



**IOWA DEPARTMENT OF PUBLIC HEALTH**

**CHILDHOOD**

**LEAD POISONING PREVENTION PROGRAM**

**CASE MANAGEMENT PROTOCOLS**

**Updated August 2016**

|   |  |
|---|--|
| <b>Childhood Lead Poisoning Prevention Program (CLPPP)</b>                  | <b>County Board of Health Contracted to Provide Service:</b> |
| <b>Service to Be Provided</b>   | <b>Agency and/or Person that Will Provide Service</b>        |
| <b>Assure that Children Receive Confirmatory Venous Blood Lead Testing</b>  |  |
| <b>Overall Case Managers</b>  |  |
| <b>Developing Written Care Plan/Checklist</b>                               |  |
| <b>Referral for Nutrition Assessment</b>                                    |  |
| <b>Nutrition Assessment and Interventions</b>                               |  |
| <b>Assuring Follow-up Blood Lead Testing</b>                                |  |
| <b>Referral for Developmental Assessment</b>                                |  |
| <b>Conducting Developmental Assessments</b>                                 |  |
| <b>Home Nursing Visits</b>  |  |
| <b>Assurance of Diagnostic Evaluation by a Physician</b>                    |  |
| <b>Assurance of Appropriate Chelation</b>                                   |  |
| <b>Environmental Investigation and Assurance of Lead Hazard Remediation</b> |  |
| <b>Resource for Questions About Chelation and Medical Issues</b>            | Iowa Statewide Poison Control Center<br>1-800-222-1222       |

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 Signature of CLPPP Director

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 Date

## **Assurance that Children Receive Confirmatory Venous Blood Lead Testing**

All capillary blood lead levels greater than or equal to 10 micrograms per deciliter must be confirmed with venous blood lead measurements. Confirmatory testing will be done according to the following schedule (chart is on page 4):

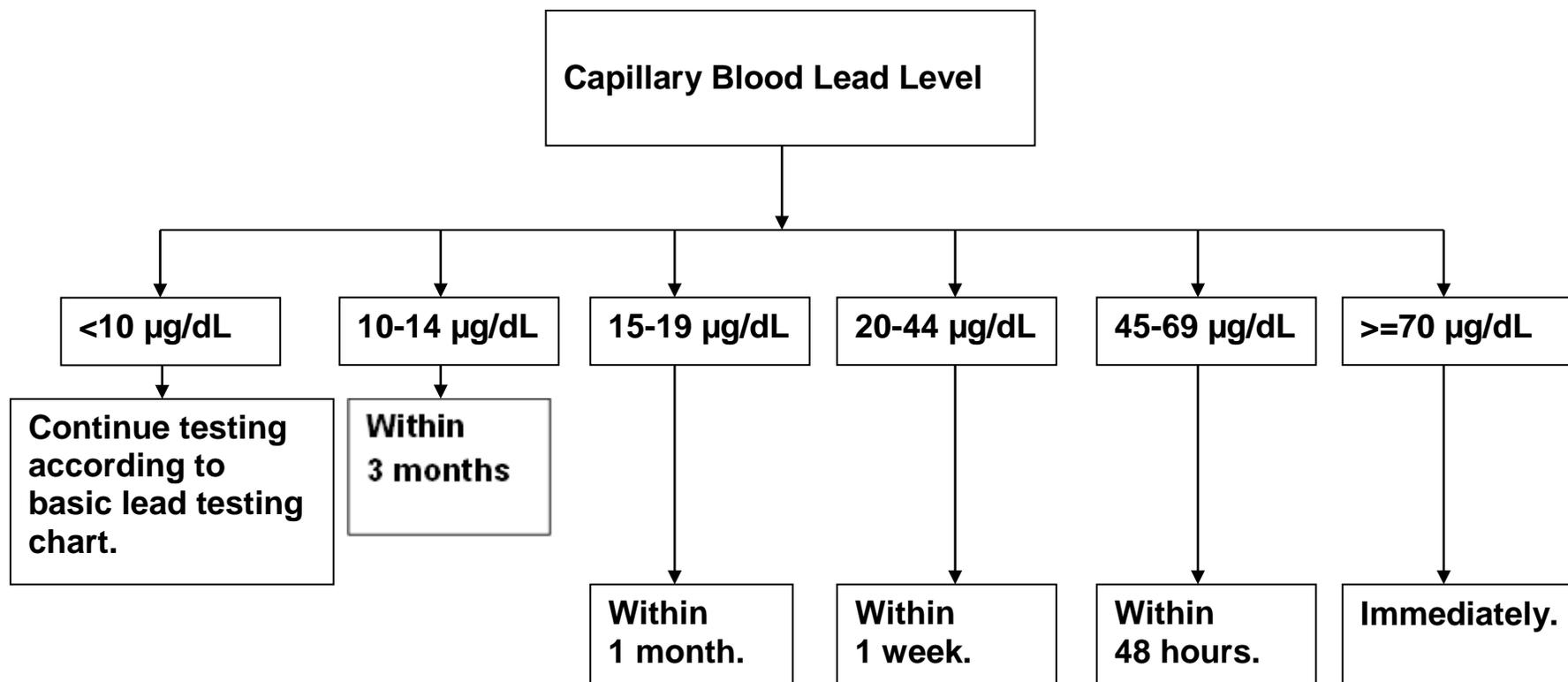
- Capillary blood lead levels greater than or equal to 70 micrograms per deciliter will be confirmed with venous blood measurements immediately upon notification of the capillary results, on an emergency basis if necessary.
- Capillary blood lead levels of 45-69 micrograms per deciliter will be confirmed with venous blood lead measurements within 48 hours of notification of the capillary results.
- Capillary blood lead levels of 20-44 micrograms per deciliter will be confirmed with venous blood lead measurements within one week of notification of the capillary results.
- Capillary blood lead levels of 15-19 micrograms per deciliter will be confirmed with venous blood measurements within one month of notification of the capillary results.
- Capillary blood lead levels of 10-14 micrograms per deciliter will be confirmed with venous blood measurements within three months of notification of the capillary results.
- Capillary blood lead levels less than 10 micrograms per deciliter do not need to be confirmed with venous blood measurements. Child should be retested according to the basic lead testing chart on page 4.

Each screening provider must ensure that children receive confirmatory venous blood lead testing. If the provider is not able to collect pediatric venous blood samples, the provider is responsible for referring the child to another provider or hospital laboratory with personnel who can collect pediatric venous blood samples. This process should be in place before the provider starts to collect blood lead samples.

### **Health Education**

The screening provider is responsible for explaining the results of the confirmatory blood lead analysis to the child's family. IDPH [publications \(http://idph.iowa.gov/lpp/resources\)](http://idph.iowa.gov/lpp/resources) can be used for this purpose. It is especially important for the screening provider to explain when the child should be tested again, what case management actions should be taken, if necessary who will be inspecting the house, etc.

## SCHEDULE FOR OBTAINING CONFIRMATORY VENIPUNCTURES



*Note: These blood lead testing guidelines are for children ages 0 – 5 years. Contact IDPH (800-972-2026) for recommendations on testing children 6+ years and adults.*

## **Case Management of Children with Venous Blood Lead Levels Greater than or Equal to 10 Micrograms per Deciliter**

### **Designation of Overall Case Manager**

Each child with a venous blood lead level greater than or equal to 10 micrograms per deciliter must have an "overall case manager" who will be responsible for ensuring that child is referred for and receives all required services. Each child with a venous blood lead level greater than or equal to 10 micrograms per deciliter must also have an individual plan of care. The Care Plan/Checklist on pages 7 to 10 or another form will be used to track the actions needed for each child, who is responsible for them, when the actions are completed, and what information to enter into HHLPS.

Children with blood lead levels less than 10 micrograms per deciliter are not required to have an "overall case manager" since no additional services are required beyond routine blood lead testing.

### **Services to Be Provided by Venous Blood Lead Level**

The following summarizes the services that will be provided for each child by blood lead level:

#### **Less than 10 micrograms per deciliter**

- Provide information to family regarding lead poisoning.
- Educate family on importance of good nutrition and housekeeping.
- Continue routine blood lead testing.

#### **10-14 micrograms per deciliter**

- Provide information to family regarding lead poisoning.
- Educate family on importance of good nutrition and housekeeping.
- Follow-up blood lead testing.

#### **15-19 micrograms per deciliter**

- Home nursing visit.
- Caregiver education.
- Referral for nutrition assessment.
- Follow-up blood lead testing.
- After two venous levels of 15-19, environmental investigation and lead hazard remediation.

#### **20-44 micrograms per deciliter**

- Chelation is NOT recommended.
- Diagnostic evaluation by a physician.
- Home nursing visit.
- Caregiver education.
- Referral for nutrition assessment.
- Follow-up blood lead testing.
- Referral for developmental assessment.
- Environmental investigation and lead hazard remediation.

#### **45-69 micrograms per deciliter**

- Chelation (refer to Iowa Poison Control Center).
- Diagnostic evaluation by a physician.
- Home nursing visit.
- Caregiver education.
- Referral for nutrition assessment.

- Follow-up blood lead testing.
- Referral for developmental assessment.
- Environmental investigation and lead hazard remediation.

Greater than or equal to 70 micrograms per deciliter

- Emergency chelation.
- Emergency diagnostic evaluation by a physician.
- Home nursing visit.
- Caregiver education.
- Referral for nutrition assessment.
- Follow-up blood lead testing.
- Referral for developmental assessment.
- Environmental investigation and lead hazard remediation.

## Care Plan/Checklist

**Child's name:** \_\_\_\_\_

**County:** \_\_\_\_\_

**Date of birth:** \_\_\_\_\_

**Medicaid Number:** \_\_\_\_\_

**MCO:** Caritas Group United

The following plan/checklist must be followed once a child has a venous blood lead level greater than or equal to 10 µg/dL. Write the person who is responsible for the activity on the appropriate line. Once the activity has been completed check the box indicating that it was done and enter the appropriate event in HHLPSS.

**ACTIVITY:**

**PERSON RESPONSIBLE:**

**DONE**

**1) Home Nursing Visit** \_\_\_\_\_

Each child with a venous blood lead level greater than or equal to 15µg/dL must receive a home nursing visit. During the visit, the nurse should provide information on lead poisoning, assess the family's needs, collect race and other information, and make a referral to a dietician. If the child's venous level is greater than or equal to 20 µg/dL, make a referral to the Early ACCESS program or the Area Education Agency (AEA) for a developmental assessment (see Activity 6). This should be the first contact with a lead-poisoned child's family and may be done during the environmental investigation, if one is necessary.



HHLPSS Clinical Information:

**Case Details, Case Information**



HHLPSS Clinical event code:

**Follow-up Home Visit-Nurse  
Initial Home Visit-Nurse**

|                     |
|---------------------|
| <b>Action Level</b> |
| ≥ 15 µg/dL          |

**2) Nutritional evaluation/counseling** \_\_\_\_\_

Each child with a venous blood lead level greater than or equal to 15 µg/dL must be referred to a dietician who will review the importance of calcium, iron, and vitamin C intake and, if needed, suggest involvement in supplemental food programs such as WIC.



HHLPSS Clinical event code:

**Nutrition**

|                     |
|---------------------|
| <b>Action Level</b> |
| ≥ 15 µg/dL          |

**ACTIVITY:**

**PERSON RESPONSIBLE:**

**DONE**

**3) Follow-up Test Reminders** \_\_\_\_\_

**Medical Provider** (giving the test) \_\_\_\_\_

Continue to have the lead-poisoned child tested according to the BLL testing and follow-up charts. Letters or telephone calls should be directed to either the child’s parents or the child’s medical provider.

Continue on this testing schedule until one of the following three criteria are met. Then you may close the child’s case and go back to the Basic Lead Testing Chart (on last page).

- 1) The child has 2 blood lead levels below 10 µg/dL. These levels can be from either venous or capillary tests.
- 2) The child has 3 blood lead levels below 15 µg/dL. These levels can be from either venous or capillary tests.
- 3) The child has 1 blood lead level below 20 µg/dL and is over 6 years old.



