C.S. MOTT CHILDREN'S HOSPITAL
MICHIGAN MEDICINE

Protecting Our Most Vulnerable Patients

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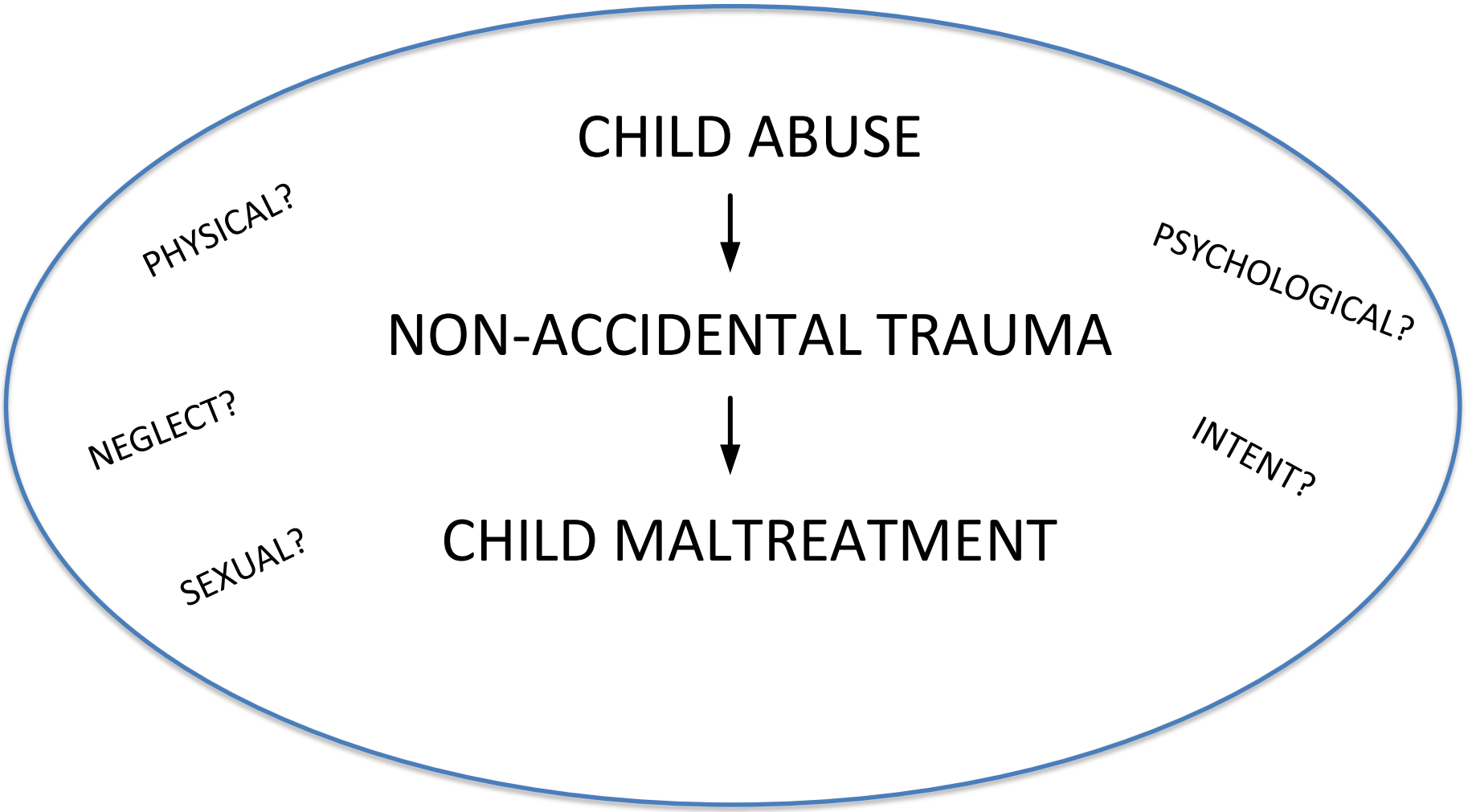
Pediatric Trauma Injury Prevention Program

WHAT ARE WE TALKING ABOUT?



Center for Disease Control – Child Maltreatment

Defined as any act or series of acts of commission or omission by a parent or caregiver that results in harm, potential for harm, or threat of harm to a child.

CENTERS FOR DISEASE CONTROL AND PREVENTION

Leeb RT, Paulozzi L, Melanson C, Simon T, Arias I. Child maltreatment surveillance: uniform definitions for public health and recommended data elements, version 1.0. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2008.

