

## Childhood Lead Screening and Case Management Guidelines New Mexico Department of Health (NMDOH)

Lead poisoning continues to be an important, preventable environmental health problem. However, only a low number of children in New Mexico are screened for lead each year.

### Health Effects

- Childhood exposure to lead can result in cognitive impairment, delayed development, changes in behavior, abdominal pain, hearing loss, kidney problems, anemia, and at very high doses convulsions, coma and death.
- Among children, neurotoxicity is greater and lead exposure is more likely to result in a rapid increase of the blood lead level (BLL), than in adults. Recent studies indicate that loss of IQ could occur at BLLs lower than the current CDC action level for intervention (i.e. 10 micrograms per deciliter of whole blood)

### Sources of Lead

- Since the elimination of leaded gasoline, deteriorating lead-based paint in homes is the major source of exposure. Remodeling of homes that have lead-based paint releases lead dust into the air (homes built before 1978.) The dust can be inhaled or picked up on children's hands and then ingested. It is not necessary for children to eat lead paint chips to be poisoned.
- Many imported toys, children's jewelry, and snaps and buttons on children's clothing contain lead. Household products, including vinyl goods and old imported plastic mini-blinds, can be a source of lead dust. Other sources may include: sucking on or ingesting leaded objects, certain folk remedies, certain Mexican candies, lead-glazed pottery, lead in soil, lead pipes or solder in plumbing, and lead shot or bullets retained in the body.
- Many adults have occupations or hobbies that use lead. Family members can be exposed to the lead dust on the hands, clothes and shoes of adults who use lead. A pregnant woman must take care to prevent mobilization of lead stored in her bones from a past exposure, or avoid a new exposure from her current job or a partner's job.

### Screening Guidelines

- **Federal Centers for Medicaid and Medicare Services (CMS) regulations require universal screening (testing) of all Medicaid eligible children at 12 months and again at 24 months of age, or if not previously screened, once between 36 and 72 months of age. No state is exempt from this requirement.**
- The National Centers for Disease Control and Prevention (CDC,1997) recommend the screening of all children in public assistance programs (such as WIC, TANF).
- Other at risk children, should be tested based on the judgment of the provider or at the request of the parents. **Please see the Lead Risk Questionnaire for guidance.**
- According to the American Academy of Pediatrics, lead poisoning should also be considered in the differential diagnosis of children with development delays, or unexplained illness such as severe anemia, seizures, lethargy, or abdominal pain.

All BLL tests done on New Mexico residents are reportable to NMDOH. NMDOH in partnership with the health care provider assure that appropriate case management is instituted on all elevated levels as follows.

### Protocol for Case Management of Children with Elevated Blood Lead Levels (EBLL) \*

Service provided by New Mexico Department of Health					
Blood Lead Level (BLL)					
0-9 µg/dL very low	10 –14µg/dL low	15 – 19µg/dL moderate	20 – 44µg/dL high	45 – 69µg/dL very high	≥ 70µg/dL medical emergency
<p>- There is no "safe" lead level. It is toxic. However, CDC has determined that no case management action must be taken at this level.</p> <p>Recent studies, however, indicate that cognitive damage could occur at BLLs lower than 10 µg/dL<sup>†</sup></p> <p>If a child's BLL is in the upper end of this range, further testing may be done at the health care provider's discretion.</p>	<ol style="list-style-type: none"> <li>1. Letter to physician</li> <li>2. Letter to family</li> <li>3. Provide educational materials**</li> <li>4. Open case file within 1 month &amp; do follow-up until BLL &lt;10µg/dL</li> </ol>	<ol style="list-style-type: none"> <li>1. Call &amp; letter to physician</li> <li>2. Call &amp; letter to family – informal interview about possible sources of exposure</li> <li>3. Provide educational materials**</li> <li>4. Open case file within 2 weeks &amp; do follow-up until BLL &lt;10µg/dL</li> <li>5. Home visit ASAP if BLL remains elevated for 3 months</li> </ol>	<ol style="list-style-type: none"> <li>1. Proceed according to first 3 actions for 15-19µg/dL</li> <li>2. Home visit ASAP after referral.</li> <li>3. Open case file within 1 week &amp; do follow-up until BLL &lt;10µg/dL</li> </ol>	<ol style="list-style-type: none"> <li>1. Proceed according to first 3 actions for 15-19µg/dL</li> <li>2. Home visit within 48 hours of referral</li> <li>3. Open case file within 48 hrs. &amp; do follow-up until BLL &lt;10µg/dL</li> </ol>	<ol style="list-style-type: none"> <li>1. Call physician &amp; family – child needs immediate hospitalization</li> <li>2. Home visit within 24 hours of referral. Child not to return to hazardous environment.</li> <li>3. Open case file within 24 hrs. &amp; do follow-up until BLL &lt;10µg/dL</li> </ol>