HHLPSS Clinical event codes:

- Contact Attempt-Face to Face**
- Contact Attempt-Telephone**
- Contact Owner-Face to Face**
- Contact Owner-Mail**
- Contact Owner-Phone**
- Contact Tenant-Face to Face**
- Contact Tenant-Mail**
- Contact Tenant-Phone**

**Action Level**  
≥ 10 µg/dL

**4) Environmental Investigation** \_\_\_\_\_

When a child has two venous levels between 15 and 19 µg/dL or one venous level greater than or equal to 20 µg/dL, it is necessary to perform an environmental investigation on the child’s house. Contact the certified EBL inspector/risk assessor for your program immediately. The urgency of the investigation depends on the child’s venous blood lead level.

|   | Inspect within: | Date referred: | Inspect by: |
|---|-----------------|----------------|-------------|
| <input type="checkbox"/> 15 - 19 µg/dL* | → 4 weeks       | _____          | _____       |
| <input type="checkbox"/> 20 - 44 µg/dL  | → 10 days       | _____          | _____       |
| <input type="checkbox"/> 45 - 69 µg/dL  | → 5 days        | _____          | _____       |
| <input type="checkbox"/> ≥ 70 µg/dL     | → 2 days        | _____          | _____       |

\* Child must have two levels in this range



HHLPSS Environmental event code:

**Inspection Other or Other Action**

**Action Level**  
15-19 µg/dL\*  
≥ 20 µg/dL

**ACTIVITY:**

**PERSON RESPONSIBLE:**

**DONE**

**5) Environmental Follow-up** \_\_\_\_\_

At least once within 6 months of initial inspection and then annually, the owner of the inspected property must be contacted to see how the lead hazard repair work is progressing. If the owner has made progress on the property then an EBL inspector/risk assessor may reinspect it to ensure that the work is being done safely. Once the lead hazard repair work has been completed and verified through a reinspection, the environmental case must be closed and a lead-safe letter must be sent.



HHLPSS Environmental event codes:

**Inspection, Abatement-Interior  
Inspection, Abatement-Exterior  
Inspection, Abatement-Survey  
Inspection, Abatement-Both**



Closing a HHLPSS address:

**Under the Environmental tab and in the Investigation detail section enter “Closed” in the Status field. Enter Date Closed, Remediation Completed, and Closure Reason.**

**Action Level**  
15-19 µg/dL\*  
≥ 20 µg/dL

### 6) Area Education Agency Referral \_\_\_\_\_

Each child with a venous blood lead level greater than or equal to 20  $\mu\text{g}/\text{dL}$  must be offered a referral to the local Early ACCESS program or AEA for a developmental assessment. Always enter a HHLPSS event. If the family refuses then note this in the results box of the event.

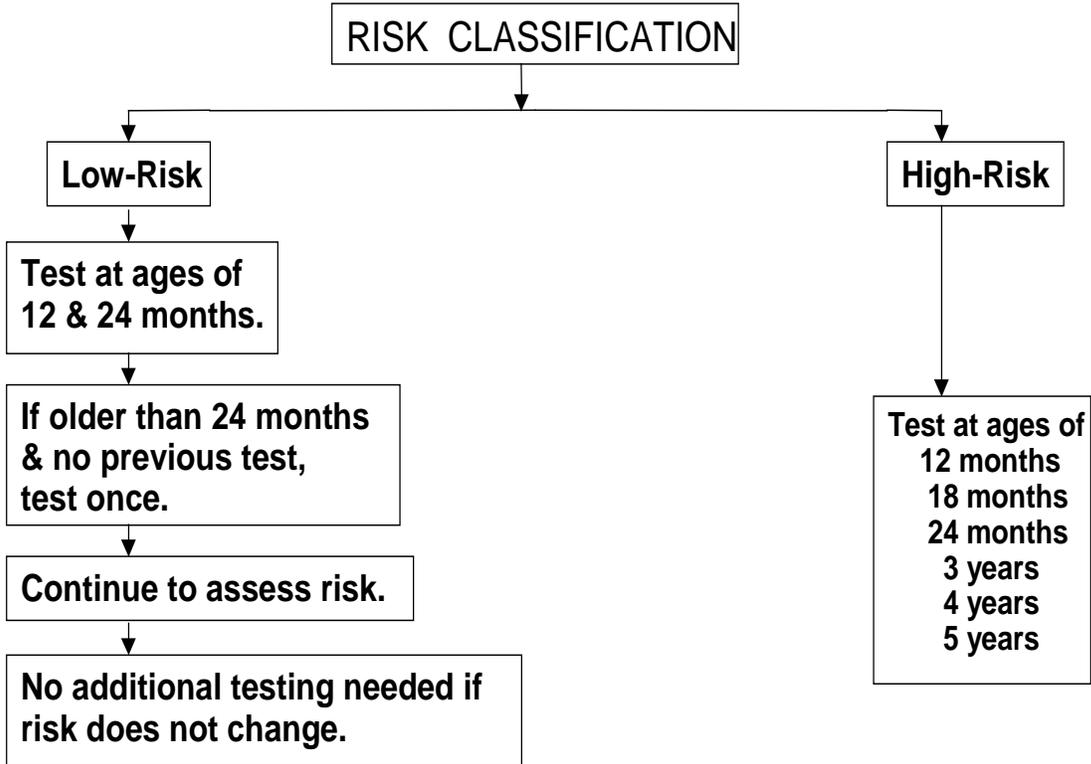


HHLPSS Clinical event code:

**Referral for Developmental Assessment**

**Action Level**  
 $\geq 20 \mu\text{g}/\text{dL}$

# BASIC LEAD TESTING CHART (Based on Risk and Age)



## **Home Nursing Visit**

Each child with a venous blood lead level greater than or equal to 15 µg/dL must receive a skilled home nursing visit, which includes a skilled assessment and instructions to the family on lead poisoning and how to cope with it. This may be combined with the environmental investigation. This is an important opportunity to educate caregivers about the risks that an elevated blood lead level poses to their child, what they can do to eliminate their child's exposure to lead, and the importance of follow-up. The timelines for conducting the home nursing visit are on page 16.

The home nursing visit should include reminding caregivers to:

- Make and keep follow-up appointments for blood tests.
- Notify the case manager if the child moves to a new residence.
- Inform all current and future health care providers of the child that the child had an elevated blood lead level.

This is important even when the child's blood lead level is no longer elevated.

## **Managing a Child's Nutrition**

Children with venous blood lead levels greater than or equal to 10µg/dL are often at risk for poor nutrition, and their caregivers should receive nutritional counseling to help these children obtain a well-balanced and age-appropriate diet. Therefore, these children should receive a nutrition assessment and counseling from a dietician. If the child is enrolled in the WIC program, the child should be referred to WIC for an additional visit to review nutrition issues related to lead poisoning. If the child is not enrolled in WIC, the family should be advised to find out if the child is eligible for the WIC program. Arrangements should be made for children who are not enrolled in the WIC program to see a WIC dietician or another dietician. If the lead program cannot identify a means for children who are not enrolled in WIC to see a dietician, the Iowa Department of Public Health may approve the use of a nurse for this nutrition counseling. The questionnaire on pages 12 and 13 can be used to assess a child's nutrition. The timelines for referring a child for nutrition counseling are on page 16.

## NUTRITION AND LEAD TOXICITY

1. How many meals a day does your child eat?

1      2      3      4+

It is important that children eat at least three meals a day. More lead is absorbed on an empty stomach.

2. Does your child snack?

YES                      NO



Nutritious snacks are a good idea for small children. Snacks help them get the nutrients they need and keep them from getting too hungry between meals.

3. Do you have concerns about your child's appetite?

YES                      NO

Children with poor appetites or who do not eat regularly have a higher risk of becoming lead-poisoned. Give them small frequent meals.

Sometimes even healthy children do not want to eat. Children's appetites drop off when they are not in a growth spurt. Normal children's appetites vary from day to day. Parents do not need to make their children eat. If you serve your children regular meals that contain nutritious foods, you are doing your part of the job of feeding them.

4. How many glasses of milk does your child drink in a day?

1      2      3      4      5+



Milk contains calcium. Calcium helps prevent lead from being absorbed. Serve children two to three glasses of milk a day.

Some children drink large quantities of milk. More than four servings a day is not necessary. Children who drink too much milk are often not interested in eating other healthy foods.

5. Circle the dairy products your child eats:

|                |                         |
|----------------|-------------------------|
| <i>cheese</i>  | <i>cottage cheese</i>   |
| <i>pudding</i> | <i>ice cream</i>        |
| <i>yogurt</i>  | <i>milk based soups</i> |

These foods are also good sources of calcium. Non-dairy sources of calcium include bok choy, collard, mustard or turnip greens, and salmon and sardines with bones.

6. Circle any of the following foods your child eats:

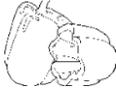
|                          |                   |
|--------------------------|-------------------|
| <i>chicken/turkey</i>    | <i>beef/pork</i>  |
| <i>liver/kidneys</i>     | <i>fish</i>       |
| <i>dried beans</i>       | <i>lentils</i>    |
| <i>dried fruit</i>       | <i>raisins</i>    |
| <i>spinach/greens</i>    | <i>broccoli</i>   |
| <i>whole wheat bread</i> | <i>oatmeal</i>    |
| <i>enriched bread</i>    | <i>brown rice</i> |
| <i>oat or wheat bran</i> | <i>cornmeal</i>   |
| <i>enriched cereal</i>   |                   |

These foods are high in iron. Iron in the diet reduces the amount of lead that gets into the body. Iron also helps make red blood cells. When red blood cells are healthy, lead will not attach to them as easily. Red meats are the best source of iron.



7. Circle the foods that your child eats at least once a week:

*orange*  
*orange juice*  
*cantaloupe*  
*tomatoes*  
*potatoes*



*grapefruit*  
*pefruit juice*  
*strawberries*  
*broccoli*  
*green peppers*

8. From the following choices, circle the foods you most frequently serve:

*graham cracker*  
*baked potatoes*  
*baked chicken*  
*frozen yogurt*  
*fresh fruit*

*cookies*  
*french fries*  
*fried chicken*  
*ice cream*  
*potato chips*

9. Does your child put anything besides food in his or her mouth?

YES NO

10. Circle any of the following supplements that your child takes:

*bonemeal*  
*oyster shell*

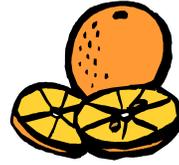
*dolomite*

10. Do you use any of the following:

*Azarcon*  
*Paylooh*

*Greta*  
*Surma*

The vitamin C in these foods helps the body absorb more iron to make healthy blood cells. Serve at least one of these daily.



The foods on the left are low in fat; the foods on the right are high in fat. Too much fat in the diet decreases a child's appetite for healthy foods. Too little fat may keep small children from growing well. All of these foods are fine; serve those on the left more often.



Paint chips and household dust could contain lead. Talk to your local health department about how to reduce the amount of lead in your home.

These supplements may contain lead. Ask your doctor to suggest a different supplement for your child.



Some home remedies for common ailments may contain lead. Talk to your doctor about the remedies you give your child.

Food does not naturally contain lead. However, lead may get into food from the environment. Follow these ways to reduce lead in the diet:

**Wash children's hands before eating.** They may have picked up lead dust while playing.



**Serve food and beverages from glass, plastic or American-made ceramic containers.** Some pottery, leaded crystal or antique collectibles may contain lead. It is safest not to use ceramic containers for serving food.

**Wash garden vegetables thoroughly before eating.** If they are grown in soil that is near an older home, any soil on the vegetables may contain lead.

