NEUROSCIENCES TELE-NEUROLOGY CONSULTATION, ADULT, EMERGENCY DEPARTMENT & INPATIENT, GUIDELINE

Updated: May 2, 2022

Clinical guideline summary

CLINICAL GUIDELINE NAME: Neurosciences Tele-Neurology Consultation Guideline

PATIENT POPULATION AND DIAGNOSIS: Adult patients presenting to the Emergency Department with neurological issues such as weakness, altered mental status, dizziness, headaches, multiple sclerosis, or seizures.

APPLICABLE TO: BW, BL, & Regional ED and inpatient spaces

BRIEF DESCRIPTION: Collection of common neurological symptoms with a simplified direction for initial work-up prior to Tele-neurology involvement. The algorithms will help direct the workflow process for tele-neurology consultation. Following the algorithms will increase efficiency, decrease unnecessary testing, decrease length of stay, possibly decrease cost, and will provide more comprehensive data potentially preventing a need for a formal neurology consult.

OVERSIGHT TEAM LEADER(S): Dr. Michelle DeJesus and Dr. Amjad Abdallah

OWNING EXPERT IMPROVEMENT TEAM (EIT): Neurology

MANAGING CLINICAL PRACTICE COUNCIL (CPC): Acute Health and Neurology

CPC APPROVAL DATE: Acute Care: December 28, 2021; Neurology: February 18, 2022

OTHER TEAM(S) IMPACTED: Emergency department, hospitalists, neurology, radiology

OPTIMIZED EPIC ENHANCEMENTS:

IMPLEMENTATION DATE: May 2022

LAST REVISED: May 2, 2022

FOR MORE INFORMATION, CONTACT: Dr. Michelle DeJesus and Dr. Amjad Abdallah

Clinical pathways clinical approach
Clinical algorithms:

Weakness or Gait Instability

Patient presents to ED with weakness and gait instability

While in ED Consider:
- baseline non contrast head CT
- Lab work: CMP, CBC, CPK, ammonia, UDS, infection work up with UA
- CXR
- Check home medications for sedatives or sedative effects

RED FLAGS:
- Lack of reflexes
- Impending intubation
- Concerns for cord compression
- GBS or history of myasthenia gravis exacerbation

Consider Contacting on call BW Neurohospitalist through Perfect Serve

Transfer patient to BW/BL under the hospitalist service or BW/BL ICU with neurology consult

Does Neurohospitalist advise admission to BW/BL?

Yes

Admission to regionals

No

Consider:
- Lab work: B12, B9, thiamine, A1c, Zinc, copper, Vitamin E, TSH, syphilis
- MRI of brain if hospitalist advises
- Tele-neurology consult

Is etiology known, is it nonfocal, is patient improving?

Yes

-Treat possible underlying etiology
- Order PT/OT evaluation

No

-MRI of brain with and without contrast and cervical spine (if not already completed)
- Place Tele-neurology consult
Patient presents to ED with altered mental status

While in ED Consider:
- Baseline non-contrast head CT
- CXR
- Lab work: CMP, CBC, UA, UDS, ammonia level, alcohol or drug levels, blood culture

RED FLAGS:
- Fever
- Focal Examination
- Concern of meningitis/encephalitis

Consider contacting the on call BW Neurohospitalist through Perfect Serve

Transfer patient to BW/BL under the hospitalist service or BW/BL ICU with neurology consult

Does Neurohospitalist advise admission to BW/BL?

- Yes
- Admission to regionals

- Lab work: TSH, Vitamin B1, B12, folic acid
- Consider: MRI brain with and without contrast or LP if hospitalist advises
- Consider Tele-neurology consult

- Order MRI brain with and without contrast if not yet done
- 2 hour EEG (if available)
- Reconsider LP if not yet done: do meningitis coverage if concern present even without LP results
- Place Tele-Neurology consult

Treatment possible underlying etiology

Is there a known etiology (infectious/metabolic) or is patient improving?

- Yes
- Treat possible underlying etiology

Note:
- NPH is outpatient work up
- Dementia if memory change > 1 year outpatient workup
Patient presents to the ED with dizziness

While in ED:
- Evaluate for signs of stroke and consider Stroke Pathway

While in ED Order:
- CT of head
- CTA/CTP of head and neck
- Lab work: CBC, CMP
- Consider: Orthostatic vital signs, 12-lead EKG, Dix-Hallpike maneuver

RED FLAGS:
- Focal signs
- Cranial nerve deficits
- Non-fatigable nystagmus
- Ataxia
- Gait problems

Consider contacting On call Stroke Neurologist through Perfect Serve prior to admission

If patient admitted:
- MRI of brain without contrast

Does CTA show verteobasilar insufficiency or MRI of brain or CT of head positive for stroke?

- Yes
  - Begin stroke work-up
  - Place Tele-stroke consult

- No
  - Place referral for PT/OT evaluation
  - Place referral for outpatient balance center
  - Consider Tele-neurology consult

Stroke Pathway
Headache

Patient presents to ED with a headache

While in ED consider:
- baseline non contrast CT of the head
- Lab work: ESR, CRP for patients greater than 50 years old

RED FLAGS:
- Abnormal head CT
- Altered mental status
- Fever
- Seizure
- Concern for subarachnoid hemorrhage

While in ED: Consider contacting on call BW Neurohospitalist through Perfect Serve

Transfer patient to BW/BL under the hospitalist service or BW/BL ICU with neurology consult

Does Neurohospitalist advise admission/transfer to BW/BL?

Admission to regionals

Consider:
- Trial of migraine cocktail: Benadryl and Phenergan or other antiemetic; Toradol if no contraindication; Magnesium 2gm IV once if appropriate
- MRI of the brain with and without contrast if no known history of migraine
- Tele-neurology consult

If headache persists:
- Order MRI of brain with and without contrast if not previously obtained
- Order CTA of the head and neck/CTV versus MRA/MRV
- Place Tele-neurology consult
Multiple Sclerosis

Patient presents to ED with known diagnosis of Multiple Sclerosis

While in ED Consider:
- Infection workup with UA, CXR, and blood culture
- Perfect Serving on call BW attending

If admission to regionals consider Tele-neurology consult or if admitted to BW/BL consider inpatient neurology consult

Was an infection found and/or symptoms lasted less than 24 hours?

- Yes
  - Treat underlying infection
  - Did patient improve?
    - Yes
      - Continue medical treatment
    - No
      - Order MRI of the brain
      - Order CT of the spine with and without contrast
      - Place Tele-neurology consult

- No
  - Order MRI of the brain
  - Order CT of the spine with and without contrast
  - Place Tele-neurology consult
Seizure

Patient presents to ED with a seizure

While in ED:
- Consider non-contrast CT of the head

Is patient back to baseline?

Yes:
- Consider:
  - Lab work: CMP, CBC, UDS, UA
  - CXR
  - Alcohol use history

No:
- Concern for ongoing seizure, status, or not back to baseline
  - Load with AEDs if appropriate
  - Contact on call BW Neurohospitalist to discuss patient

Is this a known seizure disorder?

No:
- New onset seizure
  - Load with AEDs if appropriate
  - Contact on call BW Neurohospitalist to discuss patient

Yes:
- Check AED levels
- Contact on call BW Neurohospitalist through Perfect Serve to discuss patient
- Place Tele-neurology consult if patient will be admitted

See New Onset Seizure Algorithm
References:


