COMMENTARY

Correctly Identifying Hospitalized Pediatric Patients With Tobacco Smoke Exposure: The First Step in Addressing Parental Tobacco Use

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In their study in this issue of *Hospital Pediatrics*, Mahabee-Gittens et al[1] compared tobacco smoke exposure (TSE) based on parental self-report in a convenience sample of pediatric patients who were hospitalized with TSE based on biochemical confirmation with levels of child salivary cotinine, a biomarker of nicotine. The study revealed poor sensitivity and specificity of parental self-report of TSE (reported in the electronic health record [EHR]), compared with measured cotinine levels. Only 67% of patients with positive cotinine levels were identified as having TSE by parental self-report, as documented in the EHR. In contrast, 77% of children with parental report of TSE who were hospitalized had positive cotinine levels. The authors concluded that almost 40% of children were misclassified in the EHR as not having TSE.

What accounts for the differences between parental self-report of TSE and biochemical measurement of salivary cotinine? The authors suggest several possibilities, including (1) their use of enzyme-linked immunosorbent assay to measure cotinine levels, which is not as sensitive as other methods; (2) the screening questions in the EHR were nonspecific, with a prompt for the nurse or physician to assess "tobacco smoke exposure" or "smokers in the home"; (3) overly general screening questions that did not determine the type of tobacco product, location, amount, and frequency of exposure.

Indeed, the way parents are asked about TSE may significantly impact responses: Groner et al[2] determined sensitivity and specificity and correlation with hair nicotine levels for a variety of tobacco screening questions. They concluded that a "one size fits all" approach was insufficient and recommended universal biochemical screening for TSE.[2] In several other studies, parental report was found to underestimate children's TSE when compared with cotinine levels.[3,4] By contrast, Wilson et al[5] found no differences between parental report and cotinine levels measured in children seen in a pediatric emergency department.

Why is screening for TSE so important? Despite the decreasing prevalence of cigarette smoking among adults (now at 14.0% nationally), 37.9% of children 3 to 11 years old are exposed to tobacco smoke.[6,7] With the rise in popularity of electronic cigarettes, also known as vapes and known by brand names such as JUUL, clinicians should also recognize the harms and inquire about potential secondhand aerosol exposure.[8] This study reveals the opportunity to improve screening for all forms of TSE and to consider both universal and targeted screening and interventions.

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The authors conclude that universal tobacco screening should be performed, either by performing child cotinine-level testing when feasible or by "standardized and expanded TSE screening and counseling." We agree.

Although a single, perfect, validated, universal screening question to determine child TSE is elusive, asking "Does anyone who lives in your home or who cares for your child smoke tobacco?" was shown in Groner et al[2] to have a sensitivity of 74% and a positive predictive value of 88% when compared with measuring hair nicotine levels. The American Academy of Pediatrics (AAP), in the article "Clinical Practice Policy to Protect Children From Tobacco, Nicotine and Tobacco Smoke," recommends asking in a standardized method.[9] Although child cotinine-level testing may be more sensitive in picking up TSE, many institutions may not have access to cotinine-level testing that is sensitive enough for TSE.

The focus of this study was on improved screening for TSE, but the ultimate goal of identifying TSE among children who are hospitalized is to provide interventions to parents, caretakers, and patients who use tobacco products. Multiple organizations, including the National Academy of Medicine, the American Medical Association, and the AAP, recommend identification and treatment of tobacco use in health care settings, and the AAP specifically recommends providing tobacco-use treatment of parents and caretakers.[9] The AAP article "Clinical Practice Policy to Protect Children From Tobacco, Nicotine, and Tobacco Smoke" provides pediatric health care providers with guidance and recommendations on the basis of the 5 A's (ask, advise, assess, assist, and arrange).[9] Additional information can be accessed on the AAP Julius B. Richmond Center of Excellence Web site: https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Richmond-Center/Pages/default.aspx.

Universal screening for TSE should be performed for all pediatric patients who are hospitalized. How that is best accomplished may vary by institution, but the ultimate goal should not: all tobacco users should be identified and offered treatment.

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