## **Monitoring a Child's Developmental Progress**

Each child with a venous blood lead level greater than or equal to 20 µg/dL will be referred to the local Early Access Program if the child is under the age of 3 years. If the child is 3 years or older, the child will be referred to the Early Childhood Special Education Program. Each child should receive a developmental assessment to determine if there are currently any developmental delays. If no delays are identified, then a mechanism should be determined to continue to closely monitor the child's development until the child starts school. Please note that the Denver Developmental Screen is not appropriate to assess the development of a lead-poisoned child. A more sophisticated assessment should be used. The referral for developmental assessment should be made at the time of the home nursing visit. The time needed to complete the developmental assessment will depend on the workload for the Early Access Program or the Early Childhood Special Education Program. In addition, some programs operate on a reduced schedule in the summer, so it may take longer to complete the assessment during the summer.

## **Physical Examination**

Children with venous blood lead levels greater than or equal to 20 µg/dL should have a thorough physical examination. Often, these children will not have physical findings that are specific for lead toxicity. However, a physical examination is still recommended to assess the child for iron deficiency and for any findings suggestive of encephalopathy. A serum ferritin or serum iron and iron binding capacity test should be used to determine whether the child is deficient in iron. Hemoglobin or hematocrit should not be used because these tests are not sensitive enough for children with elevated blood lead levels. If the provider suspects that a child may have ingested paint chips, an abdominal radiograph may be ordered to evaluate this suspicion. The chart on page 15 shows the schedule for ensuring that the child receives a physical examination.

## **Chelation Therapy**

Children with blood lead levels less than 45 µg/dL should NOT be chelated. Children with blood lead levels greater than or equal to 45 µg/dL should be chelated. Children with blood lead levels greater than or equal to 70 µg/dL should be treated in a pediatric intensive care unit. Contact the Iowa Poison Control Center for guidance on chelation at 800-222-1222.

## **Communication/Coordination with Physicians**

The case manager should communicate the results of the home nursing visit to the child's physician. The case manager should also review the recommended follow-up blood lead testing schedule with the physician to ensure that the physician and the case manager are giving consistent information to the family. The chart on page 15 includes additional information for physicians.

## **Follow-Up Blood Lead Testing**

The charts on pages 16 to 19 show the schedules for follow-up blood lead testing. Local programs should send letters or make telephone calls to remind families of the need for follow-up blood lead testing.

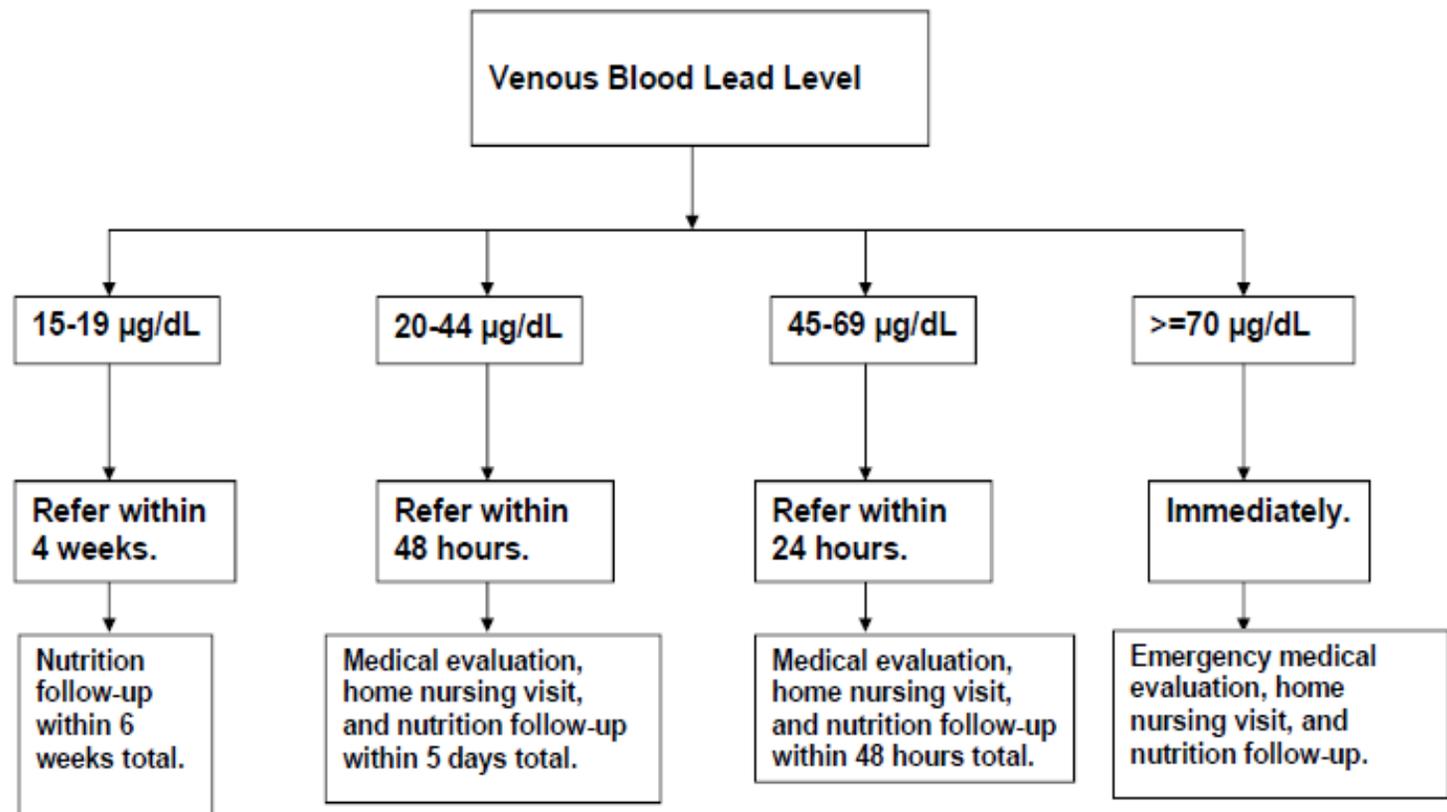
**GUIDELINES FOR DETECTION AND MANAGEMENT OF LEAD-POISONED CHILDREN**  
**For Physicians and Health Care Providers**

| <b>BLOOD LEAD LEVEL in <math>\mu\text{g}/\text{dL}</math></b><br>(micrograms per deciliter)              | <b>TREATMENT</b>   | <b>COMMENT</b>   |
|--|--|--|
| <b>&lt;5 <math>\mu\text{g}/\text{dL}</math></b>  | <ul style="list-style-type: none"> <li>Continue routine blood lead testing. (See Iowa Basic Lead Testing Chart.)</li> </ul>  | <ul style="list-style-type: none"> <li>Child does not have abnormal lead level</li> </ul>  |
| <b>5 - 9 <math>\mu\text{g}/\text{dL}</math></b><br>(capillary or venous)                                 | <ul style="list-style-type: none"> <li>Continue routine blood lead testing. (See Iowa Basic Lead Testing Chart.)</li> </ul>  | <ul style="list-style-type: none"> <li>Provide information to family regarding lead poisoning, importance of good nutrition, and housekeeping.</li> </ul>  |
| <b><math>\geq 10</math> <math>\mu\text{g}/\text{dL}</math></b><br>(capillary)                            | <ul style="list-style-type: none"> <li>Order venous blood lead level.</li> </ul>   | <ul style="list-style-type: none"> <li>Further action based on venous blood lead level.</li> </ul>   |
| <b>10-14 <math>\mu\text{g}/\text{dL}</math></b><br>(venous)  | <ul style="list-style-type: none"> <li>Capillary or venous retest within three months (12 weeks).</li> <li>Test for iron deficiency using hematocrit or hemoglobin.</li> </ul>   | <ul style="list-style-type: none"> <li>Provide information to family regarding lead poisoning, importance of good nutrition, and housekeeping.</li> </ul>  |
| <b>15-19 <math>\mu\text{g}/\text{dL}</math></b><br>(venous)  | <ul style="list-style-type: none"> <li>Venous retest in 3 months (12 weeks).</li> <li>Test for iron deficiency using hematocrit or hemoglobin.</li> </ul>  | <ul style="list-style-type: none"> <li>Refer to dietician for nutrition evaluation.</li> <li>Refer for public health nursing visit.</li> <li>Environmental investigation by public health agency after 2 venous levels of 15-19 <math>\mu\text{g}/\text{dL}</math>.</li> </ul> |
| <b>20-44 <math>\mu\text{g}/\text{dL}</math></b><br>(venous)  | <ul style="list-style-type: none"> <li>Pediatric evaluation.</li> <li>Venous retest in 4 to 6 weeks.</li> <li>Test for iron deficiency using serum iron and iron binding capacity or serum ferritin.</li> </ul>  | <ul style="list-style-type: none"> <li>Refer to dietician for nutrition evaluation.</li> <li>Refer for public health nursing visit.</li> <li>Environmental investigation by public health agency.</li> </ul>   |
| <b>45-69 <math>\mu\text{g}/\text{dL}</math></b><br>(venous)  | <ul style="list-style-type: none"> <li>Pediatric evaluation.</li> <li>Test for iron deficiency using serum iron and iron binding capacity or serum ferritin.</li> <li>Inpatient or outpatient chelation*. Venous retest before chelation, at the end of chelation, and 21 days after chelation.</li> </ul> | <ul style="list-style-type: none"> <li>Refer to dietician for nutrition evaluation.</li> <li>Refer for public health nursing visit.</li> <li>Environmental investigation by public health agency and must verify that home is lead-safe before child</li> </ul>                |
| <b><math>\geq 70</math> <math>\mu\text{g}/\text{dL}</math></b><br>(venous)<br><b>MEDICAL EMERGENCY!!</b> | <ul style="list-style-type: none"> <li>Pediatric evaluation.</li> <li>Test for iron deficiency using serum iron and iron binding capacity or serum ferritin.</li> <li>Inpatient chelation*. Venous retest before chelation, at the end of chelation, and 7 days after chelation.</li> </ul>                | <ul style="list-style-type: none"> <li>Refer to dietician for nutrition evaluation.</li> <li>Refer for public health nursing visit.</li> <li>Environmental investigation by public health agency and must verify that home is lead-safe before child returns home.</li> </ul>  |

\*For detailed recommendations regarding chelation, contact the Iowa Statewide Poison Control Center at 1-800-222-1222.

This document uses the new reference level of 5  $\mu\text{g}/\text{dL}$  that was set by the CDC and adopted by the Iowa Lead Program. Rev. 9/2014

