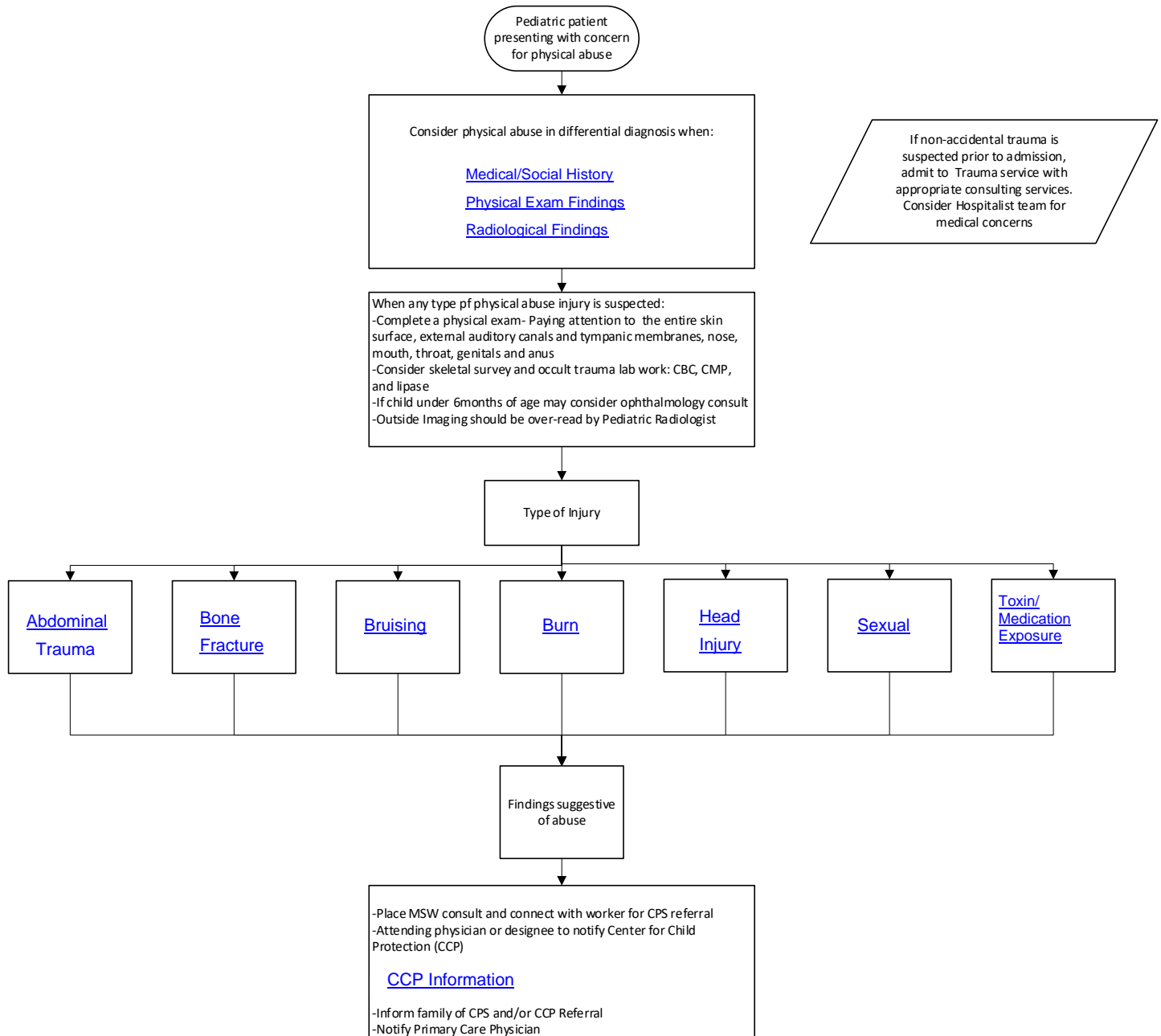


# PEDIATRIC PHYSICAL ABUSE SCREENING, INPATIENT, PATHWAY

Updated: March 30, 2023

## Clinical Algorithm:



## Clinical Pathway Summary

**CLINICAL PATHWAY NAME:** Pediatric Physical Abuse Screening

**PATIENT POPULATION AND DIAGNOSIS:** Pediatric patients (age<18), diagnosis of Non-Accidental Trauma (NAT) or suspected NAT