Commission vs. Omission

Commission	Omission
Deliberate	Failure to provide basic physical, emotional or educational needs
Intentional	Failure to supervise
Harm may or may not be intended outcome	Failure to protect from unsafe & violent environments when able

Types of Abuse

- Physical Abuse – physical acts ranging from those leaving no physical mark to those causing permanent disability, disfigurement or death

- Sexual Abuse – sexual violence against children that occurs in the context of a caregiver relationship. This can be a completed or attempted sexual act, sexual contact with, or exploitation of a child

- Psychological Abuse – intentional caregiver behavior that conveys to a child that they are worthless, flawed, unloved, unwanted, endangered, or valued only in meeting another's needs

- Caregiver - as it relates to child maltreatment is defined as a person (or people) who at the time of the maltreatment is in a permanent or temporary custodial role

National Data for 2018

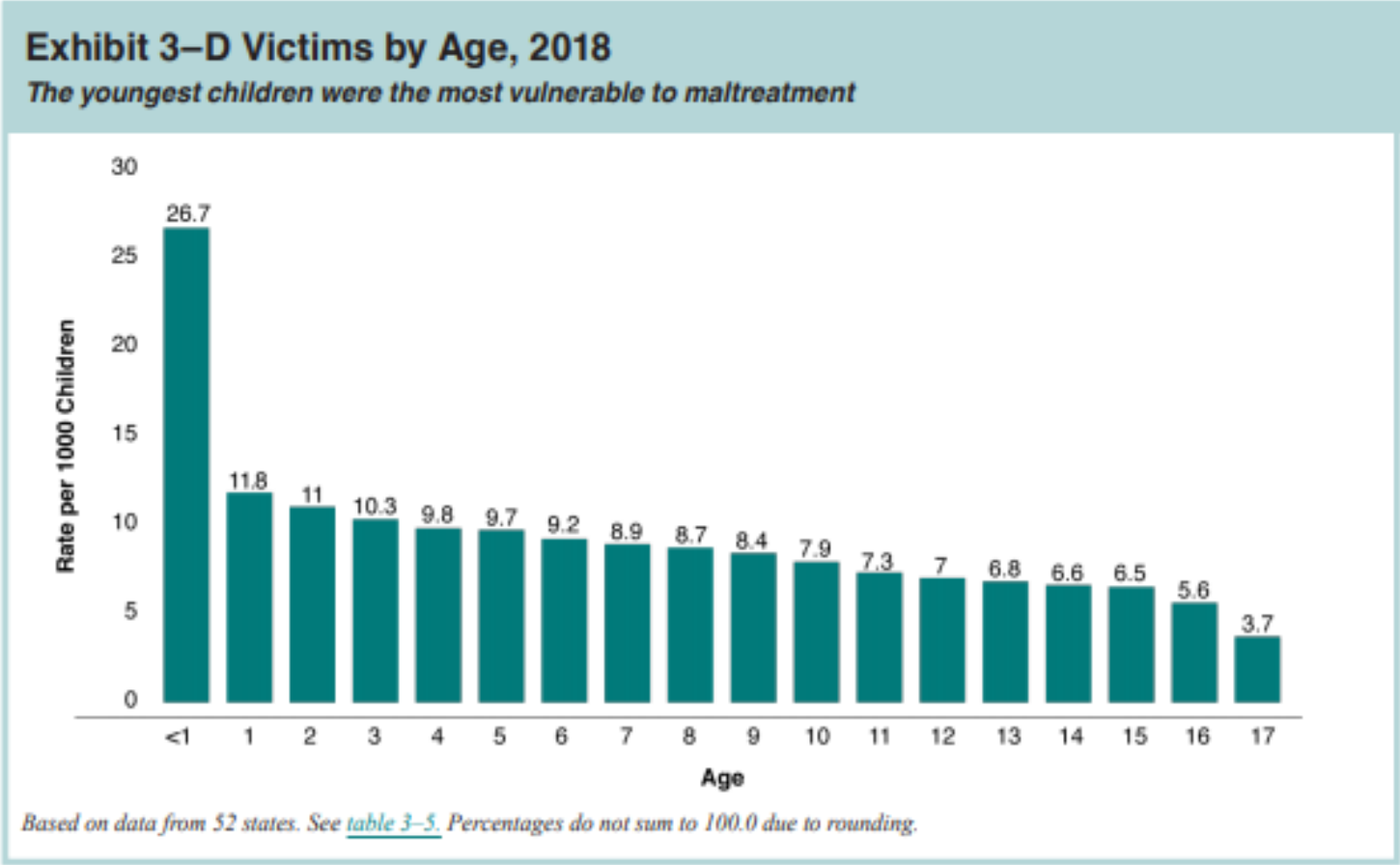
•In 2018, there were nationally 678,000 victims of child abuse and neglect

•Nationally in 2018, 1,770 children died from abuse and neglect. This was an 11.3 percent increase from 2014

• Of these fatalities, 70.6% of all cases were younger than 3 years old, with nearly half being under 1 year old