## TIMELINES FOR MEDICAL FOLLOW-UP, HOME NURSING VISIT, DEVELOPMENTAL FOLLOW-UP,\* AND NUTRITIONAL FOLLOW-UP

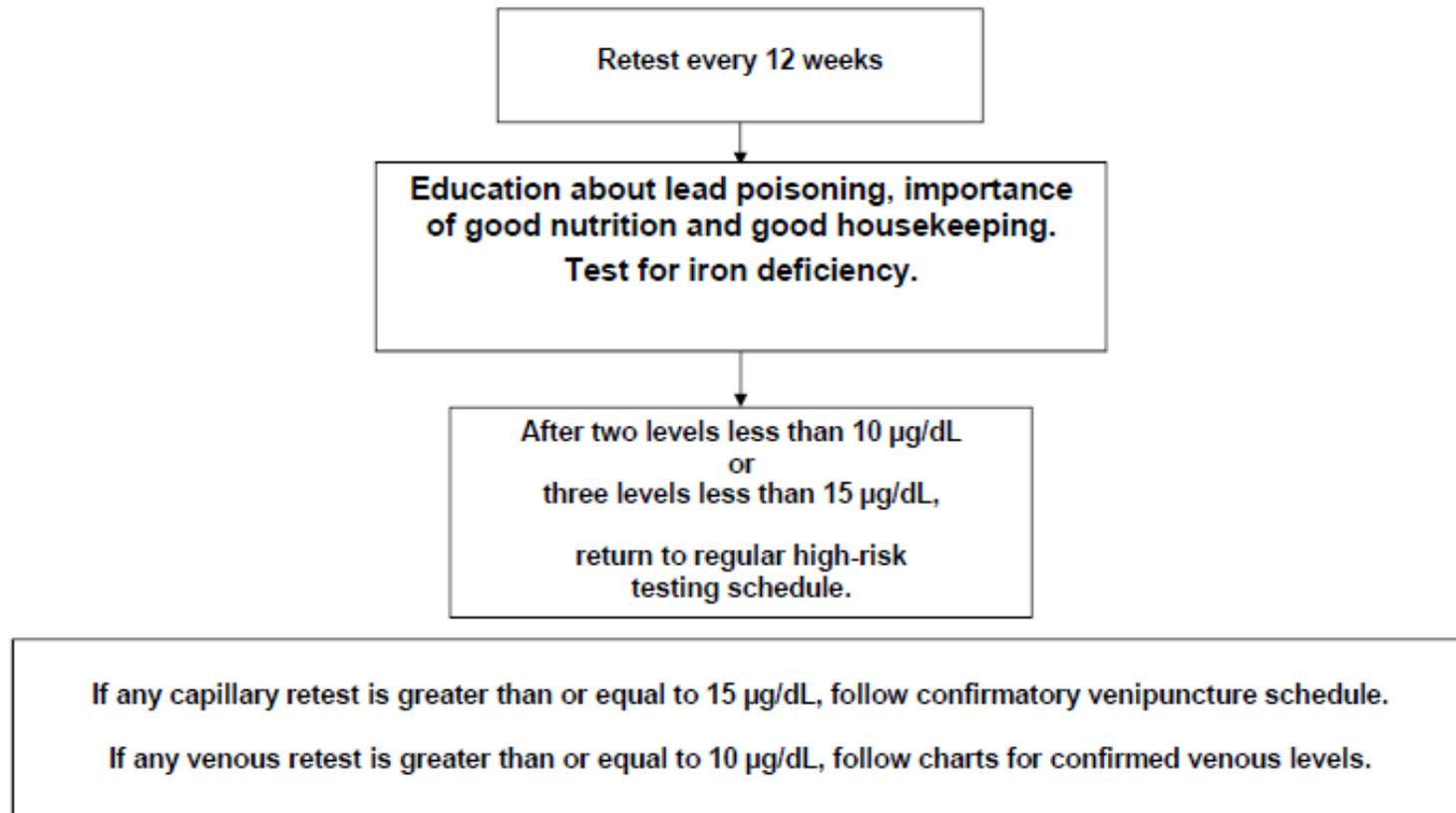


\*Note that developmental evaluation is expected only for children with venous blood lead levels greater than or equal to 20 µg/dL.

Revised 2/2015

*Note: These blood lead testing guidelines are for children ages 0 to 5 years. Contact IDPH (800-972-2026) for recommendations on testing children 6+ years and adults.*

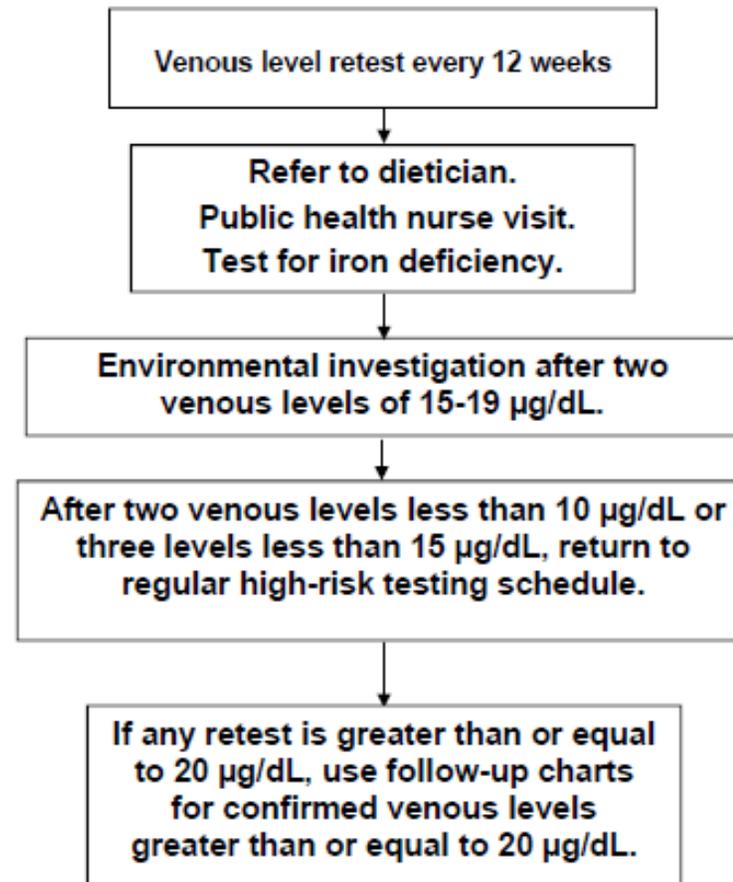
## FOLLOW-UP OF ELEVATED VENOUS BLOOD LEAD LEVELS (10-14 $\mu\text{g}/\text{dL}$ )



Revised 2/2015

*Note: These blood lead testing guidelines are for children ages 0 to 5 years. Contact IDPH (800-972-2026) for recommendations on testing children 6+ years and adults.*

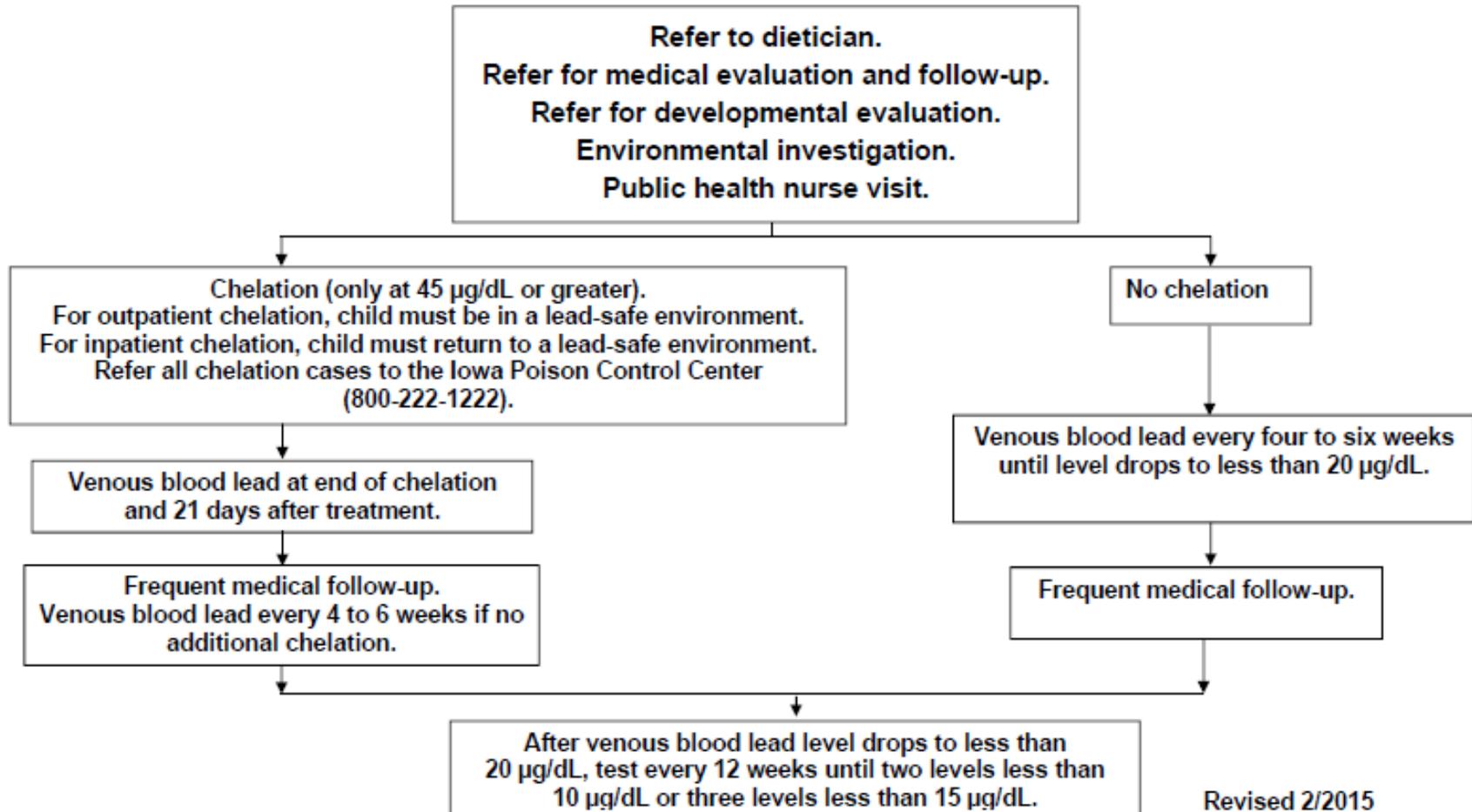
## FOLLOW-UP OF ELEVATED VENOUS BLOOD LEAD LEVELS (15-19 $\mu\text{g}/\text{dL}$ )



Revised 2/2015

*Note: These blood lead testing guidelines are for children ages 0 to 5 years. Contact IDPH (800-972-2026) for recommendations on testing children 6+ years and adults.*

## FOLLOW-UP OF ELEVATED VENOUS BLOOD LEAD LEVELS (Greater than or equal to 20 µg/dL)



*Note: These blood lead testing guidelines are for children ages 0 to 5 years. Contact IDPH (800-972-2026) for recommendations on testing children 6+ years and adults.*

## **Environmental Follow-Up**

Lead hazard investigations will be conducted for all children who have had a single venous blood lead level greater than or equal to 20 µg/dL or two venous blood lead levels of 15 to 19 µg/dL. The two levels of 15 to 19 µg/dL do not need to be consecutive or taken within a specific period. All primary and secondary addresses associated with the child at the time of case identification must be investigated. This includes any sites such as daycare centers or another relative's home where the child spends at least 8 hours per week. It may be necessary to investigate addresses where the child spends even fewer hours than this since, in some cases, children have been lead-poisoned even when spending fewer than 8 hours per week at an address. If the primary source of exposure is determined to be the child's previous address, the inspector should attempt to inspect this address so that lead hazards can be remediated. The inspector must continue to inspect all addresses to which the family subsequently moved or where the child subsequently begins to spend time until the child has had at least three blood lead levels less than 15 µg/dL or at least one blood lead level less than 10 µg/dL. The inspector may continue to inspect additional addresses after this point if requested by the family or medical provider or if the inspector has particular concerns about the family or child.

Lead hazard investigations must be conducted by elevated blood lead (EBL) inspector/risk assessors certified by the Iowa Department of Public Health according to the provisions of 641-Chapter 70 *Iowa Administrative Code* - Lead Professional Certification. These investigations must also be conducted according to the provisions of Chapter 70 and the procedures taught in the 48-hour elevated blood lead inspector/risk assessor training program.

Lead hazards will be identified through lead hazard investigations that will consist of educating parents about childhood lead poisoning, conducting an inspection to discover lead hazards in the child's environment, and communicating the results of the inspection to the parents and the property owner (if other than the parents).

The investigator should obtain a case history on the lead-poisoned child if this has not already been done. This includes information regarding the circumstances under which lead poisoning was diagnosed and any medical treatment that the child has been receiving. In addition, the investigator should obtain the names and ages of all children currently occupying this property and should recommend that all children under the age of 6 living in or frequently visiting the home who have not been tested for lead poisoning be tested. If the home is undergoing renovation, adults living in the home may also need to be tested for lead poisoning.

The investigator will give the parents information about the causes of lead poisoning and the health effects of lead poisoning on children. The inspector will remind the parents of the importance of follow-up blood lead testing. The environmental inspector should ask whether the child has pica (consumes non-food items such as dirt, paint chips, paper, etc.). Children with pica are at very high risk for lead poisoning. Children who have pica must be very well-supervised to limit their access to contaminated soil, paint chips, etc.

