

Guide for Public Health Case Management of Children with Elevated Blood Lead Levels



Childhood Lead Poisoning Prevention Program
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The purpose of this document is to provide guidance for conducting public health case management services provided to families of children with Elevated Blood Lead Levels (EBLLs), and to provide an overview of the health effects and sources of lead (see Appendix B). Program goals include education to families, reduced blood lead levels, reductions in environmental lead hazards, appropriate referrals to nutritional services, developmental screenings, and improving the health of children and their families.

[WAC 246-101](#) requires laboratories (including those who use Point of Care Machines) to report all blood lead test results to the Washington State Department of Health. All elevated blood lead levels (5 µg/dL or higher in youths under age 15, and 10 µg/dL or higher in adults) must be reported within two days. All other test results must be reported within one month.

The United States Centers for Disease Control and Prevention (CDC) confirmed case is defined as (1) a second capillary blood draw with a blood lead result of ≥ 5 µg/dL within 12 weeks of the first blood lead capillary draw ≥ 5 µg/dL; OR (2) one venous blood draw with a blood lead result of ≥ 5 µg/dL.

Case Management Reimbursement

To claim reimbursement, a case manager must conduct a home visit.

Case management services should be performed by individual staff or teams of appropriate staff with backgrounds in public health, environmental health, social services, and/or related disciplines.

Local Health Jurisdictions (LHJs) who have opted to participate in this program, and who have followed this DOH case management procedure and submitted the required documentation may be reimbursed at a maximum rate of \$500 per home case management visit, for up to 2 visits per child (14 years of age and younger) with an EBLL in a 12 month period.

The reimbursement process is facilitated through the case management Statement of Work (SOW) in the Consolidated Contracts (ConCon) between DOH and LHJs. Each SOW sets out the provisions for additional items which may be reimbursed, such as laboratory, interpretation, and translation services. LHJs may request additional allocations if initial allocations are utilized. DOH will provide such additional allocations if funding allows.

Elevated Blood Lead Case Management Procedure

The best practices for case management of children with EBLLs suggest a cooperative approach that may include several professionals such as case managers, physicians, families, caregivers, and referral agencies. Public Health case management (CM) activities may include, but are not limited to, the following: outreach to the family/caregiver of each child, conducting an environmental assessment at the child's home, coordination with medical providers, service/referral planning and coordinating with involved professionals, and resource identification. Case managers are encouraged to use their own professional judgment,

experience, and knowledge of available local resources to support families in addressing their own unique needs.

This Guide is intended to provide clear guidance on documentation required for home visit reimbursement, and suggested practices for case management. Because each family and each community is different, flexibility is available to allow case managers to exercise their own professional judgment when working a case. DOH staff is available to consult with case management staff regarding individual situations and questions, if helpful.

Data Management Requirement

The case manager should complete the investigation information fields in WDRS. The Plan of Care document(s) should be uploaded as an attachment in WDRS. Please include with the A-19 reimbursement request a list of the WDRS Event Numbers associated with the reimbursement request, and indicate if the request is for the first or second visit, or both. Please also include invoices to document any additional services allowed to be reimbursed by the Consolidated Contract Statement of Work.

First Home Visit: Environmental Assessment

To claim reimbursement, a case manager must conduct a home visit. A general suggested framework for a successful first home visit includes:

- ✓ **Step 1:** Contact the provider to gather complete EBLL case information

A confirmed case is defined as (1) a second capillary blood draw with a blood lead result of ≥ 5 $\mu\text{g}/\text{dL}$ within 12 weeks of the first blood lead capillary draw ≥ 5 $\mu\text{g}/\text{dL}$; OR (2) one venous blood draw with a blood lead result of ≥ 5 $\mu\text{g}/\text{dL}$. The case manager should recommend the provider order a follow-up confirmation if only one capillary elevated level was collected.