https://www.acf.hhs.gov/sites/default/files/cb/cm2018.pdf

National Data – Victims of Maltreatment

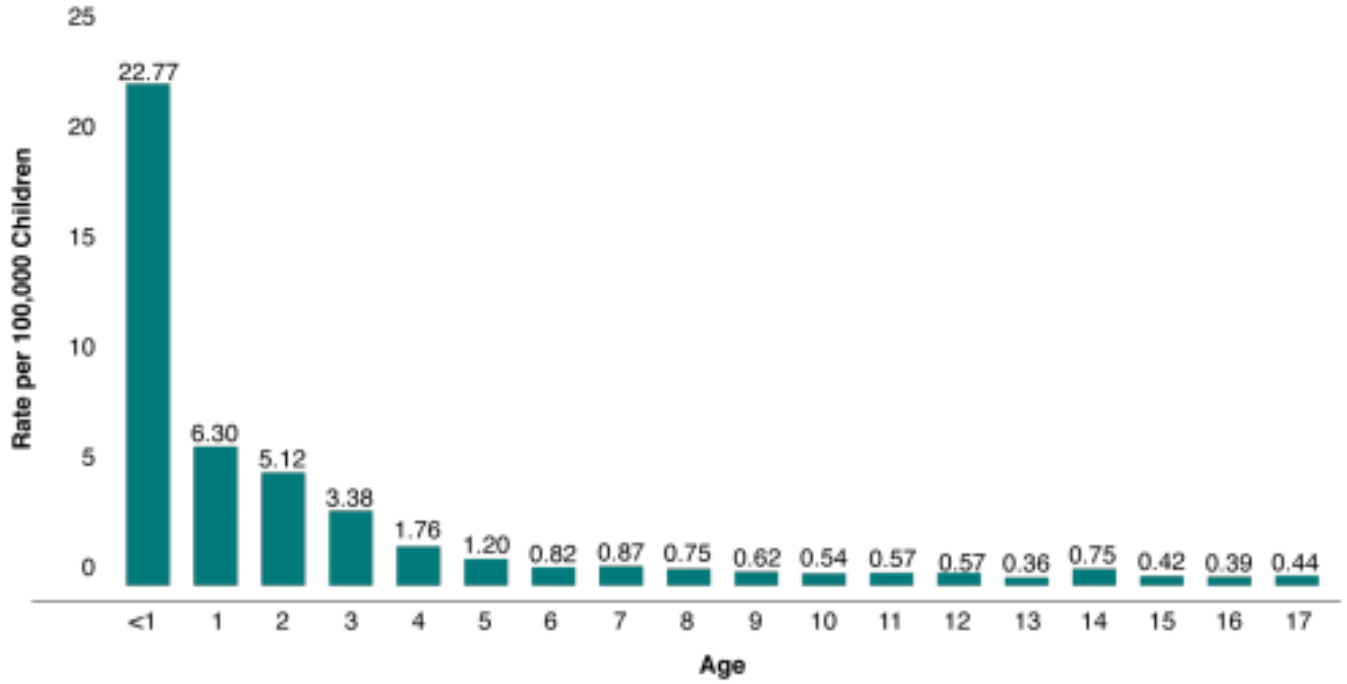


https://www.acf.hhs.gov/sites/default/files/cb/cm2018.pdf

National Data – Child Maltreatment Fatalities by Age

Exhibit 4–B Child Fatality by Age, 2018

Children <1 year old died from abuse and neglect at 3.6 times the rate of children who were 1 year old.



Based on data from 44 states. See table 4–3

https://www.acf.hhs.gov/sites/default/files/cb/cm2018.pdf

National Data – Perpetrators

• In 2018 nationally, data revealed that 91.7% of victims are maltreated by one or both parents. They could have acted together, acted alone or acted with other people

•Risk factors (of perpetrator) include: history of substance use or abuse, mental health disorders, arrests or incarcerations, and intimate partner violence. Socioeconomic factors and stressors can also be risk factors.

Perpetrators

Table 3–11 Victims by Relationship to Their Perpetrators, 2018

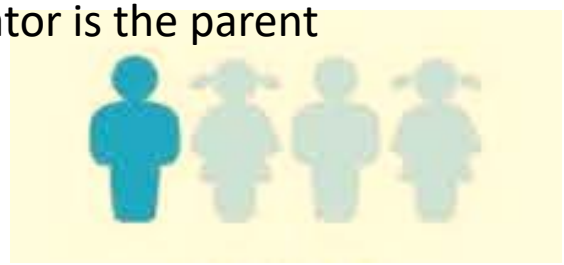
Perpetrator	Victims	Reported Relationships	Reported Relationships Percent
PARENT	-	-	-
Father	-	143,703	21.5
Father and Nonparent(s)	-	8,556	1.3
Mother	-	263,370	39.4
Mother and Nonparent(s)	-	47,343	7.1
Mother and Father	-	142,329	21.3
Mother, Father, and Nonparent	-	7,229	1.1
Total Parents	-	**612,530**	**91.7**
NONPARENT	-	-	-
Child Daycare Provider	-	2,019	0.3
Foster Parent	-	1,659	0.2
Friend and Neighbor	-	5,547	0.8
Group Home and Residential Facility Staff	-	926	0.1
Legal Guardian	-	1,623	0.2
More Than One Nonparental Perpetrator	-	7,711	1.2
Other	-	18,546	2.8
Other Professional	-	1,356	0.2
Relative	-	31,456	4.7
Unmarried Partner of Parent	-	18,787	2.8
Total Nonparents	-	**89,630**	**13.4**
Total Unknown	-	**19,897**	**3.0**
NATIONAL	**668,149**	**722,057**	-

Based on data from 51 states.

