

## Non-Accidental Trauma (NAT) Protocol

When a child presents with suspected NAT, social work will be immediately notified and Child Protective Services will be made aware. All children with suspected NAT will have a complete work-up including a complete history and physical exam with a focus on injuries and explanation for the injuries. See policy C-06: <https://upstate.ellucid.com/documents/view/1188>

### Major Areas of Evaluation:

1. A complete history (document who obtained the history and who gave the history)
  - a. Including review of prior PCP, ED, and inpatient records as well as prior radiologic studies performed at outside hospitals (if available) to look for sentinel injuries – a visible, relatively minor injury that is nevertheless concerning for physical abuse due to the child's age and developmental level, such as a frenulum tear or any bruising on a pre-cruising infant.
2. Head to toe physical exam with particular attention to:
  - a. Growth parameters
  - b. Thorough skin exam, including scalp and hair (undress patient completely)
  - c. Palpation of legs, arms, hands, feet and ribs to feel for crepitus or deformities
  - d. Complete neurologic examination
  - e. Oral examination with attention to the lips, tongue, buccal mucosa, frenula, palate and teeth
  - f. Auricle exam
  - g. Genitalia examination
3. Head Imaging
  - a. Infants < **12 months** should have a head CT without contrast or MRI of the brain without contrast to evaluate for intracranial injuries regardless of the presence or absence of neurologic findings. MRI is preferred if patient has no sign of injury and normal mental status.
  - b. Children > **12 months** should have a head CT without contrast if there are signs of neurological injury including mental status depression or external signs such as facial bruising or scalp hematoma.
  - c. If the CT or MRI indicates signs of trauma, MRI of the c-spine as well as C-spine immobilization should be considered.
  - d. If there is a suspicion of a skull fracture, consider ordering a CT scan with 3D reconstruction, to better clarify fracture versus suture (must be ordered prior to the CT scan being done).

4. Abdominal Imaging
  - a. Consider CT scan of the abdomen/pelvis with IV contrast for any child who presents with signs/symptoms of abdominal trauma, bruising to the abdomen or torso, or an ALT/AST > 80.
  - b. Consider abdominal CT if urinalysis has >10 RBCs and/or positive stool guaiac.
5. Skeletal Survey (PLEASE NOTE: ORDERS WILL NOT BE ENACTED UPON UNTIL THE APPROPRIATE RADIOLOGY STAFF ARE AVAILABLE, INCLUDING TWO X-RAY TECHNICIANS AND A PEDIATRIC ATTENDING RADIOLOGIST)
  - a. Children < **36 month** should have a skeletal survey, including oblique views of the ribs to evaluate for occult fractures.
  - b. Children > **36 months** can have x-rays focusing on areas of concern rather than the entire skeleton.
  - c. Consider getting a full skeletal survey in children > **36 months** who have developmental delays.
  - d. When applicable, a follow up skeletal survey should be obtained at Upstate Downtown Campus approximately two weeks following the suspected trauma to check for fractures that are too acute to show up on initial survey (i.e. rib fractures). Skull films are generally excluded from the repeat survey unless the provider specifically requests them. An order for a complete bone survey should be entered in EPIC through the discharge navigator and the Diagnostic Front Desk Clerk in Radiology should be called at 4-7475 (Monday through Friday between 0700 – 2300) to schedule the outpatient study PRIOR to discharging the patient.
6. Outside Imaging
  - a. Patients transferred from an outside hospital for NAT evaluation should have all outside imaging studies transferred into Synapse for permanent storage.
  - b. Formal second opinion reads should be obtained on all skeletal surveys performed at outside hospitals as part of an NAT work-up. Our Pediatric Radiologist will determine the adequacy of the study and/or the need for supplemental films.
  - c. Formal second opinion reads on other imaging studies will be obtained as needed if there is clinical concern or disagreement with the outside study. Having the outside report is helpful but not necessary. *See policy RAD O-04: <https://upstate.ellucid.com/documents/view/4533>*

## 7. Ophthalmology Consult

- a. Children < **12 months** should have ophthalmologic evaluation to look for retinal hemorrhages. Retinal photographs should be obtained, when possible.
- b. Children > **12 months** should have ophthalmologic evaluation when eye injuries are suspected, when head injury is suspected, and/or when there is facial bruising.
- c. Ophthalmologic examination should be obtained as soon as possible. However, the dilated eye exam should be deferred in children with head injuries pending neurosurgery clearance.

## 8. Lab Evaluation

- a. The following labs should be ordered routinely on children with suspected NAT:
  - CBC with diff and platelets
  - Lipase
  - CMP
  - PT/PTT/INR
  - Urinalysis with microscopic
- b. Consider a UDS/toxicology evaluation if there is clinical suspicion of exposure to substances or in children < 2 years of age with altered mental status.
- c. Consider Vitamin D 25 Hydroxy, Calcium, Phosphorus and PTH if clinically indicated.

## 9. Medical Photography

- a. Medical Photography should be contacted as soon as possible to document skin findings, since they can change rapidly. Medical Photography can be reached at 4-5877 (Monday through Friday between 0900-1700). A licensed healthcare provider must be present while the photographs are taken in order to direct the photographer's attention to areas of concern. *See policy C-06*
- b. In the event that Medical Photography is unavailable, the medical provider should photograph the patient with the camera provided by social work. Medical photography *should still be contacted as soon as possible*, even if photographs were already taken by a medical provider, law enforcement, and/or CPS.