NOTE: Generally, the first home visit will take place once the case is confirmed. However, if in the case manager's professional judgment, conducting a home visit before the confirmatory blood draw has been done will be of assistance to the family, the visit may take place prior to the confirmatory test. During the home visit, the case manager should inform the family of the need for confirmatory testing, and assist them in overcoming any barriers to obtaining that testing.

The medical provider may also be able to provide additional case information, details on why the test was performed, plans for follow up testing and medical management, information on the family (i.e. additional siblings, parental occupation, associated medical history, and preferred language.)

Suggested Timetable for Initial Provider Contact

EBL Level	Time Frame After Receiving EBL Lab Result
5-9 µg/dL	Within 10 Business Days
10-19 µg/dL	Within 5 Business Days
20-44 µg/dL	Within 3 Business Days
45+ µg/dL	Immediately

- ✓ **Step 2:** Make contact with the family and explain why and how public health responds to EBLs. [Note: using the term “consultation,” rather than “investigation” can make the visit less intimidating to the family.] Offer a home visit, and explain how your consultation with them, in their home, can assist in addressing issues of lead exposure, as well as providing education and possible resources. If the family agrees to an in-home consultation, schedule the home visit. Visit the child's residence at least once. Interview the family, using the questions on the Child Blood Lead Investigation Form, to assess environmental factors that may impact the child's blood lead level.

If a family is reluctant to schedule a home visit, the case manager may choose to do the interview by phone, in advance of a home visit, to have an opportunity to discover possible sources of lead exposure. This may assist in building rapport and lead to a discussion with the family where they are more open to a home visit to allow an opportunity for the case manager to consult further and, when appropriate, take field samples for analysis. Some families may still decline a home visit, and this choice by the family should be respected. However, please be aware that currently no reimbursement is available without a home visit taking place.

Balance the importance of swift public health response with the family's need to feel in control of a potentially frightening medical situation, and the possible feelings of overwhelm, defensiveness, mistrust, and fear. Look for opportunities for the family to feel empowered in the case management process, by working cooperatively with them in scheduling and the interventions they are willing to accept.

The case manager should begin the on-site public health lead investigation at the property most likely to be the source of the child's lead poisoning. Assessing the lead-poisoned child on-site allows observation of possible sources of lead exposure and the child's access to any deteriorated painted or varnished surfaces.

The case manager will interview the family/caregiver and gather the information in the: [Child Blood Lead Investigation Form](#)

This questionnaire covers environmental exposures and behavioral risk factors to help determine the source of exposure. Contact DOH for additional technical assistance if needed.

Case managers can use basic home assessment supplies, such as; [LeadCheck Swabs](#), [dust wipes](#), (click on hyperlinks for instructions) and supplies to collect paint and soil samples. See the training videos at <https://www.doh.wa.gov/CommunityandEnvironment/Contaminants/Lead/CaseManagementLead> to assist with sampling technique. As funding allows, DOH may have supplies available to provide to LHJs. When those supplies are not available, these basic items may be ordered from Fisher Scientific.

Depending on potential lead exposures identified through the questionnaire, and visually during a home visit, an evaluation of the property may be performed on any/all of the following:

- Overall building condition
 - Areas of bare soil
 - Interior and exterior surfaces with deteriorated paint
 - Painted surfaces that are impact points or subject to friction (such as windows and doors)
 - All other deteriorated, painted surfaces
 - Chewable surfaces
 - Other non-painted, non-structural sources such as toys, furniture, ceramic ware, imported spices and candies, traditional remedies, etc.
 - Potential take-home exposure from a parent's occupation or hobbies
- LHJs should send suspected exposure sources to a National Lead Laboratory Accreditation Program (NLLAP) certified lab for analysis, and/or use an X-Ray Fluorescence (XRF) Analyzer to check for the presence of lead.

Note: If needed, please feel free to contact DOH to request technical assistance.

- ✓ **Step 3:** Determine if the child is Medicaid enrolled. Determine if the family lives in Section 8 or HUD Housing.
- ✓ **Step 4:** Provide lead exposure prevention education materials and explanations to the parent/caregiver.

