



JOHNS HOPKINS ALL CHILDREN'S HOSPITAL

Trauma Patient Consults Clinical Pathway

Johns Hopkins All Children's Hospital

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Table of Contents

1. [Rationale](#)
2. [Background](#)
3. [Emergency Center](#)
4. [Admission](#)
5. [Inpatient](#)
6. [Concussion Management](#)
7. [Outcome Measures](#)
8. [Clinical Pathways Team Information](#)

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Owners: Dr. Christopher Snyder; Trauma

This pathway is intended as a guide for physicians, physician assistants, nurse practitioners and other healthcare providers. It should be adapted to the care of specific patient based on the patient's individualized circumstances and the practitioner's professional judgment.

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Rationale:

This clinical pathway was developed by a consensus group of JHACH physicians, advanced practice providers, nurses and pharmacists to standardize the management of children requiring multiple clinical services. This guideline will assist bedside practitioners when to consider consultation of subspecialist services.

Background

Trauma patients often require coordination of multiple services to address injuries across different body systems. Coordination of care is necessary to ensure patients receive expert focused injury care and will be coordinated by the admitting service.

Emergency Center Management

Consider sub specialist consultation for the following injuries:

1. Traumatic Brain Injury (TBI) patients: Neurosurgery consult:
 - a. CT scan abnormalities (see [Closed Head Injury Clinical Pathway](#) for special case of isolated linear skull fractures).
 - b. GCS <12 without obvious signs of intoxication.
 - c. Focal neurologic deficit.
 - d. Concussion/mild TBI with normal neuroimaging does not typically require Neurosurgery consult. See [Closed Head Injury Clinical Pathway](#) for additional information.
2. Spine injury patients: Spine service (either orthopedics or neurosurgery, depending on other injuries)
 - a. Vertebral body abnormality on X-ray.
 - b. Ligamentous abnormality.
 - c. Neurologic deficit.
 - d. Fill out an ASIA form on any patient with neurologic deficit or body fracture.
3. Facial injury: Plastic Surgery and/or Trauma Surgery (General Surgery)
 - a. Complex laceration.
 - b. Facial fractures, including orbital fractures.
 - c. In general, Plastic Surgery is first call for isolated facial injury
 - d. When the patient has severe facial trauma and/or multisystem injuries, Trauma surgery will decide whether Plastics, OMFS or Dental is needed once the patient is stabilized.
 - e. Oral & Maxillofacial Surgery (OMFS) can be contacted by the Plastics, Trauma surgery, or Dentistry teams as needed after initial evaluation.
4. Isolated dental / dentoalveolar injury: Dentistry* (see footnote below)

5. Vascular injury: Trauma Surgery (General Surgery)
6. Orthopedic consult:
 - a. For all long bone fractures or major ligamentous instability.
 - b. Concern for extremity compartment syndrome (see [Compartment Syndrome Clinical Pathway](#))
7. Major thoracic trauma: Trauma Surgery (General Surgery)
8. Social Services
 - a. Trauma team activation
 - b. Complex social situations
 - c. Concern for Non Accidental Trauma (NAT) (see [Physical Child Abuse Clinical Pathway](#))/Domestic violence/Sex trafficking
 - d. Drug or alcohol use

*Dental injury footnote: When injuries are isolated to the teeth only and do not include jaw fracture, facial bone fracture or airway injury, consult Dental.

-Even if concerned for alveolar bone fracture, Dentists can manage many of these and are still the first call. They can request further imaging and consultation if needed and it is not up to the EC provider to determine this level of assessment.

When the extent of injury is unclear, usually a facial CT can help determine if facial bones are involved.

-If CT rules out additional fractures, consult Dental.

-If CT identifies facial bone fractures, consult Plastics. They will see the patient but they may still recommend Dental consultation if facial bone fractures are stable.

-If there continues to be difficulty assessing the patient's needs, or if there is dental trauma in the setting of concussion/TBI not requiring neurosurgery, consult Trauma surgery.

Admission

Trauma patients must be admitted to a surgical service. Multiple-system injured patients will be admitted to the Trauma service with focused system injuries co-managed with consultants. All patients with suspected/confirmed non-accidental trauma/physical abuse are assumed to be multi-system injured patients until proven otherwise. PICU trauma admissions will be admitted under the trauma service or neurosurgery service and co-managed with the pediatric intensivist.