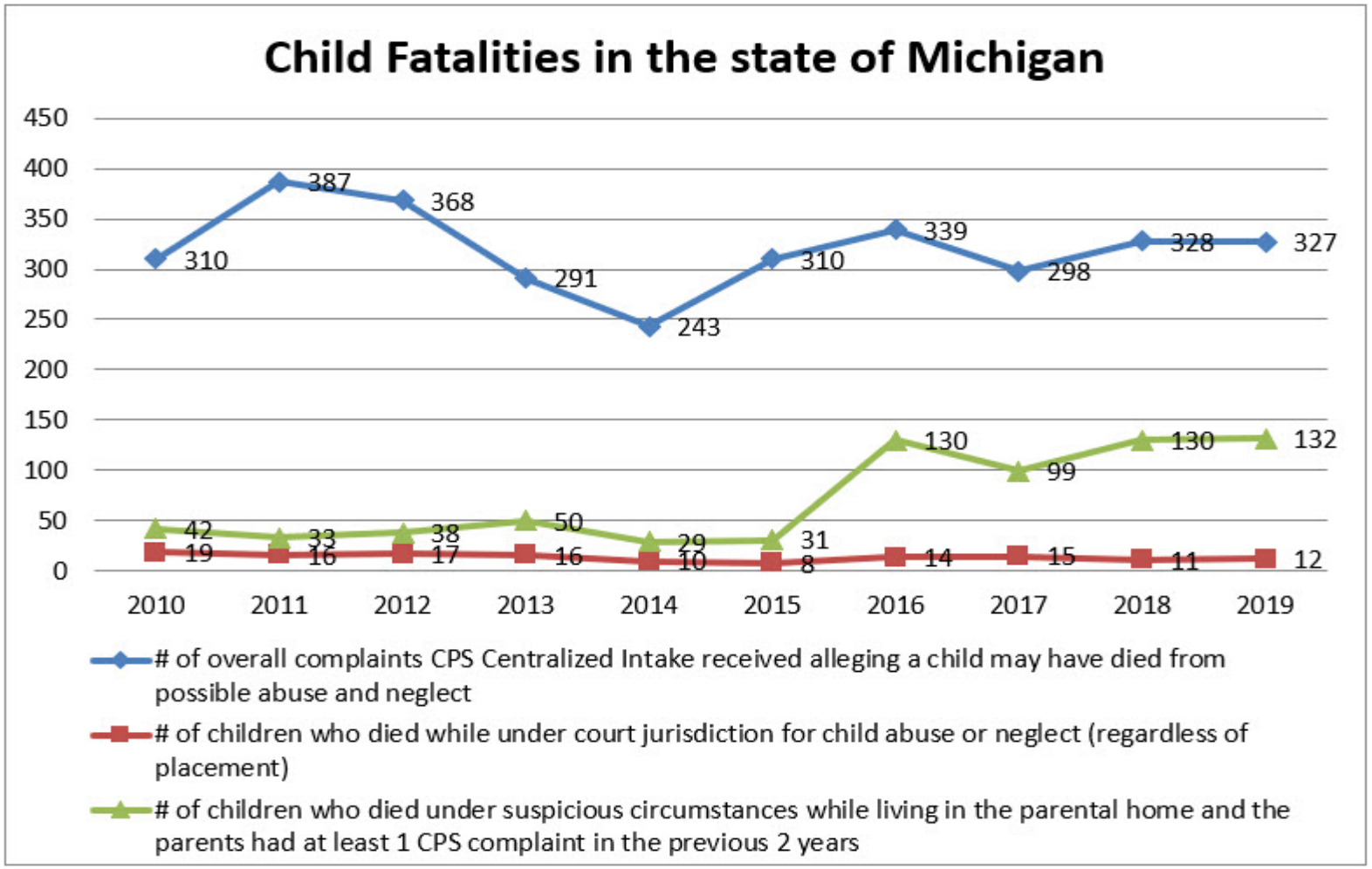
https://www.acf.hhs.gov/sites/default/files/cb/cm2018.pdf

Michigan Data

- The number of CPS investigations in 2018: 100,123
- 27% resulted in evidence of abuse or neglect
- Of all disposed of investigations in 2018, a total of 25,654 complaints were confirmed representing 37,738 identified victims
- 38% of victims were under the age of four.
- In a study by Caldwell & Noor (2005), costs of child abuse in Michigan were estimated at $1,827,694,855. The costs of prevention are a fraction of the costs of abuse. Cost savings ranged from 96% to 98% depending on the prevention model tested.
- In approximately 65 percent of all cases, the perpetrator is the parent (biological, adoptive, putative or step-parent)



Child Deaths in Michigan



https://www.michigan.gov/mdhhs/0,5885,7-339-73971_72316---,00.html

What Can We Do?

What Can We Do?

Trauma centers need standardized targeted screening tools for physical abuse to implement across the continuum of care, rather than ones limited to triage.

- American College of Surgeons

https://www.facs.org/-/media/files/quality-programs/trauma/tqip/abuse_guidelines.ashx

Making the Subjective Objective

- Standardized educational programs and established screening protocols improve detection of child abuse and decrease bias

- Staff education should be formal, structured, and mandatory with a focus on hospital specific screening protocols, abuse detection and interview techniques

