPOSE: This policy outlines the recommended assessments and interventions needed to stabilize and treat suspected stroke patient. Early identification and a systematic approach improve the possibility of good patient outcomes.

ASSESSMENT/INTERVENTIONS (RN Staff Role):

A) Patient presents to the Emergency Department (ED) by triage or Emergency Medical Services (EMS) with stroke symptoms (facial droop, arm weakness, speech changes, visual disturbances, unilateral denial or neglect, or acute onset severe headache). To determine the patient's eligibility for treatment the nurse should:

1. Identify the patient's last known well (<4.5 hours OR >4.5 hours & <24 hours)
2. Triage and assess the patient's ESI (Emergency Severity Index) to determine if the patient is stable to include a full set of vital signs, point of care (POC) blood glucose, and weight.
3. Direct the ED PCT (Patient Care Tech) to notify the ED provider, CT on call, Nursing Supervisor, and lab.
4. Complete the FAST-ED Stroke Scale
5. Enter the ED Adult Stroke-RP order set (includes orders for initial monitoring, labs, non-contrast CT, and EKG) and grab the ED Stroke Box to be at the patient's bedside.

B) Patient with stable airway should be taken to Computed Tomography (CT) by Radiology and nurse from the ER as soon as possible. If unstable airway, patient will be stabilized and then to CT if possible.

DO NOT DELAY COMPUTED TOMOGRAPHY (CT): If possible (per provider preference), the nurse should take the tPA bolus dose down to CT with the patient. If the patient is stable, leave on table and await provider decision to give tPA. The Computed Tomography Angiography (CTA) can be obtained after the tPA infusion has started. Use the attached tPA infusion sheet for preparation and administration guidelines.

C) After initial non-contrast CT is obtained or as soon as practicable (do not delay CT for additional interventions)

1. Place patient on cardiac monitoring, insert foley catheter
2. Obtain 2 large bore intravenous (IV) access devices and draw a rainbow of tubes for lab, place blood band on patient

3. Provide hemodynamic and oxygenation/ventilation support as necessary per provider order avoiding profound hypotension/hypertension or hypoxia.

4. Complete the attached **Stroke Triage and tPA Administration Tool**

5. Complete a full assessment to include a stroke scale and neuro checks (LOC, orientation, angioedema, pupils unilateral weakness or sensation changes). Stroke Scale below:

Facial Palsy

a. Normal or minor paralysis
b. Partial or complete paralysis

Arm Weakness

a. No weakness
b. Drift or some effort against gravity
c. No effort against gravity or no movement

Speech Changes

a. Denies/no observation of speech changes
b. Mild to moderate
c. Severe, global aphasia or mute

Eye Deviation

a. Denies/no observation of eye deviation
b. Partial
c. Forced deviation

Denial/Neglect

a. Denies/no observation of denial/neglect of extremity(s)
b. Extinction to bilateral simultaneous stimulation in only one sensory modality
c. Does not recognize own hand or orients only to one side of the body

5. Enter order for a "Burke Dysphagia Screen" and complete the bedside swallow evaluation to identify safety concerns with the patient's swallow

Pharmacist Role

1. Mix tPA and assist with dosing if available. 2 RN protocol if unavailable.
2. Available to assist with other medication management (i.e. Blood Pressure).

CT Technician Role

1. Clears CT table As Soon As Possible (ASAP) when receiving notification of possible stroke.
2. After Head CT is complete, reformat images and send to PACS system before starting CTA scan.

Emergency Department Provider Role

1. Evaluate patient upon arrival and perform a relevant history and physical.
2. Document NIHSS in ED forms tab in CERNER.
3. Discuss and collaborate care with hospitalist and Neurologist (tertiary center)
4. Manage other patient care needs as appropriate.
5. Utilize Stroke Power Plan and standing orders within CERNER (Initial monitoring, labs, non-contrast CT, EKG, tPA, and Transfer of patient if needed).

