# Lead Exposure Resource Guide

## Indiana State Department of Health

# Lead Exposure Resource Guide

**BACKGROUND**

According to the Centers for Disease Control and Prevention (CDC), childhood exposure to lead can result in elevated levels of lead in a child's blood. Elevated levels of lead in a child's blood may have negative and irreversible impacts on the cognitive development of young children, resulting in lower IQ, attention deficit, and other cognitive issues.

Exposure to lead may occur in several ways, including lead-based paint, lead water pipes, environmental contamination, spread from occupational sources, or through a variety of imported products, such as glazed pottery and homeopathic remedies.

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# Lead Exposure Resource Guide

## I. INTRODUCTION

While many steps have been taken over the past several decades to reduce the likelihood of human exposure to lead and lead-containing products, the possibility still exists that public health agencies may face situations where widespread lead exposure has occurred.

Our nation's aging infrastructure, which includes water delivery systems that utilize lead pipes; industrial sites contaminated with lead, both active and closed; imported products such as jewelry, cosmetics, homeopathic medicines, and cookware; and homes built before 1978 that have never undergone testing or remediation for lead based paint, all represent possible hazards for lead exposure.

As such, it is critical that public health agencies maintain the capacity to assess lead exposure and provide appropriate follow-up services through such activities as the operation of blood lead testing clinics, environmental and developmental risk assessments, and case management.

### A. Situation

1. Effects on Children and Fetuses - Exposure to lead can have a wide range of effects on a child's development and behavior. Even low levels of blood lead, including blood lead levels more than 10 micrograms per deciliter (µg/dL), are associated with increased behavioral effects, delayed puberty, and decreases in hearing, cognitive performance, and postnatal growth or height. Pregnant women need to be particularly careful around lead. Lead can pass through the placenta directly to an unborn child. Maternal blood lead levels more than 5 µg/dL are associated with reduced fetal growth. Additional information can be found at https://www.niehs.nih.gov/health/materials/lead_and_your_health_508.pdf.

2. Economic and Societal Impact - Lead exposure also has negative economic and societal effects with direct impacts on lifetime medical costs, schooling costs, teen pregnancy, child abuse, crime, earnings, welfare utilization, and adult health. If the U.S. were able to get all children to a blood lead level at or below 1 µg/dL, the impact would amount to $50,000 per child annually and an overall savings of approximately $1.2 trillion for society as a whole. Additional information can be found at https://jamanetwork.com/journals/jamapediatrics/fullarticle/382153

### B. Purpose

The Indiana State Department of Health (ISDH) Lead and Healthy Homes Program, in coordination with the ISDH Division of Emergency Preparedness, has developed this document to serve as a guide for public health agencies in assessing needs and planning a response to incidences of large-scale lead exposure should they occur. These are likely to include incidents tied to industry exposures (businesses working with lead or leaded

products) and neighborhood exposures (homes located in proximity to a site that caused area-wide lead contamination).

**C. Scope**

The scope of this document focuses on situations in which it is deemed that children or pregnant women may have been exposed to a lead source, possibly on a wide scale, and the actions that should be considered to assess and address the exposure. Specifically, the following activities are included:

- Evaluating whether vulnerable populations may have been exposed to a lead source, and determining who in that population may have elevated blood lead levels as a result.
- Resource and planning considerations as they pertain to the use of testing clinics to collect blood lead samples to assess risk to children and pregnant women
- Roles and responsibilities of public health and other entities in assessing individual risk posed by lead exposure
- Procedural and decision-making processes for managing situations where there are individuals with blood lead levels exceeding recommended action levels and risk assessment and case management may be necessary
- Templates and tools that may be used in conducting the above activities

**D. Assumptions and Limitations**

Every incident will be different based on jurisdiction, resource availability, size of affected population, and other factors, and it is impossible to anticipate every variable that may impact the response to the situation. As such, every plan will inevitably rely upon a number of assumptions and possess a number of limitations.

**1. Assumptions**

- Responsibility for initiating any response lies with the local jurisdiction(s) impacted by an incident.
- The populations at highest risk are young children and pregnant women due to higher vulnerability to the impacts of lead exposure. When messaging and making resource decisions, these are the populations that should be prioritized.
- Local jurisdictions will first utilize their own resources to respond to any incident prior to requesting resource support from the state or another jurisdiction.

**2. Limitations**

- All planning requires flexibility. The needs of a specific population or community must be considered when planning the response.

- This document merely serves as a guide and should not limit the users' thoughts about what elements, considerations, or actions might be appropriate.
- The capabilities and resources of every jurisdiction vary, as does the ability of each jurisdiction to fully address the issues identified in the responsibilities section.
- The nature of the source of lead exposure, such as contaminated soil or occupational exposure, may influence the approach to the response.

## II. AUTHORITIES

Below are applicable federal, state, and local regulations that establish the statutory authority to carry out the governmental functions identified within this document. The list is not intended to be a comprehensive listing of all statutes and regulations that may impact the activities addressed within this document.

### A. Federal

***Toxic Substances Control Act of 1976***. Provides EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures.

***Lead-Based Paint Poisoning Prevention in Certain Residential Structures 40 CFR Part 745.*** Phases in requirements regarding lead renovation, repair, and painting. Requires contractors and renovators who work in pre-1978 housing and child-occupied facilities must be certified follow specific work practices to prevent lead contamination. The rule also sets forth requirements for training, certifying, and accrediting providers of renovation, including renovators, renovation workers, and dust sampling technicians.

- Residential Lead-Based Paint Disclosure Program (Section 1018 of Title X)
- Residential Hazard Standards for Lead in Paint, Dust and Soil (TSCA Section 403)

***United States Department of Homeland Security, National Incident Management System (NIMS), December 2008.*** Provides background information regarding NIMS, including a detailed explanation of the core set of concepts and principles that comprise the program.

***National Response Framework (NRF), January 2008.*** Presents the guiding principles that enable all response partners to prepare for and provide a unified response to national disasters and emergencies.

### B. State

***Indiana Code 16-19-3.*** Gives ISDH the authority to act to protect the health and lives of Indiana residents. The code also gives this department "all powers necessary to fulfill the duties prescribed in the statutes and to bring action in the courts for the enforcement of the health laws and health rules."

***Indiana Code 16-41-39.4*** Grants the ISDH statutory authority to adopt rules for case management of a child with an elevated blood lead level.

