



CHOC Children's Hospital
Best Evidence and Recommendations

Best Practice for EMS Child Abuse Screening

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PICO(T): For EMS providers caring for pediatric patients, what is the best evidence-based tool to detect suspected child abuse in order to initiate timely and effective evaluation and child abuse reporting.

P (Population/problem): EMS providers caring for pediatric patients

I (Intervention/issue): best evidenced-based tool to detect suspected child abuse

C (Comparison): no tool

O (Outcome): timely and effective evaluation and child abuse reporting

Background:

In 2018 there were over 30,000 documented child abuse allegations in Orange County, California, 14.7% of these allegations were substantiated (First 5 Orange County Children & Families Commission, 2019). These children make up the most vulnerable population in our county.

All healthcare providers, including those providing emergency medical services, have an ethical and legal duty to recognize and report suspected child abuse and neglect. Studies clearly indicate that healthcare providers have room for improvement when it comes to the recognition of abusive injuries. For example, Thorpe and colleagues (2014) found that 33% of children with healing abusive fractures had previous contact with a medical provider. A study by Sheets et al. (2013) uncovered that 27.5% of abused infants had a previous sentinel injury prior to their current admission. In 41.9% of the cases, medical providers were aware of the sentinel injury. These studies indicate a gap in early identification of childhood injuries that indicate abuse, for truly all children experiencing questionable injuries should be identified and reported for suspected child abuse by healthcare providers.

Research findings also indicate that provider racial/ethnic bias may affect the reporting of abuse. Lane et al. (2002) found that minority children are more frequently evaluated and reported for abuse. Laskey et al. (2012) identified that patients from low socioeconomic status were more likely to be diagnosed with abuse. Many content experts have asserted that a standardized screening tool may help decrease provider biases related to race and socioeconomic status and assist in the identification more consistently among all ethnicities and social status domains.

Given the ongoing and pervasive incidence of child abuse, early identification and reporting of suspected abuse and neglect is a critical strategy to prevent ongoing and escalated abuse. Screening tools are currently utilized worldwide to assist with early recognition and decrease



provider biases and/or lack of expertise in identification of abuse. A systematic review by Louwers and colleagues (2012) demonstrated that systematic screening in the emergency department leads to improved detection rates. The American College of Surgeons (2019) recommends screening across the continuum of emergency and trauma care. This requires screening at all points of contact with a patient, including the pre-hospital, emergency, admission and rehabilitation phases of the individual's treatment pathway.

Child abuse and neglect recognition and reporting has recently been affected by the COVID-19 pandemic. According to Orange County social services, in April 2020, monthly abuse reports dropped to nearly half the usual rate after the California stay-at-home order went into effect. Historically, teachers are the primary reporters of child abuse. For example, in Orange County, California teacher reporting typically accounts for approximately 27% of all reports made to social service. With the COVID-19 school closures, teacher report rates have dropped below 10% of all reported cases.

The purpose of this evidence-based project was to determine the best evidenced tool for EMS to screen for child abuse in the field.

Search Strategies and Databases Reviewed:

- Databases searched for this review included: PubMed, CINAHL, Google Scholar, Burlew. Search yielded more than 100 reviews articles (systematic reviews of RCT, literature reviews, retrospective reviews, practice guidelines, position statements). 29 articles were found to have applicable information.
- Evidenced-based screening tools from the following professional organizations were reviewed: American College of Surgeons, American Academy of Pediatrics, Emergency Nursing Association, U.S. Department of Health and Human Services, and the National Association of School Nurses.

Synthesis of Evidence:

- EMS personnel have reported barriers to reporting suspected abuse. These include discomfort caring for children in general, uncertainty of what qualifies as child abuse, and the numerous other demands of working in a fast-paced environment (Tiyyagura et al., 2017). In Orange County, approximately 6,000 children are treated by EMS personnel each year (V. Sweet, personal communication, 07/30/2020). Adding a child abuse screening tool specifically for EMS use can significantly increase the number of children in Orange County that are evaluated and treated for child abuse.
- The literature revealed a need by paramedics for “focused education on recognition of signs of physical abuse, increased training on scene safety, real-time decision support, increased follow up and feedback related to cases of CAN [Child abuse and neglect] may improve detection of CAN in the prehospital setting” (Tiyyagura et al., 2017, p. 52).
- Currently, there are no standardized child abuse screening tools for specific use by EMS personnel.
- Most screening tools have only been validated for use in the emergency or inpatient setting. The Adverse Childhood Experiences (ACE) Study was one of the first known child abuse



screenings published. Since then there have been various tools developed at different institutions. These screening tools are known to improve the detection of child abuse and decrease provider bias (Hoft, 2017).