Clinical Screening Tools for Child Abuse

Clinical Tool	Intended Population	Exclusion Criteria	Injuries/Findings	Validation Study Results
Pediatric Brain Injury Research Network (PediBIRN)[10]	Children under 3 years of age admitted to the pediatric ICU with an acute, closed, traumatic cranial or intracranial injury; tool now also validated in an ED setting[19]	• Imaging reveals "pre-existing brain malformation, disease, infection, or hypoxia-ischemia" • Injuries resulting from a motor vehicular collision	The 4 variables used were: • Clinically significant respiratory compromise any time prior to admission; • Bruising of the torso, ears, neck; • Subdural hematoma or fluid bilaterally and/or in the interhemispheric fissure; • Any skull fracture except a parietal fracture that is isolated, unilateral, nondiastatic, linear	When more than 1 variable was present, the sensitivity was 96% and the specificity was 46%
Predicting Abusive Head Trauma (PredAHT)[17]	Hospitalized children under 3 years old presenting with an intracranial injury	Cases where etiology of injury was deemed "indeterminate"	6 features are used in the tool: head or neck bruising, seizure, apnea, rib fracture, long bone fracture, retinal hemorrhage	With more than 3 features present, sensitivity was 72.3% and specificity was 85.7%
Pittsburgh Infant Brain Injury Score (PIBIS)[9]	Well appearing infants (i.e. less than 1 year of age) presenting to an ED with no history of trauma and a high-risk sign or symptom (e.g., acute life-threatening event [ALTE]/ brief resolved unexplained event [BRUE], seizure, vomiting without diarrhea, irritable, bump on scalp, bruising)	Having a previously abnormal head computed tomography (CT)	The 5-point PIBIS scale is weighted: 2 points for abnormality on dermatologic exam (e.g., bruising); 1 point for age above 3 months, head circumference above 85%, or serum hemoglobin under 11.2 g/dL	In patients with a score of 2 or greater, sensitivity of the test for identification of abnormal intracranial imaging was 93% and specificity was 53%

TEN-4 FACESp for Children < 4 years old

Bruising to the Torso, Ear, Neck, Frenulum, Angle of jaw, Cheek [buccal], Eyelids, Subconjunctiva, or patterned bruising, or any bruising anywhere on an infant 4 months of age and younger.

https://www.acepnow.com/article/ten-4-faces-p-a-mnemonic-to-help-you-spot-signs-of-child-abuse/

Red Flags for Abuse

- History or story changes
- Delay in seeking care
- No history of trauma is reported and/or possible trauma is denied when there is an obvious injury
- Inappropriate response or child behavior is reported by the caregiver after injury
- An injury is attributed to self-inflicted harm, a pet or sibling
- A history of an unexplained death of a child in the household
- An injury mechanism doesn't fit developmental age

Red Flags for Abuse - Ensuring the Injuries Match the Story

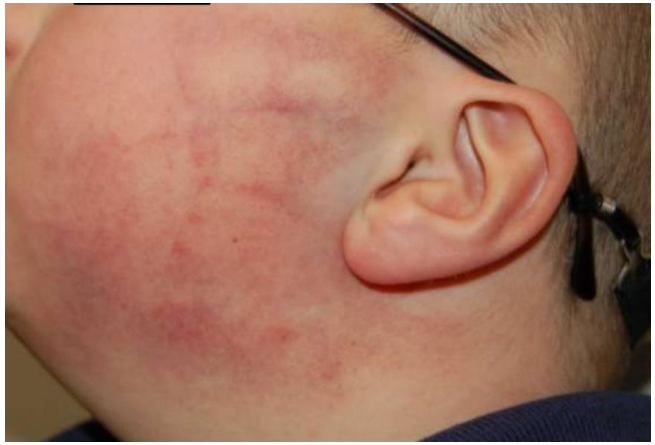
Some things to consider:

- Does the mechanism of injury make sense?
- Was care sought right away?
- Does the story match the child's developmental stage?
- Does the story change?
- Are there other injuries present?
- Are there distinct patterns of bruising?
- Are there bruises in areas of the body not routinely bruised?

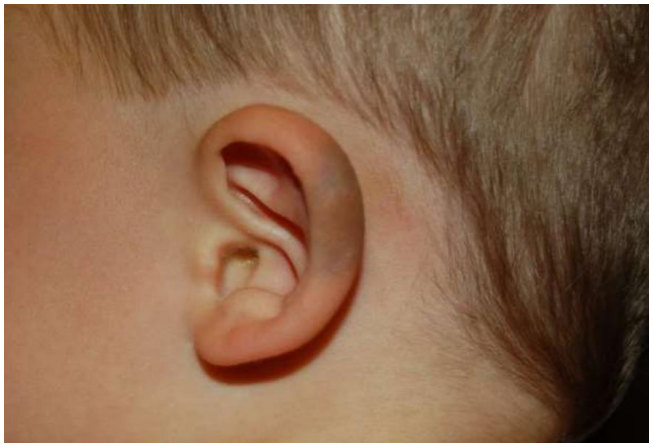
Suspicious Bruising

Accidental Bruising	Abnormal or Suspicious Bruising
Forehead	Cheeks of the face
Head	Buttocks
Chin	Ears
Knees	Neck
Elbows	Back
Outer arms	Genitals
Shins	Petechia most often indicative of abuse

