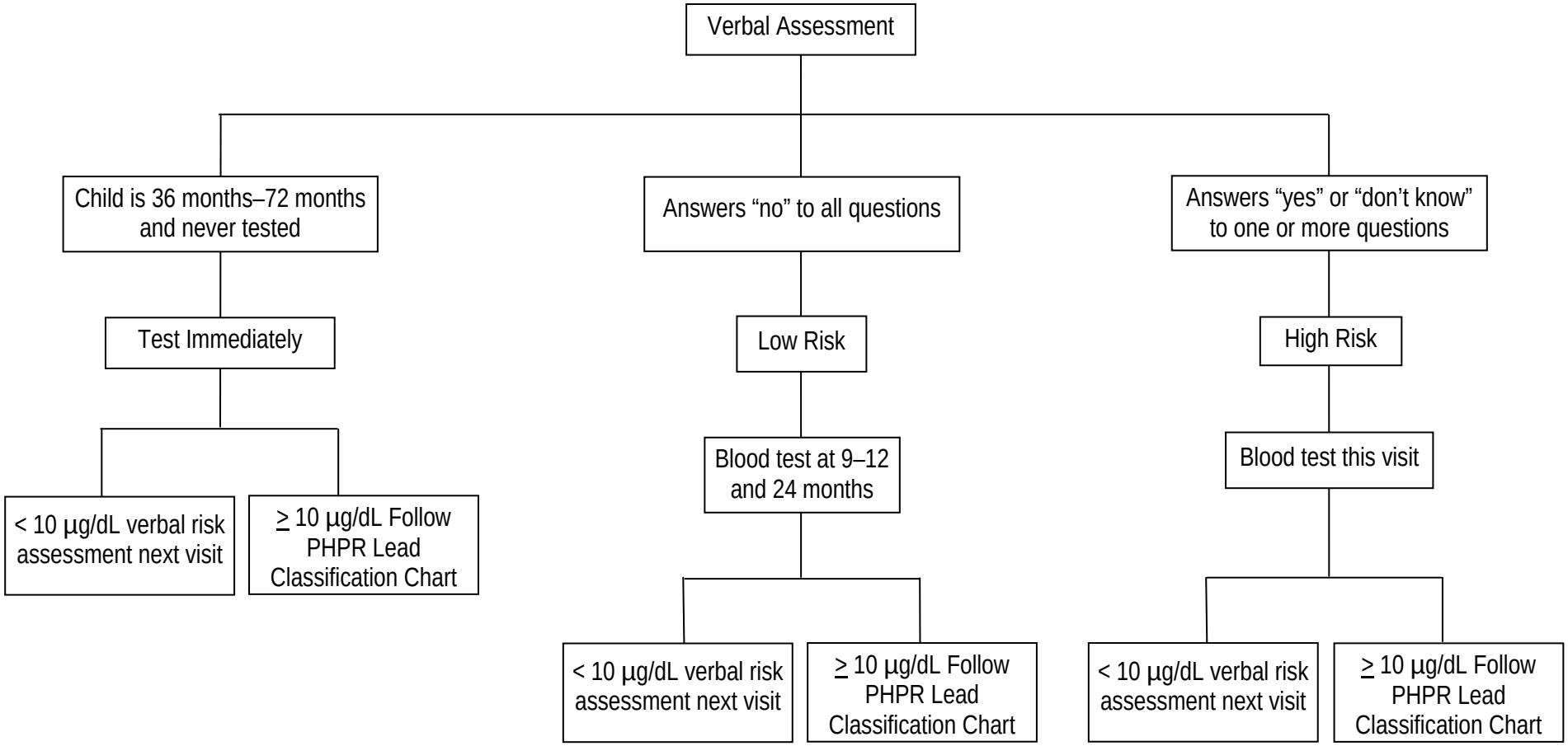
# LEAD SCREENING GUIDELINES*

**(Age 6 Months – 6 Years)**




***Case management required for all children with blood lead levels at or above 10 µg/dL**

# LEAD CLASSIFICATION CHART

| | FINDING/ CONDITION/NEED | ASSESSMENT | INTERVENTIONS | FOLLOW-UP |
|---|---|---|---|---|
| **Blood Lead** | **Class I**<br><10 (µg/dL) | Not considered lead poisoning | • Continue to review risk assessment questions at each preventive health visit up to age 6 with routine blood lead testing at 9–12 and 24 months.<br>• Parent education pamphlet | • Annual blood lead levels once a positive risk factor is identified.<br>• Retest at next periodicity visit if risk factor changes<br>• Routine blood lead level obtained at 1 and 2 years of age and all children 3–6 years of age who have never been screened unless other risk factors are identified. |
| | **Class II A**<br>10–14 (µg/dL) | Level of concern | • Parent education pamphlet<br>• Contact state CLPPP nurse consultant | • Repeat blood lead levels every 12–20 weeks until blood lead level is <10 µg/dL<br>• Case management |
| | **Class II B**<br>15–19 (µg/dL) | 1st specimen at this level<br><br>2nd specimen remaining 15–19 µg/dL range | • Parent education pamphlet<br>• Contact state CLPPP nurse consultant<br>• Nurse and/or local environmentalist may make home visit for visual investigation. | • Repeat blood lead levels every 12 weeks or until level is <10 µg/dL.<br>• Repeat testing as for first 15–19-µg/dL specimen.<br>• Establish a tracking system that assures retesting.<br>• Case management |
| | **Class III**<br>20–44 (µg/dL)<br>Two (2) capillary specimens or one (1) venous specimen in this range or higher confirms diagnosis of lead poisoning. | First capillary specimen at this level.<br><br>First venous specimen or 2nd capillary specimen at this level. | • Parent education pamphlet.<br>• Contact state CLPPP nurse consultant<br>• Medical Nutrition Therapy.<br>• Refer to primary physician for medical evaluation.<br>• Refer to a person certified to perform a risk assessment.<br>• Initial home visit by nurse if confirmed blood lead level is ≥20 | Submit second specimen within one week (if capillary).<br>• Repeat blood lead levels at 1–2 month intervals until:<br>a) Blood lead level is <10 µg/dL for 6 months<br>b) Hazards have been removed and<br>c) There are no new hazards<br>• Case management |
| | **Class IV**<br>45–69 (µg/dL)<br>Two (2) capillary specimens or one (1) venous specimen in this range or higher confirms diagnosis of lead poisoning. | | • Same as Class III, except refer for medical evaluation and possible chelation therapy within 48 hours. | • Submit the second specimen as soon as possible but no later than 48 hours.<br>• During and post chelation, retest monthly until:<br>a) Blood lead level is <10 µg/dL for 6 months<br>b) Hazards have been removed and<br>c) There are no new hazards<br>or as ordered by the physician. |
| | **Class V**<br>70 (µg/dL) & above<br>Two (2) capillary specimens or one (1) venous specimen in this range or higher confirms diagnosis of lead poisoning. | | • Same as Class III, *except refer for medical evaluation immediately while results of confirmatory test are awaited.* | • Submit the second specimen as soon as possible but no later than 48 hours.<br>• During and post chelation, retest monthly until:<br>a) Blood lead level is <10 µg/dL for 6 months<br>b) Hazards have been removed and<br>c) There are no new hazards<br>or as ordered by the physician. |

# LEAD POISONING PREVENTION AND MANAGEMENT

Environmental lead exposure continues to cause harm, particularly to young children and pregnant women. This document offers guidance on the provision of lead screening and follow-up services for children six months to six years of age.

Case management of children with elevated blood lead levels involves the coordination, provision and oversight of services required to reduce levels below a level of concern (below 10 μg/dL). A hallmark of effective case management is ongoing communication with the caregivers and other service providers, and a cooperative approach to solving any problems that may arise during efforts to decrease a child's elevated blood lead level, and eliminate lead hazards in the child's environment.

**Case management** is much more than a simple referral to other service providers. There are 8 components, which should be under the purview of a registered nurse:

- Client identification and outreach
- Individual assessment and diagnosis
- Service planning and resource identification
- The linking of clients to needed services
- Service implementation and coordination
- The monitoring of service delivery
- Advocacy
- Evaluation*

Note: children with elevated blood lead levels become "health department patients" when their cases are brought to the attention of staff, even if they are or have been receiving direct clinical services elsewhere.

**Case closure** is defined according to the initial elevated level of classification (See Lead Classification Chart):

1. Classes II A & B – Level is < 10 μg/dL
2. Classes III, IV, & V – Level is < 10 μg/dL for at least 6 months; environmental hazards have been removed; and there are no new environmental hazards

A case may also be designated as *administrative closure* if all directives as enumerated in the "Followup/Internal Tracking/Referral" section has been completed.

* "*Managing Elevated Blood Lead Levels Among Young Children: Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention" – CDC, 2002*

## 1. VERBAL RISK ASSESSMENT FOR LEAD POISONING

Review each of these questions at each preventive health visit for all children ages 6 months to 6 years.

1. Does child live in or visit a building built before 1978 with peeling/chipping paint or with recent or ongoing remodeling?

2. Does child have a brother/sister/playmate who has or did have lead poisoning?

3. Do you (or a family member) work on a farm; in a bridge, tunnel, or high construction area; with batteries; ammunition, or visit a firing range?

4. Do you use any folk remedies that may contain lead or use pottery or ceramic ware for cooking, eating, or drinking?

Document in the medical record at every visit that the assessment was done, any positive response(s) and action taken:

- If the verbal risk assessment is negative at each visit, a blood lead level test should be routinely done at 9–12 months of age and at 24 months of age.
- A positive or "don't know" answer to any question on the risk assessment will warrant a blood test for lead poisoning beyond the routine periodicity schedule.

## 2. BLOOD LEAD TESTING

Perform a blood lead test for children 9–12 months of age and again at 24 months of age. Additionally, provide a blood lead test for children who present to the health department between 25 and 72 months of age if they have not previously received a blood lead test.

## 3. COMPLETION OF LABORATORY SUBMISSION FORMS

### A. SCREENING

This should be checked for the:

- initial capillary sample; first venous sample
- rescreenings of children with levels <20µg/dL
- and any screening test being repeated due to clot, insufficient quantity, or any other reason the sample could not be analyzed.

### B. CONFIRMATORY

This should be checked for:

- the *second capillary* sample when the first capillary sample was ≥20µg/dL
- venous samples submitted as confirmatory samples after a first capillary sample was ≥20µg/dL and
- confirmatory tests being repeated due to clot, insufficient quantity, or any other reason the sample could not be analyzed.

**C. MEDICAL FOLLOW-UP**

This should be checked for:

- follow-up tests of ALL children who have been previously confirmed to be lead poisoned and
- medical follow-up tests being repeated due to clot, insufficient quantity, or any other reason the sample could not be analyzed.

**NOTE**: If a venipuncture is done as an initial screening and the results are ≥20µg/dL, this is to be considered a confirmed case of lead poisoning. Follow the recommended actions for levels ≥20µg/dL as indicated in the "Protocol for Blood Lead Levels and Follow-Up."

# LEAD MANAGEMENT HOME VISITS

**An initial home visit by a nurse is required for all children receiving services in a health department clinic with a confirmed blood lead levels of 20 µg/dL or above.** An environmental inspector must also visit the child's home, with the nurse if possible, to conduct an environmental assessment to identify sources of lead exposure. Follow-up home visits may additionally be made, at the discretion of the nurse or environmentalist, to monitor the blood lead status of the child and/or to evaluate the home.

