

A preliminary examination of elevated blood lead levels in a rural Georgia county

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Background: Children in Flint, Michigan were exposed to lead at unsafe levels in drinking water bringing renewed interest and national attention to an old public health problem. In Georgia, thousands of children are exposed annually to lead at unsafe levels primarily from paint in homes built before 1978. With lead poisoning typically viewed as an urban problem, rural areas are often considered lower-risk in light of similar lead poisoning risk factors, albeit on a smaller scale. The purpose of this preliminary study was to examine the prevalence of elevated blood lead levels in children <6 years of age tested in rural Ben Hill County, Georgia, a county designated as lower risk.

Methods: Lead surveillance data from the Georgia Department of Public Health (DPH) were analyzed using SAS@v-9.3 to calculate the prevalence of elevated blood lead levels ($\geq 5\mu\text{g}/\text{dL}$) among those children in Ben Hill County who had been tested for lead; the results were compared to state and national data.

Results: A preliminary analysis of 2010-2015 screening data for Ben Hill County indicates that 8.73% (95%- CI: 7.4%-10.1%) of children who were tested for lead exceeded the Centers for Disease Control reference level ($\geq 5\mu\text{g}/\text{dL}$). This is approximately 3.5 and 2.4 times higher, respectively, when compared to national (2.5%) and state (3.64%) percentages of children exposed to lead $\geq 5\mu\text{g}/\text{dL}$. Analysis also indicated low screening rates, which limits interpretation of population prevalence.

Conclusions: Lead poisoning is often viewed as an urban, inner-city problem due to a higher percentage of older homes clustered together, exposing more children, compared to rural areas with homes geographically dispersed. While these data are preliminary and more analysis is planned to understand the problem, it highlights lead poisoning risks rural communities face that are often overlooked in population-based risk analysis and research on lead exposure in children.

Key words: rural, reference level, elevated blood lead level, prevalence, risk

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