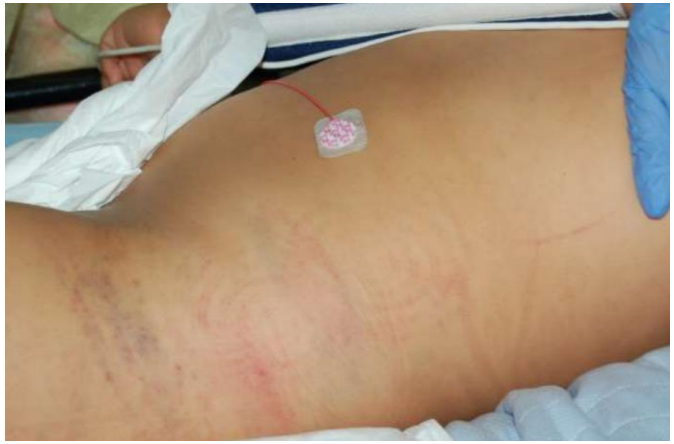
Patterned Bruising



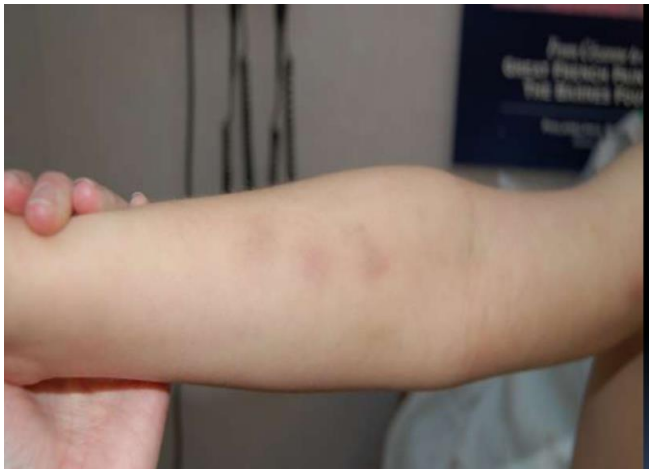
Slap mark



Ear grab



Pattern bruise to abdomen (shoe)



Grab mark

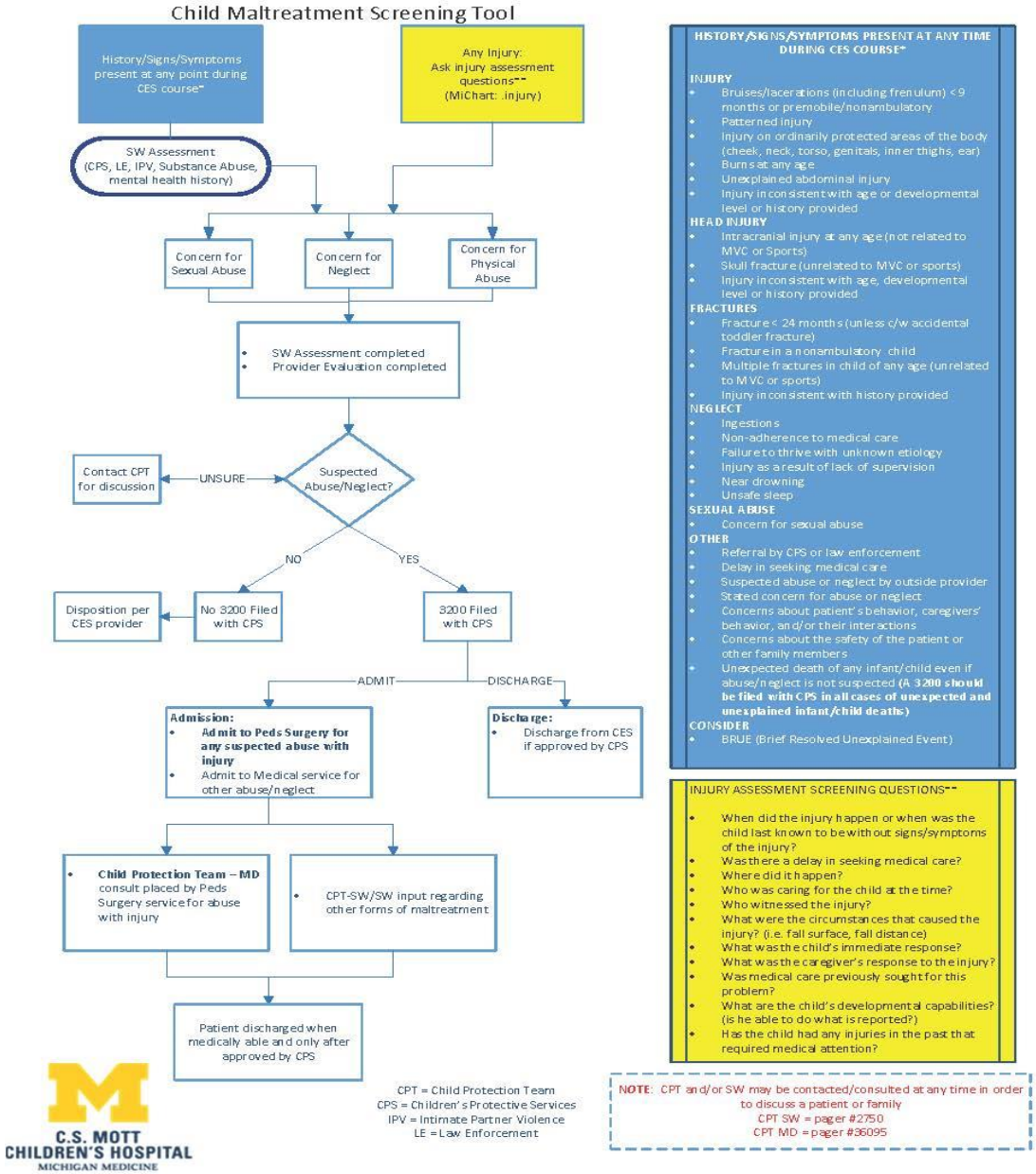
SOURCE: https://www.rchsd.org/documents/2017/03/compliance-training-6-child-abuse.pdf