- There is no “gold standard” child abuse screening tool and there is no tool comprehensive enough to assess for all forms of child abuse (including physical, neglect, sexual and emotional abuse).
- There is no tool that can replace provider judgement or instinct (Louwers, 2012). Experts agree that screening tools alone will not suffice. Education along with provider follow-up is key to maintaining effectiveness and provider competency.
- A summary of child abuse screening tools recommended by healthcare professional organizations can be found in Table 1.
- A summary of child abuse screening tools tested in the emergency department or intensive care unit can be found in Table 2
- Some child abuse screening tools require advanced assessment techniques outside the scope of paramedics or imaging results not applicable to the pre-hospital setting. Because of this, the following child abuse screening tools are inappropriate for use by EMS; PediBIRN, PredAHT,
- A review of the literature identified two sexual abuse screening tools; both would also be inappropriate for use by EMS because of method they are administered. In addition, the tools (“questionnaire for evaluating behavior, physical and emotional symptoms of children 2–12 years old” and “Spotting the Signs”) both have questionable validity and need further empirical testing (Hoft, 2017).

Table 1: Summary of Child Abuse Screening Tools Recommended by Healthcare Professional Organizations

Organization	Recommendations	Tool Recommendation
American College of Surgeons (ACS)	The ACS recommends three approaches to screening. <ol style="list-style-type: none"> 1. Mass Screening: the tool is applied to entire populations coming to the ED. 2. Selective Screening: tool is applied to only high-risk groups. 3. Multiphase screening: 2 or more screenings are applied at different times. 	<ul style="list-style-type: none"> • TEN-4 FACESp Bruising Clinical Decision Rule (BCDR) • Pediatric Brain Injury Research Network (PediBIRN) • Predicting Abusive Head Trauma (PredAHT) • Pittsburgh Infant Brain Injury Score (PIBIS)

American College of Surgeons. (2019). *ACS trauma quality programs: Best practices guideline for trauma center recognition of child abuse, elder abuse, and intimate partner violence*. Available from https://www.facs.org/-/media/files/quality-programs/trauma/tqip/abuse_guidelines.ashx



American Academy of Pediatrics (AAP)	<p>AAP Recommends the use of the ACES tool as well as Bright Futures anticipatory guidance to aide in the recognition of child abuse. These tools evaluate social determinants of health and high-risk factors. Pediatricians not only play an integral role in not only recognizing child abuse, but also strengthen families and provide resources to high risk families before abuse occurs.</p>	<ul style="list-style-type: none"> • Adverse Childhood Experiences (ACES) • Bright Futures
<p>Child Abuse Prevention. (n.d.). Retrieved October 29, 2020, from https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Pages/Child-Abuse-Prevention.aspx</p>		
Emergency Nurses Association	<p>Comprehensive screening programs improve the recognition of child physical abuse. Nurses play an integral role in the detection of nonaccidental childhood injuries by using child abuse screening tools in their hospital.</p> <p>ENA offers a Early Recognition of Child Physical Abuse Course that introduces the ESCAPE tool as validated tool appropriate for nurses to use in the ED.</p>	<ul style="list-style-type: none"> • ESCAPE
<p>Carson, S. M. (2018). Implementation of a comprehensive program to improve child physical abuse screening and detection in the emergency department. <i>Journal of Emergency Nursing</i>, 44(6), 576-581.</p>		
US Department of Health and Human Services	<p>Provides child abuse manuals with guidance on identifying, prevention and responding to child maltreatment. Manuals are available for:</p> <ul style="list-style-type: none"> • Educators: primary goal of education system is to teach, but in order to achieve this it is necessary to remove barriers that impede a child's ability to learn. They do not mention a screening tool for educators. • First Responders: should be aware of their role as mandated reporter, be able to recognize abuse, create a safe environment for the patient and report abuse appropriately. No screening tool is mentioned for first responders. 	N/A
<p>New and Revised Child Abuse and Neglect User Manuals. (n.d.). Retrieved October 29, 2020, from https://www.childwelfare.gov/pubs/umnew/</p>		
National Association of School Nurses	<p>School Nurses serve as vital role in recognition of child maltreatment. They receive training on laws and regulations regarding reporting, signs and indicators of potential abuse, how to provide support to students and how to link students and families to community resources. They do not have a recommended child abuse screening tool for school nurses.</p>	N/A