***Indiana Lead Rule 410 IAC 29. Reporting, Monitoring, and Preventive Procedures for Lead Poisoning.*** Indiana Administrative Code regarding lead poisoning with the following select references:

- 410 IAC 29-1-4: Case management – the process of providing, overseeing, and coordinating lead poisoning services
- 410 IAC 29-1-5: Case manager – a person authorized by a health department and trained by the ISDH to perform case management protocols
- 410 IAC 29-1-6: Case management implementation and coordination – Overview of all actions for various levels of blood lead levels. Implementation of case management for confirmed elevated blood levels of ten (10) µg/dL or greater
- 410 IAC 29-1-11: Confirmed elevated blood lead level defined as ten (10) µg/dL or higher that has been verified by a confirmed blood lead test.
- 410 IAC 29-2-1: Local health officers shall ensure the provision of case management to all children under seven (7) years of age in their jurisdiction. Child case management includes: outreach and identification of children with elevated blood lead levels (EBLL), service planning and resource identification, service implementation and coordination, retesting, monitoring of child case management service delivery, program advocacy, and program evaluation
- 410 IAC 29-4-1: Local health officer may enter and inspect private property, at proper times after due notice, in regard to the possible presence, source, and cause of lead poisoning and lead hazards. Local health officer may order what is reasonable and necessary to prevent lead poisoning or remediate lead hazards. Remediation shall be followed by a clearance examination conducted by the local health officer or his or her designee.

***Indiana Lead Rule 410 IAC 32. Lead-Based Paint Program.*** Indiana Administrative Code regarding lead rules in paint.

***Indiana Public Water Supply 327 IAC 8.*** Indiana Administrative Code regarding drinking water, to include standards on lead and role of the Indiana Department of Environmental Management in regards to public water supplies.

***IC 10-14-3. Emergency Management and Disaster Law.*** Establishes and coordinates local emergency management programs and provides information regarding the disaster declaration process, emergency planning, and other pertinent requirements for public safety programs.

### C. Local

***Local Emergency Management Ordinances.*** Local Emergency Management (EM) Ordinances are an extension of **Indiana Code 10-14-3,** at the local jurisdictional level. These local statutes describe additional jurisdictional-specific or area-specific requirements that state law does not address. The Local EM Ordinances also provide the local emergency management director with the authority to act before, during, and after an emergency or disaster, and define the necessary requirements for establishing and maintaining an effective emergency management and public safety program for a given jurisdiction.

## III. ASSESSMENT AND RESPONSE PLANNING

Because the actual process of developing a plan is relatively simple compared to the process of responding to a particular disaster, the information below is straightforward. More comprehensive examples of a concept of operations may be found in documents such as the State Comprehensive Emergency Management Plan (CEMP) or ISDH Emergency Operations Framework (EOF).

### A. Roles and Responsibilities

This section identifies the roles and responsibilities of the individuals charged with executing the plan. These can be responsibilities of organizations as a whole or individuals.
The following presents the organizational and individual responsibilities as they pertain to this document:

Federal

- *United States Environmental Protection Agency (EPA):* Oversees environmental hazard response and prevention for the federal government.
- *Agency for Toxic Substances and Disease Registry (ATSDR):* Responds to exposure to natural and man-made hazardous substances by investigating emerging environmental health threats; conducting research on the health impacts of hazardous waste sites; and building capacity at the state and local health department levels.

State

- *Indiana State Department of Health (ISDH)*: Coordination of lead testing and follow-up both of children and in homes
- *Family and Social Services Administration (FSSA):* Assist in locating children and families on Medicaid in the affected area, enrolling residents in Medicaid, assisting local health departments in enrolling as Medicaid providers
- *Indiana Department of Environmental Management (IDEM):* Coordination of water and soil lead testing at residential and commercial locations

*Indiana Department of Education (DOE):* Assist in connecting school and district administrators with county-led response efforts.

Local

*Local Health Department:* The local health officer is responsible for ensuring proper case management is in place for children with an EBLL. Case management includes:

1. Outreach and identification of children with an EBLL
2. Case management service planning and resource identification
3. Confirmatory testing
4. Case management service implementation and coordination
5. Retesting
6. Monitoring of case management service delivery, advocacy, and evaluation
   - *Mayor's Office/County Council:* Promote communication of issue and response, provide access to city or county services and facilities as needed
   - *Emergency Response Agency*: Provide general resource support and coordination in response to county emergencies and other incidents impacting public safety
   - *Township Trustee*: Administrator of emergency assistance within their township. Also responsible for oversight and care for low-income individuals.

**B. Planning Considerations**

The following questions will help local health department (LHD) staff develop a comprehensive understanding of the situation and include the right parties:

- When can a call be scheduled with the state and/or federal agencies involved to get a full rundown of the situation?
- Have residents already been notified about either the testing plan, tested levels in their homes, or risk to them?
- Have local officials been notified, and does everyone support the response plan?
- Do individuals at the county, city, or community level have some knowledge of this issue already?
- Does the LHD have a response plan for this kind of event already in place?
- Which community partners could assist in coordinating delivery of a blood lead testing clinic?
- Is support needed to conduct environmental assessments in homes of families with EBLLs? Which state agency or agencies are aware of this issue? Is the Governor's office aware?

- Who lives in the affected area? (Demographic information around number of households, number with children under 7 years of age or pregnant women, languages spoken, and average household education/income)
- How is contamination being defined in this situation? What data is available to support that this level of contamination is dangerous?
- What is the source of the contamination? Does the contamination come from an occupational setting, a contaminated property, a source within the home?
- If contamination is tied to an employer or the contamination is confirmed inside or outside industry, what efforts have IDEM, OSHA, or the LHD undertaken to monitor or inspect?
- If contamination is tied to the site of a former plant or employer, has a responsible party been found liable for costs associated with response and remediation?
- Are children or pregnant women living in the contaminated area currently in case management by the LHD for an EBLL?
- Does the situation require immediate or urgent testing of children and pregnant women for EBLLs?
- Have any state agencies coordinated with federal agencies on this site?
- Do any data-sharing agreements or memoranda of understanding need to be executed with federal partners to obtain information about the site?
- Is this site contamination currently being addressed by EPA, or are there plans in place to address contamination at the site?
- Who has a complete inventory of the addresses of homes, businesses, schools and churches in the affected area?
- Are other sites nearby currently being investigated and may warrant inclusion in response efforts?

**C. Clinic Planning**

Most jurisdictions already maintain and exercise plans and have identified staff and volunteers for the operation of medical countermeasure Points of Dispensing (POD) and vaccine clinics. These existing plans may be used, often with minimal modification, to conduct blood lead testing clinics. Below are some unique considerations for the set-up and operation of blood lead clinics.