Most cases of childhood lead poisoning are caused by exposure to lead-based paint. However, the investigator should also ask whether there are other possible sources of lead exposure such as

the use of poorly glazed pottery and the parent's or guardian's occupations and/or hobbies (examples: ceramics, indoor shooting ranges, construction, etc.)

If the home is not owner-occupied, the property owner will be contacted and invited to be present during the inspection. As an alternative, where travel time is not a concern may choose to meet the property owner at the address at a later date to review the results of the investigation.

A timely remediation completion date will be established in consultation with the property owner based on the severity of the hazards and the child's blood lead level. The lead hazards and other conditions which must be remediated and the agreed-upon completion date will be included in a follow-up letter that is sent to the family and to the property owner.

In cases where the investigator cannot identify deteriorated lead-based paint or lead-contaminated soil as the source of lead poisoning for the child, additional environmental testing of dust or other sources of lead may be appropriate. The Iowa Department of Public Health (IDPH) will provide funding for this testing when it is necessary. Contact IDPH at 1-800-972-2026 to find out how to get this testing paid for.

The timelines for conducting environmental investigations are on page 23. The following documents are attached for reference:

- Excerpt of *Iowa Administrative Code* 641—Chapter 70, which gives the required methods for conducting elevated blood lead (EBL) inspections.
- *Iowa Administrative Code* 641—Chapter 68, which can be adopted as a local regulation to require lead hazard remediation. Instructions for adopting Chapter 68 by reference are also attached.
- Eliminating Lead Hazards – instructions for safe remediation of lead-based paint hazards.

### **Communication/Coordination with Physicians**

The inspector will send a summary of the environmental findings to the physician. If necessary, the inspector will speak to or further communicate with the physician to ensure that the physician and the inspector are giving consistent messages to the family.

### **Follow-up After Lead Hazard Investigations**

At least two follow-ups will be conducted on each open address during each year. The follow-ups may be by letter or telephone or may be conducted through an on-site visit. Follow up letters and phone calls should be made to the owner of the property, who is the person responsible for ensuring that lead hazards are remediated. If necessary, the inspector shall identify and contact subsequent property owners if the property is sold. Follow up must continue until the lead hazards are remediated.

Follow up blood lead testing is the main method of determining the success of medical and environmental case management. When a child's blood lead level does not fall or increases the environmental and medical case managers must determine why this is occurring. Except for

rebounds that occur after chelation, additional home nursing visits and environmental investigations must be made if a child's blood lead level increases by 5 µg/dL or more. In addition, levels that fail to fall to less than 20 µg/dL must be closely followed to ensure that additional exposure is not occurring.

### **Referrals to the Department of Human Services**

A family may be referred to the Department of Human Services based on medical neglect if the family fails to follow through with follow up blood lead testing, medical treatment, or assuring that the child is in a safe environment, or if all other means of working with the family have been exhausted. While these referrals are sometimes necessary, they should be used only as a last resort.

### **Criteria for Medical Case Closure**

Medical cases can be closed under the following circumstances:

1. If the child is under the age of 6 years, the case can be closed after the child has had three blood lead levels less than 15 µg/dL or two blood lead levels less than 10 µg/dL.
2. If the family has moved from the area and the case has been transferred to another area.
3. If the child has reached the age of 6 years and has a blood lead level less than 20 µg/dL.

Contact the Iowa Department of Public Health's Childhood Lead Poisoning Prevention Program at 800-972-2026 if the patient's case has not closed in HHLPS after meeting the criteria described above.

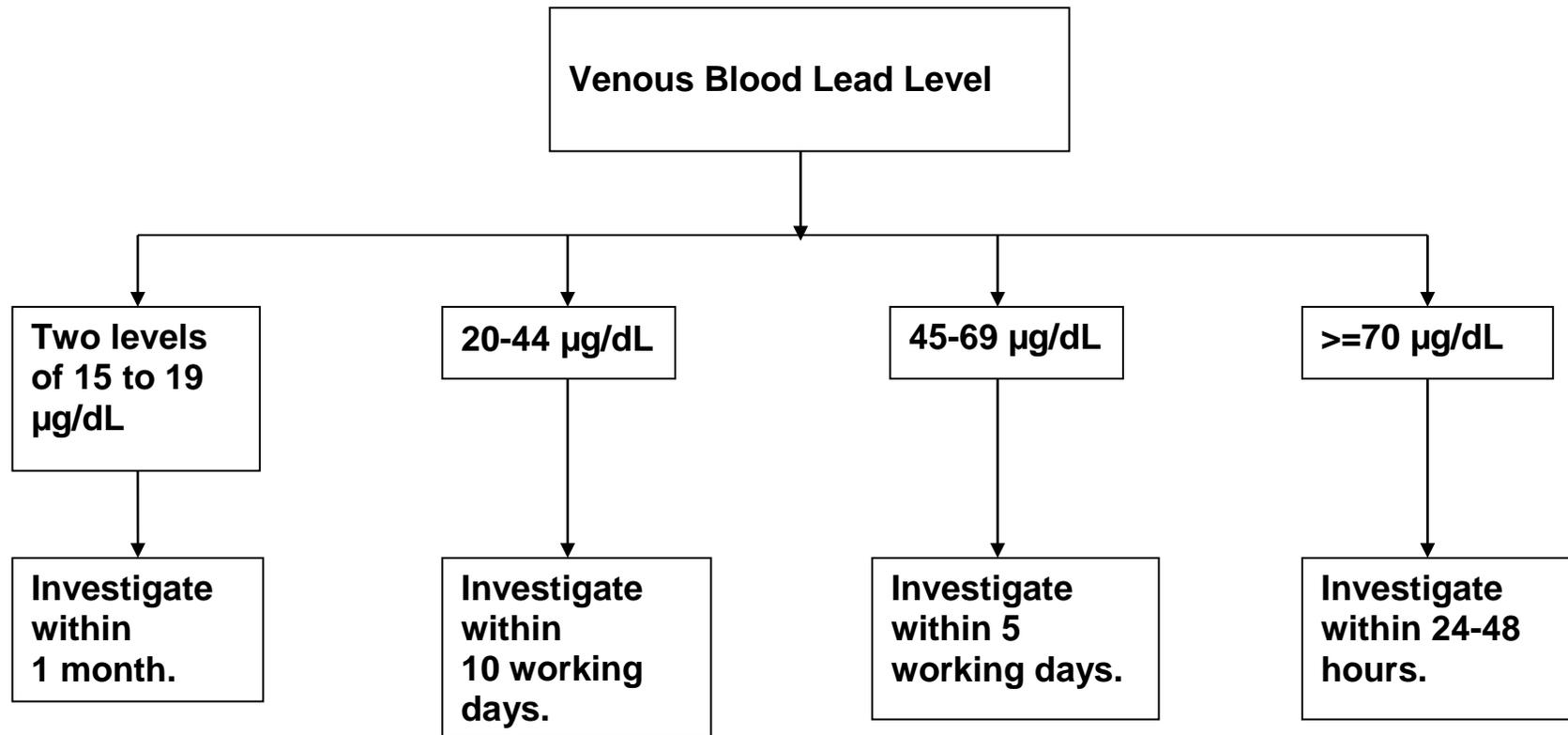
### **Criteria for Environmental Case Closure**

Environmental cases can be closed in HHLPS by the environmental case manager if no lead hazards are identified in the property or if the inspector has verified that all lead hazards have been remediated. Environmental cases can be closed for other reasons only with prior permission from the Iowa Department of Public Health's Childhood Lead Poisoning Prevention Program.

### **Children Over the Age Of Six Years**

The case manager will contact the Iowa Department of Public Health's Childhood Lead Poisoning Prevention Program for specific case management guidelines for a child over the age of six years who has a venous blood lead level greater than or equal to 20 µg/dL.

## TIMELINES FOR ENVIRONMENTAL FOLLOW-UP



**EXCERPT FROM 641—CHAPTER 70**

**70.6(3)** A certified elevated blood lead (EBL) inspector/risk assessor must conduct elevated blood lead (EBL) inspections according to the following standards. Beginning March 1, 2000, elevated blood lead (EBL) inspections shall be conducted only by a certified elevated blood lead (EBL) inspector/risk assessor.

a. When conducting an elevated blood lead (EBL) inspection, the certified elevated blood lead (EBL) inspector/risk assessor shall use the following procedures:

(1) The certified elevated blood lead (EBL) inspector/risk assessor shall test paint in each room, including each exterior side.

(2) The certified elevated blood lead (EBL) inspector/risk assessor shall test each testing combination in each room. On windows, the window frame, interior windowsill, window sash, and window trough shall each be considered a separate testing combination. One sample shall be taken for each testing combination in a room. If a testing combination is not tested, it shall be assumed to be painted with lead-based paint.

b. Paint shall be tested using adequate quality control by X-ray fluorescence or by laboratory analysis using a recognized laboratory to determine the presence of lead-based paint on a surface. If testing by laboratory analysis, the certified elevated blood lead (EBL) inspector/risk assessor shall collect paint samples using the documented methodologies specified in guidance documents issued by the department. If testing by X-ray fluorescence, the certified elevated blood lead (EBL) inspector/risk assessor shall use the following methodologies:

(1) The certified elevated blood lead (EBL) inspector/risk assessor shall use an X-ray fluorescence analyzer that has a performance characteristics sheet and shall use the X-ray fluorescence analyzer according to the performance characteristics sheet.

(2) The certified elevated blood lead (EBL) inspector/risk assessor shall use the NIST 1.02 standard film or standards provided by the manufacturer for calibration of the X-ray fluorescence analyzer. The certified elevated blood lead (EBL) inspector/risk assessor shall not state that any surface is free of lead-based unless the NIST 1.02 standard film is used for calibration.

(3) The certified elevated blood lead (EBL) inspector/risk assessor shall take calibration readings consisting of an average of three readings at the beginning of the inspection.

(4) If required by the performance characteristics sheet, the certified elevated blood lead (EBL) inspector/risk assessor shall conduct substrate correction for all XRF readings less than 4.0 milligrams per square centimeter of lead. For each substrate that requires substrate correction, the certified elevated blood lead (EBL) inspector/risk assessor shall completely remove all paint from an area of two different testing combinations for that substrate. If possible, the areas chosen for substrate correction should have initial XRF readings of less than 2.5 milligrams per square centimeter. For each testing combination, the certified elevated blood lead (EBL) inspector/risk assessor shall remove paint from an area that is at least as large as the XRF probe faceplate. On each of the two areas, the certified elevated blood lead (EBL) inspector/risk assessor shall place the NIST 1.02 standard film over the surface, and take three XRF readings with the XRF used to conduct the inspection. The certified elevated blood lead (EBL) inspector/risk assessor shall calculate the arithmetic mean for these six readings and shall subtract 1.02 from this arithmetic mean to obtain the substrate correction value. The certified elevated blood lead (EBL) inspector/risk assessor shall then subtract the substrate correction value from each XRF reading for the substrate requiring substrate correction to obtain the corrected XRF reading. For example, if the six readings taken on the NIST 1.02 standard film were 1.1, 1.3, 1.4, 1.0, 1.2, and 1.1, the arithmetic mean is calculated by the equation  $(1.1 + 1.3 +$

$1.4 + 1.0 + 1.2 + 1.1)/6$  and is equal to 1.18. The substrate correction value is equal to 1.18 minus 1.02, or 0.16. If the certified elevated blood lead (EBL) inspector/risk assessor does not conduct substrate correction where required by the performance characteristics sheet, then the certified elevated blood lead (EBL) inspector/risk assessor shall assume that all of the readings are positive and shall not state that a surface is free of lead-based paint.

(5) The certified elevated blood lead (EBL) inspector/risk assessor shall classify each XRF reading that did not require substrate correction and each corrected XRF reading for XRF readings that required substrate correction as positive, negative, or inconclusive, according to the performance characteristics sheet for the XRF. The certified elevated blood lead (EBL) inspector/risk assessor may assume that all inconclusive readings are positive and classify them as such.

