

Physicians Missing the Mark on Lead Testing in Kids

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As many as one in three children with elevated levels of lead in their blood may be going undiagnosed, and children living in the southern and western United States and in the District of Columbia appear to be most vulnerable to inadequate screening, a study has shown.

"In southern and western states engaged in reporting, roughly 3 times as many children with EBLI were missed than were diagnosed," write Eric M. Roberts, MD, PhD, from the Public Health Institute in Oakland, California, and colleagues in an article [published online](#) May 1 in *Pediatrics*.

Because practices related to screening and testing for elevated blood lead levels (EBLLs) vary widely, the authors sought to determine whether state-level reports of EBLI prevalence in children aged 12 months to 5 years aligned with population-based estimates derived from national survey data.

The investigators compared the number of EBLI cases, defined as a blood lead level of 10.0 $\mu\text{g}/\text{dL}$ or greater, reported to the Centers for Disease Control and Prevention (CDC) from 1999 to 2010 with state-specific expected numbers generated from National Health and Nutrition Examination Survey data. The findings indicate that 23 of the 39 states including the District of Columbia that participated in the CDC Childhood Lead Poisoning Prevention Program during the period of study reported less than 50% of the expected number of EBLI cases, and 11 states reported less than 20%.

Compared with the estimated 1.2 million children expected to have EBLI during the study based on statistical models, just 606,709 cases were reported to the CDC. Although approximately 45% of those not reported were attributable to states not reporting during some of the years, the remainder "were not reported because of incomplete case ascertainment in states engaged in reporting efforts," the authors write.

Looking at the reported data by state and region, the greatest number of children reported as having EBLI occurred in the Midwest and the Northeast, but the greatest number of cases occurred in the South, the authors report. And although "the smallest number of cases occurred in the West, this was also the region with the greatest proportion of missed cases (89%) due both to ineffective ascertainment and to nonparticipation in the CDC [Childhood Lead Poisoning Prevention Program]," they write.

Of expected cases of EBLI in the Northeast and Midwest, 99.5% and 94.3%, respectively, were reported, compared with only 25.3% of the expected cases in the South and 21.8% of those in the West.

The large number of states with a significant gap between reported and expected cases "is striking," the authors write. "In the absence of epidemiologic data demonstrating that the prevalence of EBLI in any of these states is lower than estimated, underreporting (and therefore undertesting) should be considered potentially endemic in these states."

With respect to testing, the American Academy of Pediatrics encourages pediatricians to rely on state- and local-level guidelines to determine which children should be tested for EBLI. However, "these recommendations are often difficult for clinicians to access and commonly defer to practitioners' individual evaluations of EBLI risk in the communities they serve, a task for which few are equipped,"

the authors write. Universal testing is only recommended by the CDC in the absence of a state-level plan. Further, the CDC no longer recommends universal testing in Medicaid populations; rather, the agency now suggests questionnaire-based screening for the need for testing, with the expectation that states and localities would develop evidence-based protocols appropriate for their jurisdictions.

In the absence of data-directed decisions about EBLI testing and the lack of mechanisms and resources for enforcing statutory requirements, large numbers of children with EBLI, and the majority of such children in certain regions, have been missed by clinicians, the authors write. "Departments of public health should reach out to providers and make sure their guidelines are accessible and feasible given the typical provider's skill set and time availability."

In addition, the authors call for "population-based EBLI prevalence studies "that would produce more reliable estimates than our model-based ones and enable allocations of resources to assist communities most in need," they write.

Finally, clinicians in states with low ascertainment should adopt more aggressive testing protocols and be prepared to counsel parents whose children test positive by becoming informed of resources set aside by states and localities for environmental remediation and available legal protections.

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