BROWN EMERGENCY MEDICINE
TRANSIENT ISCHEMIC ATTACK DIAGNOSTIC PATHWAY

PURPOSE: To provide an accelerated diagnostic pathway for the initial evaluation of patients presenting to the ED with clinically suspected TIA in order to identify the underlying etiology of TIA symptoms, accurately stratify risk for progression to stroke, and to initiate education, secondary prevention strategies and outpatient planning.

INCLUSION CRITERIA:

Any adult patient presenting to the ED with clinical suspicion for TIA without evidence of obvious mimic or other ongoing serious medical diagnosis who, at the time of evaluation, has a normal neurologic exam.

- This includes sudden and transient unilateral limb weakness, aphasia, dysarthria, sensory loss, vision loss, or other focal and localizing transient neurologic deficit.
- **Symptom must have been acute, transient, and resolved except with recurrent dizziness.**
- **For low risk patients: expedited outpatient TIA work-up unable to be coordinated during ED stay (pursue outpatient pathway)**

EXCLUSION CRITERIA:

- Age <18 years old
- Pregnancy
- Ongoing or stuttering symptoms (>2 episodes within the past week)
- New measurable neurologic deficit (with the exception of isolated sensory changes)
- Co-morbid active medical illness warranting hospital admission
- Clear evidence of alternative explanation of symptoms (e.g. metabolic or infectious)
- New onset atrial fibrillation
- New and clinically relevant ECG, CT, or lab abnormalities mandating additional medical intervention
- Persistently abnormal vital signs
    - Temperature >100.4F
    - HR >100 bpm or symptomatic bradycardia (HR<60)
    - Hypotension (SBP<100mmHg) or severe hypertension (SBP>180mmHg)
    - Hypoxia, O2<93% on RA
- Failed nursing swallow assessment
- Alcohol or substance intoxication, risk for alcohol or substance withdrawal, psychosis or suicidal ideation
- Inability to ambulate or lay recumbent for 30min
- Requiring more assistance for ADLs than the CDU is capable of safely providing (generally no more than 1 assist)
- Patients with ESRD requiring dialysis
- Unlikely discharge within 24hrs (ED attending discretion)

INTIAL ED WORK UP:

Standard work-up prior to entry into the CDU includes a full ED provider evaluation as well as:

- Non-contrast CT brain

- CTA brain and neck prior to CDU admission (if not contraindicated)
- 12-lead ECG
- Nursing swallow assessment
- Labs (POCT blood glucose, BMP, CBC, PT/INR, aPTT, troponin, UA)
- Specific to RIH: Consultation of neurology resident (Consult request must be verbally confirmed prior to CDU placement, however, consultation may take place in the CDU.)

ADDITIONAL DIAGNOSTIC WORK-UP PERFORMED IN THE CDU:

- MRI brain without gadolinium
- Vessel imaging (if CTA not already done):
  - CTA brain and neck (preferred method)
  - MRI/MRA brain and neck with gadolinium (if contraindication to CTA, do not order MRI without gadolinium separately)
- Continuous telemetry while in the CDU
- Additional labs (hepatic function panel, Hb A1C, fasting lipid profile, Utox)
- Neurology Consult (please note site specific differences)
  - RIH: resident should have been contacted prior to move over to the CDU, attending-lead neurology team will round in the AM
  - TMH/NPT: Attending to be called in AM. If imaging abnormalities or clinical concerns, contact on-call neurology attending in real-time.
- Potential Testing at the Discretion of the EM/Neurology Team:
  - 2D transthoracic echocardiogram (TTE)
  - Carotid duplex ultrasound
  - Pre-discharge referral for a 30-day cardiac even monitor
- BP to be kept <220/120. If BP >220/120 at any point during the CDU stay, IMMEDIATELY page the neuro team

OPERATIONS OF THE CDU TIA PATHWAY:

Nursing Documentation:

Smoking, physical activity, and dietary habits

Q4h neuro checks including mNIHSS

Standardized Medication Interventions:

- Anticoagulation: All patients without cerebral hemorrhage who are not otherwise anti-coagulated should receive 325mg aspirin orally. Additional anti-platelet medication may be advised by the consulting neurologist.
- Anti-hypertensive Therapy: Patients with three blood pressures >140mmHg separate by at least 30 minutes each should be considered for anti-hypertensive therapy. Preferred agents are calcium channel blockers, diuretic, ACE-inhibitors, ARBs. Definitive

recommendations regarding initiation of anti-hypertensive therapy should be made by the consulting neurologist.
- Statins: Initiation of a statin should be considered if the patient has not taken the medication previously. Those already on statin agents should resume their usual dose. Plans to target or not target intensive statin therapy should be included in documentation. Specific recommendations regarding medication selection and dose should be made by the consulting neurologist.

