STATE OF MAINE
CHILD DEATH AND SERIOUS INJURY REVIEW PANEL

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Missed child abuse by medical providers: tragedy and opportunity

In 2014 Doctor Lawrence Ricci authored a bulletin for the Maine Board of Licensure in Medicine (attached) pointing out the need for improved medical provider identification of injuries in infants that might be related to physical abuse. That bulletin was in response to the release of a revised DHHS reporting statute that specifically identified several injuries in infants under the age of 6 months that require a report to DHHS, regardless of suspicion.

Since the passage of that law, there has been improved reporting of injuries in infants and several infants' lives have been saved. Several others', however, have not.

Over the past few years, missed abuse cases in Maine have included the following examples:

1. An infant presented to a medical provider with unexplained ear bruising. This was neither investigated nor reported. This infant subsequently was subjected to devastating inflicted head trauma.
2. An infant presented to a medical provider with a broken arm, which the parent said might have been caused by a toddler sibling. This was not initially reported and only identified as highly suspicious for inflicted trauma five days later when an astute follow-up provider sought out child abuse pediatrics consultation.
3. An infant presented with bruising of the leg accepted by a provider as accidental. This child subsequently presented with an inflicted leg fracture.
4. An infant presented with subconjunctival hemorrhage, diagnosed as being secondary to constipation. The child subsequently died from abusive head trauma.
5. An infant presented with unexplained vomiting and subtle facial bruising and was later found to have subdural hematomas and retinal hemorrhages.

All of these cases represent missed opportunities for child abuse prevention. In some, the damage was irreparable.

According to a 2019 paper by Berger and Lindberg, despite the emergence of the specialty of child abuse pediatrics, with now approximately 500 board certified child abuse pediatricians in the United States, the rate of missed abuse by medical providers has not improved. Indeed, the number of abuse related deaths in the US has remained unchanged at approximately 600 per year.

The purpose of this letter is to alert all medical providers to this tragic problem and to recommend steps to prevent it, particularly using the concepts of sentinel injuries and clinical prediction rules.

Sentinel injuries in child abuse have been defined as any injury, particularly in an infant less than 6 months of age, which is then followed by a later more serious injury. Sentinel injuries include bruises, lacerations (particularly of the mouth frenula), fractures, burns, and head trauma. Retrospectively identifying a sentinel injury in the history, as a child lay dying in a PICU, is relatively easy, though obviously too late. The goal is to identify such injuries

before further injury occurs. Identification alone, however, is not enough. It must be followed by reporting to child protective services and subspecialty child abuse pediatric consultation.

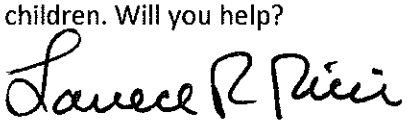
Berger and Lindberg argue that it is time to stop relying upon clinical judgement and social intuition when deciding whom to work up for abuse and time to start using clinical prediction rules.

One such clinical prediction rule is TEN-4 FACESp. This rule, extensively studied and validated, states that any bruise in an infant less than 4 months of life) and bruising involving the trunk, ear, or neck (TEN) in children under 4 years of age should warrant more thorough evaluation. After the initial TEN-4 rule was created, FACESp was added to include the frenula, angle of the jaw, cheek, eyelid, subconjunctiva, or patterned injuries, all of which should be concerning for possible abuse. Many would argue that the age cutoff for any bruising should be 6 months of life, rather than 4, and should include any injury such as a fracture and head trauma, as is the case in Maine law.

What should the provider do with this simple rule? Whenever the rule is triggered, particularly in an infant less than 6 months of age, a report to child protective services and a consultation to child abuse pediatric services should be routinely made. Other steps in the workup could include a screening skeletal survey (22 films, limited radiation equal to living in Maine for 3 months, and positive in 15-20% of cases); lab work including CBC, CMP, INR, and PTT; and consideration for head imaging. Skeletal surveys have emerged as a powerful screening tool for children under the age of 2 with the caveats that an incomplete or poorly done skeletal survey is worse than none and that a negative survey does not rule out abuse. Oftentimes, in consultation with a child abuse pediatrician, these tests should be done as an inpatient to assure safety and time for social service and possibly law enforcement evaluation. Hospitalization is best obtained in a center with experience conducting this workup.

When applying the rule to toddlers and preschoolers who are ambulatory, some discretion is involved, though not much. When in doubt, consult a child abuse pediatrician. In Maine the only source for this subspecialist consultation is The Spurwink Center for Safe and Health Families, which provides 24-7 child abuse pediatrics phone coverage at 207-879-6160.

Had such a decision rule been applied to the children in the above case examples, further injury and even death might well have been averted. The opportunity to bridge the gap, as Berger and Lindberg point out, between knowledge and practice with our most vulnerable patients is here. Together, we can do better for Maine's children. Will you help?



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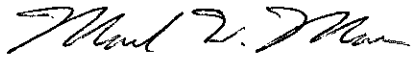

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Berger RP, Lindberg DM. Early Recognition of Physical Abuse; Bridging the Gap between Knowledge and Practice. J Pediatr 2019; 204:16-23.