**APPLICABLE TO:** HDVCH

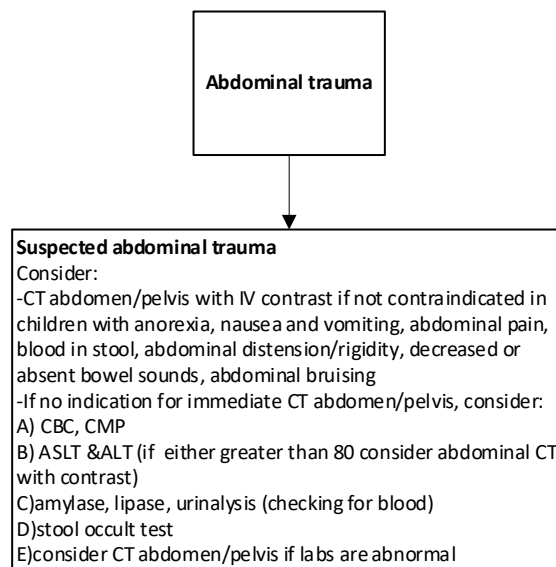
**BRIEF DESCRIPTION:** To define criteria that will prompt abuse screening in patients who are less than 18 years of age and to outline the recommended response to concerns about pediatric physical abuse. Additional information about head injury can be found in Pediatric TBI.