(6) The certified elevated blood lead (EBL) inspector/risk assessor shall resolve inconclusive readings as defined by the performance characteristics sheet for the XRF by collecting paint samples for laboratory analysis. If the certified elevated blood lead (EBL) inspector/risk assessor does not resolve inconclusive readings, then the certified elevated blood lead (EBL) inspector/risk assessor shall assume that the inconclusive readings are positive.

c. If lead-based paint is identified through an elevated blood lead (EBL) inspection, the certified elevated blood level (EBL) inspector/risk assessor must conduct a visual inspection to determine the presence of lead-based paint hazards and any other potential lead hazards, including bare soil in the play area or in the dripline of a home where lead-based paint is identified on exterior components or lead-based paint previously existed on exterior components, but has been removed, enclosed, or encapsulated.

d. No later than two weeks after the receipt of laboratory results, A a certified elevated blood lead (EBL) inspector/risk assessor shall prepare a written report for each residential dwelling or child-occupied facility where an elevated blood lead (EBL) inspection has been conducted and shall provide a copy of this report to the property owner and the occupant of the dwelling. The report shall include, at least:

- (1) A statement that the elevated blood lead (EBL) inspection was conducted to determine identify lead-based paint and lead-based paint hazards in the residential dwelling;
- (2) Date of each elevated blood lead (EBL) inspection;
- (3) Address of building;
- (4) Date of construction;
- (5) Apartment numbers (if applicable);
- (6) The name, address, and telephone number of the owner or owners of each residential dwelling or child-occupied facility;
- (7) Name, signature, and certification number of each certified elevated blood lead (EBL) inspector/ risk assessor conducting the investigation;
- (8) Name, address, and telephone number of each laboratory conducting an analysis of collected samples;
- (9) Each testing method and/or sampling procedure employed for paint analysis, including quality control data, and, if used, the manufacturer, ~~the~~ serial number, software, and operating mode of any X-ray fluorescence (XRF) device;
- (10) XRF readings taken for calibration and calculations to demonstrate that the XRF is properly calibrated;
- (11) Specific locations of each painted component tested for the presence of lead-based paint by room and the results for each component expressed in terms appropriate to the sampling method used;

(12) A statement that all painted or finished components that were not tested must be assumed to contain lead-based paint;

(13) A description of the location, type, and severity of identified lead-based paint hazards, including the classification of each tested surface as to whether it is a lead-based paint hazard, and any other potential lead hazards, including bare soil in the play area or in the dripline of a home where lead-based paint is identified on exterior components or lead-based paint previously existed on exterior components, but has been removed, enclosed, or encapsulated.;

(14) A description of interim controls and lead abatement options for each identified lead-based paint hazard and a suggested prioritization for addressing each hazard. If the use of an encapsulant or enclosure is recommended, the report shall recommend a maintenance and monitoring schedule for the encapsulant or enclosure.;

(15) Information regarding the owner's obligations to disclose known lead-based paint and/or lead-based paint hazards upon sale or lease of residential property as required by Subpart H of 24 CFR Part 35 and Subpart I of 40 CFR Part 745; and

(16) Information about the notification regarding lead-based paint prior to renovation, remodeling, or repainting as required by IAC 641—Chapter 69.

e. A certified elevated blood lead (EBL) inspector/risk assessor shall maintain a written record for each residential dwelling or child-occupied facility where an elevated blood lead (EBL) inspection has been conducted for no fewer than ten years. The record shall include, at least:

- (1) A copy of the written report required by paragraph 70.6(3)“d.”
- (2) Blood lead test results for the elevated blood lead (EBL) child.
- (3) A record of conversations held with the owners and occupants of each residential dwelling or child-occupied facility prior to, during, and after the EBL inspection.
- (4) Records of follow-up visits made to each residential dwelling or child-occupied facility where lead-based paint hazards are identified to ensure that lead-based paint hazards are safely repaired.

## CHAPTER 68 CONTROL OF LEAD-BASED PAINT HAZARDS

**641—68.1(135) Applicability.** The provisions of this chapter are applicable in jurisdictions in which a local board has adopted this chapter for the purpose of requiring control of lead-based paint hazards where a child has been identified with an elevated blood lead level. Nothing in this chapter shall be construed as requiring a local board to adopt this chapter as a model regulation.

**641—68.2(135) Definitions.**

“*Certified elevated blood lead (EBL) inspector/risk assessor*” means a person who has met the requirements of Iowa Administrative Code 641—70.5(135) for certification or interim certification and who has been certified by the department.

“*Chewable surface*” means an interior or exterior surface painted with lead-based paint that a young child can mouth or chew.

“*Child-occupied facility*” means a building, or portion of a building, constructed prior to 1978, visited by the same child under the age of six years on at least two different days within any week (Sunday through Saturday period, provided that each day’s visit lasts at least three hours and the combined weekly visits last at least six hours). Child-occupied facilities may include, but are not limited to, day care centers, preschools and kindergarten classrooms.

“*Clearance testing*” means an activity conducted following interim controls, lead abatement, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation to determine that the hazard reduction activities are complete. Clearance testing includes a visual assessment, the collection and analysis of environmental samples, the interpretation of sampling results, and the preparation of a report.

“*Department*” means the Iowa department of public health.

“*Deteriorated paint*” means any interior or exterior paint or other coating that is cracking, flaking, chipping, peeling, or chalking, or any paint or coating located on an interior or exterior surface that is otherwise damaged or separated from the substrate of a building component.

“*Dripline*” means the area within three feet surrounding the perimeter of a building.

“*Dust-lead hazard*” means surface dust in residential dwellings or child-occupied facilities that contains a mass-per-area concentration of lead greater than or equal to 40 micrograms per square foot on floors, 250 micrograms per square foot on interior windowsills, and 400 micrograms per square foot on window troughs based on wipe samples. A dust-lead hazard is present in a residential dwelling or child-occupied facility when the weighted arithmetic mean lead loading for all single-surface or composite samples of floors and interior windowsills is greater than or equal to 40 micrograms per square foot on floors, 250 micrograms per square foot on interior windowsills, and 400 micrograms per square foot on window troughs based on wipe samples. A dust-lead hazard is present on floors, interior windowsills, or window troughs in an unsampled residential dwelling in a multifamily dwelling if a dust-lead hazard is present on floors, interior windowsills, or window troughs, respectively, in at least one sampled residential unit on the property. A dust-lead hazard is present on floors, interior windowsills, or window troughs in an unsampled common area in a multifamily dwelling if a dust-lead hazard is present on floors, interior windowsills, or window troughs, respectively, in at least one sampled common area in the same common area group on the property. If dust samples are not taken, it may be assumed that surfaces in rooms with hazardous lead-based paint or where renovation, remodeling, or repainting has occurred recently are dust-lead hazards.

“*Elevated blood lead (EBL) child*” means any child who has had one venous blood lead level greater than or equal to 20 micrograms per deciliter or at least two venous blood lead levels of 15 to 19 micrograms per deciliter.

*“Elevated blood lead (EBL) inspection”* means an inspection to determine the sources of lead exposure for an elevated blood lead (EBL) child and the provision within ten working days of a written report explaining the results of the investigation to the property owner and occupant of the residential dwelling or child-occupied facility being inspected and to the parents of the elevated blood lead (EBL) child. A certified elevated blood lead (EBL) inspector/risk assessor shall not determine that a residential dwelling is free of lead-based paint as a result of an elevated blood lead (EBL) inspection.

*“Friction surface”* means an interior or exterior surface that is subject to abrasion or friction including, but not limited to, certain window, floor, and stair surfaces.

*“Hazardous lead-based paint”* means lead-based paint that is present on a friction surface where there is evidence of abrasion or where the dust-lead level on the nearest horizontal surface underneath the friction surface (e.g., the windowsill or floor) is equal to or greater than the dust-lead hazard level, lead-based paint that is present on an impact surface that is damaged or otherwise deteriorated from impact, lead-based paint that is present on a chewable surface, or any other deteriorated lead-based paint in any residential building or child-occupied facility or on the exterior of a residential building or child-occupied facility.

*“Impact surface”* means an interior or exterior surface that is subject to damage by repeated sudden force such as certain parts of doorframes.

*“Lead-based paint”* means any paint or other surface coatings that contain lead equal to or in excess of 1.0 milligram of lead per square centimeter or more than 0.5 percent by weight. Lead-based paint is present on any surface that is tested and found to contain lead equal to or in excess of 1.0 milligram per square centimeter or more than 0.5 percent by weight and on any surface like a surface tested in the same room equivalent that has a similar painting history and that is found to be lead-based paint.

*“Lead-based paint hazard”* means hazardous lead-based paint, a dust-lead hazard, or a soil-lead hazard.

*“Local board”* means the local board of health as authorized by Iowa Code chapter 137.

*“Mid-yard”* means an area of a residential yard approximately midway between the dripline of a residential building and the nearest property boundary or between the driplines of a residential building and another building on the same property.

*“Occupant”* means any person living, sleeping, cooking or eating in, or having any actual possession of, a dwelling or dwelling unit.

*“Owner”* means any person who, alone or jointly with others: (1) has legal title to any dwelling, with or without accompanying actual possession thereof, or (2) has charge, care or control of any dwelling by acting as the agent of the owner or as the executor, administrator, trustee, or guardian of the estate of the owner.

*“Paint-lead hazard”* means the presence of hazardous lead-based paint in a residential dwelling or a child-occupied facility.

*“Play area”* means an area of frequent soil contact by children of less than six years of age as indicated by, but not limited to, factors including the following: the presence of play equipment (sandboxes, swing sets, and sliding boards), toys, or other children’s possessions; observations of play patterns; or information provided by parents, residents, caregivers, or property owners.

*“Residential building”* means a building containing one or more residential dwellings.

*“Residential dwelling”* means (1) a detached single-family dwelling unit, including the surrounding yard, attached structures such as porches and stoops, and detached buildings and structures including, but not limited to, garages, farm buildings, and fences; or (2) a single-family dwelling unit in a structure that contains more than one separate residential dwelling unit, which is used or occupied, or intended to be used or occupied, in whole or part, as the home or residence of one or more persons.

*“Retaliation”* means harassment, termination of the tenancy, discontinuation of utilities or other services, and any other action taken against the lessee.

*“Soil-lead hazard”* means bare soil on residential real property or on the property of a child-occupied facility that contains total lead greater than or equal to 400 parts per million for the dripline, mid-yard, and play areas. A soil-lead hazard is present in a dripline, mid-yard, or play area when the soil-lead concentration from a composite sample of bare soil is greater than or equal to 400 parts per million. If soil samples are not taken, it may be assumed that bare soil within three feet of the foundation of a garage or other structure built prior to 1978 is a soil-lead hazard.

**641—68.3(135) Elevated blood lead (EBL) inspections required.** The local board shall appoint a certified elevated blood lead (EBL) inspector/risk assessor to conduct elevated blood lead (EBL) inspections in residential dwellings and child-occupied facilities where an elevated blood lead (EBL) child lives, visits, or has recently lived. All owners and occupants shall allow access to the residential dwellings and child-occupied facilities that the certified elevated blood lead (EBL) inspector/risk assessor desires to inspect.

**641—68.4(135) Refusal of admittance.** If the certified elevated blood lead (EBL) inspector/risk assessor appointed by the local board is refused entry to a property, then the certified elevated blood lead (EBL) inspector/risk assessor may make a complaint under oath to any magistrate of the county. The magistrate may issue a warrant directing the owner or occupant to allow the certified elevated blood lead (EBL) inspector/risk assessor to conduct an elevated blood lead (EBL) inspection and directing a peace officer to accompany the certified elevated blood lead (EBL) inspector/risk assessor during the elevated blood lead (EBL) inspection/risk assessment.