Freeland, M., Easterling, T., Reine, K., & Amidon, C. (2018, June). Prevention and Treatment of Child Maltreatment – The Role of the School Nurse. Retrieved October 29, 2020, from <https://www.nasn.org/advocacy/professional-practice-documents/position-statements/ps-child-maltreatment>

Table 2: Summary of Child Abuse Screening Tools Tested in the Emergency Department or Intensive Care Unit

Name of Tool	Year Developed	# of Questions	Reliability and Validity	Overview	Screens for:
ESCAPE	2011	6	80% Sensitivity, 98% Specificity	Assessment of physical abuse and neglect in the emergency setting. Assesses six domains of high-risk indicators. Applicable to all ages.	Physical Abuse and Neglect
TEN-4-FACESp Bruising Clinical Decision Rule	2010	n/a	98% Sensitivity 84% Specificity	Developed for children less than 48 months in the pediatric intensive care unit. Evaluates high risk bruising patterns.	Physical Abuse
SPUTOVAMO-R screening tool	2011	6	Significant number of false positives and false negatives	Used by emergency department staff for patients presenting with physical injury. Evaluates five domains of injury. Authors found this instrument is not accurate for abuse screening	Physical Abuse
Algorithm to screen for physical abuse (Higginbotham, 2014)	2014	n/a	Needs to be empirically tested	Used in the emergency room for infants <1 year old presenting with a fracture. It was effective in identifying fractures related to abuse. It also eliminated disparities related to racial or social economic background.	Physical Abuse
Hoft, M., & Haddad, L. (2017). Screening children for abuse and neglect: A review of the literature. <i>Journal of Forensic Nursing</i> , 13(1), 26–34. https://doi.org/10.1097/JFN.000000000000136					
Pittsburgh Infant Brain Injury Score (PIBIS)	2016	8	93% Sensitivity 53% Specificity	Used by emergency department physicians to determine which infants require a computed tomography (CT) to evaluate for abusive head injuries	Physical Abuse



American College of Surgeons. (2019). *ACS trauma quality programs: Best practices guideline for trauma center recognition of child abuse, elder abuse, and intimate partner violence*. Available from https://www.facs.org/-/media/files/quality-programs/trauma/tqip/abuse_guidelines.ashx

Practice Recommendations:

- Create a Child Abuse Screening Tool specifically for EMS use
 - Utilize pediatric and EMS experts to determine what aspects of existing validated tools are important for use in the EMS Setting. Determine need for any additional questions relevant to EMS.
 - Determine requirements for integration of tool into EPCR with OCEMS Medical Director.
- Engage in pilot screening of a tool with a designated fire agency
 - Complete child abuse screening tool training with designated fire agency.
 - This agency will complete screening on all pediatric patients which the county defines as 14 years old and younger.
 - Positive screening will trigger paramedic to make base contact with a pediatric base station. This follows the current OCEMS Policy 310.0, stating all paramedics must make base contact for suspected physical or sexual abuse.

Definitions:

- EMS: Emergency Medical Services
- OCEMS: Orange County Emergency Medical Services
- ERC: Emergency Receiving Center
- CCERC: Comprehensive Children's Receiving Center
- MICN: Mobile Intensive Care Nurse
- CQI: Continuous Quality Improvement
- EPCR: Electronic Patient Care Report

Acknowledgments:

- The Evidence-Based Scholars Program was supported by a grant from the Walden and Jean Young Shaw Foundation
- Jennifer Hayakawa, DNP, PCNS-BC, CNRN, CCRN, Nurse Scientist, CHOC Children's.
- Vicky R. Bowden, DNSc, RN, Azusa Pacific University, CHOC Children's Hospital EBP Scholars Mentor

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