Educational interventions with parents/caregivers are helpful to prevent or limit children's exposure to lead. Educate parents on the risks of lead poisoning, sources of lead, the impact of lead toxicity on young children, and steps they can take to prevent lead exposure. This information should include the following important topics:

- Child's blood lead level and what it means
- Sources of lead exposure
- Reducing the sources of lead to decrease the duration of exposure
- Temporary measures the parent can take to decrease lead exposure (wet cleaning areas with lead paint chips and dust; blocking access to lead hazards; handwashing before naps, meals, and after play; using only cold tap water for food and formula preparation, and flushing pipes each morning)

Note: The home visit and health education should be conducted and provided in the primary language of the family whenever possible.

Step 5: Develop a Plan of Care (see **Appendix A for an example**).

Based on the above assessments, the case manager should develop a Plan of Care with the family that describes steps suggested to lower the elevated blood lead level, prevent re-exposure and identify services needed to address the effects of lead poisoning. The Plan of Care will be provided to the family and provider, and uploaded to WDRS.

- ✓ **Step 6:** As part of the Plan of Care, include a written summary of any environmental assessment lab test results and associated recommendations on how to remove and remediate lead exposure. List the educational material provided to the family that addresses the child's needs.
- ✓ **Step 7: Reimbursement requirements:**
Add information gathered from the investigation to the applicable fields in WDRS. Upload your Plan of Care document as an attachment to the case in WDRS.

Step 8: Encourage re-testing

Following the home visit, work with the family and provider to encourage having the child retested following the Pediatric Environmental Health Specialty Units (PEHSU) medical management guidelines. Click [here](#) for the PEHSU medical management guidelines.

Even after the blood lead level drops to <5 ug/dL, the case manager may choose to keep the case open, if in their judgment, continued monitoring of the case seems helpful to encourage the family to do additional follow-up testing, or if other ongoing support for the family seems appropriate in an individual case.

Second Home Visit: Child Assessment and Referral Services (optional)

Note: a first and second home visit may take place at the same time, if the case manager believes this will serve the needs of the family of a child with an EBLL. Although not required, a model that has worked well for many local health jurisdictions is for an environmental health staff person to conduct the evaluation of the physical property while a public health nurse interviews the family to gather the investigation form information and handles the assessment and referral portions of a consultation. In a case where the elements of each visit are performed together, the first and second visits may both be billed on the same date.

Developmental and nutritional assessment and appropriate referral(s) of the child with lead poisoning for services can be an important component of case management. The case manager is encouraged to connect the family of a child with an EBLL with services and resources that are available at the local, state, or national level. The assessment provides the basis to plan interventions to reduce lead exposure and make appropriate referrals. The assessment may include the child's health or development status, behavior, nutrition, and risk factors for lead

exposure. Another important part of this assessment is to determine the primary concerns of the family related to lead poisoning, and identify other family issues that may influence the child's BLL.

- ✓ **Step 1:** Work with the family to encourage an appropriate/available method of screening the child for developmental delays.

Because the primary toxicity of lead poisoning in young children is to the brain and central nervous system, the case manager may refer the family to WithinReach, an organization that provides free on-line developmental screenings statewide via their website www.parenthelp123.org or [WithinReach Developmental Screening Questionnaire](#). WithinReach has multi-lingual staff score the parent-completed questionnaires and follow up with the parents by phone. Depending on the child's needs, they will either provide referral information to an agency in the family's community that can provide a developmental assessment, or information about activities to continue to promote their child's health development.

The case manager may take a hard copy of the developmental screening to the home visit in the event it cannot be submitted online. Alternatively, the case manager may use another developmental screening tool which they are already familiar with, or refer the family to the child's physician or to another entity that is trained to administer developmental screening tests.