Individualized Patient Counseling and Education (verbal with written provided at discharge)
- Stroke Education
- Smoking Cessation
- Weight counseling (BMI>25)
- Dietary recommendations (salt <2000mg/day, fat <30% total calories, DASH diet)
- Physical activity (30min of daily exercise)

CRITERIA FOR HOSPITAL ADMISSION FROM THE CDU TIA PATHWAY:
- Recurrent event while undergoing observation.
- Evidence of significant (>50%) carotid stenosis (evidence of intracranial stenosis >50% relevant to presenting symptoms may also require admission at the discretion of the consulting neurologist).
- Evidence of structural cardio-embolic source warranting additional intervention (if TTE obtained), such as endocarditis or intracardiac thrombus.
- Clinical deterioration or EM attending concern that the patient is unsafe for discharge.

DISCHARGE PROCEDURE FROM THE TIA OBSERVATION UNIT:
Upon completion of the diagnostic evaluation and neurology consultation, patients not meeting the above admission criteria may be discharged home. The following appointments should be made prior to discharge:
- The patient's primary care physician (PCP) should be contacted and follow-up arranged. If the patient does not have a PCP, then referral will be based on the following:
  - If insured, contact the Lifespan referral network for an appointment within 90 days.
  - If uninsured, refer to the Chapman St. clinic (RIH), Fain medical clinic (TMH), or Newport LPG (401-606-4PCP).
- Neurology follow-up should be arranged within 90 days. If already established with a neurologist, the patient should follow up with that physician. If the patient does not have a neurologist, refer to the consulting neurologist if he/she agrees. Otherwise:
  - If insured, refer the patient to 444-8806.
  - If uninsured, refer the patient to the neurology resident clinic, 444-5507.

PROVIDER ROLES IN THE CDU TIA PATHWAY

EM Attending Duties and Coverage:

The EM attending covering the CDU will be responsible for clinical oversight, operation and patient flow through this unit. The attending covering the CDU patients will round with the APP each morning at the site scheduled time. A progress note will be completed upon rounding. Upon discharge, the APP will notify the ED attending covering the unit that the patient is ready for discharge; the ED attending and APP will see the patient and briefly review the discharge or answer any questions the patient may have. On the discharge portion of a templated progress note, the ED attending will document that the "Discharge was reviewed with the patient," and sign with note. The covering EM attending will review and document all patient imaging, labs, and consult recommendations. Nursing will notify the attending of ECGs to review.

APP Duties and Coverage:

The EM APP in the CDU will implement the observation protocols. They will perform the daily H&P notes and discharges from the unit. They will complete the ORM forms for all patients. As part of the discharge process, the APP will communicate with the patient's PCP and arrange for follow-up with the neurology service as described above. They will also perform the follow-up phone calls to all patients on day 30 following their discharge from the CDU.

EM Nursing Duties and Coverage:

EM nursing will implement the POM observation protocols and attend to the daily needs of the patients in the CDU. They will notify the covering EM attending and APP of changes in the patient's condition and will notify the EM attending of clinical data to review. Nursing will prepare patients for additional procedures in accordance with hospital protocols. The nurse will arrange transport for all testing required by CDU patients. Upon discharge, the nurse will go over standardized education paperwork with patients.

Neurologist Duties and Coverage:

The covering neurology attending will provide consulting services for the TIA patients in the CDU and will personally evaluate the patient. Specific to Rhode Island Hospital, the attending evaluation will be preceded by a neurology resident evaluation. Specific objectives of the neurology consultation include: exclusion of alternative diagnoses, explanation of likely etiology, recommendations for secondary prevention strategies and medications, and finally, confirmation of a follow-up plan.

Updated 10/24/2023
RIH/TMH Stroke