Blood Lead Level Screening Recommendations and Outcomes for Newly Arrived Refugee Children in Washington

There is no safe blood lead level in children. Exposure can result in permanent damage to the brain and nervous system as well as slowed growth and development. Prevention and prompt treatment are essential. Old house paint, imported toys and toy jewelry, imported candies, and aging water pipes may be sources of lead for a child in the United States. Arriving refugee children may have faced additional risks for lead exposure.

Background

Screening for blood lead levels (BLL) in newly arrived children is an important part of the domestic health screening exam that all refugees are eligible for and encouraged to receive within 30 days of arrival to Washington State. Compared to U.S.-born children, certain newly arrived pediatric refugee groups are disproportionately affected by elevated blood lead levels (EBLL; defined as ≥5 µg/dL) at the time of arrival due to overseas exposures such as:

- use of leaded gasoline in countries lived in,
- exposure to ammunition manufacturing and use
- use of lead-containing traditional remedies and cultural items (e.g., kohl eye make-up)

Child wearing traditional kohl eye make-up, also known as surma or kajal. Photo credit: NPR.
Unlike US-born babies who have the opportunity for BLL testing at routine well-child visits, most refugee children arrive in Washington at older ages and may also have predisposing factors such as malnutrition, including iron, calcium and zinc deficiencies, which can further increase their absorption of lead. Refugee children may also be at higher risk for new or ongoing exposures to lead post-resettlement in the United States, if they live in older housing with lead-based paint and/or if there is continued use of lead-containing products such as traditional remedies and cultural items.

Washington Refugee Blood Lead Level (BLL) Screening Guidelines

The Washington State Refugee Health Screening Guidelines recommend that all refugee health screening clinics perform an initial BLL test for newly arrived children 6 months to 16 years of age, and pregnant women at the time of arrival. The goal is to identify children and mothers in need of medical monitoring and management (Table)

<table>
<thead>
<tr>
<th></th>
<th>Initial BLL screening (0 to 3 months post-arrival)</th>
<th>Post-resettlement BLL screening (3 to 6 months later)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performed by</td>
<td>Refugee Domestic Health Screening Clinic</td>
<td>Primary Care Provider</td>
</tr>
<tr>
<td>Purpose</td>
<td>Identify children in need of medical monitoring and management</td>
<td>Identify new or continued lead exposure (e.g., housing, traditional remedies) Identify children in need of medical monitoring and management</td>
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<tr>
<td>Recommended for</td>
<td>All children ages 6 months to 16 years old</td>
<td>Children ages 6 months to 6 years old regardless of initial BLL result</td>
</tr>
</tbody>
</table>

Table. Summary of WA State Refugee Health Screening Guidelines for BLL Screening

Among children identified with EBLL, the refugee health screening clinics will give a strong active referral to primary care providers for medical case management and scheduled retesting. They also provide overseas and domestic health screening records to the providers of all children. Blood lead level is a notifiable condition and clinics will report all results to the Department of Health Lead Program to enable public health case investigation and follow-up. Healthcare providers of recently arrived refugee children should perform follow-up testing 3 to 6 months after the initial BLL test, regardless of the result (Table).

BLL Screening and Outcome Trends

The Washington DOH Refugee Health Program conducts surveillance of refugee health screening outcomes. From 2015 through 2017, 96% (n=4,148) of refugee children ages 6 months to 16 years had BLL testing performed. We identified following:

- 14% of refugee children tested were identified with EBLL, versus 2.2% EBLL rate for US-born children ≤6yo
- Higher EBLL prevalence was associated with younger age, anemia, wasting and stunting
EBLL prevalence varies by country of origin (see Figure).

Afghan refugees are a top arrival community to Washington and 47% of the children had EBLL with 13% testing ≥10 µg/dL.

These findings highlight the heterogeneity of health needs and predisposing factors for EBLL, such as birthplace, countries of residence and additional medical conditions among newly arrived refugee children. Continued BLL screening at arrival in the United States and follow-up testing 3 to 6 months post-resettlement is important to identify children with EBLL and to ensure linkage to care for continued medical monitoring and management.

Because not all lead exposures can be attributed to an overseas exposure, EBLL case and environmental investigation by local health jurisdictions is important to identify any continued exposures in the household as well as strengthen care coordination and service delivery. Local health jurisdictions have a number of roles in reducing lead exposure in refugee children:

- Perform a complete case investigation per DOH Childhood Lead Poisoning Prevention Program guidance to determine potential ongoing or new sources of lead exposure in the home.
- Ensure your local providers perform follow-up testing per Washington State BLL Testing guidelines.
- Make referrals for nutritional and developmental assessments.
- For case management advice the local refugee health screening clinic may be able to assist in identifying resources (e.g., transportation, medical interpreter, coordination of care). The clinic may be able to help identify resources such as a medical interpreter or request assistance from a refugee’s resettlement case worker in order to coordinate care.
- Make sure your local providers and labs report both positive and negative BLL test results to the WA DOH Childhood Lead Poisoning Prevention Program.

Elevated lead levels in children is an ongoing public health challenge. Preventing exposure to lead and intervening for children who have been exposed can prevent a lifetime of adverse outcomes.

Please contact us if you have any questions:

Childhood Lead Poisoning Prevention Program
WA State Department of Health
360-236-4280
lead@doh.wa.gov

Refugee Health Program
WA State Department of Health
206-418-5500
refugeehealth@doh.wa.gov
Resources

• CDC guideline: Screening for Lead during the Domestic Examination for Newly Arrived Refugees
  https://www.cdc.gov/immigrantrefugeehealth/guidelines/lead-guidelines.html

• Pediatric Environmental Health Specialty Unit (PEHSU) guidelines
  o Interpreting and Managing Low Blood Lead Levels
  o Medical Management of Childhood Lead Exposure and Poisoning

• Washington DOH Childhood Lead Poisoning Prevention Program
  https://www.doh.wa.gov/YouandYourFamily/InfantsandChildren/ProtectKidsfromToxicChemicals/PreventLeadPoisoning

• Lead prevention materials (available in several languages)
  https://www.doh.wa.gov/YouandYourFamily/HealthyHome/Contaminants/Lead/Publications

• Provider resources including screening guidelines
  https://www.doh.wa.gov/AboutUs/ProgramsandServices/DiseaseControlandHealthStatistics/RefugeeHealthProgram/ProviderResources

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