If the family declines to follow-through with a developmental screening or referral, document in the plan of care the encouragement of this process. Pushing a family too hard to complete an assessment may alienate them and discourage further positive interventions to help the child. The family will have the referral information available in the plan of care and will be able to utilize it when/if they are ready to follow-up in the future.

- ✓ **Step 2:** Recommend a nutritional assessment and make additional referrals as appropriate.

Nutrition is an important factor in managing lead poisoning. Certain nutrients, such as iron and calcium, may reduce the child's absorption of lead. Children with elevated blood lead levels are often at risk for poor nutrition, and their caregivers could be referred to the Women, Infants, and Children (WIC) program (if eligible), a Registered Dietitian Nutritionist (RDN), and/or other known local resources for a nutritional assessment to help these children obtain a well-balanced and age-appropriate diet.

- ✓ **Step 3:** Encourage blood lead testing of other children less than 72 months of age, and pregnant or nursing mothers in the home.
- ✓ **Step 4:** As appropriate for the individual case, encourage communication among other professionals and agencies involved.

The case manager can assist with communication between any/all professionals that are providing services to the child and family. For example, the case manager can notify the child's health care provider that public health services are being provided to the child and family, and what those services include. Communication with WIC nutrition staff, early childhood program staff, social service professionals, and any other providers is encouraged when feasible and as time allows.

✓ **Step 5: Reimbursement requirements:**

Submit a Plan of Care, which should contain:

1. Results of developmental screening, if available, or information on referral for this screening.
2. When applicable, referral to WIC or other nutritional service providers
3. Other referrals made and medical follow-up care of child with lead poisoning and siblings or other at-risk children living in the home

Case Closure

Cases may be closed in WDRS based on the following reasons:

- Blood lead level is now <5.0 ug/dL
- Lost to follow-up
- Moved out of state
- False Positive
- No investigation was performed by LHJ
- Family refuses services
- Provider is not retesting
- Child turned 15 years old

Once the blood lead level is <5.0 ug/dL, a case manager is not required to close the case. In the case manager's discretion, a case may remain open, as determined helpful or necessary, such as continuing to monitor blood lead levels for a desired amount of time.

Appendix A:

SAMPLE: Written Report with Plan of Care Template

[Optional- copy and paste onto your agency’s letterhead]

Personalize this report to fit the child’s specific needs.

[Insert date here]

PARENT NAMES

ADDRESS

Year structure was built:

Plan of Care for Lead Exposure Reduction

Dear XXXXXXXXXXXX & XXXXXXXXXXXXXXXX -

Thank you for taking the time to talk about XXXXXXXXXXXX’s blood-lead level and allowing me to sample areas around your home. Here are the sampling results (Please note this is not an official Lead Investigation or Assessment, merely a guide for use in addressing lead exposures).

[Customize this section to reflect your lab results]

Test ID #	Matrix	Location	Result	Standard
1	Water	Tap in Kitchen	<1.0 ug/L	15 ug/L
2a	Soil	Soil from back yard, bare patch near pool	270.0 ppm	250 ppm
2b		Soil from front yard, adj to fence	130.0 ppm	
3a	Dust wipe	Wipe, window sill, adj to XXXX’s bed	91.0 ug/ft ²	100 ug/ft ²
3b		Wipe, older window sill, XXXX’s bedroom	< 14.0 ug/ft ²	100 ug/ft ²
3c		Wipe, tiled floor in kitchen	< 9.4 ug/ft ²	10 ug/ft ²
3d		Wipe, painted front porch near front door	130.0 ug/ft ²	

Red font indicates test results above regulated standards. **These are examples- please remove and enter your test results here.**

Safe Drinking Water Act – 15 µg/L

WA-DOE Cleanup (MOTCA) - Soil- 250 ppm (mg/kg)

EPA Renovation, Repair and Painting Rule –lead paint contains ≥ 0.5% lead

EPA Lead Abatement Program - Lead in surface dust: Floors - 10 ug/ft², Window sills - 100 ug/ft²

Summary [Customize this section to reflect your home assessment results]

No lead was detected in your drinking water.

