

Evaluation Pathway for Children with Suspected Physical Abuse/Neglect in the Pediatric Emergency Department

The following information is intended as a guideline for the acute management of children with suspected physical abuse (non accidental trauma). Management of your patient may require a more individualized approach.

History & Injuries that Raise Concern for Physical Abuse/Neglect

Injuries Concerning for Physical Abuse:

1. **Sentinel Injuries:** non-ambulatory child with physical findings (including burns)
2. **TEN-4:** bruising to the torso, ear, or neck or any bruising on an infant **≤ 4 months of age**
3. **TEN-4 FACESp:** Torso, ear, neck (TEN), frenulum, angle of jaw, cheeks (fleshy), eyelids, subconjunctivae (FACES), and patterned (p) in a child **less than 4 years old**
4. **Unexplained fracture in any child**, a fracture in non-ambulatory child, or a previously unknown healing fracture
5. **Skull fracture and/or intracranial injury** in a child **< 12 months**
6. Any child with **patterned bruising**
7. Any child present during a **domestic violence** incident

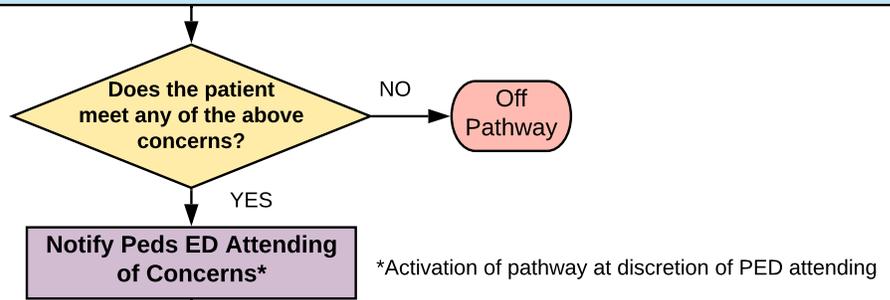
History that would suggest a concern for child abuse/neglect:

- Delay in seeking care
- Changing history
- No known/observed history to explain the injury
- History inconsistent with child's developmental skills
- Implausible history (e.g., "maybe the dog bruised the 2 mo "I think the pacifier caused the injury", "car seat was too tight and left bruises")

History needed to clarify concerns for possible abuse/neglect:

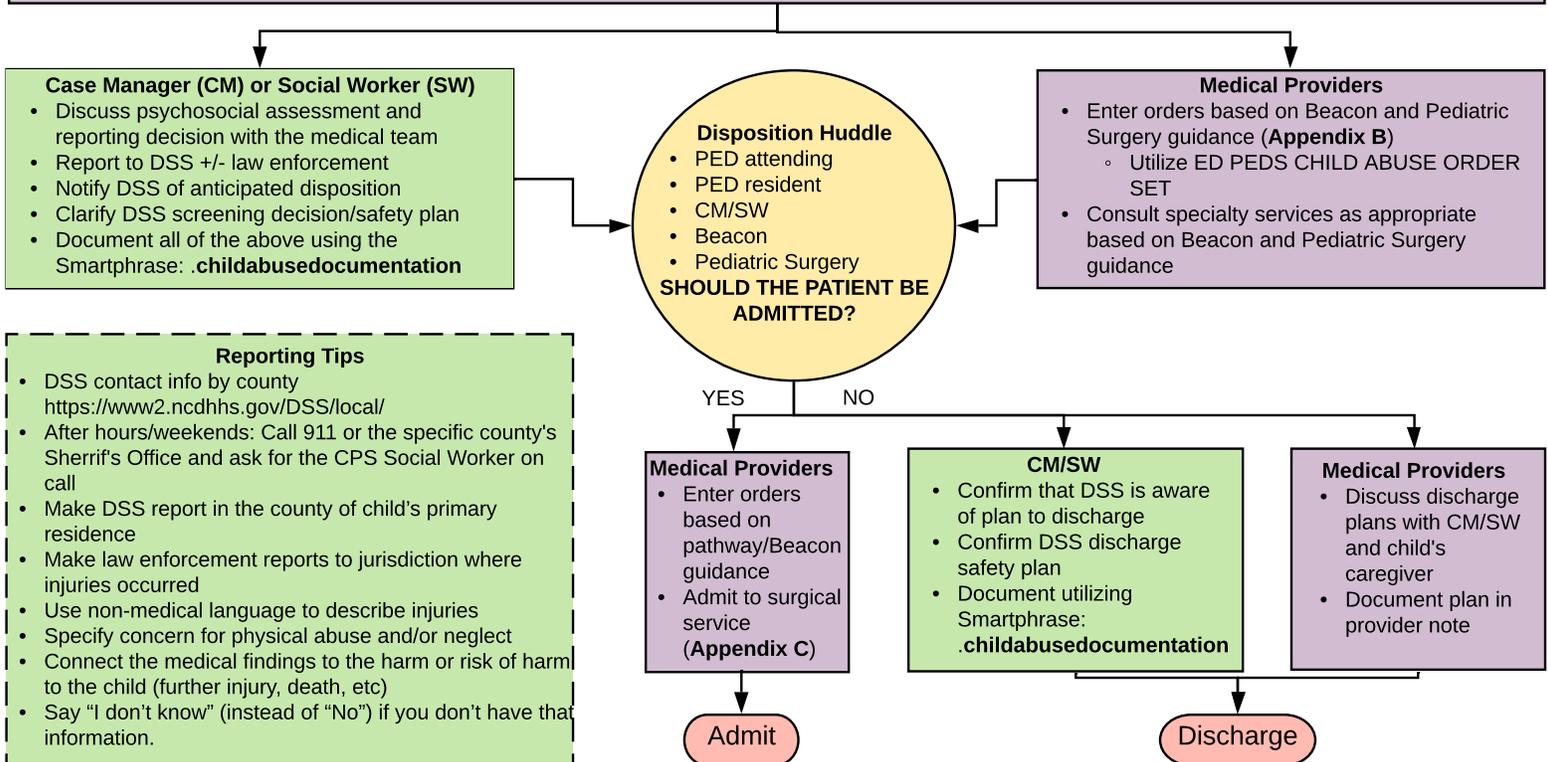
- When was the last time the child/infant was well?
- Is there a mechanism of injury that was observed?
- Who first noted the injury/concern and what was their response?
- When did the caregiver decide to access medical care and why?

Developed by:
LaClaire Stewart MD,MPH
(lclaire@email.unc.edu)
Dan Park, MD
(daniel.park@unc.edu)
Last Revision: 10/22/21



Medical Provider (Resident/Attending/APP) performs the following tasks:

- Perform history and physical
- Photodocument injuries in Haiku
- Consult pediatric trauma if patient has physical injuries (Consider Trauma Activation; **Appendix A** on next page)
- Page Beacon 123-4100 (8a-4p Mon-Sun + Holidays; Amion= ungenpeds) to discuss appropriate medical management or refer to **Appendix B** on next page if no provider on call
- Page Case Management or Social Work to complete the psychosocial assessment
 - Daytime: 919-347-1838; 11p-7a: 919-923-8995