\*Source: "Managing Elevated Blood Lead Levels Among Young Children" CDC, March 2002 - adapted for New Mexico by NMDOH

\*\*Educational material on sources of lead exposure, methods of lead reduction and elimination, dietary and hygiene recommendations

**Recommendations to Health Care Providers  
for Management of Children with Elevated Blood Lead Levels (EBLL)\***  
In all cases, the provider should discuss adequate nutrition and possible sources of lead exposure

**Blood Lead Level (BLL)**

0-9 µg/dL very low	10 –14µg/dL low	15 – 19µg/dL moderate	20 – 44µg/dL high	45 – 69µg/dL very high	≥ 70µg/dL medical emergency
<p>-There is no “safe” lead level. It is toxic. However, at this time, CDC has determined that no action must be taken at this level.</p> <p><b>However, please note that recent studies indicate that cognitive damage could occur at BLLs lower than 10 µg/dL<sup>†</sup></b></p> <p><b>If a child’s BLL is at the upper end of this range, a health care provider may wish to retest the child within 3 months.</b></p>	<p>-Re-test to confirm EBLL. <u>See chart A below.</u></p> <p>-If sibling has EBLL, re-test sooner</p> <p>-Have family monitor for pica behavior</p>	<p>- Re-test to confirm. EBLL. <u>See chart A below.</u></p> <p><b>Note:</b> If a follow-up BLL test is still in this range 3 mos. do:</p> <p>- History &amp; physical</p> <p>- Lab work-up a). Hemoglobin b). Iron status* c). FEP or ZPP</p>	<p>- Re-test to confirm EBLL. <u>See chart A below.</u></p> <p>- History &amp; physical</p> <p>- Lab work-up a). Hemoglobin b). Iron status* c). FEP or ZPP</p> <p>- Neurodevelopmental monitoring</p> <p>- Abdominal X-ray if particulate lead ingestion suspected, with bowel decontamination if indicated.</p> <p><b>– If BLLs remain elevated after 1-2 visits consider chelation therapy.</b></p>	<p>- Re-test to confirm EBLL. <u>See chart A below.</u></p> <p>- Proceed according to other actions for 20-44 µg/dL.</p> <p>- Consider <b>chelation</b> therapy, if no foreign bodies are detected in abdominal x-ray.</p>	<p>- Confirm EBLL immediately as a STAT lab test</p> <p>- Proceed according to actions for 20-44 µg/dL</p> <p>- Hospitalize and commence <b>chelation</b> therapy, if no foreign bodies are detected in abdominal x-ray</p>
<p><b>Before beginning chelation consult with NM Poison Control at 1-800-222-1222 or in Albuquerque at 272-2222</b></p>					
<p>After intervention do follow-up testing according to chart B below</p>					
<p>The following actions are not recommended at any BLL:                      Searching for gingival lead lines                      Testing of neurophysiologic function                      Evaluation of renal function (except before &amp; during chelation with EDTA)</p>					
<p align="right">Testing of hair, teeth, or fingernails for lead                      Radiographic imaging of long bones                      X-ray fluorescence of long bones</p>					

\* Source; “Managing Elevated Blood Lead Levels Among Young Children” CDC, March 2002 - adapted for New Mexico by NMDOH

• Routine tests to evaluate iron stores

† NEJM. R. L. Canfield et.al. Intellectual Impairment in Children with Blood Lead Concentrations Below 10 µg per Deciliter: vol.348 no. 16; 4-17-03; pp.1517-1526

**Note:** Information on childhood lead exposure should be a part of a child’s permanent medical history and follow the child to the next health care provider. This information should be available for school personnel if the child’s cognitive function is affected and educational intervention is needed. Knowledge of prior EBLL is especially important for girls as they reach childbearing age. Lead can be stored in the bones for 20-30 years and be leached out by the fetus during pregnancy. Special care must be taken to insure adequate calcium supplies.

**A. Recommended Schedule for Obtaining a Venous Blood Sample**

Screening test result (µg/dL)	Perform a confirmatory test within:
10-19	1-3 months °
20-44	1 week – 1 month°
45-59	48 hours
60-69	24 hours
>70	Immediately as an emergency lab test

° The higher the BLL on the screening test, the more urgent the need for a confirmatory test. Also consider the age of the child.

**B. Schedule for Follow-up Blood Lead Testing**

Venous BLL (µg/dL)	Early Follow-up (First 2-4 tests after initial)	Late follow-up (After BLL begins to decline)
10-14	3 months <sup>°°</sup>	6-9 months
15-19	1-3 months <sup>°°</sup>	3-6 months
20-24	1-3 months <sup>°°</sup>	1-3 months
25-44	2 weeks - 1 month	1 month
>45	As soon as possible	Chelation with follow-up

°° Provider may choose to repeat BLL tests on all new patients within a month to ensure that their BLL level is not rising

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