A Targeted Approach to Blood Lead Screening in Children, WA State

Lead Testing Data from Washington State

The Department of Health has been conducting lead surveillance since 1993 and continues to receive, record, and analyze blood lead results reported as a requirement of the Washington State notifiable condition rule (WAC 246-101). While the number of blood lead tests has increased in Washington State over the past decade, the proportion of children screened in Washington State remained well below the national average (Table 3). Table 3 compares Washington State data to U.S. data using the CDC definition of a confirmed case; defined as a venous test or two elevated capillary tests performed within 12 weeks of each other that are ≥5 μg/dL.

**Table 3: Estimated proportion of children under 6 years old screened for lead and proportion of confirmed blood lead results > 5μg /dL in Washington State and the United States.** Source: CDC National Lead Poisoning Surveillance Data (1997-2013).

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated % of WA children screened</th>
<th>Estimated % of US children screened</th>
<th>Proportion of WA tests ≥10 μg/dL</th>
<th>Proportion of US tests ≥10 μg/dL</th>
<th>Proportion of WA tests ≥5 μg/dL</th>
<th>Proportion of US tests ≥5 μg/dL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1.3%</td>
<td>15.9%</td>
<td>0.49%</td>
<td>0.94%</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>2008</td>
<td>2.4%</td>
<td>17.1%</td>
<td>0.31%</td>
<td>0.72%</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>2009</td>
<td>3.0%</td>
<td>17.2%</td>
<td>0.29%</td>
<td>0.61%</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>2010</td>
<td>3.5%</td>
<td>16.7%</td>
<td>0.23%</td>
<td>0.50%</td>
<td>3.02%</td>
<td>6.54%</td>
</tr>
<tr>
<td>2011</td>
<td>3.1%</td>
<td>15.2%</td>
<td>0.15%</td>
<td>0.56%</td>
<td>2.40%</td>
<td>5.81%</td>
</tr>
<tr>
<td>2012</td>
<td>3.4%</td>
<td>10.5%</td>
<td>0.10%</td>
<td>0.62%</td>
<td>2.60%</td>
<td>5.42%</td>
</tr>
</tbody>
</table>

*Prior to 2010 tests ≤10.0 μg/dL were not considered elevated

Screening rates vary by county from 0% in Garfield to 25% in Adams County. Figure 2 shows that the variability in screening rates does not seem to correlate with risk from an older housing stock and greater likelihood of lead risks in homes.

**Resources:**

[Visit our Facebook page](#)  [Chelan-Douglas Health District Web Pages](#)
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Figure 2. Proportion of pre-1950 housing and 2012 screening rates by county, Washington

State vs. U.S. average. Sources: U.S. Census Bureau, American Community Survey (ACS), 2014 and DOH Lead Registry.

Risk Geographically – Lead Exposure Risk Index Model

To assist providers with understanding lead risk in the communities they serve, the Department of Health created a Lead Exposure Risk Index model which can be accessed at: https://fortress.wa.gov/doh/wtn/WTNIBIL/. The model combines lead risk from housing and poverty and displays it on a map in deciles from 10 where there is the greatest risk from these two factors to 1 where there is the lowest risk.
RECOMMENDATIONS FOR BLOOD LEAD TESTING OF CHILDREN IN WASHINGTON STATE

The Department of Health recommends screening children using the below algorithm at 12 and 24 months of age.

Does the child have any of the following risk factors:
- Lives in or regularly visits any house built before 1950.*
- Lives in or regularly visits any house built before 1978 that has recent or ongoing renovations or remodeling.
- From a low income family (defined as incomes <130% of the poverty level).**
- Known to have a sibling or frequent playmate with elevated blood lead level.
- Is a recent immigrant, refugee, foreign adoptee, or child in foster care.
- Has a parent or principal caregiver who works professionally or recreationally with lead. (See sidebar for examples.)
- Uses traditional, folk, or ethnic remedies or cosmetics (such as Greta, Azarcon, Ghasard, Ba-baw-san, Sin door or Kohl.)

* Screening may not be indicated if the home has previously undergone lead abatement or tested negative for lead after remodeling.

** Apple Health in Washington Medicaid covers children with family incomes up to 300% of the federal poverty level. If family income is unknown, testing should be offered.

Healthcare providers should consider testing child per clinical judgment, if:
- Parents have concern or request testing (including older children that have risk of exposure).
- Child lives within a kilometer of an airport or lead emitting industry or on former orchard land.
- Child with pica behavior.
- Child with neurodevelopmental disabilities or conditions such as autism, ADHD, and learning delays.

Healthcare providers are encouraged to use the Department of Health’s Lead Risk Index Map to better understand which areas in their community are at higher risk for lead exposure. See https://fortress.wa.gov/doh/wtn/WTNBL/

Interpretation and Medical Management of Blood Lead Levels:
If blood lead level is ≥5 mcg/dL: See PHSU Recommendations on Medical Management of Childhood Lead Poisoning