Follow the Clues

- Along with mechanism of injury, physical exam findings are key to guiding pediatric trauma care
- One example:
  - Seat belt sign after an MVC – was it a lap belt only, five point harness, or no seat belt sign. Cannot always rely on driver/parent/patient to know or relay how the child was riding
  - Was the infant still rear facing? Was the car seat still in the vehicle? Gather as much information as possible from those on scene
  - If an older patient, were they wearing the shoulder belt correctly?

Follow the Clues

"Yes, of course my child was in a booster…."


Child Maltreatment Screening Tool
History/Signs/Symptoms present at any point during CES course*
Any Injury: Ask injury assessment questions** (MiChart: .injury)
SW Assessment (CPS, LE, IPV, Substance Abuse, mental health history)
Concern for Sexual Abuse
Concern for Neglect
Concern for Physical Abuse
SW Assessment completed
Provider Evaluation completed
Contact CPT for discussion
UNSURE
Suspected Abuse/Neglect?
NO
YES
Disposition per CES provider
No 3200 Filed with CPS
3200 Filed with CPS
ADMIT
DISCHARGE
Admission:
Admit to Peds Surgery for any suspected abuse with injury
Admit to Medical service for other abuse/neglect
Discharge:
Discharge from CES if approved by CPS
Child Protection Team – MD consult placed by Peds Surgery service for abuse with injury
CPT-SW/SW input regarding other forms of maltreatment
Patient discharged when medically able and only after approved by CPS
HISTORY/SIGNS/SYMPTOMS PRESENT AT ANY TIME DURING CES COURSE*
INJURY
Bruises/lacerations (including frenulum) < 9 months or premobile/nonambulatory
Patterned injury
Injury on ordinarily protected areas of the body (cheek, neck, torso, genitals, inner thighs, ear)
Burns at any age
Unexplained abdominal injury
Injury inconsistent with age or developmental level or history provided
HEAD INJURY
Intracranial injury at any age (not related to MVC or Sports)
Skull fracture (unrelated to MVC or sports)
Injury inconsistent with age, developmental level or history provided
FRACTURES
Fracture < 24 months (unless c/w accidental toddler fracture)
Fracture in a nonambulatory child
Multiple fractures in child of any age (unrelated to MVC or sports)
Injury inconsistent with history provided
NEGLECT
Ingestions
Non-adherence to medical care
Failure to thrive with unknown etiology
Injury as a result of lack of supervision
Near drowning
Unsafe sleep
SEXUAL ABUSE
Concern for sexual abuse
OTHER
Referral by CPS or law enforcement
Delay in seeking medical care
Suspected abuse or neglect by outside provider
Stated concern for abuse or neglect
Concerns about patient's behavior, caregivers' behavior, and/or their interactions
Concerns about the safety of the patient or other family members
Unexpected death of any infant/child even if abuse/neglect is not suspected (A 3200 should be filed with CPS in all cases of unexpected and unexplained infant/child deaths)
CONSIDER
BRUE (Brief Resolved Unexplained Event)
INJURY ASSESSMENT SCREENING QUESTIONS**
When did the injury happen or when was the child last known to be without signs/symptoms of the injury?
Was there a delay in seeking medical care?
Where did it happen?
Who was caring for the child at the time?
Who witnessed the injury?
What were the circumstances that caused the injury? (i.e. fall surface, fall distance)
What was the child's immediate response?
What was the caregiver's response to the injury?
Was medical care previously sought for this problem?
What are the child's developmental capabilities? (is he able to do what is reported?)
Has the child had any injuries in the past that required medical attention?
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CPT = Child Protection Team
CPS = Children's Protective Services
IPV = Intimate Partner Violence
LE = Law Enforcement
NOTE: CPT and/or SW may be contacted/consulted at any time in order to discuss a patient or family
CPT SW = pager #2750
CPT MD = pager #36095

HISTORY/SIGNS/SYMPTOMS PRESENT AT ANY TIME DURING CES COURSE*

INJURY
- Bruises/lacerations (including frenulum) < 9 months or premobile/nonambulatory
- Patterned injury
- Injury on ordinarily protected areas of the body (cheek, neck, torso, genitals, inner thighs, ear)
- Burns at any age
- Unexplained abdominal injury
- Injury inconsistent with age or developmental level or history provided

HEAD INJURY
- Intracranial injury at any age (not related to MVC or Sports)
- Skull fracture (unrelated to MVC or sports)
- Injury inconsistent with age, developmental level or history provided

FRACTURES
- Fracture < 24 months (unless c/w accidental toddler fracture)
- Fracture in a nonambulatory child
- Multiple fractures in child of any age (unrelated to MVC or sports)
- Injury inconsistent with history provided

NEGLECT
- Ingestions
- Non-adherence to medical care
- Failure to thrive with unknown etiology
- Injury as a result of lack of supervision
- Near drowning
- Unsafe sleep