**OPTIMIZED EPIC ELEMENTS (if applicable):** N/A

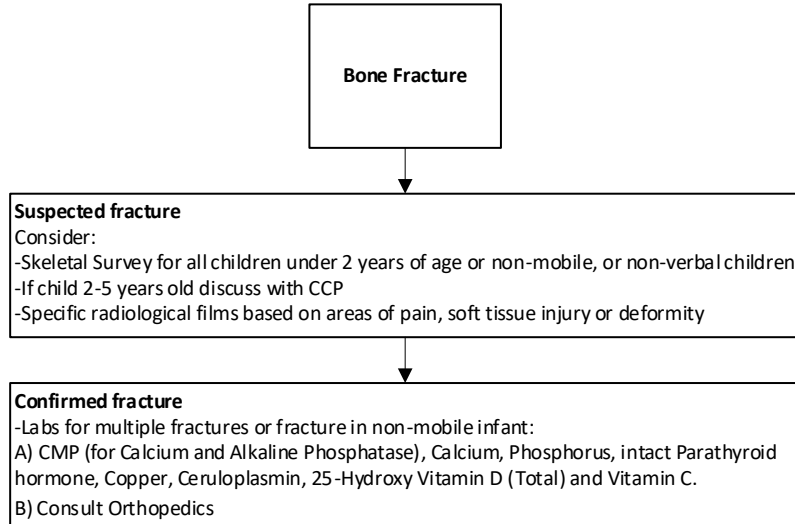
**IMPLEMENTATION DATE:** March 2023

**LAST REVISED:** March 2023

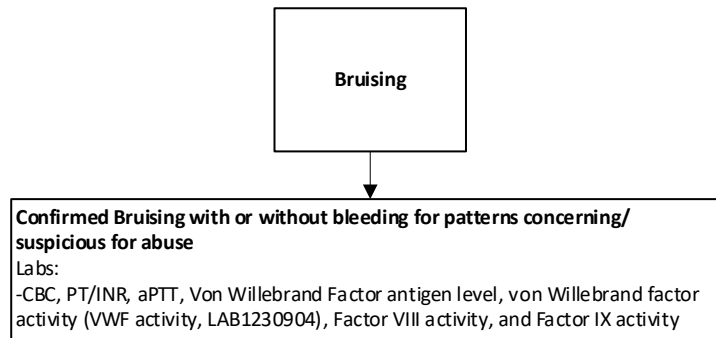
### Abdominal Trauma



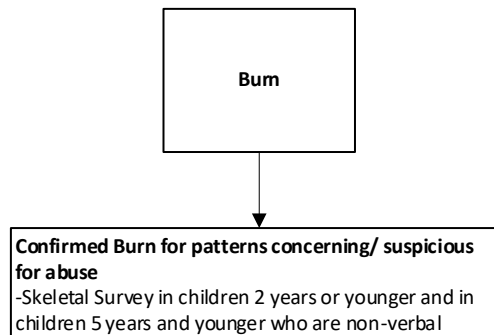
## Bone Fracture



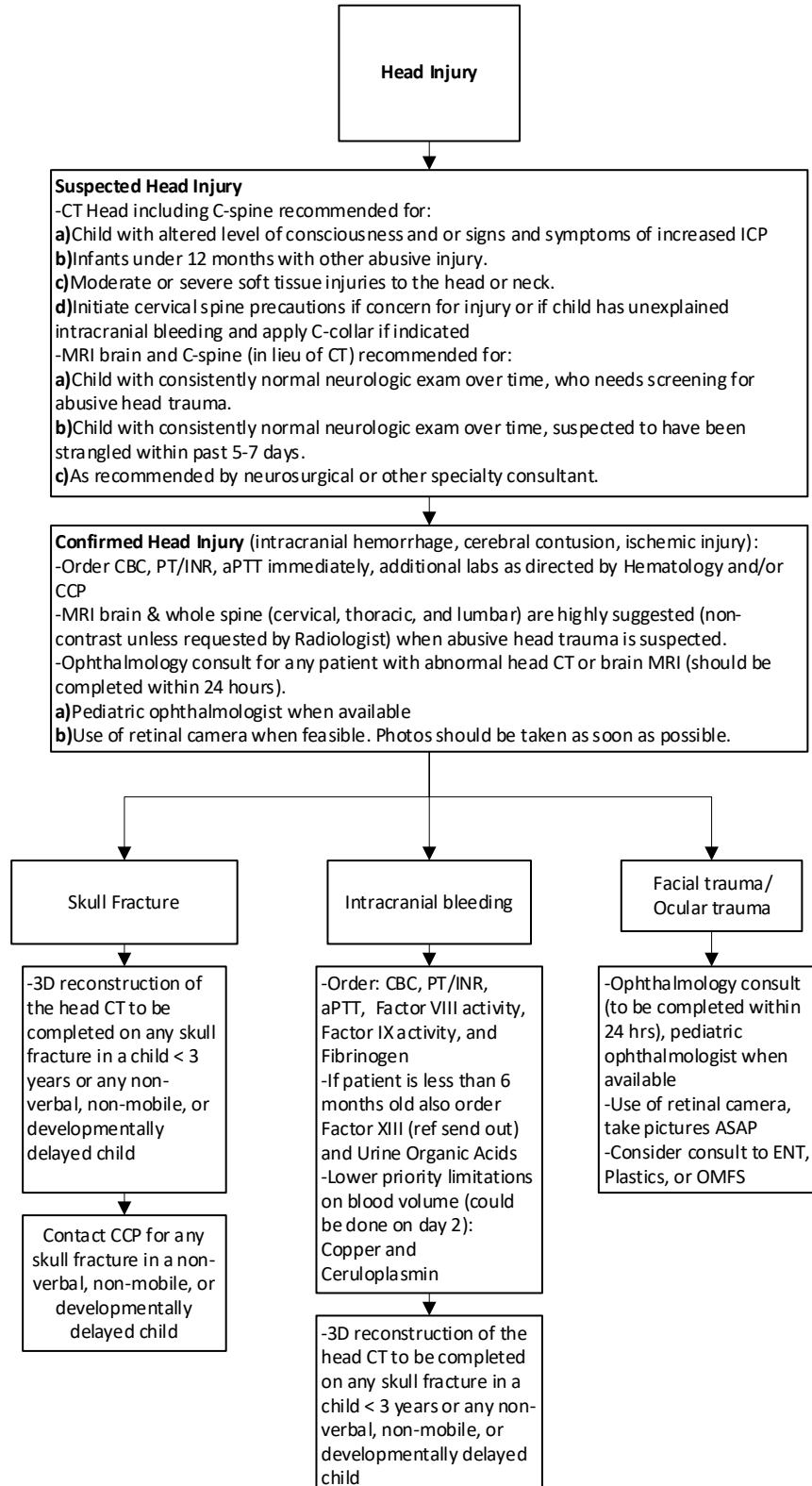
## Bruising



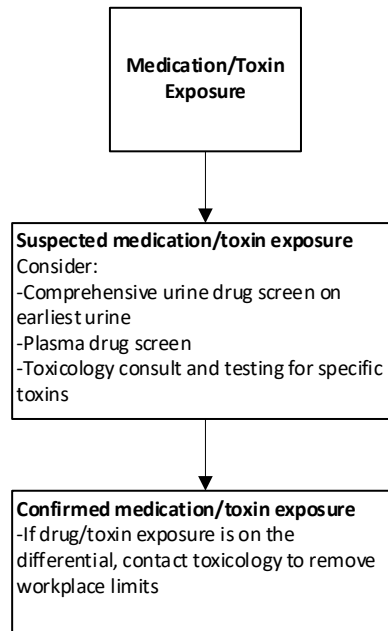
## Burn



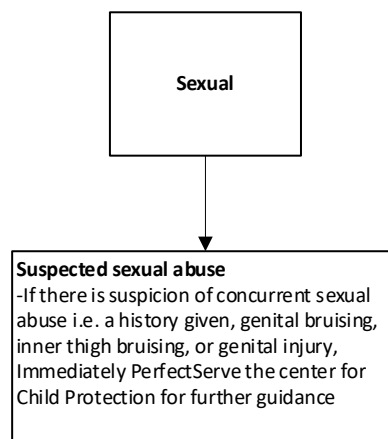
## Head Injury



## Medication/Toxin Exposure



## Sexual



## Clinical Pathways Clinical Approach

### TREATMENT AND MANAGEMENT:

- A. Consider child physical abuse in differential diagnosis when:
- I. Medical/Social History:
    - a. Missing/inconsistent history
    - b. History inconsistent with child's age/developmental ability
    - c. Unwitnessed injury
    - d. Delay in seeking care
    - e. Prior ED visit(s), especially if different ED's
    - f. Domestic violence in home
    - g. Premature infant
    - h. Low birth weight or intrauterine growth restriction
    - i. Chronic medical condition(s)
    - j. Caregiver is parent's significant other but is not themselves a biological parent
  - II. Physical Exam Findings:
    - a. Torn frenulum
    - b. Failure to thrive
    - c. Large head in infant; rapid head growth (crosses percentiles significantly)
    - d. Bruises (even a single bruise) on non-ambulating child