REFERENCES:

1. Blacquire, D., Lindsay, M., Foley, N., Taralson, C., Alcock, S., Baig, C., . . . Silver, F. (2017). Canadian Stroke Best Practices Recommendations: Telestroke Best Practice Guidelines Update 2017. *International Journal of Sroke, 12*(8), 886-895. doi:doi.org/10.1177/1747493017706239
2. Jauch, E., Saver, J., Adams, H., Bruno, A., Connors, J., Demaerschalk, B., . . . Yonas, H. (2013). Guidelines for the Early Management of Patients with Acute Ischemic Stroke. *Stroke: A Jounal of Cerebral Circulation*, 870-947. doi:10.1161/STR.0b013e318284056a
3. Xian, Y., Xu, H., Lytle, B., Blevins, J., Peterson, E., Hernandez, A., . . . Fonarow, G. (2017). Use of Strategies to Improve Door-to-Needle Times with Tissue-Type Plasminogen Activatior in Acute Ischemic Stroke in C linical Practice. *American Heart Association Journals*, 1-8. doi: 10.1161/CIRCOUTCOMES.116.003227

Stroke Triage / tPA Administration Tool

Complete this form if symptom onset is within 4.5 hours from time of arrival

1. Document TIMES for the following:

- PT Arrived ED____________ Last Known Well ______________ (must be < 4.5 hours)
- Initial Fast ED- Stroke Scale ___________ POC Blood Glucose ________ (must be >50)
- To CT________ CT DONE________ RESULT _________________ (must be NEGATIVE)

2. Pre –tPA Vital Signs and Neurological Assessment Q15 min:(BP <185/110)

Time	BP	HR	RR	SPO2	LOC	Orientation	Speech Changes	Facial Palsy	Angioedema	Eye Deviation	Weakness R/L	Sensory Change R/L

3. Stroke Time-Out Checklist: **All checklist documentation and top section of this form must be completed to determine tPA administration eligibility

Measured Weight _________ BP <185/110 _________ No blood thinners _______(see below)

PT/INR ____________(1) Platelet count < 100,000; (2) Patient has received heparin within 48 hours and has an elevated aPTT (greater than upper limit of normal for laboratory); (3) Current use of oral anticoagulants (ex: warfarin) and INR >1.7; (4)Current use of direct thrombin inhibitors or direct factor Xa inhibitor

Other exclusion criteria ___________ (1)Neurosurgery, head trauma, or stroke in past 3 months, (2)active internal bleeding, History of intracranial hemorrhage (3) Known intracranial arteriovenous malformation, neoplasm, or aneurysm (4) Suspected/confirmed endocarditis

4. Does the patient meet criteria for tPA administration?

_____ Yes (Go to dosing guidelines)

_____ No (Stop here) tPA Rule Out Time ____________

5. tPA Administration: Total Dose ________ 0.9 mg/kg **MAX DOSE 90mg**

***Total dose to be administered in two divided doses (bolus and infusion)**

***Reconstitute tPA 100 mg vial with 100 ml sterile water for concentration 1mg/1ml**

***Withdraw excess medication from the vial so it only contains the total dose amount (Ex: pt wt 70 kg,70 kg X 0.9 mg= Total Dose 63 mg, 100 ml-63 ml=37ml to be discarded)**

- **BOLUS Dose: _________**(0.09 mg/kg to be given IV Bolus over 1 min via IV pump)
- **INFUSION Dose: ___________**(0.81 mg/kg to Infuse over 60 min via IV pump)

Flush tubing with 50 ml of NS after infusion is complete to clear tPA from IV tubing

6. tPA Bolus and Infusion Documentation: Vital Signs and Neurological Assessment

- Notify the provider: for changes in the patient's neuro status, signs of bleeding or angioedema, if SBP > 180 or DBP > 105.
- SCDs for VTE prophylaxis, No antithrombotic for 24 hours, Repeat CT in 24 hours
- Patient should be NPO until a bedside swallow evaluation is completed

  Burke Dysphagia Screen Completed: YES/NO RESULT: ________________

Q15min x 1 hour **Take a set of vital signs immediately prior to administering tPA**

Time	BP	HR	RR	SPO2	LOC	Orientation	Speech Changes	Facial Palsy	Angioedema	Eye Deviation	Weakness R/L	Sensory Change R/L

7. tPA Post Infusion Documentation:

Q15min x 1 additional hour after initial infusion is complete, then Q30 min x 6 hours

Time	BP	HR	RR	SPO2	LOC	Orientation	Speech Changes	Facial Palsy	Angioedema	Eye Deviation	Weakness R/L	Sensory Change R/L

Q30min x 6 hours, then Q1 hour x 16 hours

Time	BP	HR	RR	SPO2	LOC	Orientation	Speech Changes	Facial Palsy	Angioedema	Eye Deviation	Weakness R/L	Sensory Change R/L

Staff Signature #1: ____

Staff Signature #2:____

Staff Signature #3:____