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Missed opportunities to intervene with caregivers of young children highly exposed to secondhand tobacco smoke

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Kruse and Rigotti (2014) conducted a study to assess the feasibility of implementing screening for secondhand tobacco smoke exposure (SHSe) in hospitalized adult and pediatric patients at Massachusetts General Hospital. The authors found that routine screening was feasible, and that 3.8% of admitted non-smoking children were exposed to secondhand tobacco smoke in the home or car; SHSe was more common in children who were Medicaid recipients or admitted with asthma. As the authors and others suggest, findings likely under-represent the prevalence of secondhand smoke (Prochaska et al., 2013) as caregivers may not feel comfortable revealing the level of their child's SHSe. An investigation of SHSe admission screening in children by Wilson and colleagues indicates that the majority of smoke-exposed children were not identified on the basis of admission screenings (Wilson et al., 2012). A study at our institution (Howrylak et al., 2014), indicated that among caregivers who reported no SHSe, 69.9% had detectable salivary cotinine.

Our recent research findings indicate a high rate of SHSe in young, low-income children who presented to the pediatric emergency department (PED) with respiratory-related illnesses. This research was part of a larger study conducted from November 2013 to July 2014 to assess the effect of a smoking cessation intervention on caregivers who presented to the PED at Cincinnati Children's Hospital Medical Center with their children. Caregivers completed a brief tobacco survey and an assessment of their children's SHSe. As part of this study, we biochemically assessed for SHSe with 16 children via salivary cotinine assays (Salivettes; Salimetrics, Inc., State College, PA). Cotinine was measured using the enzyme-linked immunosorbent assay technique with a limit of detection of 1.0 ng/ml. Based on prior

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studies (Butz et al., 2011; Kumar et al., 2008), children with a cotinine value of >1 ng/ml were classified as exposed to SHS. In our study, the mean age (SD) of children was 2.26 (1.73) years; 94% were female; 44% were Non-Hispanic, African American, 56% were White; 100% had Medicaid. The top three chief complaints were cough, difficulty breathing, and cold symptoms. Cotinine levels ranged from <0.8 ng/ml to 34.5 ng/ml. Caregiver reports of their child's SHSe in the home and car were 56.3% and 63.6%, respectively. Fifteen children (93.8%) had evidence of SHSe based on a cotinine level >1.0 ng/ml. SHSe was documented in the patient's record by a clinician 75% of the time, although this may have been assessed on a previous visit. Of those children who did not have SHSe documented in their record, 75% had a detectable level of cotinine. Among the four children whose caregivers reported no tobacco exposure in the home or car, 100% had detectable salivary cotinine. Of the children with reported exposure either in the home or car, 91.7% had detectable salivary cotinine.

Our results provide additional evidence to support the universal screening of children, not only in the in-patient setting, as recommended by Kruse and Rigotti, but also in the PED. All pediatric healthcare visits represent an underutilized opportunity to identify and intervene with caregivers to reduce their child's SHSe. Unfortunately, as in previous studies, our findings demonstrate that caregivers fail to accurately report their child's level of SHSe. Therefore, efficient biochemical testing of SHSe exposure is necessary to identify those caregivers and their children who do not self-report exposure. In addition, biochemical testing for SHSe may provide a teachable moment through which to motivate caregivers who smoke to quit.

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