**641—68.5(135) Lead hazard reduction required.**

**68.5(1)** When the certified elevated blood lead (EBL) inspector/risk assessor appointed by the local board determines that hazardous lead-based paint, a dust-lead hazard, or a soil-lead hazard is present in a residential dwelling unit or child-occupied facility where an elevated blood lead (EBL) child lives, frequently visits, or has recently resided, the certified elevated blood lead inspector/risk assessor shall issue a written notice to the owner within two weeks of the inspection and receipt of any laboratory results. The written notice shall require the owner to complete lead hazard reduction in a time period determined by the certified elevated blood lead (EBL) inspector/risk assessor. If the occupant who occupies the residential dwelling at the time that this written notice is issued vacates the residential dwelling, the residential dwelling shall not be leased or occupied by any other person until the certified elevated blood lead (EBL) inspector/risk assessor issues a written notice that the lead hazard reduction has been completed.

**68.5(2)** The owner of any residential dwelling or child-occupied facility which has been determined to contain hazardous lead-based paint, a soil-lead hazard, or a dust-lead hazard shall correct these hazards within the time period allowed by the certified elevated blood lead (EBL) inspector/risk assessor in the written notice. The following methods shall be used for lead hazard reduction. These methods shall not require the services of a lead abatement contractor certified in accordance with Iowa Administrative Code 641—70.5(135). However, other local, state, or federal regulations may require the use of a contractor who has completed an eight-hour lead-safe work practices course or a lead abatement contractor or lead abatement worker certified in accordance with Iowa Administrative Code 641—70.5(135).

*a.* On a surface that contains hazardous lead-based paint, but is not chewable and does not have evidence of impact or friction, the lead-based paint hazard shall be reduced by removing all loose and deteriorated paint from the surface, preparing the surface for repainting, and repainting the surface with a lead-free coating.

*b.* On a surface that contains hazardous lead-based paint and is chewable or has evidence of impact or friction, the lead-based paint hazard shall be reduced by treating the surface one inch back from the edge or corner through one of the following methods:

(1) All lead-based paint on the treatment area shall be removed to the bare substrate. The surface shall be prepared for repainting and repainted with a lead-free coating.

(2) The treatment area shall be covered with a permanently affixed lead-free material such as plastic, wood, or vinyl. Carpet may be used on floors and stair treads.

*c.* Dust-lead hazards shall be reduced by thoroughly cleaning the affected surface.

*d.* Soil-lead hazards shall be reduced by planting grass or groundcover, applying sod, or covering the affected area with six inches of bark, gravel, or other material.

*e.* Lead hazard reduction shall be conducted using lead-safe work practices to protect the safety of the occupants and workers. Occupants shall not enter the work area while work is underway. The following are prohibited methods of lead hazard reduction:

(1) Open-flame burning or torching of lead-based paint.

(2) Machine sanding or grinding or abrasive blasting or sandblasting of lead-based paint unless used with high-efficiency particulate air (HEPA) exhaust control that removes particles of 0.3 microns or larger from the air at 99.97 percent or greater efficiency.

(3) Uncontained water blasting of lead-based paint.

(4) Dry scraping or dry sanding of lead-based paint except in conjunction with the use of a heat gun or around electrical outlets.

(5) Operating a heat gun at a temperature above 1100 degrees Fahrenheit.

**68.5(3)** The certified elevated blood lead (EBL) inspector/risk assessor shall inspect all areas identified as hazards after lead hazard reduction is complete. The certified elevated blood lead (EBL) inspector/risk assessor may conduct clearance testing pursuant to Iowa Administrative Code 641—Chapter 70 to ensure that no dust-lead hazards exist after the work is complete. Within two weeks of verifying that all lead hazard reduction has been completed as required, the certified elevated blood lead (EBL) inspector/risk assessor shall issue a written notice to the owner and occupant stating that the lead hazard reduction has been completed and that the repaired surfaces must be maintained in good condition.

**641—68.6(135) Retaliation prohibited.**

**68.6(1)** The lessor of a dwelling, the employees of the lessor, and agents or persons acting on behalf of the lessor shall not retaliate against lessees of residential dwellings and child-occupied facilities whose occupants or visitors have been tested for lead poisoning and shall not discourage the occupants or visitors from being tested for lead poisoning.

**68.6(2)** An action taken against the lessee shall not be considered retaliation if it is supported by reasonable cause unrelated to the testing of an occupant for lead poisoning or if it is shown to have occurred as a result of an accident or mistake and not to be the intentional act of the lessor of a dwelling,

the employees of the lessor, or agents or persons acting on behalf of the lessor.

**641—68.7(135) Enforcement.** The certified elevated blood lead (EBL) inspector/risk assessor appointed by the local board shall have the duty and responsibility of enforcing this chapter.

**68.7(1)** Penalties shall be as provided in Iowa Code section 137.21.

**68.7(2)** Upon failure of any person to correct a hazard identified through this chapter in the time specified by the certified elevated blood lead (EBL) inspector/risk assessor appointed by the local board, the local board may direct or cause the correction of said hazards. All expenses incurred thereby may be recovered by suit in the name of the local board, or the local board may certify the amount of said expenses, together with a description of the property, to the county treasurer, who shall enter the

same upon the tax books as costs for removing a lead hazard, and said amounts shall be collected as other taxes.

**641—68.8(135) Hearings.** In the event any person is aggrieved by any order of the certified elevated blood lead (EBL) inspector/risk assessor, the person may appeal to the local board in writing within ten days of the date of such order. The appeal shall state the reasons for requesting such order to be rescinded or modified. The local board shall review the action of the certified elevated blood lead (EBL) inspector/risk assessor. The local board shall order compliance with said order or may, with cause, modify or withdraw said order. Any order of the local board may be appealed within ten days to the district court for the county in which the local board is located.

**641—68.9(135) Variances.** The elevated blood lead (EBL) inspector/risk assessor may determine that a chewable surface that would otherwise be identified as a hazard by this chapter is not causing or does not have reasonable potential to cause lead exposure and is not required to be corrected through lead hazard reduction. The elevated blood lead (EBL) inspector/risk assessor shall document the reason for this determination in the inspection report. However, the elevated blood lead (EBL) inspector/risk assessor shall not, under any circumstances, determine that any other surface meeting the definition of hazardous lead-based paint does not need to be corrected through lead hazard reduction.

**641—68.10(135) Injunction.** Nothing in this chapter shall prohibit a local board from pursuing injunctive relief or other relief as allowed by law.

**641—68.11(135) Effective date.** This chapter shall be in effect in a jurisdiction after a local board adopts it.

These rules are intended to implement Iowa Code section 135.102.

**STEPS TO FOLLOW IN ADOPTING IOWA ADMINISTRATIVE CODE CHAPTER 68,  
"CONTROL OF LEAD-BASED PAINT HAZARDS," BY REFERENCE**

1. The board of health determines the text of the regulation. The suggested text for this regulation is:

\_\_\_\_\_ County Board of Health Regulation Number \_\_\_\_\_  
Control of Lead-Based Paint Hazards  
Iowa Administrative Code 641—Chapter 68, "Control of Lead-Based Paint Hazards," is adopted by reference.

2. The board of health votes to hold a public hearing on the proposed regulation.
3. The board of health determines the date of the public hearing.
4. The board of health publishes a notice of the time and place of the hearing, as well as the general nature of the proposed regulation. The notice must be published between 4 and 20 days before the hearing in one general circulation newspaper in the county. Notice of the hearing must also be given to the communications media in the county. You may wish to ask for a notarized affidavit of publication or proof of publication from the newspaper(s). Some suggested wording for this public notice is:

**PUBLIC NOTICE**

You are hereby notified that the \_\_\_\_\_ County Board of Health is considering the adoption of proposed \_\_\_\_\_ County Board of Health Regulation Number \_\_\_\_\_, Control of Lead-Based Paint Hazards, which is the adoption, by reference, of Iowa Administrative Code 641—Chapter 68, "Control of Lead-Based Paint Hazards." The purpose of this regulation is to require control of lead-based paint hazards where a child has been identified with an elevated blood lead level.

You are further notified that the \_\_\_\_\_ County Board of Health will hold a public hearing thereon at (time) on (date) at (location). You may submit comments in writing prior to the hearing or appear to give oral or written comments at the hearing.

Dated at \_\_\_\_\_, Iowa this \_\_\_\_\_ day of (month, year).

(name), Chair  
\_\_\_\_\_ County Board of Health

5. The board of health holds the public hearing. Any "citizen" may appear and be heard at the hearing - everyone has the right to speak.
6. The board of health must then vote to approve the regulation. This can be done at any time after the public hearing.
7. The regulation must then be approved by the board of supervisors. This can be accomplished through a simple motion. The supervisors are not required to hold hearings on the regulation or

have several readings of the regulation. The board of supervisors is required to put the item on the board agenda.

8. The regulation becomes effective when it is published in a newspaper having general circulation in the county. As with the notice of public hearing, you may wish to ask for a notarized affidavit of publication or proof of publication from the newspaper(s). Some suggested wording for the publication is:

**PUBLIC NOTICE**  
**NOTICE OF ADOPTION OF \_\_\_\_ COUNTY BOARD OF HEALTH REGULATION**  
**NUMBER \_\_\_\_\_,**  
**CONTROL OF LEAD-BASED PAINT HAZARDS**  
**TO WHOM IT MAY CONCERN:**

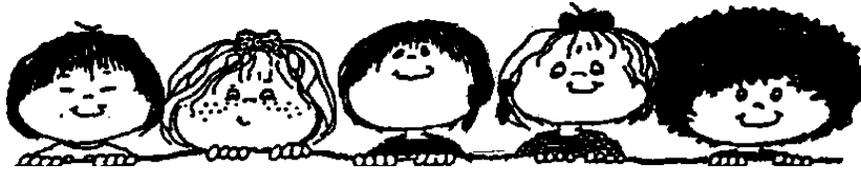
You are hereby notified that on (date), the \_\_\_\_\_ County Board of Health adopted \_\_\_\_\_ County Board of Health Regulation Number \_\_\_\_\_, Control of Lead-Based Paint Hazards, which is the adoption, by reference, of Iowa Administrative Code 641—Chapter 68, “Control of Lead-Based Paint Hazards.”

The purpose of this regulation is to require control of lead-based paint hazards where a child has been identified with an elevated blood lead level.

This regulation shall be in effect after final passage, approval, and publication.

Dated at \_\_\_\_\_, Iowa this \_\_\_\_\_ day of (month, year).

(name), Chair  
 \_\_\_\_\_ County Board of Health



# ELIMINATING LEAD HAZARDS

## Information and Instructions

IOWA DEPARTMENT OF PUBLIC HEALTH  
 Childhood Lead Poisoning Prevention Program  
 1 - (800) - 972-2026

**Lead-based paint hazards can cause lead poisoning in children.** These hazards must be eliminated from homes to prevent lead poisoning and to help lead-poisoned children get better. However, the presence of lead-based paint does not always mean that there are lead-based paint hazards in the home.

An inspector determines whether a surface has lead-based paint on it by using a machine called an x-ray fluorescence monitor (XRF) or by sending a sample of paint to a laboratory. If your property has not been inspected, you can use the publication, *Lead Poisoning: How to Protect Iowa Families*, to look for lead hazards in your home. You can get a copy of this by calling the above number.

### **Lead-based Paint Is a Hazard under the Following Five Conditions:**

1. The paint is on a surface that is **CHEWABLE**. This means that the surface is the right height and angle for children to chew on it. This paint is a hazard even if the paint is in good condition. (Example: window sills.)
2. The paint is on an **IMPACT** surface. Impact surfaces are in locations where people moving furniture or other objects, children playing with toys, etc. often run into the surface. The impact is often hard enough to knock paint off the surface. The paint on this surface is a hazard if you see any paint chipped from the surface. (Ex: Edge of door frame below the four foot level.)
3. The paint is on a surface that is subject to **FRICITION**. Friction occurs when there is up and down, back and forth, or rubbing movement. This friction creates lead dust that can cause lead poisoning in children. This paint is a hazard if you see any worn paint. (Example: track where window goes up and down or a floor.)
4. The paint is **peeling, chipping, chalking, cracked**, or otherwise **deteriorating**.
5. **Bare soil** around buildings that have been painted with lead-based paint contains lead. This is a hazard to children who play in these areas. The bare soil is a hazard within 3 feet of the building. The top 6 to 8 inches of the soil will contain lead. This soil contains lead because the lead-based paint on the building ended up in the soil when it was scraped off or fell off in the past. This bare soil is a hazard even if you cannot see paint chips. The paint chips break down into very small pieces, but the lead is still there. Areas that have a good grass cover or landscaping to cover the soil are not a hazard.