**1. Testing Method**

One of the first items to consider is the type of blood draw that can be accommodated at a clinic. In Indiana, blood lead levels can be confirmed either through a venous blood draw or through two consecutive capillary blood draws. Below are some of the advantages and disadvantages to both methods.

Venous

Advantages:

- Local health department staff do not have to obtain a second, confirmatory test for initial elevated blood lead levels.
- If a child or parent refuses a venous draw, capillary draws can be used as a backup with relative ease.
- Nearly all venous samples that are properly labeled are adequate for laboratory analysis.

Disadvantages:

- Venous draws on children require special training and skill. Getting enough support from medical personnel with this ability can be a challenge.
- Supplies for a venous clinic are more expensive.
- Transportation of samples back to ISDH laboratory can be more expensive (this can be mitigated if someone is willing to drive samples back to the ISDH laboratory).

Capillary

Advantages:

- Capillary specimens are easy to draw, and any medical staff should feel comfortable collecting them.
- Quicker draw time allows for more patients per hour.
- Testing supplies are available through the ISDH Lead and Healthy Homes Program.

Disadvantages:

- Must identify dedicated space and time to allow samples to dry prior to sending in for testing.
- Confirming EBLL requires resident to come back for a second, confirmatory test.
- Patient may not have enough free-flowing blood from finger prick to get sufficient sample.

**2. Clinic Location**

The location for any clinic should depend on several factors, including proximity to affected region, clinic frequency, layout, availability, and cost. LHD staff should plan to do a walk-through of the location prior to decide on clinic type, dates, and other key details. Other considerations include:

a) Proximity: Any location more than one mile away from the site will require transportation support for some families.
b) Frequency: Can a single location accommodate hosting multiple clinics at various dates/times, including evenings and weekends, or will this require multiple sites?
c) Layout: Using the sample layout provided on page 1 of Appendix B, does the location have adequate space and flow for visitors and staff to move throughout the room?
d) Availability: Is the facility open to the public during the proposed clinic hours, and will any staffing support from the host location be necessary?

e) Cost: If there is a charge for using the facility, could it be waived? If not, does the LHD have funds to help cover the cost? Are there no-cost options like a local WIC clinic or Head Start office that might be a consideration?
f) Structure: Is a temporary location like a tent appropriate, or would a permanent structure like a building be more suitable?
g) Is the location accessible to those with disabilities and compliant with the Americans with Disabilities Act?

**3. Clinic Scheduling**

When determining the number of clinics necessary and the days/hours those clinics need to be accessible, please consider the following:

a) What is the availability of the facility identified as the clinic location?
b) What hours are staff and volunteers able to provide support?
c) How many clinics will need to be hosted to ensure that the entire target population has an opportunity to come?
d) Are evening or weekend hours necessary to secure participation from families with working parents?
e) If the issue is tied to an employer, how many shifts does the site run? Can the clinic times/dates be scheduled to accommodate all shifts?

**4. Clinic Access and Transportation**

If a clinic location is not within walking distance of the affected community, or if you expect inclement weather, transportation should be an option. When planning for transportation, please consider:

a) Transportation support options:
   - Non-profits
   - Churches
   - Taxi/Lyft/Uber
   - Local health department
   - Employer (affected site)
   - City resources

b) Transportation considerations:
   - Liability protection
   - Vehicle availability and safety
   - Drop-off/pick-up points
   - Driver compensation (gas, mileage, time)
   - Rider Charges

When determining clinic staffing needs, please recognize that there will be a need for both medically trained staff and for non-medical staff. Ideally, one point person should be designated to handle any issues that come up either with volunteers or families.

Additionally, there may be a need (based on community demographics) for a bilingual resource to help families understand and navigate the process.

Individuals familiar with drawing blood from pediatric patients can typically handle four patients per hour, assuming they have support from an assistant at the station. If that assistant also has medical training, the process tends to run more smoothly.

EXAMPLE: Using the sample venous clinic layout provided on page 1 of Appendix B, the following staff would be needed:

- 4 healthcare professionals/phlebotomists – may be nurses, paramedics, medical tech, lab tech, phlebotomists, or others trained in pediatric venipuncture
- 2 staff for registration (best place for bilingual resources)
- 4 assistants/comfort staff (1 per station)
- 2 logistics staff
- 1 healthcare professional/PH nurse for recovery area
- 1 clinic manager

**Note: Ideal staff members would be obtained from local hospitals, local health departments, local medical offices, ISDH, and preparedness districts**

It's also important to clarify for all staff or volunteers, in advance, whether or not reimbursement or pay will be available for any of their time, travel, or expense in supporting the clinic.

Utilizing the Incident Command System (ICS) to manage clinic operations is an effective way to ensure the clinic runs smoothly. See page 5 of Appendix B for an example of an ICS structure for managing clinic operations.

**5. Clinic Registration**

Clinic registration is likely to get the most questions about what testing is, who needs it, and who doesn't. It's critical to ensure that bilingual staff are available at registration to help guide non-English speakers through the process and secure necessary release forms. Registration is also most likely to get media inquiring about videography and interviews, so it's important to keep the clinic coordinator nearby to ensure no video or pictures are taken inside the clinic while patients are present and that requests for interviews or comments are handled appropriately. Finally, it is important to handle all documents and patient information in a manner consistent with guidelines established by HIPAA.

<u>Sample Forms</u>

- See page 3 of Appendix B for a sample Blood Lead testing release form.
- See Page 4 of Appendix B for a sample Clinic Cover Letter that can be used during canvassing or awareness campaigns.

6. **Equipment and Supplies**
   Supply and equipment needs will vary depending on the type of clinic planned, as well as the layout and location of the clinic. Prior to ordering supplies, local health department staff should check the ISDH website at http://www.in.gov/isdh/19144.htm for a list of screening and shipping supplies that can be provided at no cost. A sample testing clinic supply list can be found in on page 2 of Appendix B

**D. Public Information and Messaging**

Accurate and timely public information and messaging are key to the success of any response operation. Most jurisdictions maintain a Crisis Emergency Risk Communications (CERC) plan for communicating with the public and media during such times. CERC plans identify the process by which a jurisdiction coordinates its messaging among partners, specify who within a jurisdiction is responsible for distributing information, and determine the methods by which information is broadcast. The following should be considered in the development and broadcasting of information to the public regarding the situation and response activities.

1. **Roles and Coordination**
   a) If a jurisdiction does not have or does not intend to use a pre-identified spokesperson, an individual who can speak in public and to the media on behalf of the jurisdiction should be identified.
   b) A primary point of contact for inquiries related to messaging and public information also should be identified to ensure that a standard process for responding to questions and developing messages is utilized.
   c) A Public Information Officer (PIO) should be identified who can coordinate the development and distribution of public information and messaging. This position may also serve as the point of contact and spokesperson. However, as incidents expand, the jurisdiction may want to consider assigning additional personnel to these roles.
   d) During large incidents, jurisdictions may consider the use of a Joint Information Center (JIC) to coordinate messaging and the release of public information among multiple agencies.