No lead was detected in floor areas inside the house, or in the plastic toy bin.

A small amount of lead was detected in the dust wipe taken inside the window sill adjacent to XXXX’s bed. The level of lead detected was below the clean-up standards set by the Department of Housing and Urban Development. The window itself appears relatively new, and is not a likely source of the lead. The source of the lead is possibly the plastic vinyl blinds.

Two of three soil samples contained lead; one sample’s level was just above the Washington State clean-up level for contaminated soil. Lead is commonly detected in soils in our area, originating from pesticides, old paint, air pollution or a wide range of industrial sources.

The dust wipe sample taken on the front porch contained lead. The dark brown paint on the porch was worn and in need of repainting. Old exterior floor paint often contained high levels of lead, a likely source of the lead detected in this sample.

➤ **List possible sources of lead exposure:**



Continue the good housekeeping that I noted in your home. Vacuum floors weekly and damp mop bare floors weekly. Regularly use a damp cloth to dust window sills and other horizontal surfaces that collect dust.

Repaint the front porch with new coat of latex floor paint using lead safe work practices. This will contain any lead escaping from older layers of paint. New paint does not contain lead. **[When applicable, enclose EPA’s “Renovate Right: Important Lead Hazard Information for Families, Child Care Providers, and Schools”.]**

Playing outside and helping in the garden are extremely healthy activities for XXX and your other children, but protect them from lead exposure while they play. Minimize and monitor play time in bare soil areas of your yard. Don’t let them eat soil or put dirty hands in their mouths. Wash their hands after they play in the yard. If they go barefoot, wash off their feet before they enter the house. Take off your shoes before entering the house.

The vegetables from your garden are extremely healthy foods for your children to be eating. Make sure they’re well washed, particularly root crops like carrots or beets.

Feed the children foods high in calcium, Vitamin C and iron.

Referrals

✓ *Developmental*

Completion date of online WithinReach Developmental Screening Questionnaire _____

WithinReach Developmental Screening Results:

✓ *Nutritional*

(If applicable) Nutritional screening date of referral _____

Provider and nutritional screening results:

✓ *Other referrals:*

Additional follow-up:

- Educational material provided to caregivers addressing the child’s needs:

- Members of the case management team, their involvement, and case information provided to them:

- If blood lead testing of at-risk family members was recommended list the individuals:

If you have questions or need additional information please contact me at xxx-xxx-xxxx.

Sincerely,

Case Manager name

Appendix B:

Background: Health Effects

Lead can affect almost every organ and system in the body. Children six years old and younger are the most susceptible to the effects of lead. Their growing bodies absorb more lead than adults. Their brains and nervous systems are more sensitive to the damaging effects of lead.

Babies and children are most commonly exposed to lead by:

- Ingesting lead dust from lead-based paint or lead-contaminated soil
- Putting their hands and other objects, which may be contaminated with lead dust, into their mouths
- Eating and drinking food or water containing lead
- Using dishes or glasses that contain lead
- Playing with toys that contain lead paint
- Picking up a take-home exposure from a parent's occupation
- Being given a traditional remedy that contains lead

Lead in the blood of children can result in:

- Permanent damage to the brain and nervous system, leading to behavior and learning problems, lower IQ, and hearing problems
- Slowed growth
- Anemia

(In rare cases, ingestion of lead can cause seizures, coma, and even death.)