Inpatient Management

Consider the following consultations for inpatients:

Palliative Care

- Critical illness
- Expected poor outcome or death

Rehabilitation Services

- Admission greater than 7 days
- Any change in mobility, self-care, cognitive ability
- Need for inpatient or outpatient rehabilitation at discharge

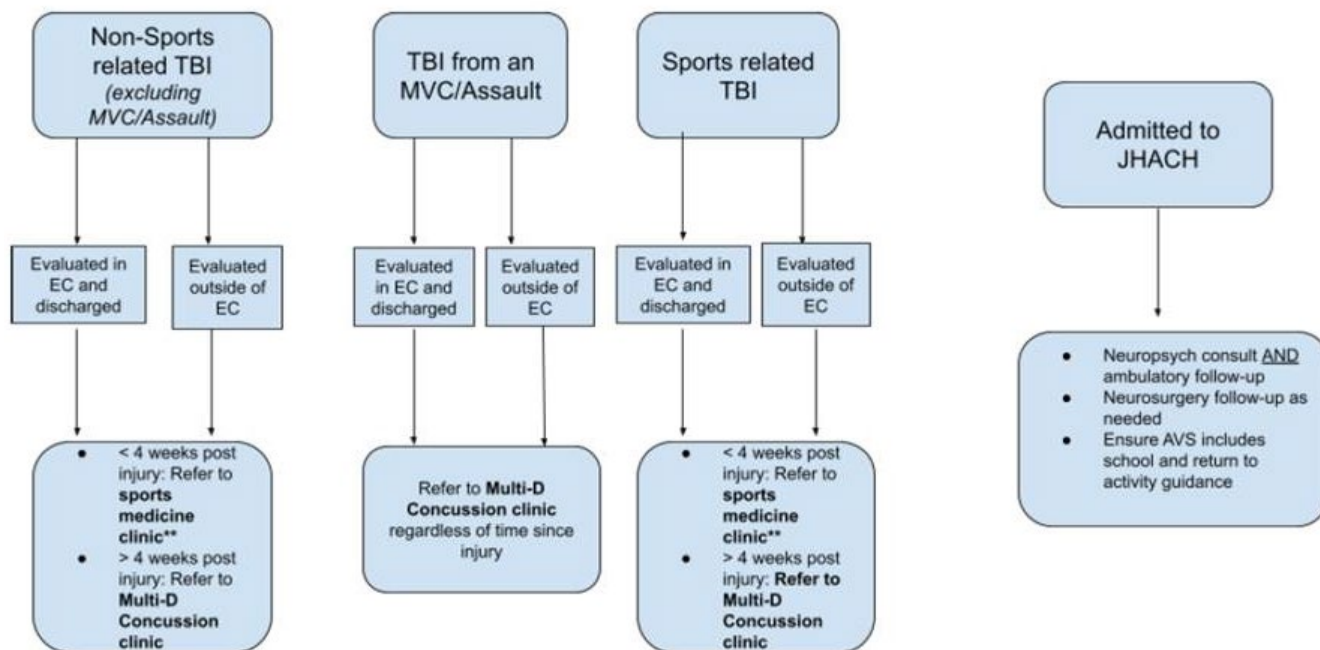
Concussion Management

Concussion / traumatic brain injury is a common occurrence in the pediatric population. Even when mild, TBI may have long-term sequelae that requires ongoing follow-up care.

For patients discharged from the EC, the Emergency Medicine attending will have primary responsibility for ensuring follow-up orders and instructions are placed correctly.

For patients less than 3 years old who are evaluated in the EC and discharged, follow-up will typically be with their primary pediatrician only. Patients <3 y/o admitted to the hospital may have other services (neuropsychology, neurology, neurosurgery, rehab medicine, pediatric hospitalist) involved on a case-by-case basis.

For patients 3 years old and older, follow-up depends on the mechanism and timing of injury as shown in the following figure.



Footnotes:

- **Utilize standard sports medicine appointment and/or ACE evaluation to determine who is appropriate for Multidisciplinary Concussion (MDC) Clinic. Motor Vehicle Collision (MVC) and assault patients should not be referred to Sports Medicine acute concussion clinic
- To refer to Multidisciplinary Concussion Clinic, use ambulatory referral to Pediatric Psychology (Dr. Danielle Ransom) and specify "MDC clinic".
 - Unclear situations regarding MDC vs. sports medicine clinic referral should be discussed with the Neuropsychologist on call to determine appropriate follow-up.

Outcome Measures

- Admission to nonsurgical service
- Delayed consultation delaying disposition decision

Clinical Pathway Team
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Disclaimer

Clinical Pathways are intended to assist physicians, physician assistants, nurse practitioners and other health care providers in clinical decision-making by describing a range of generally acceptable approaches for the diagnosis, management, or prevention of specific diseases or conditions. The ultimate judgment regarding care of a particular patient must be made by the physician in light of the individual circumstances presented by the patient.

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