    - e. Bruises in non-exploratory location (torso, ears, neck, cheek, eye) in children < 4 years (TEN-4 FACES P rule)
    - f. Bruises, marks, or scars in patterns suggesting hitting with an object
    - g. Perineal bruising or injury
    - h. Burns not consistent with stated or presumed injury
    - i. Any sentinel injury (relatively minor, suspicious injuries) in non-mobile, non-verbal or developmentally delayed child
  - III. Radiologic Findings:
    - a. Fractures in children < 2 years
    - b. Rib fractures in infants (especially posterior)
    - c. Any fractures in non-ambulating children
    - d. Undiagnosed, healing fractures or fractures of different ages (acute & healing)
    - e. Metaphyseal fractures (corner)
    - f. Subdural or subarachnoid hemorrhage in children < 1 year
    - g. Evidence of brain injury in different stages of healing not adequately explained
    - h. Intracranial hemorrhage without history of trauma
    - i. Unexplained intraabdominal injury

\*\*The above list is comprehensive but not exclusive.
- B. If child requires admission for medical/surgical care:
- I. When non-accidental physical trauma is suspected prior to admission, admit patient to the Trauma Service with appropriate consulting services. Consider consulting Hospitalists team for specific medical concerns (i.e., anemia, dehydration, nutritional concerns, infection concerns, etc.)

