Suspected Concussion

Trauma to the head, neck or body with a suspected concussion

Review signs & symptoms for concussion:
- Glasgow coma scale (GCS) if patient is seen immediately after injury
  - Patients with GCS <15 should be sent to ED
- Graded symptom check list
- Cognitive assessment

Perform physical exam which includes:
- Neck exam
- Manual muscle testing
- Balance exam
- Consider coordination exam
- Subdural Hematoma/Epidural Hematoma assessment
- Evaluation of vision
- Undilated fundus exam
  - Abnormal eye or vision exams may require immediate referral to ophthalmology

Inclusion Criteria
- Children ≥ 5 years of age

Exclusion Criteria
- Children < 5 years of age
- Focal neurological deficits
  - Consider Acute Stroke Pathway
- Change in mental status
- Potential spinal injury
- Progressive, worsening symptoms or new neurological signs
- Persistent vomiting
- Evidence of skull fracture
- Post traumatic seizures
- Coagulopathy
- History of neurosurgery (e.g. shunt)
- Polytrauma

Emergent non-contrast CT imaging of the head &/or neck

Are one or more of the following present?
- Symptoms: somatic (e.g. headache), cognitive (eg, feeling like in a fog) &/or emotional symptoms (e.g., lability)
- Physical signs (e.g., loss of consciousness, amnesia, neurological deficit)
- Balance impairment (e.g., gait unsteadiness)
- Behavioral changes (e.g., irritability)
- Cognitive impairment (e.g., slowed reaction times)
- Sleep/wake disturbance (e.g., somnolence, drowsiness)

Consult with neurology/neurosurgery

If concussion is diagnosed, discharge patient (with these instructions)
- 1-2 days of physical & cognitive rest
  - Includes keeping child out of school
- Light activity
  - Limit/decrease electronic use, do not eliminate electronic use
- Encourage sleep
- Acetaminophen as needed
- Follow up with PCP in clinic or by phone within 2 days

After 2 days of light activity, primary PCPs should encourage:
- Returning to school with academic accommodations as needed
- A light increase in physical & mental activity (as tolerated)
- No physical contact sports/activities

It is suggested within 4 weeks, PCPs:
- Remove academic accommodations as symptoms resolve, symptoms may resolve much earlier than 4 weeks
- Establish an appropriate return to play transition based on age, activity, athlete vs. non-athlete, availability of ImPACT testing, availability of athletic trainer, etc.

Pediatricians should consider referring child to a concussion specialist if child is not ready to return to normal activities after 4 weeks

Notes:
- Weekly follow up post-concussion is recommended either in clinic or by phone to monitor symptom progression
- Clinical condition rarely deteriorates in the days after a concussion; however, clinicians should reassess the need for imaging & other studies at each appointment based on symptom presentation
- 80-90% of patients diagnosed with concussion will be able to return to normal activities within 4 weeks if there is no additional trauma
- Specialists to consider referral to include: Neurology, Physical Medicine & Rehabilitation
  - for concussion as a result of motor vehicle accident (MVA) or other mechanism (fall from great height, etc.)
- Sports Medicine
  - for concussions related to sports, recreation or similar activities not MVA, etc.
- Neurosurgery

Positive imaging finding

Consult with neurology/neurosurgery

Patient cleared by neurology/neurosurgery?

NO

Manage off Pathway

NO

Manage off pathway

Consider Concussion Diagnosis

Negative imaging finding

NO

Manage off pathway

YES

Emergent non-contrast CT imaging of the head &/or neck