2. **Message Development**
   a) When developing content for messages, content should be presented at a 5$^{th}$ grade reading level. Avoid jargon and unfamiliar acronyms.
   b) Messaging should clearly explain the situation and include information pertaining to:
      - The circumstances that lead to the situation and why it is of concern
      - The jurisdiction and agency leading the response to the incident
      - What actions are being taken to address concerns related to the situation
      - Actions the public can take to reduce risks posed by the situation

- The primary audience for whom the message is intended

c) Ensure that messaging reaches all languages and literacy levels. Translate materials into languages that may be prevalent among the impacted population and consider the use of drawings or other visual aids to explain messaging.
d) When messaging the need and options for obtaining a blood lead test, such as while promoting a testing clinic, emphasize that testing efforts are focused on children under 7 years of age and pregnant women due to their heightened vulnerability to lead exposure.
e) Use the term "elevated blood lead level" rather than "lead poisoning" in your messaging.
f) Explain how lead exposure can impact vulnerable populations and what steps are taken if an elevated blood lead level is detected.
g) Local jurisdictions may request support from the ISDH Lead and Healthy Homes Division or Office of Public Affairs in developing message content or obtaining translation services.

**3. Message Distribution**

a) Consider the unique characteristics and demographics of the target population in determining how messaging will be broadcast.
b) If the individuals or geographic areas impacted by the situation are well defined, it may be useful to use distribution methods that focus messaging on those individuals, such as canvassing door to door, or sending messages by U.S. mail if addresses are available.
c) Consider enlisting both traditional media and social media platforms if messaging is intended for a large group of people.
d) Ensure that all messaging going to large audiences clearly defines the geographical areas and populations impacted so as not to create concern among those not impacted.
e) During public information and messaging efforts, allow ample time for content review and approval at the state and local levels. Ensure that residents have enough advance notice so that they can plan accordingly to utilize services being offered.

## E. Resources

This section provides an overview of the resources that will be required to execute the tasks identified within the plan. If resources are required that are not currently available or must be procured at the time of an incident through purchase or other partners, the jurisdiction should begin by contacting the ISDH Lead and Healthy Homes Program.

The following is a list of resources that can help jumpstart response efforts and quickly clarify Indiana policy relative to lead response and management:

- Summary of Case Management Requirements from 410 IAC 29 (see page 1 of Appendix A)

- Lead Screening Flowchart (see page 4 of Appendix A)
- ISDH Lead and Healthy Homes Website: http://www.in.gov/isdh/26550.htm
- Centers for Disease Control and Prevention (CDC) lead website: https://www.cdc.gov/nceh/lead/
- EPA lead website: https://www.epa.gov/lead
- EPA emergency response site list: https://response.epa.gov/

# APPENDIX A

## Lead Screening Requirements and Medical Management Recommendations

## 410 IAC 29-2-1 Indiana Administrative Code Summary

Overview: This rule restates the Local Health Officer responsibilities to ensure proper steps for case management of a child with an elevated blood lead level.

Case Management duties include:

1. Outreach and identification children with an EBLL
2. Child case management service planning and resource identification
3. Confirmatory testing
4. Child case management service implementation and coordination
5. Retesting
6. Monitoring of child case management service delivery, program advocacy, and program evaluation

LHD Role:

*"The Local Health Officer shall ensure the provision of case management*"

- Implement child case management services
- Notify child's primary medical provider
- Visit child's residence (and other sites where the child spends a significant amount of time)
- Ensure retesting
- Provide continuing child case management services until case closure

Target populations:

An "at-risk" child is one who:

1. Lives in or regularly visits a house or other structure built before 1978
2. Has a sibling or playmate who currently has, or had, an EBLL
3. Has frequent contact with an adult who works in an industry or has a hobby that uses lead
4. Is an immigrant, refugee, or has recently lived abroad
5. Is a member of a minority group
6. Is a Medicaid recipient
7. Uses medicines or cosmetics containing lead
8. Lives in a geographic area that increases the child's probability of exposure to lead

Medical Management:
Requirement: Hoosier Healthwise/HIP 2.0 requires all children to be tested (at 1 and 2 years of age, and 3-6 years if never tested before-*regardless of their risk factors!* *See medical management (rainbow chart) for details

Confirmatory testing:
A confirmed elevated blood lead level (CEBLL) is defined as:
–The initial test was a venous test

–The initial test was a capillary test, and was followed by a venous (preferred) or a capillary test within the recommended time frames (see Rainbow Chart).
*All tests must be retested with in the timeframes indicated on the medical management (rainbow) chart
LHD Risk Assessments:

1. Local health officers may enter upon and inspect private property, at proper times, after due notice (owner and residents), in regard to the possible presence, source, and cause of elevated blood lead levels and lead hazards (licensed risk assessor).

2. Risk assessor will identify hazards and provide a written report to property owner within five days of receiving sample results.

3. LHDs may order what is reasonable and necessary to prevent elevated blood lead levels or remediate lead hazards. Property owner has 180 days to remediate hazards.

4. All remediation of lead hazards shall be followed by a clearance examination (completed by a licensed risk assessor).

Reporting requirements:

- All results must be reported to ISDH within ONE week of testing!
- The results must include at least the following:
  - Name, date of birth, gender, race, ethnicity, address, guardian name and phone number, test date, sample type, result, physician or specimen submitter, and testing laboratory.