- II. If initially admitted to a non-surgical service such as Pediatric Hospitalists or Pediatric Critical Care Medicine, then consultation is required with appropriate surgical service such as Trauma, Neurosurgery, Orthopedic Surgery, and/or Burn.
  - III. Surgical specialists may consider transfer to non-surgical service after 24 hours if appropriate; requires an attending-to-attending discussion.
  - IV. Place a social work (SW) consult in Epic. Refer to care management policy 11698 “Suspected Child Abuse and Neglect”
  - V. If not already completed, file a “DHS 3200 form” and complete a referral to Children’s Protective Services (CPS). This can be located at [dhhs.michigan.gov](http://dhhs.michigan.gov) and can be completed by the medical team. Connect with social work for CPS referral.
  - VI. Attending physician or a designee will notify the Center for Child Protection (CCP)/ Child Abuse Pediatrics: do not delay notification (even during off hours). Team is always available via PerfectServe or CCP Office (616) 391-1242. Fax “DHS 3200 form” to CCP (fax number: 616-391-3206).
    - a. The attending physician, SW or a designee will inform parent/caregiver of CPS and/or CCP Referral and Consultations (as ordered), unless there is a flight risk or concern for safety of the patient or staff. The care team will work with family so that they understand that once a 3200 is filed CPS determines discharge custody.
  - VII. Primary Care Physician must be notified of admission.
- C. Recommended evaluation in cases of suspected physical abuse
- I. All children with physical abuse on differential diagnosis need a thorough physical exam, including the visualization of the entire skin surface, external auditory canals and tympanic membranes, nose, mouth and throat, genitals, and anus.
  - II. Obtain a skeletal survey and occult trauma lab work in children 2 years or younger or non-verbal children 5 and under: CBC, CMP, and Lipase.
  - III. All outside imaging should be over-read by a pediatric radiologist.
  - IV. For any head/face, intracranial or ocular trauma, consider obtaining an ophthalmology consult. The Center for Child Protection physician may also recommend ophthalmology consult for children <6 months with suspicion of acute or subacute/chronic abuse.
  - V. **Possible medication/toxin exposure or altered LOC**
    - a. Comprehensive urine drug screen on earliest urine available in lab.
    - b. Plasma drug screens as clinically indicated.
    - c. Testing for specific toxins as clinically indicated. A toxicology consult is recommended.
    - d. In a case where drug/toxin exposure is on the differential contact toxicology to remove workplace limits showing any substance presence.
- D. Recommended evaluation for specific injuries
- I. **Head injury**
    - a. Suspected Head Injury
      - 1. CT Head including C-spine recommended for:
        - i. Child with altered level of consciousness and or signs and symptoms of increased ICP
        - ii. Infants under 12 months with other abusive injury.
        - iii. Moderate or severe soft tissue injuries to the head or neck.