Environmental home assessments:

- **The health department nurse is responsible for referring all children receiving services in a health department clinic with a confirmed blood lead level of 20 µg/dL or above to a person certified to perform a risk assessment.**
- A private provider or the parent or guardian may refer children receiving services in the private sector. The health department is also responsible for conducting an environmental assessment for children with a confirmed blood lead level of 20 µg/dL or above, when referred to the health department by a private provider or the parent or guardian.

The home visit by the nurse and the environmental assessment should occur according to the timeframe specified below. Consult the Home Visitation Form in the Forms Section.

| NEED | ASSESSMENT | INTERVENTION/FOLLOW-UP |
|---|---|---|
| Initial home visit:<br><br>• **70 µg/dL and above within 24 hours.**<br><br>• **45–69 µg/dL within 48 hours.**<br><br>• **20–44 µg/dL within 1 week.**<br><br>**2 specimens at a level of 15–19 µg/dL (*may* make home visit and refer to environmentalist)**<br><br>**The initial home visit (home visit other than evaluation and management visit) usually lasts 31 or more minutes.** | Family's awareness of the child being lead poisoned and level of understanding.<br><br>Who is providing primary and acute health care?<br><br>Child's physical status, including behavior problems/changes, nutritional status and specific habits such as placing fingers in mouth or eating dirt or paint chips.<br><br>Home environment: determine whether dwelling was built prior to *1978*, the general condition of the house/apartment and the level of housekeeping/cleanliness. | Inform family of the child's lead status, what lead poisoning is, the effect of lead, and the importance of monitoring blood lead levels at least every 1–2 months or as indicated by physician.<br><br>Assist family in scheduling an appointment for a medical evaluation for lead poisoning and an appointment for preventive health care if indicated.<br><br>Provide health education and referrals, as indicated. Stress importance of high iron, high calcium, low fat diet, and the importance of washing child's hands and toys frequently.<br><br>Explain common sources of lead and ways to immediately reduce exposure such as cleaning with detergent, covering chipping paint with tape or plastic, and restricting child from playing in a hazardous area.<br><br>If an environmentalist is initially unavailable for a visit, tell the family that one should soon come to assess the house for additional potential sources of lead. (A person certified to perform lead risk assessments must make visits in homes with children having blood lead levels of $\geq$ 20 µg/dL) |

# LEAD MANAGEMENT HOME VISIT

(continued)

| NEED | ASSESSMENT | INTERVENTION/FOLLOW-UP |
|---|---|---|
| Follow-up Visit<br><br>(indicated for children not returning to clinic for blood lead monitoring, and children with blood lead levels which remain high, increase or do not decline over time)<br><br>The follow-up visit (other than evaluation and management visit) usually lasts 16–30 minutes. | Family's understanding of lead poisoning.<br><br>Whether appointments are being kept.<br><br>Child's physical status.<br><br>Child's blood lead level status.<br><br>Home environment: determine whether temporary measures are continuing.<br><br>Determine whether permanent measures have occurred/are planned.<br><br>Determine if interim controls may help lower child's lead level. | Reinforce previous health education.<br><br>Stress importance of monitoring blood lead levels every 1–2 months or as ordered by the physician (for confirmed cases, 3–4 months for others 10–19 μg/dL).<br><br>Provide health education and referral, if indicated.<br><br>Collect blood and/or schedule a clinic appointment, if indicated. (Coded "Screening" or "Confirmatory" sample. "Medical Follow-up" if child has been confirmed.)<br><br>Reinforce previous recommendations. Provide education, as indicated.<br><br>Stress importance of workers using safety precautions and appropriate clean-up procedures during abatement. Encourage pregnant women and children to be kept away from work areas. While extensive work is being done, it is preferable to move the family out of the home. |

**Manuals:**

1. *Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials*. (CDC, 1997)
2. *Managing Elevated Blood Lead Levels Among Young Children: Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention*. (CDC, 2002)