Case Closure:
1. Case Complete
-The child has at least two consecutive confirmed tests less than 10µg/dL at least six (6) months apart, AND
-Environmental lead hazards have been remediated and passed a dust clearance test, OR

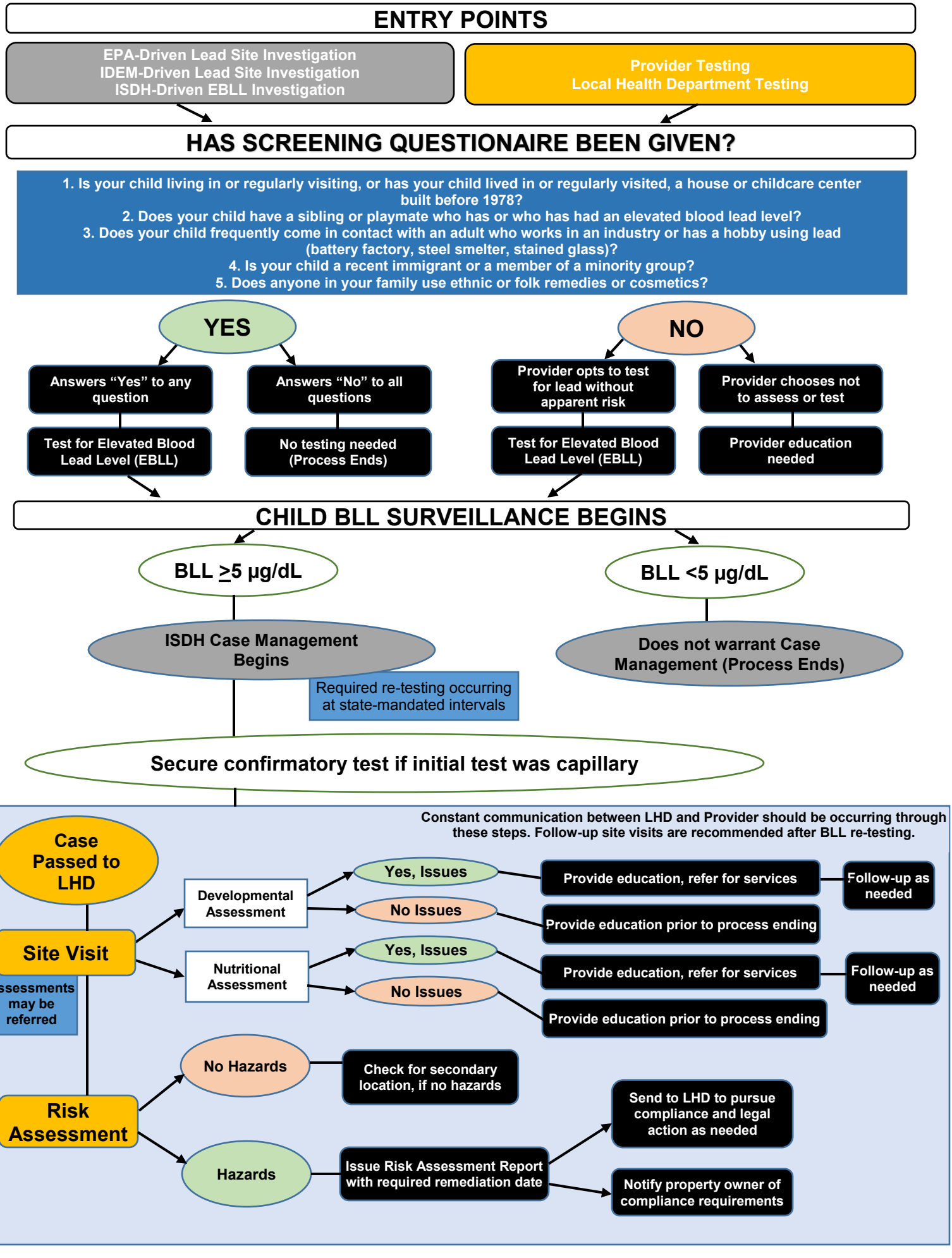
-Environmental case remains open until the lead hazards have been remediated and passed clearance, AND
-Referrals have been made for long-term medical, developmental, environmental and follow up.

2. Administratively Closed
-The child moves to another state (referral*)
-The child moves to another county in Indiana (referral*)
-The child reaches his/her 7th birthday (referral*)
-Case management is blocked for religious or legal reasons
-Death of the child
-The child can no longer be located (four documented attempts and one repeat)

Attempt can include:

1. At least one telephone call to parent or guardian, or
2. At least one letter to parent or guardian, or
3. Certified letter to parent or guardian, or
4. Home visit attempt to last known residence

# Appendix A


ENTRY POINTS
EPA-Driven Lead Site Investigation
IDEM-Driven Lead Site Investigation
ISDH-Driven EBLL Investigation
Provider Testing
Local Health Department Testing
HAS SCREENING QUESTIONAIRE BEEN GIVEN?
1. Is your child living in or regularly visiting, or has your child lived in or regularly visited, a house or childcare center built before 1978?
2. Does your child have a sibling or playmate who has or who has had an elevated blood lead level?
3. Does your child frequently come in contact with an adult who works in an industry or has a hobby using lead (battery factory, steel smelter, stained glass)?
4. Is your child a recent immigrant or a member of a minority group?
5. Does anyone in your family use ethnic or folk remedies or cosmetics?
YES
Answers "Yes" to any question
Answers "No" to all questions
Test for Elevated Blood Lead Level (EBLL)
No testing needed (Process Ends)
NO
Provider opts to test for lead without apparent risk
Provider chooses not to assess or test
Test for Elevated Blood Lead Level (EBLL)
Provider education needed
CHILD BLL SURVEILLANCE BEGINS
BLL ≥5 µg/dL
BLL <5 µg/dL
ISDH Case Management Begins
Does not warrant Case Management (Process Ends)
Required re-testing occurring at state-mandated intervals
Secure confirmatory test if initial test was capillary
Constant communication between LHD and Provider should be occurring through these steps. Follow-up site visits are recommended after BLL re-testing.
Case Passed to LHD
Site Visit
Assessments may be referred
Developmental Assessment
Yes, Issues
No Issues
Provide education, refer for services
Follow-up as needed
Provide education prior to process ending
Nutritional Assessment
Yes, Issues
No Issues
Provide education, refer for services
Follow-up as needed
Provide education prior to process ending
Risk Assessment
No Hazards
Check for secondary location, if no hazards
Hazards
Issue Risk Assessment Report with required remediation date
Send to LHD to pursue compliance and legal action as needed
Notify property owner of compliance requirements

Indiana State Department of Health

Lead and Healthy Homes Division (ILHHD)

**LEAD SCREENING REQUIREMENTS and MEDICAL MANAGEMENT RECOMMENDATIONS**
**For children ages 6 months to 84 months**

**RISK FACTORS ASSESSMENT QUESTIONNAIRE**

*- - - ask at **each** well child visit - - -*

1. Is your child living in or regularly visiting, or has your child lived in or regularly visited, a house or child care center built before 1978?
2. Does your child have a sibling or playmate who has or who has had an elevated blood lead level?
3. Does your child frequently come in contact with an adult who works in an industry or has a hobby using lead (battery factory, steel smelter, stained glass)?
4. Is your child a recent immigrant or a member of a minority group?
5. Does anyone in your family use ethnic or folk remedies or cosmetics?

