Early recognition of child physical abuse is having its moment. Since 1999, when we learned that nearly one-third of children with the most severe forms of abuse had been seen by medical professionals who had failed to make the diagnosis, the new pediatric subspecialty of child abuse pediatrics has produced an explosion of research to identify the earliest signs of physical abuse.\(^1\)

Elsewhere in JAMA Network Open, Pierce and colleagues\(^2\) validated a short list of bruise characteristics that should raise the alarm for abuse. While bruising is easy to dismiss or overlook in older children, it can be a critical opportunity to identify abuse in infants and toddlers and to protect them from serious or permanent injury. In addition to the work by Pierce et al.,\(^2\) teams\(^3\)-\(^5\) have described other so-called sentinel injuries, such as fractures, burns, oral injuries, and signs of occult brain injury, and have called attention to the children who live in homes with other forms of family violence. Recognizing and responding to these warning signs can have a lifesaving impact for children who have been abused. Just as importantly, they allow clinicians to use a more objective approach, rather than waiting for their own intuition to kick in. An intuition-based approach is both insensitive and susceptible to intrinsic bias. It leads to a world where Black children and children from lower-income families are disproportionately likely to be evaluated for abuse, while White children and children from relatively wealthy families are at increased risk for missed abuse.\(^1\)

However, the benefits of these new data will only be realized if they are broadly implemented, and that will not happen from awareness-building campaigns alone. For one thing, the new data, including that in the study by Pierce et al.,\(^2\) are necessarily nuanced. In a 12-month old, forehead bruising is not unexpected, but bruising to the fleshy part of the cheek is alarming. In a 3-month old, even forehead bruising is concerning. The Pittsburgh Infant Brain Injury Score (PIBIS)—another important advance—applies to infants who are vomiting, but only if they do not have fever or diarrhea and if they present without a history of trauma. Gone are the days when we could simply remember to look for spiral fractures or differently colored bruises, as these findings have been shown to be unreliable.

For another thing, children who have been abused are not preferentially brought to abuse specialists. While parents might move heaven and earth to find a subspecialist for their child with diabetes, severe asthma, or leukemia, caregivers of children who have been maltreated are more likely to present to general emergency departments, urgent care clinics, or their family physician. Clinicians in these settings may spend only a fraction of their time seeing children and encounter physical abuse once a year or less. To be effective, rules like PIBIS and the one developed by Pierce et al.\(^2\) (TEN-4-FACESp; bruising to the torso, ear, neck, frenulum, angle of jaw, cheeks [fleshy], eyelids, or subconjunctivae, patterned bruising, or any bruising on an infant <4.99 months of age) need to be remembered by thousands of frontline clinicians with many demands on their attention.

In short, child abuse recognition is the quintessential example of a topic where subspecialty knowledge is needed by a broad range of generalist clinicians. Dissemination methods, such as peer-reviewed articles, grand rounds lectures, and journal digests are important, but they will not be enough to overcome intrinsic bias when the signs of abuse are subtle and when caregivers give false or incomplete histories.

We need to deploy broad-based solutions that require less effort from clinicians to narrow the gaps for children who have been abused to fall through. Routine abuse screening by emergency
department nurses has been shown to be feasible and to identify children at high risk. We need to test whether it decreases severe abuse in the longer term. Passive screening tools based in the electronic medical record are another promising way to backstop busy clinicians. The key for such passive screening is to identify the actions that clinicians take that are not affected by their subjective impressions of a family. The best radiologists will raise the possibility of abuse when they see rib or metaphyseal fractures and are not influenced by the demeanor, demographic characteristics, or dress of a child's caregivers. Ideally, an electronic medical record could be trained to serve a similar function by recognizing specific orders related to sentinel injuries, such as an alert triggered by an order for a femur radiograph and an orthopedic consult in a young infant. If clinical charts and radiology reports were completed contemporaneously, natural language processing could be used to recognize injuries in a way that is more sensitive, specific, or reliable than International Classification of Diseases codes, which have not proven sufficient and which may be assigned long after a child is discharged.

These solutions not only help to identify children, but they also help to disseminate the new injury data to a wider range of clinicians, periodically bringing concepts like TEN-4-FACESp to the fore just when clinicians are caring for children at high risk. Thankfully, because older children are much less likely to experience the most severe forms of physical abuse, these tools can be restricted to the youngest children to mitigate alert fatigue.

We should also ensure that all clinicians have access to easy consultation with child abuse pediatricians. While subspecialists are likely to be concentrated in quaternary academic pediatric centers for the foreseeable future, the COVID-19 pandemic has dramatically expanded the use of telehealth, and this should be leveraged to bring subspecialty expertise to all health care practitioners. To protect children from abuse before they are critically ill, we need to be able to push knowledge out, rather than transferring patients in.

The dramatic increase in work like the TEN-4-FACESp rule is among the brightest signs that we can improve the lives of children who have been abused. It challenges clinicians across the house of medicine to integrate increasingly nuanced data into their own practice, even for low incidence and high-impact diagnoses like child physical abuse. Challenge accepted.

ARTICLE INFORMATION


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