## 10. Sexual Abuse

- a. If sexual abuse is suspected, DO NOT discard clothing or cleanse the child if forensic evidence collection may be necessary.
- b. For detailed recommendations regarding screening labs, vaccines, additional consults and follow-up care please refer to <http://champprogram.com/pdf/Guidelines-Suspected-Child-Sexual-Abuse-2017.pdf>

### 11. Siblings/Other At Risk Children

- a. Social work will make CPS aware of any siblings or other at risk children residing in the home of the index patient and document accordingly.
- b. All children < **36 months** should be immediately evaluated at the Upstate Downtown Campus ED for a medical screening exam and skeletal survey.
- c. Children > **36 months** can be evaluated by their PCP within 24 hours, unless there is evidence of abuse, in which case, they should be immediately evaluated in the ED.

### 12. Inpatient Admission

- a. Admit all patients who have a clinical indication or when there is a concern about the safety of the patient, especially if there is a disagreement between the provider and CPS.
  - i. Patients undergoing an NAT work-up meet criteria for inpatient status even if there are no identified injuries.
  - ii. Patients with suspected NAT will be admitted to a surgical service.
  - iii. If Pediatric Surgery is not the primary team, they should be consulted to ensure the work-up is complete and appropriate follow-up is in place.
- b. Nursing will document a focus note Q shift noting all parent/child interactions.
- c. Children < 24 months with suspected or documented head injury should have serial head circumferences measured daily.

### 13. Discharge

- a. If a CPS report has been accepted, the child will not be discharged without clearance from CPS as documented in the medical record by social work or the primary team.
- b. CARE clinic should be notified via In Basket message about any child evaluated in the ED for possible NAT. The CARE Program will assist with coordination of outpatient follow-up as needed. If Pediatric Surgery has been consulted, follow-up will be arranged by their service.
- c. All children admitted for an NAT work-up should have outpatient follow-up after discharge with either Pediatric Surgery (315-464-2878) or the CARE Program (315) 883-5617.

- e. When applicable, follow up skeletal survey should be obtained at Upstate Downtown Campus approximately two weeks following the suspected trauma to check for fractures that are too acute to show up on initial survey (i.e. rib fractures). Skull films are generally excluded from the repeat survey unless the provider specifically requests them. An order for a complete bone survey should be entered in EPIC through the discharge navigator and the Diagnostic Front Desk Clerk in Radiology should be called at 4-7475 (Monday through Friday between 0700 – 2300) to schedule the outpatient study PRIOR to discharging the patient.
- d. When feasible, follow-up appointments with all consulting services requesting outpatient follow-up should be scheduled prior to discharge.

#### 14. Impact Statements

- a. An impact statement is a letter written by a health care provider that informs, interprets and provides a medical opinion for child protective workers or the court regarding the level of concern for non-accidental trauma and the impact on the child.
- b. Impact Statements should:
  - Describe the situation and your relationship to the patient.
  - Use layman’s terms to describe medical issues.
  - Clearly define your concerns in terms that are meaningful to the court and child protective services.
  - Answer questions that CPS has asked.
  - Identify your opinion if you have one, but refrain from outright advocacy if possible.
  - Usually outline next steps for medical and/or legal needs.
- c. The primary team responsible for the patient should generate the impact statement. *See Addendum A for Rating Scale for Abuse Likelihood. For documentation tips and sample impact statements, go to the CHAMP website at: <http://www.champprogram.com/resources.shtml>*

## ADDENDUM A

### Rating Scale for Abuse Likelihood

1. **Definitely not inflicted injury** (significant, independently verifiable mechanism such as MVC, disinterested witness such as police, ambulance, video documentation, mimic – i.e. Mongolian spot)
2. **Not concerning for inflicted injury** (mechanism explains all injuries, consistent history)
3. **Mildly concerning for inflicted injury** (somewhat concerning injuries with no offered history - i.e. unexplained humerus fracture in a 10-month-old or otherwise unconvincing injury with past suspicious injury and same caregiver)
4. **Intermediately concerning for inflicted injury** (insufficient information to offer an opinion, sequence of events clear but uncertain whether they constitute abuse, necessary lab tests/consultations pending, concerning injury in the setting of bone fragility/bleeding diathesis)
5. **Very concerning for inflicted injury** (given history unlikely to produce documented injuries or concerning injury with no history of trauma – i.e. 4 month old with femur fracture)
6. **Representative of substantial evidence of inflicted injury** (severe injury with no offered history in a child incapable of inflicting the injury on himself or herself, history inconsistent with identified injuries, serious injury with changing history or history inconsistent between caregivers, inappropriate delay in seeking care, multiple severe injuries of different ages without plausible explanation)
7. **Definite inflicted injury** (pattern bruises/burns, unexplained posterior rib fractures, characteristic retinal hemorrhages, reliable eye witness, suspicious injury and concurrently abused sibling, obvious injury with significant, unexplained delay in seeking care – i.e. serious burn, unresponsive child, apparent prolonged seizures)

Lindberg, D. M., Shapiro, R.A., Laskey, A.L., Pallin, D. J., Blood, E. A. & Berger, R. P. (2012). Prevalence of abusive injuries in siblings and household contacts of physically abused children. *Pediatrics*, 130(2), 193-201.