**If the answer is YES or UNKNOWN to any of the questions, a blood lead test is necessary!**

**HOOSIER HEALTHWISE**

**Test all children at 1 and 2 years of age, and children 3 to 6 years of age if never tested *regardless of their risk factors*!**

**IT IS A FEDERAL REQUIREMENT**

| Blood Lead Levels (BLL) | Recommended Medical and Case Management Actions | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Confirmatory Blood Lead Test (A) | Hospitalization | Chelation Therapy (B) | Blood Lead Level Retest | Referrals (C) | History and Physical (D) | Elevated BLL Education (E) | Reducing Exposure and Absorption (F) |
| 0-9.9 µg/dL | No | No | No | within 6 months if BLL ≥ 5 µg/dL | No | No | YES | YES |
| 10-19.9 µg/dL | within 1 months, venous or capillary | No | No | see ***Retest Chart*** below | YES | YES | YES | YES |
| 20-44.9 µg/dL | within 1 month, venous or capillary | | | | | | | |
| 45-59.9 µg/dL | within 48 hours, venous or capillary | No, if home is lead-safe | YES | see ***Retest Chart*** below | YES | YES | YES | YES |
| 60-69.9 µg/dL | within 24 hours, venous or capillary | | | | | | | |
| ≥ 70 µg/dL | Immediate emergency lab test, venous only | YES MEDICAL EMERGENCY | YES | see ***Retest Chart*** below | YES | YES | YES | YES |

THERE IS NO SAFE LEVEL OF LEAD– DAMAGE CAUSED BY AN ELEVATED BLOOD LEAD LEVEL IS ***PERMANENT AND IRREVERSIBLE***!

## Explanation of Recommended Medical and Case Management Actions

(A) **Confirmatory blood lead test**: 2 consecutive capillary blood lead tests, not more than 12 weeks apart, OR, single venous blood lead test

(B) **Chelation Therapy**: if chelation therapy is indicated, the child should be immediately removed from the hazardous environment until it is made lead-safe; however, if the home is already lead-safe, the child may remain in the home unless hospitalization is indicated

(C) **Referrals**: contact local health department and/or LHHD to assist in case management and environmental investigations

(D) **History and physical**: take medical, environmental, and nutritional histories; test for anemia and iron deficiency; assess neurological, psychosocial, and language development; screen all siblings under age 7; evaluate risk of other family members, especially pregnant/lactating women

(E) **EBLL (Elevated Blood Lead Level) education**: discuss sources, effects of lead, and hazards associated with living in/or renovating a pre-1978 home, during prenatal care and well child care at 3, 6, and 12 months; explain what blood lead levels mean; contact LHHD for materials

(F) **Reducing exposure and absorption: discuss damp cleaning to remove lead dust on surfaces; eliminating access to deteriorating lead paint surfaces, and ensuring regular meals which are low in fat and rich in calcium and iron; contact LHHP for materials**

## Retest Chart

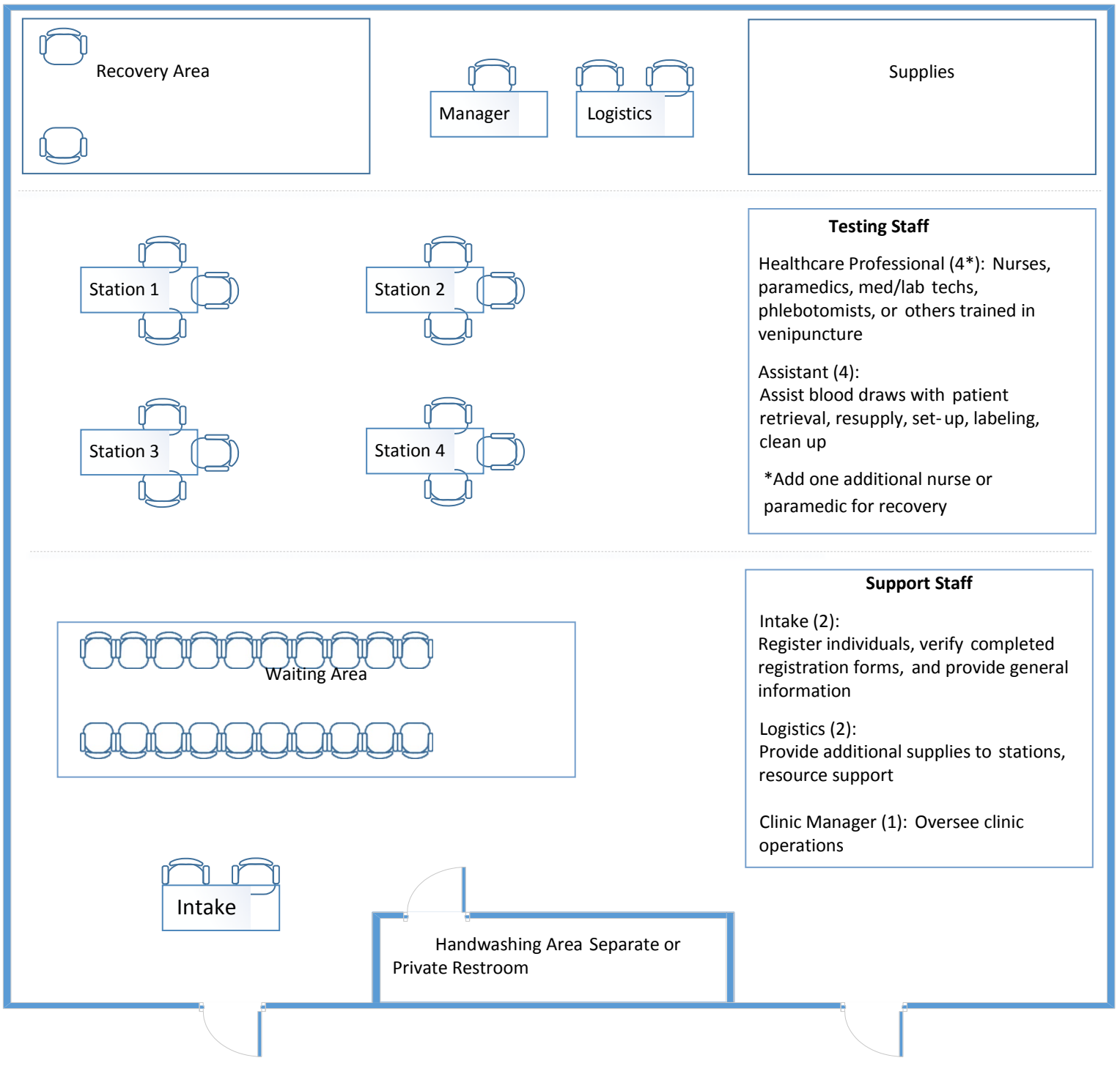
Use this chart to determine when to retest children who are *confirmed with elevated blood lead levels.*
Venous testing is **strongly preferred**, but capillary testing is acceptable.

| If the child's last confirmed BLL was… | Test the child again within… |
|---|---|
| 0-9.9 µg/dL | 6 months |
| 10-19.9 µg/dL | 3 months |
| 20-44.9 µg/dL | 1 month |
| ≥ 45 µg/dL | 1 month after chelation therapy, venous method only |

A child with an elevated blood lead level will most likely not have his/her level reduced to zero; however, this retesting schedule should be followed regardless of the BLL to ensure the level is decreasing rather than remaining the same or increasing, which would indicate continued exposure. Retesting should occur until the blood lead level is ≤ 5 µg/dL for six months, all lead hazards have been removed, housing is made lead-safe, and no new exposure exists.