SEXUAL ABUSE
- Concern for sexual abuse

OTHER
- Referral by CPS or law enforcement
- Delay in seeking medical care
- Suspected abuse or neglect by outside provider
- Stated concern for abuse or neglect
- Concerns about patient's behavior, caregivers' behavior, and/or their interactions
- Concerns about the safety of the patient or other family members
- Unexpected death of any infant/child even if abuse/neglect is not suspected **(A 3200 should be filed with CPS in all cases of unexpected and unexplained infant/child deaths)**

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Child Protection Team

- Serves as a resource for Child Protective Services – DOES NOT make decision or determination of abuse or placement of child
- Comprised of physicians board-certified in Child Abuse Pediatrics, Social Work and Clinical Coordinators
- Able to consult and direct care and treatment in order to compile clinical evidence
- Provide expert testimony as needed

What Can Trauma Centers Do?

- Educate
- Remain vigilant
- Develop processes for detection and referral
- Reach out to Pediatric Trauma Centers for resources and support
- Develop prevention strategies

PREVENTING CHILD ABUSE AND NEGLECT

Strategy	Approach
• Strengthen economic supports to families	• Strengthening household financial security • Family-friendly work strategies
• Change social norms to support parents & positive parenting	• Public engagement and education campaigns
• Provide quality care and education early in life	• Preschool enrichment with family engagment
• Enhance parenting skills to promote healthy child development	• Parenting skill and family relationship education
• Intervene to lessen harms and prevent future risk	• Enhanced primary care • Behavioral parent training programs (ie Period of Purple Crying, etc.) • Treatment to lessen harms of abuse

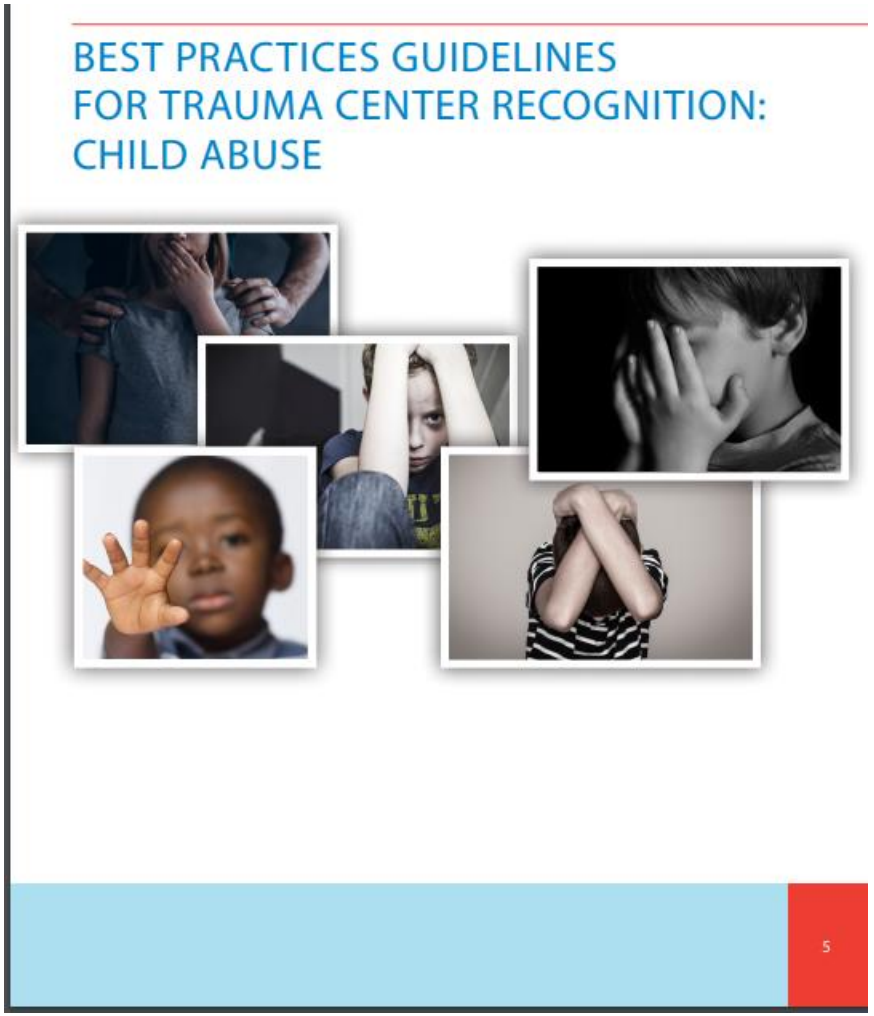
https://www.cdc.gov/violenceprevention/childabuseandneglect/prevention.html

RESOURCES

- Pediatric Trauma Society
- CDC: Child Abuse and Neglect
- Michigan Department of Health and Human Services (CPS)
- Child Welfare Information Gateway – childwelfare.gov
- Society of Trauma Nurses
- Pediatric Trauma Center in your region or state

Resources

Resource guideline compiled by the American College of Surgeons that seeks to help the trauma practitioner identify victims of abuse that present with physical injury and to initiate treatment report. Also includes sections related to Elder Abuse and Intimate Partner Violence



https://www.facs.org/-/media/files/quality-programs/trauma/tqip/abuse_guidelines.ashx

Thank you!

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www.pediatrictrauma.org