Appendix A. Pediatric Trauma Criteria

PEDIATRIC RED (AGE 0 - 15)
<ul style="list-style-type: none"> <input type="checkbox"/> Traumatic cardiac arrest post injury <input type="checkbox"/> Respiratory compromise / obstruction as evidenced by: <ul style="list-style-type: none"> <input type="checkbox"/> Intubation prior to arrival <input type="checkbox"/> Compromised airway <input type="checkbox"/> Absent / significantly diminished breath sounds <input type="checkbox"/> Significant retractions / nasal flaring <input type="checkbox"/> Age-specific increased or decreased respiratory rate: <ul style="list-style-type: none"> <input type="checkbox"/> 0 to 1 years: RR >35 or <30/minute <input type="checkbox"/> 2 to 5 years: RR <25 or >40/minute <input type="checkbox"/> 6 to 12 years: RR <15 or >35/minute <input type="checkbox"/> >12 years: RR of <10 or >30/minute <input type="checkbox"/> Shock as evidenced by: <ul style="list-style-type: none"> <input type="checkbox"/> Transfer patients receiving blood to maintain vital signs <input type="checkbox"/> CONFIRMED age-specific hypotension at ANY time: <ul style="list-style-type: none"> <input type="checkbox"/> 0 to 1 years: systolic BP < 60 mmHg <input type="checkbox"/> 2 to 5 years: systolic BP < 70 mmHg <input type="checkbox"/> 6 to 12 years: systolic BP < 80 mmHg <input type="checkbox"/> >12 years with systolic BP < 90 mmHg <input type="checkbox"/> Ongoing fluid boluses or PRBC required to maintain BP <input type="checkbox"/> Capillary refill >3 sec thought to be due to hypovolemia <input type="checkbox"/> Bradycardia at any time <input type="checkbox"/> Neurologic injury as evidenced by: <ul style="list-style-type: none"> <input type="checkbox"/> GCS less than or equal to 8 with traumatic MOI <input type="checkbox"/> Deteriorating level of consciousness <input type="checkbox"/> Neuro deficits in limb with traumatic MOI <input type="checkbox"/> Specific traumatic injuries: <ul style="list-style-type: none"> <input type="checkbox"/> Penetrating injuries, including gunshot and stab wounds, to head, neck, chest, or abdomen <input type="checkbox"/> Burn with known or suspected trauma that meets at least one red alert criteria <input type="checkbox"/> Amputation above wrist or ankle <input type="checkbox"/> Tourniquet use / vascular compromise of extremity <input type="checkbox"/> Any other injured patient at ED attending physician's discretion

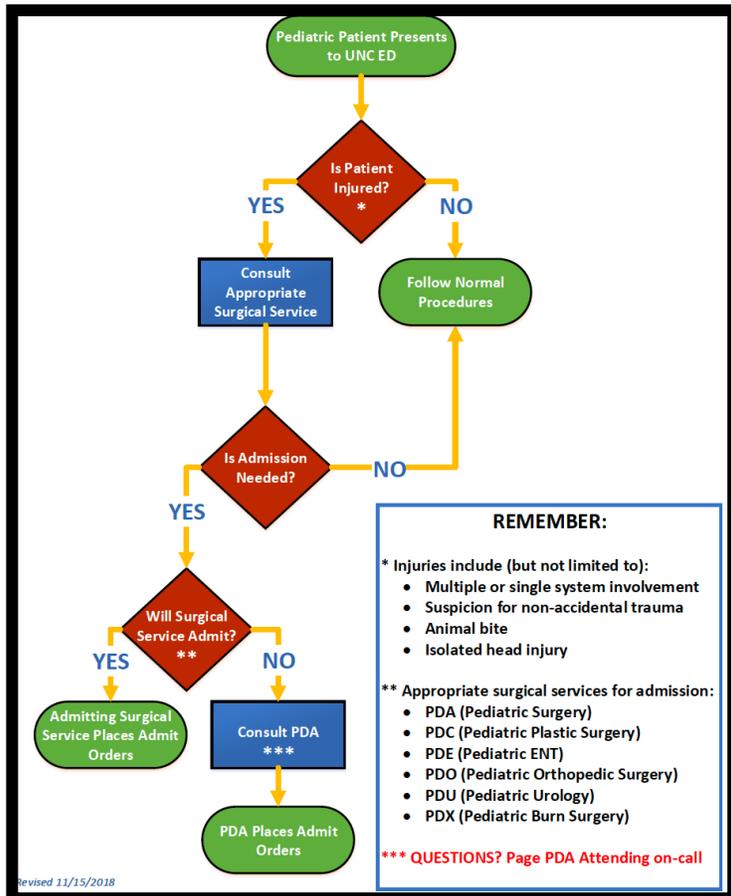
PEDIATRIC YELLOW (AGE 0 - 15)
<ul style="list-style-type: none"> <input type="checkbox"/> Neurologic injury as evidenced by: <ul style="list-style-type: none"> <input type="checkbox"/> GCS <14 but >8 with mechanism attributed to trauma, no change in GCS from initial evaluation <input type="checkbox"/> Open skull fracture <input type="checkbox"/> Depressed skull fracture <input type="checkbox"/> Specific traumatic injuries: <ul style="list-style-type: none"> <input type="checkbox"/> Femur fracture or humerus fracture in setting of any additional known or suspected traumatic injuries <input type="checkbox"/> Open fracture of femur, humerus, radius, ulna, tibia, or fibula in setting of any additional known or suspected traumatic injuries <input type="checkbox"/> Crush injury to the chest or pelvis <input type="checkbox"/> Pneumothorax / hemothorax <input type="checkbox"/> Burn with known or suspected trauma that meets at least one yellow alert criteria <input type="checkbox"/> Any other injured patient at ED attending physician's discretion