Sources of Lead in the Environment:

- **Lead-Based Paint:** Lead-based paint and lead-contaminated dust are the most common sources of lead poisoning. Paint containing lead was not banned in the United States until 1978. Homes built before 1978 have a good chance of having lead-based paint, which can chip, peel or flake. Household dust can contain lead particles released from old paint during remodeling by sanding, scraping, or tearing into painted surface. Painted areas where friction occurs such as doors, window, and drawers can also produce lead-contaminated dust. Children can be poisoned when they ingest lead dust or chips from worn or damaged layers of lead-based paint. Children also may eat lead-based paint chips, which sometimes taste sweet.
- **Contaminated Soil:** Children may be exposed to lead through contaminated soil when they play outside. Lead in dirt clings to fingers, toys, and other objects children normally put in their mouths. Lead can get in soil from: deteriorating lead-based paint around buildings and old playground equipment, legacy leaded gasoline exhaust near busy roads, lead producing industry such as lead-acid battery recycling facilities, and lead ore mining and milling, smelting, and municipal solid waste incinerators, and pesticide use in former orchards.

- **Children’s Toys and Jewelry:** Some toys and toy jewelry contain levels of lead that may have a serious health risk to children. Parents should check with the [Consumer Product Safety Commission](#) (CPSC) to see if their child’s toys and jewelry have been recalled. Although antique or salvaged items may not appear on a recall list, they may contain lead especially items that are painted wood or metal. Children may put toys or jewelry in their mouth, suck or chew on them, and sometimes even swallow them. Handling items that contain lead and then putting their hands in their mouths can also expose children to lead.
- **Drinking Water:** Lead in drinking water is not a common source of lead poisoning, it usually comes from water distribution lines or household plumbing and fixtures rather than the source water. However, children who are formula fed are especially high risk since water constitutes a majority of their diet.
- **Workplace Hazards:** Parents may unknowingly bring lead home on their hands, clothing, and shoes. Jobs that expose people to lead include: painting, construction or home remodeling, radiator repair, battery or scrap metal recycling, pottery manufacturing, working with guns and ammunition, industries using lead solder, roadwork, and shipbuilding.
- **Hobbies:** Dust and fumes from hobbies can also be a source of lead, hobbies that use lead include: stained glass windows with lead solder, glazing and firing ceramics, making or handling ammunition and fishing weights, target practice (indoor and outdoor firing ranges), refinishing furniture, remodeling old homes, and jewelry making.
- **Traditional Home Remedies and Cosmetics:** Some families use traditional home remedies to treat illnesses. Some remedies may contain up to 100 percent lead and are very dangerous to children. Home remedies that may contain lead:
 - Azarcon and Greta, both fine orange powders (also known as Alarcon, coral, luiga, maria luisa, or rueda) may be used in the Hispanic community for indigestion or upset stomach.
 - Paylooh, a red or orange powder, may be given to children in the Vietnamese and Hmong community as a cure for rash or fever.
 - Ghasard, Bali Goli, and Kandu may be used for stomachaches in some Asian Indian communities.

Certain cosmetics, especially those from the Middle East, India, and Asia, may also contain high levels of lead. Cosmetics that may contain lead are Kohl, Kajal, Surma, and Sindoor.
- **Lead Glazed Ceramic Ware, Pottery, and Leaded Crystal:** Lead can be used to make ceramic glazes with deep and brilliant color. Imported, old, handmade, or poorly glazed ceramic dishes and pottery are especially at risk for having lead in the glaze. Lead may also be found in leaded crystal, pewter, and brass dishware. Acidic foods or drinks (such as orange, tomato, other fruit juices, tomato sauces, wines, and vinegar) may cause the lead to be drawn out of the glaze and contaminate the food or drink with lead. You can't tell by looking at a dish whether it contains lead.

- **Imported Candy:** Lead has been found in certain candies imported from Mexico. Certain candy ingredients such as tamarind or chili powder may be a source of lead exposure. Lead can get into the candy when processes such as drying, storing, and grinding the ingredients are done improperly. Lead has also been found in the wrappers of some imported candies, the ink of these plastic or paper wrappers may contain lead that leaches into the candy. People selling these candies may not know whether the candy contains lead. You can't tell by looking at or tasting a candy whether it contains lead. Avoid eating imported candies containing chili powder and tamarind. Examples products include lollipops coated with chili and powdery mixtures of salt, lemon flavor, and chili seasoning sold as a snack item.