# APPENDIX B

## Blood Lead Testing Clinic Resources


Recovery Area
Manager
Logistics
Supplies
Station 1
Station 2
Station 3
Station 4
Testing Staff
Healthcare Professional (4*): Nurses, paramedics, med/lab techs, phlebotomists, or others trained in venipuncture
Assistant (4):
Assist blood draws with patient retrieval, resupply, set-up, labeling, clean up
*Add one additional nurse or paramedic for recovery
Support Staff
Intake (2):
Register individuals, verify completed registration forms, and provide general information
Logistics (2):
Provide additional supplies to stations, resource support
Clinic Manager (1): Oversee clinic operations
Waiting Area
Intake
Handwashing Area Separate or Private Restroom

| Supplies and Equipment for Blood Lead Clinic - (based on 250 patients) | | |
|---|---|---|
| **Item** | **Size** | **Quantity** |
| **Testing Supplies** | | |
| *Venous Sample Collection* | | |
| Tourniquets | 1" | 2 boxes, 250 per box |
| Blood Collection Set w/ Holder | 23G x 3/4 x 7" | 250 |
| EDTA lavender blood collection tubes | 3 ml | 250 |
| *Capillary Sample Collection* | | |
| Lancets | NA | 100 |
| Spot Saver Card | NA | 100 |
| Drying Rack | NA | 10 |
| **General Supplies** | | |
| Alcohol pads | medium | 6 boxes, 50 per box |
| Band-Aids | Regular | 300 each |
| Gauze | 2x2 12ply | 600 each |
| Sharps Container | 1 gallon | 6 each |
| Underpad | 23"x36" | 100 each |
| Nitrile Exam Gloves | Medium | 4 boxes, 100 per box |
| Nitrile Exam Gloves | Large | 1 box, 100 per box |
| Bio-hazard bags | 7-10 gallon | 20 each |
| Hand sanitizer | 8 oz | 6 each |
| Trash cans | small | 10 each |
| Trash bags | 7-10 gallon | 20 each |
| Paper towels | rolls | 6 each |
| Tissues | box | 6 each |
| Appropriate supplies for shipping/mailing/transporting specimens | | |
| **Office Supplies/Equipment** | | |
| Dispensing bins | N/A | 10 each |
| Ink Pens | N/A | 2 boxes, 12 per box |
| Clipboards | N/A | 10 each |
| File folders | N/A | 10 each |
| Tables/folding tables | 6 ft. | 10 |
| Chairs/folding chairs | NA | 30 |

Indiana State Department of Health (ISDH)

Consent for Blood Lead Level Screening and Confirmatory Testing

Please complete this form for each person testing, sign and bring it with you. Testing is free and voluntary.

Section 1: Client Information – Please print clearly and fully complete a form for EACH person who will be tested.

| Client Name: FIRST | M.I. | LAST | GRADE: |
|---|---|---|---|
| | | | |

| Date of Birth: ____/____/____ | Sex: F ☐ M ☐ | Pregnant or nursing?: YES NO Trimester? | Race: ☐ Black or African American ☐ White ☐ Multi-racial ☐ Asian ☐ American Indian/Alaskan Native ☐ Other | Hispanic Ethnicity: ☐ Hispanic or Latino ☐ Not Hispanic or ☐ ino Unknown |
|---|---|---|---|---|

| Current address: Street:_____ City:_____ State:_____ Zip Code:_____ How long lived at this address? _____months _____years What school do you attend? _____ | Previous address: Street:_____ City:_____ State:_____ Zip Code:_____ How long at previous address? _____months _____years Where do you work? _____ | Phone: (____)_____ E-mail:_____ Send Results to (Mailing Address): Street:_____ City:_____ State:_____ Zip Code:_____ |
|---|---|---|

| Parent/Guardian Name Last:_____ First:_____ Relationship to Child:_____ | Insurance Type: ☐ Medicaid ☐ Private Ins. ☐ Medicaid #_____ ☐ No Insurance ☐ Medicare |
|---|---|

Section 2: Consent for Blood Lead Level Screening and Confirmatory Testing: By signing below, I attest that I: (1) have read and understand this form and accompanying cover letter; (2) have been provided an opportunity to ask questions; and (3) consent to blood lead level screening for myself and/or my minor child. I understand that all information provided by me is confidential. The federal HIPAA regulations permit ISDH to share my results with the Delaware County Health Department, Centers for Disease Control, and other public health agencies in a confidential manner (45 C.F.R. § 164.512), as well as to use or disclose my information for treatment, payment and health care operations without authorization (45 C.F.R. § 164.506). I understand that my consent for blood lead level and confirmatory testing is voluntary and that I may withdraw my consent at any time prior to testing.

Client/Parent/Legal Guardian: (Please print) _____

Client/Parent/Legal Guardian signature: _____ Date: _____

If I or my child receives a screening result of 5 mcg/dl or greater, I also consent to confirmatory testing: ____Yes ____No

DO NOT WRITE BELOW FOR PROFESSIONAL STAFF ONLY

Section 3: Blood Sample Information:

| Date of Blood Draw: ____/____/____ | Specimen Type: Venous_____ Capillary_____ | Test Reason: Screening_____ Confirmatory_____ | Test Site: |
|---|---|---|---|
| Capillary Fingerstick Site: L Hand R Hand Digit: 2 3 4 | Comments: | | Drying Rack # |
| Signature of Screening Professional | Lab Received Date: | Lab Specimen # | |

## SAMPLE CLINIC LETTER

INSERT (LHD) LOGO HERE

DATE HERE

As a part of an ongoing effort to keep the citizens of (Insert Affected Area) and Indiana healthy, the (Insert Affected Area) Health Department and the Indiana State Department of Health will be offering a **free lead testing clinic** to children ages 6 months to 7 years and pregnant women living in your neighborhood. Children 7 and under are most at risk from harmful effects of lead because their brains are still developing. Pregnant women and nursing mothers are also at risk because lead can pass from mother to baby during pregnancy and through breast milk.