**You must understand what Type of Surface is covered with lead-based paint.**

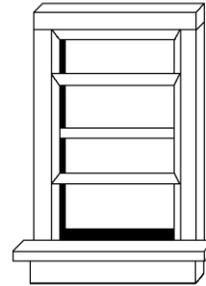
The type of surface determines how much paint removal or other work is needed to eliminate the hazard.

## TYPES OF SURFACES

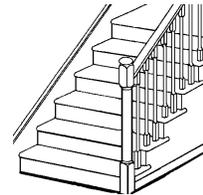


### CHEWABLE surfaces are:

**Windows:** Interior and exterior.  
Window sills below four foot level.  
Inside the windows.



**Stairs:** Stair railings.  
Stair rail spindles.  
Stair treads from four inches from lip on top of tread and from lip to riser on the bottom side.



**Porch:** Railings and spindles.



**Other Surfaces:** Anything that the investigator decides a child can chew on.



### IMPACT surfaces are:

#### **Walls**

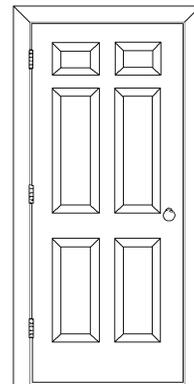
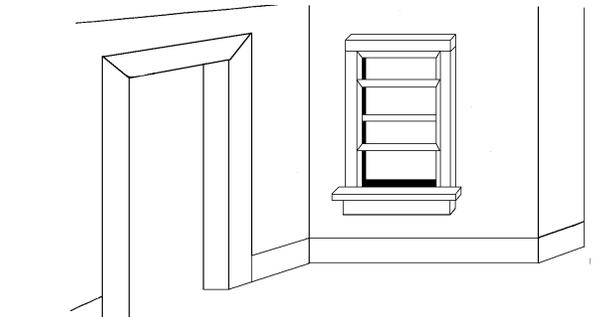
Corners that stick out into the room one inch from the edge on both sides below the four foot level.

#### **Baseboards**

Corners that stick out into the room. One inch from the edge on both sides.

#### **Doors, door frames, and door stops (interior and exterior)**

Doors, door frames, and door stops below the four foot level and one inch from all edges that are subject to impact.





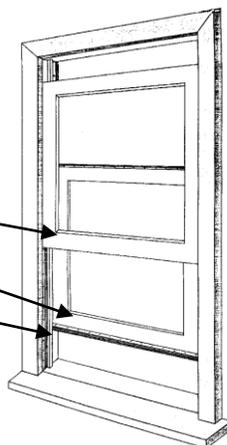
# TYPES OF SURFACES

## FRICITION surfaces are:

Floors

Window sashes

Window tracks



## Eliminating Lead Hazards on Chewable, Impact, and Friction Surfaces

There are three ways to eliminate lead hazards on these surfaces:

### 1. Remove **ALL** paint to the base material.

- Repaint or refinish the surfaces with a lead-free finish.
- You need to remove **ALL** paint **ONLY** on the part that is a chewable, impact, or friction surface.
- On a window sill, this would be the area one inch from the edge of the window sill on the top and bottom of the sill. You do **NOT** need to do anything to the rest of the window **IF** the paint is in good condition. If the paint on the rest of the window is **not** in good condition, remove only the deteriorated paint.

### 2. If doors or other wood surfaces are in poor condition, you can also replace them with new ones.

- Spray all surfaces to be replaced with a light water mist before removing them from the home. This will reduce the amount of lead dust produced.

### 3. Cover surfaces such as corners and floors.

- Plastic corner protectors or other materials will protect painted surfaces from hard impacts.
- Carpet or linoleum will keep you from walking directly on the lead-based paint. Apply coverings tightly enough to keep children from removing them.
- If applied to a chewable surface, the covering must be sturdy enough so that children cannot chew through it.



*Paint alone is NOT sturdy enough  
to cover chewable, impact, and friction surfaces.*



## Eliminating Lead Hazards on Chewable, Impact, and Friction Surfaces

There are also three ways to eliminate lead hazards on **OTHER** surfaces:

1. **Carefully remove all loose, peeling, chipping, flaking, or otherwise deteriorating paint from the surface.**
  - All remaining paint must stick tightly to the surface.
  - You do **NOT** have to remove paint that is in good condition.
  - Wet sand the surface and remaining paint to smooth it and prime. This will help the new paint stick to the surface so it will not start to peel again.
  
2. **If windows are leaking, you can remove them and install new windows. If doors or other wood surfaces are in poor condition, you can also replace them with new ones.**
  - Spray all surfaces with a light water mist before removing them from the home. This will reduce the amount of lead dust produced.
  
3. **If walls are in poor condition, you can cover them with wallboard or paneling.** If exterior siding is deteriorated and will not hold paint, you can cover it with new siding.

### ELIMINATING BARE SOIL HAZARDS

To eliminate lead hazards from bare soil:

- Cover the soil with 6 inches of rock, mulch, or similar materials.
- Plant bushes or shrubs that keep children from playing near them. (Shrubs with small thorns work well.)
- Use a fence to keep children from playing in the soil.

It is not practical to remove the soil because this is very expensive.

## WINDOWS

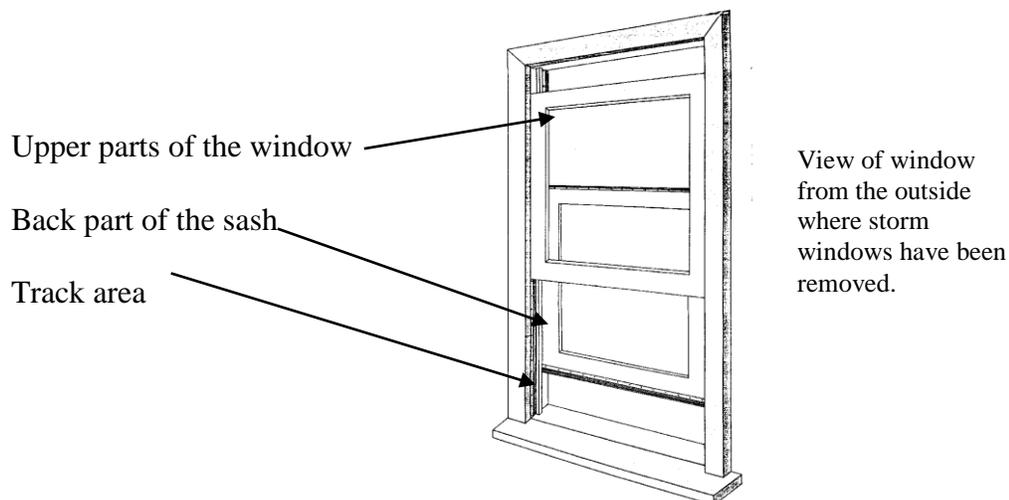
Window sashes, tracks, and the space between the interior window and the screen/storm window are the most common hazard areas. **Almost every home built before 1960 has peeling or chipping lead-based paint in these areas.** Children like to look out or play in open windows. They may put the paint chips in their mouths. Or, they can get paint chips or dust on their hands and toys. They then put these toys and hands in their mouths.

To remove the hazards between the windows:

1. Remove the storm windows/screens.
2. Work on the surfaces only from the **OUTSIDE** of the house while keeping the inside window shut.  
This will keep the dust and paint chips from getting inside the house.

## WINDOWS

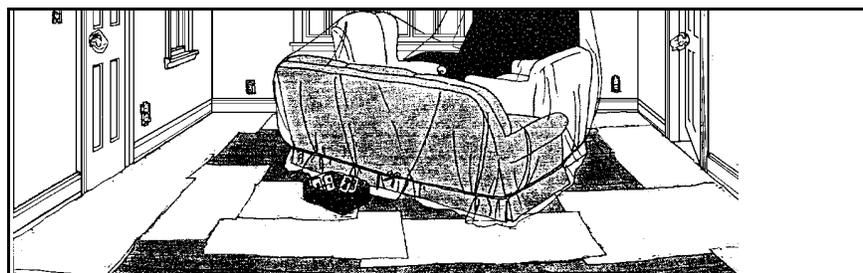
Make sure you remove the chipping and peeling paint from:



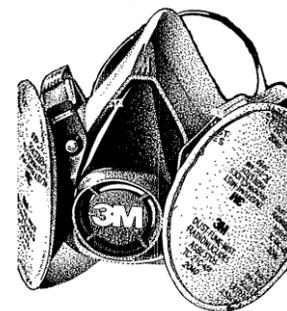
If paint is left in these areas, it can peel or rub away. Then, it falls to the sill where children can find it.

## FOLLOW THESE GUIDELINES

1. Remove lead-based paint carefully! You should **NEVER** dry scrape or dry sand lead-based paint on the inside or outside of your home. **Always mist surfaces with water** before scraping or sanding them. Use a tarp or piece of plastic to catch paint chips when you are working on the outside of your house. This will keep paint chips from falling on the soil. If you are working outside, close windows to prevent lead dust from entering the home.
2. **DO NOT** sandblast or waterblast lead-based paint on the outside of your home. You do not want the paint chips to end up all over your yard or the neighbor's yard. Sandblasting and waterblasting is safe **ONLY** if you have a special machine that will catch the paint chips.
3. Remove furniture, drapes, and if possible, carpet from the room you will work in before starting work. Cover the floor and furniture that cannot be removed from the room with a sheet of 6 mil plastic. Seal each room from the rest of the house with plastic while working in it. Be careful not to track dust and paint chips into other areas of the home.



4. Wear a negative pressure, half-mask respirator with a magenta (purple) HEPA filtration canister. You can buy these respirators at auto parts stores (used for brake and clutch work). The respirator will say “HEPA Filters - Asbestos Approved.” Be sure to read the instructions for positive and negative facefit tests and for cleaning the respirator. If the respirator does not fit properly, it will not protect you. It will also not protect you if it is dirty. These masks do not protect against organic vapors from heat guns or paint strippers. So, use heat guns and paint strippers only where there is good ventilation. This will help disperse any organic vapors from the strippers or from heating the paint.



5. Replace the filters on the respirator if they are damaged. You should also replace them if it gets hard to breathe. This means that the filters are plugging. Wash the facepiece (without the filters) with mild soap. Store the respirator in a bag outside of the work area.
6. If you have asthma, emphysema, or heart problems, do **not** try to wear a respirator. Take off the respirator **immediately** if you feel short of breath. If you have a perforated eardrum that has not been repaired, this respirator will not protect you from inhaling lead dust.
7. If you will be using a heat gun, make sure it is a low-temperature heat gun that operates below 1100° F.
8. Do not eat, drink, or smoke until you have left the work area and thoroughly washed your hands and face. Take a shower, wash your hair, and change clothes before coming in contact with others.
9. Keep pregnant women and children out of the room if you are working on a small project. A small project would be working on only a few surfaces in one room at a time. For larger projects, keep pregnant women and children out of the home until you complete the job.
10. After you complete the job, wash all surfaces thoroughly with any household detergent. Vacuum with a HEPA vacuum or a regular vacuum with microfilter bags. Shampoo carpets using a machine that pumps liquid into the carpet and pulls it back out.
11. Place paint chips, dust, and pieces of wood in a plastic bag at the end of each day. Put this with your garbage that will go to the landfill.



**After you complete work to eliminate lead-based paint hazards, you must** maintain the remaining lead-based paint in good condition. You should also frequently clean the house. Wash floors, window sills, areas between the windows, and other places where dust and dirt accumulate at least once a week. Check the condition of lead-based paint frequently. You need to repair paint when it begins to deteriorate.