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Blood Lead Testing Among Children Aged <72 Months — Alaska, 2017-2021

Introduction

On October 28, 2021, the US Centers for Disease Control and Prevention (CDC) updated its blood lead reference value (BLRV) from 5 micrograms per deciliter ($\mu\text{g}/\text{dL}$) to 3.5 $\mu\text{g}/\text{dL}$.¹ The BLRV is based on the 97.5th percentile of the blood lead values among US children aged 1–5 years.¹ Given that no safe blood lead level (BLL) has been established, earlier recognition of lead exposure enables providers and families to intervene by mitigating exposure that might otherwise result in higher blood lead concentrations that can cause lifelong impairments. The Section of Epidemiology (SOE) has adopted the BLRV of 3.5 $\mu\text{g}/\text{dL}$ for initiating a childhood lead investigation to identify and mitigate the source of lead exposure and to assist with the medical management of these patients. This *Bulletin* presents data from the past 5 years to assess trends in testing rates, as well as to estimate the number of lead-exposed children that could benefit from earlier intervention.

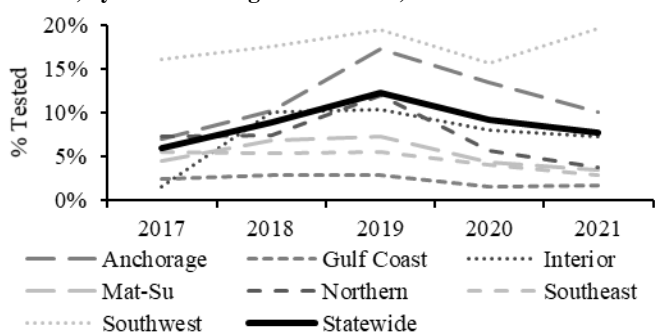
Methods

We reviewed all BLL tests reported from 2017–2021 for children aged <72 months (<6 years). We calculated the annual percentage of children tested by region and the annual number of children with BLLs $\geq 5 \mu\text{g}/\text{dL}$ and $\geq 3.5 \mu\text{g}/\text{dL}$. Annual counts include children tested in multiple years and therefore vary slightly from counts over the 5-year period. Population data were obtained from the Alaska Department of Labor and Workforce Development.²

Results

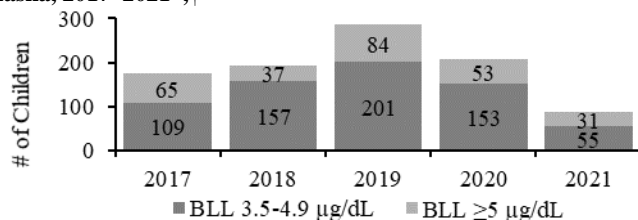
During 2017–2021, a total of 28,902 BLL tests among children aged <72 months were reported to SOE. Annual blood lead testing rates varied by year and by region with the highest testing rates in the Southwest region and the lowest in the Gulf Coast region (Figure 1). A total of 247 and 906 unique children aged <72 months had a BLL at or above the previous BLRV of 5 $\mu\text{g}/\text{dL}$ and the updated BLRV of 3.5 $\mu\text{g}/\text{dL}$, respectively (Figure 2). The annual percentage of children aged <72 months with a BLL $\geq 5 \mu\text{g}/\text{dL}$ and $\geq 3.5 \mu\text{g}/\text{dL}$ ranged from 0.7%–1.8% and 2.0%–4.7%, respectively.

Figure 1. Blood Lead Testing Rates Among Children Aged <72 Months, by Year and Region — Alaska, 2017–2021*



*Annual counts include children tested in multiple years.

Figure 2. Children Aged <72 Months with BLL $\geq 5 \mu\text{g}/\text{dL}$ and — Alaska, 2017–2021*,†



*Annual counts include children with BLLs above the BLRV in multiple years.
†Counts include suspect cases that may not have received a confirmatory venous blood sample.

Discussion

The results of this assessment reveal that during 2020–2021, blood lead screening rates among children aged <72 months decreased considerably. Correspondingly, the number of children identified with an elevated BLL also decreased.

In Alaska, commonly identified potential lead exposure sources include parent occupation or hobby, consumption of meat hunted with lead ammunition, living in a home built before 1978, and pica.³ The only way to know if and how much lead exposure has occurred is to perform a blood lead test. Annual BLL testing rates among children aged <72 months in Alaska remain below the national average (e.g., 8.9% vs. 17.6% in 2018, respectively).⁴

Along with many other states, Alaska saw a decline in testing rates in 2020 due to missed in-person clinic visits during the COVID-19 pandemic.⁵ Testing declined even further in 2021, likely due to the COVID-19 pandemic and the recall of LeadCare® test kits, a common point-of-care blood lead testing product widely used in Alaska. As of February 14, 2022, distribution of the LeadCare® II products has resumed.

This assessment also reveals that nearly four times more children will be identified for follow-up with the adoption of the updated BLRV. This may have a significant impact on health care providers, public health staff, and families, but is a great opportunity to promote health and further reduce childhood lead exposures.

Efforts should be made to increase screening rates in Alaska. Increased screening, paired with the adoption of the updated BLRV, will help ensure that lead-exposed children are identified earlier, their exposure is mitigated, and they receive appropriate medical interventions.

Recommendations

1. Health care providers should assess *all children* aged <18 years, particularly those aged <72 months, for exposure to lead and offer BLL testing to those with any known or suspected risk factors. A lead exposure risk assessment tool for children is available at: <https://dhss.alaska.gov/dph/epi/eph/pages/lead/default.aspx>.
2. Health care providers are required to test BLL for all Medicaid-eligible children at ages 12 and 24 months, or before 72 months if not previously tested.
3. Capillary BLL tests with a result of $\geq 3.5 \mu\text{g}/\text{dL}$ *must* be confirmed with a venous test at a certified laboratory.
4. Per 7 AAC 27.014, laboratories and providers performing blood lead testing (venous or capillary) are required to report all BLLs to SOE within 28 days, and providers are required to report BLLs $\geq 5 \mu\text{g}/\text{dL}$ within 7 days. This regulation has not yet been updated to correspond with the updated BLRV of $\geq 3.5 \mu\text{g}/\text{dL}$, though it is recommended that providers report BLLs $\geq 3.5 \mu\text{g}/\text{dL}$ within 7 days.

References

1. CDC. Blood Lead Reference Value. Available at: <https://www.cdc.gov/nceh/lead/data/blood-lead-reference-value.htm>
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3. Bressler JM, et al. Blood lead surveillance and exposure sources among Alaska children. *J Pub Health Manag Pract* 2019;25:S71–S75. Available at: https://journals.lww.com/jphmp/Fulltext/2019/01001/Blood_Lead_Surveillance_and_Exposure_Sources_Among.12.as
4. CDC. National Childhood Blood Lead Surveillance Data. Available at: <https://www.cdc.gov/nceh/lead/data/national.htm>
5. CDC. Decreases in young children who received blood lead level testing during COVID-19 – 34 jurisdictions, January–May 2020. *MMWR* 2020;70(5):155–61.