Appendix B. Physical Abuse Workup Considerations

Imaging Considerations	General Physical Abuse Labs
<ul style="list-style-type: none"> • Neuroimaging (non-contrast head CT or non-contrast rapid MRI see Appendix D) to rule out intracranial injury, particularly if <12 mo with neck, face, ear, or scalp injuries; vomiting or altered mental status • Abd/Pelvis CT with IV contrast if sx/signs of abdominal trauma or AST or ALT >80 or high clinical suspicion • Skeletal survey if <2 yo and suspicious fractures, bruises, or other injuries (not available on nights/weekends unless Peds Radiology Attending in house) 	<ul style="list-style-type: none"> • Urine tox (may be bag urine, please obtain ASAP prior to pain medication/sedation if possible) • UA (non cath) for occult abdominal trauma • AST/ALT, lipase, amylase
+Bruising/Bleeding/Neurological sx Labs	<ul style="list-style-type: none"> • CBC • Coags (PT/PTT/INR) • VWF activity, VWF antigen • Factor VIII level, Factor IX level • Subdurals add: D-dimer, Fibrinogen
+Fracture Labs	<ul style="list-style-type: none"> • 25-OH Vitamin D • PTH • Calcium, magnesium, phosphorous, alkaline phosphatase

Appendix C. How to Admit an Injured Pediatric Patient



Appendix D. Imaging of Mild Head Injury

CT imaging of mild head injury should be considered when intracranial injury is suspected and:

- a. Hemodynamic instability
- b. Patient is going to the OR emergently for any reason
- c. High suspicion of a mass lesion (i.e. blown pupil or lateralizing exam)
- d. Palpable deformities of the scalp or skull are present or there is an open laceration/fracture
- e. Practitioner's discretion on level of suspicion of intracranial injury and urgency of intervention or patient stability

Trauma Rapid MRI (multiple plane T2 + SWI) of hemodynamically stable mild head injury patients with supplemental multiple view XR for skull fracture evaluation should be considered when intracranial injury is suspected and:

- a. Consciousness is normal to mildly depressed
- b. Patient is hemodynamically stable
- c. Patient is not likely to proceed emergently to the OR
- d. Mechanism is suggestive of potential for intracranial injury such as high velocity or significant fall
- e. Clinical findings such as neurological deficit or scalp/skull deformity are present in the absence of a correlative history to suggest a traumatic mechanism.
- f. Practitioner's discretion on level of suspicion of intracranial injury and appropriateness of Rapid MRI