The (Insert Affected Area) County Health Department, in coordination with (Insert Partners) and the Indiana State Department of Health, will be offering testing at (INSERT LOCATION/DATES/TIMES).

Trained nurses will collect the blood samples to check for lead levels. Additional staff will be available to provide support to children being tested. Blood samples will be collected as described below:

- A trained nurse will tie a rubber strap around your child's arm and ask your child to clench his or her fist.
- The nurse will find a vein by touch and release the rubber strap.
- The nurse will then prepare for the collection, retighten the rubber strap, and rub alcohol on the arm to clean the area for the draw.
- The nurse will insert the needle through the skin into the vein to start the draw and fill the collection tube with blood.
- Once full, the nurse will release the tourniquet and remove the needle.
- The nurse will cover the site where the needle came out with a cotton ball and gauze.
- Once bleeding stops (typically after 1-2 minutes), the nurse will apply a bandage.

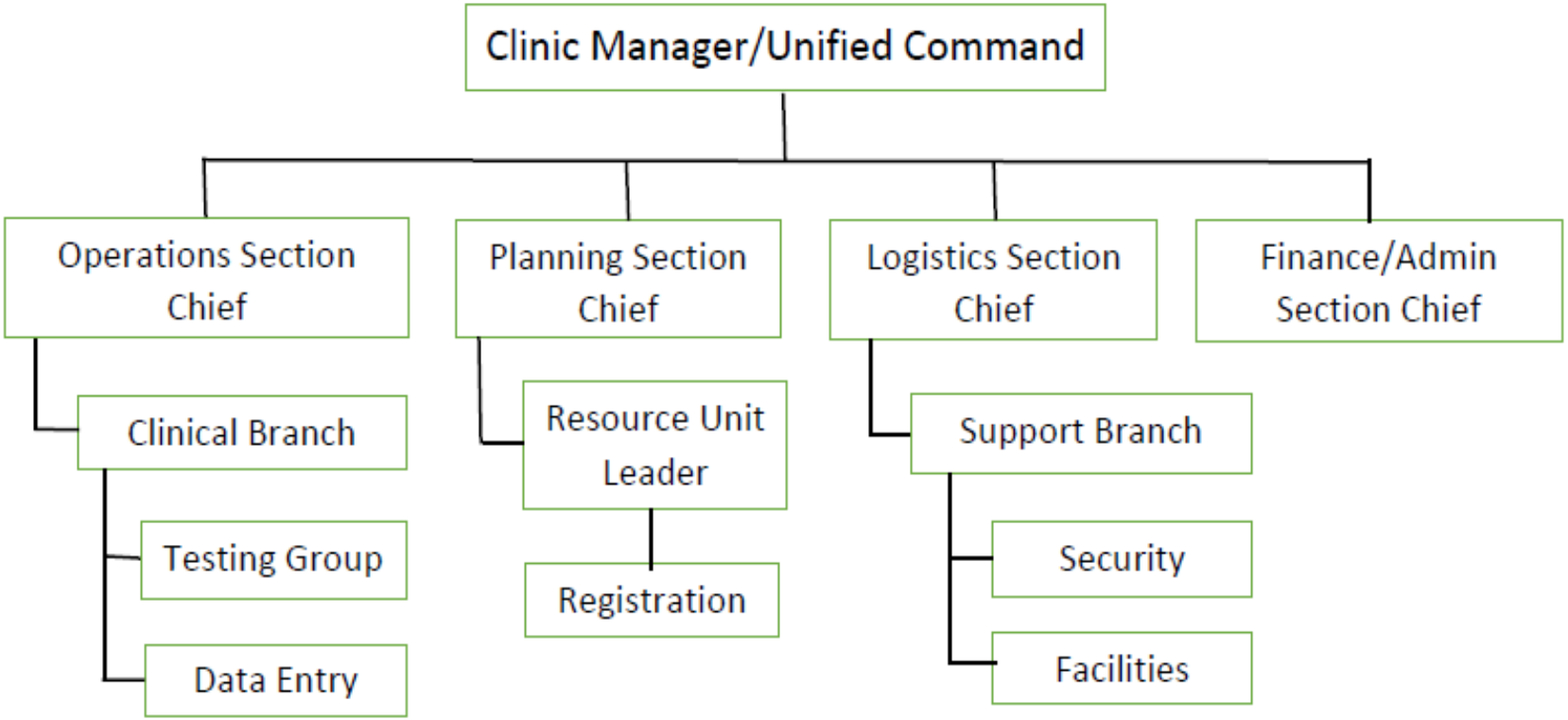
If the nurse is unable to draw blood from your child's arm, he or she may offer to test by sticking your child's finger and collecting drops of blood. This alternate test method is less reliable and may require a second, confirmatory test if your child's blood lead level appears high.

**To receive a free blood lead level test, please complete and sign the attached consent form for each person to be tested and bring the signed form(s) to the testing site. Testing cannot be done without a signed consent form.** You may also get testing done through your local health department or health care provider.

All blood samples are tested at the Indiana State Department of Health Laboratory, and the (Insert Affected Area) County Health Department will mail results to you using the address you provide on the attached consent form. You may also contact the (Insert Affected Area) Health Department directly for results at (Insert Phone Number).

Even though testing is free and insurance will not be billed, your insurance type must be noted on the consent form. Federal regulations permit the results of your blood lead test to be shared without authorization (45 C.F.R. § 164.506) only with public health officials in a confidential manner (45 C.F.R. § 164.512), for treatment, payment, and public health interventions.

For questions about testing, please contact (Insert Contact Person's Name and Phone) or the Indiana State Department of Health at 317-233-1250.


Clinic Manager/Unified Command
Operations Section Chief
Planning Section Chief
Logistics Section Chief
Finance/Admin Section Chief
Clinical Branch
Testing Group
Data Entry
Resource Unit Leader
Registration
Support Branch
Security
Facilities

# ATTACHMENT A

| AGENCY INVOLVEMENT |
| --- |
| |
| **Federal** |
| Environmental Protection Agency |
| Agency for Toxic Substance and Disease Registry |
| |
| **State** |
| Indiana State Department of Health |
| Indiana Department of Environmental Management |
| Family and Social Services Administration |
| Indiana Housing and Community Development Authority |
| Indiana Department of Education |
| |
| **Local** |
| Local Health Department |
| Local Emergency Management Agency |
| Add others as needed |