- iv. Initiate cervical spine precautions if concern for injury or if child has unexplained intracranial bleeding and apply C-collar if indicated. Refer to Pediatric C-spine guideline
2. MRI brain and C-spine (in lieu of CT) recommended for:
  - i. Child with consistently normal neurologic exam over time, who needs screening for abusive head trauma.
  - ii. Child with consistently normal neurologic exam over time, suspected to have been strangled within past 5-7 days.
  - iii. As recommended by neurosurgical or other specialty consultant.
- b. Confirmed Head Injury
  1. Head Trauma (defined as any intracranial hemorrhage, cerebral contusion, ischemic injury)
    - i. MRI brain & whole spine (cervical, thoracic, and lumbar) are highly suggested (non-contrast unless requested by Radiologist) when abusive head trauma is suspected.
    - ii. Ophthalmology consult for any patient with abnormal head CT or brain MRI (should be completed within 24 hours).
      - a) Pediatric ophthalmologist when available
      - b) Use of retinal camera when feasible. Photos should be taken as soon as possible.
    - iii. CBC, PT/INR, aPTT immediately. Additional coagulation work-up at the direction of CCP and/or Hematology (see “bruising and intracranial bleeding” below for additional labs).
  2. Skull Fracture
    - i. Any skull fracture in a child <3 years old requires 3D reconstruction of head CT (can be done on most outside films).
    - ii. Request 3D reconstruction on any non-verbal, non-mobile, or developmentally delayed child.
    - iii. Contact CCP for any skull fracture in a non-verbal, non-mobile, or developmentally delayed child.
  3. Intracranial bleeding
    - i. CBC, PT/INR, aPTT, Factor VIII activity, Factor IX activity, and Fibrinogen
    - ii. If patient is < 6 months old, add: Factor XIII (ref send out) and Urine Organic Acids.
    - iii. Lower priority if limitations on blood volume (could be done on day 2): Copper and Ceruloplasmin
  4. Face or Ocular Trauma
    - i. Ophthalmology consult (should be completed within 24 hours)
    - ii. Pediatric ophthalmologist when available
    - iii. Use of retinal camera when feasible. Photos should be taken as soon as possible.
    - iv. Consult appropriate subspecialist as indicated, such as, ENT, Plastics, or Oral and Maxillofacial Surgery
  5. Visible (cutaneous or mucosal) Injuries
    - i. Ensure Center for Child Protection is aware of need to photo-document injuries.



## II. Abdominal injury

- a. Possible abdominal injury
  1. CT abdomen/pelvis with contrast if not contraindicated recommended for:
    - i. Child with symptoms of abdominal injury (anorexia, nausea and vomiting, abdominal pain, blood in stool, etc.)
    - ii. Child with signs of abdominal injury (decreased or absent bowel sounds, abdominal bruising, abdominal distention/rigidity, pain tenderness with abdominal palpation).
  2. If child does not have indication for immediate CT abdomen/pelvis:
    - i. Labs to screen for abdominal trauma recommended:
      - a) CBC, CMP (includes AST, ALT – if either greater than 80 consider abdominal CT with contrast), amylase, lipase, urinalysis (checking for presence of blood).
      - b) Consider stool occult blood testing.
      - c) Consider CT abdomen/pelvis if lab screens abnormal.
  3. Consult pediatric surgery if not already consulted.

## II. Fracture

- a. Suspected fracture or fractures
  1. Skeletal Survey for all pre-verbal and non-mobile children (<2 years old or non-verbal). If 2-5 years old, discuss with CCP.
  2. Specific films for areas of pain, soft tissue injury, or deformity in children of any age.
- b. Confirmed fracture, multiple fractures or fractures in non-mobile infant
  1. CMP (for Calcium and Alkaline Phosphatase), Calcium, Phosphorus, intact Parathyroid hormone, Copper, Ceruloplasmin, 25-Hydroxy Vitamin D (Total) and Vitamin C.
  2. Consult Pediatric Orthopedics

## III. Bruising

- a. Confirmed Bruising
  1. CBC, PT/INR, aPTT, Von Willebrand Factor antigen level, von Willebrand factor activity (VWF activity, LAB1230904), Factor VIII activity, and Factor IX activity.

## IV. Burn

- a. Skeletal Survey in children 2 years or younger, and in children 5 years and younger who are non-verbal

## V. Sexual

- a. If there is suspicion of concurrent sexual abuse, i.e. a history given, genital bruising, inner thigh bruising, or genital injury, **Immediately contact Center for Child Protection** via PerfectServe for further guidance

## Pathway Information

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**EXPERT IMPROVEMENT TEAM (EIT):** Abuse, Neglect and Maltreatment EIT

**CLINICAL PRACTICE COUNCIL (CPC):** Children's Health

**CPC APPROVAL DATE:** March 28, 2023

**OTHER TEAM(S) IMPACTED:** Care Management

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