Case Management

Lead & Healthy Homes Program

Kim Roe, Health Educator
Environmental Public Health
Topics to Cover

• History
• Legislation
• Medical Management
• Introduction
• Opening a Case
• Case Management
• Break

• Role of the Local Health Department
• Environmental Investigations 
  & Risk Assessments
• Case Closure
• ISDH Role
• The Silent Menace
• Questions
Elevated Blood Lead Levels are . . .

The #1 PREVENTABLE Illness in Children
A HISTORY OF LEAD
In 1866, Henry Sherwin and Edward Williams established the Sherwin Williams paint company.

Lead was added to paint because it increased durability, resisted corrosion and moisture, PLUS it speeds up the drying time.

Lead paint was used by consumers for almost 50 years before leaded gasoline appeared on the U.S. market.
In 1921, it was the combination of General Motors, Du Pont and Standard Oil of New Jersey, (which formed EXXON), that were looking for a way to make auto engines stop knocking.

Thomas Midgley, Jr., discovered that lead added to gasoline will stop the knocking noise. He also gave us CFCs.
Lead in EVERYTHING!

• Ancient Alchemists were combining principles, elements, planets & metals.

• Although aware of the danger, modern scientists and chemists continue to find uses for Lead.
What to do about all the lead?

LEGISLATION

1921 “The Kid” Charlie Chaplin
Statutes, Bills, Codes, Rules

• Statutes, public laws, codes, and acts, all come from the Indiana Legislature and start from Bills.  
  (SB 538, P.L. 135-2005,)

• Once it has the Governor’s signature, it becomes the Law. Indiana Code (IC 16-41-39.4) Case Management of a Child with an elevated blood lead level.

https://iga.in.gov/legislative/laws/2015/ic/
Indiana Administrative Code

• **IC 16-41-39.4** grants ISDH the authority to adopt *rules* for case management of a child with and elevated blood lead level.

• **410 IAC 29-2-1** of the Indiana Administrative Code is the rule that restates the Health Officer’s authority and sets up the steps for case management of a child with an elevated blood lead level.

• *Rules* have the force and effect of law.

https://secure.in.gov/isdh/files/410_IAC_29.pdf
The Rule 410 IAC 29-2-1

• The Rule by ISDH (410 IAC 29-2-1) states:

  “Local health officers shall ensure the provision of case management to all children under seven (7) years of age in their jurisdictions, including the following . . .”
The Rule  410 IAC 29-2-1

• The Rule by ISDH (410 IAC 29-2-1) continues:
  1. Outreach and identification of EBLL children.
  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 Authority and Responsibility

• **Rule 410 IAC 29-4-1**
  
  Simply restates this already existent power to inspect:
  
  – 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.
  
  – Local health officers may *order what is reasonable and necessary* to prevent elevated blood lead levels or remediate lead hazards.
  
  – Remediation shall be *followed by a clearance examination*. 
U.S. Policies & Children’s Average Blood Lead Levels

Blood Lead Levels

Year

- 1971: Lead-Based Paint Poisoning Prevention Act
- 1973: Lead in gasoline and soldered cans phaseouts begin
- 1978: Residential New Lead Paint Ban; Air and Industrial Workplace Standards
- 1986: Lead in plumbing banned
- 1988: Lead Contamination Control Act
- 1989: McKinney Act Public Housing Abatement
- 1991: Private Housing Lead Paint Grants; EPA Lead Drinking Water Rule
- 1992: Title X Housing and Community Development Act
- 1995: Ban on lead solder in food cans
- 1996: Lead Disclosure Rule
- 1999: Federally Assisted Housing Rule
- 1999/2001: Housing Lead Dust and Soil Standards Published HUD/EPA
- 2000: President’s Task Force 10-Year Plan (2000-2010)
- 2008: Renovation, Repair, and Painting (RRP) Rule Published
- 2009: Lead Limit in New Residential Paint Rule Update
- 2011: Lead in Children’s Products Rule Update
- 2012: CDC Blood Lead Reference Value Issued

David E. Jacobs, PhD, CIH National Center for Healthy Housing, September 2008
MEDICAL MANAGEMENT
INTRODUCTION
Why do blood lead screenings?

In a nutshell . . .

Hoosier Healthwise/HIP 2.0
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 required by law.
410 IAC 29
Who is our target population?

At-risk Child (410 IAC 29-1-2) is one who:

1. Lives in or regularly visits a house or other structure built before 1978
2. Has a sibling or playmate who has been lead poisoned
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
Confirmatory blood tests are required . . .

If a child’s initial screen blood lead level is elevated, a confirmatory test is required by law.
What is a Confirmed EBLL?

- 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).
Reference Value – 5 µg/dL
• The BLL (blood lead level) at which additional screening, education, and environmental investigation are recommended
How do I know when to open the case?

OPENING A CASE
Opening a Case

• ISDH will forward an EBLL Manifest for your county, if a child’s blood test come back as elevated for lead.

• Timeframe for action varies according to the child’s blood lead level (BLL)
  – Case managers should arrange a home visit with the child’s caregiver in the time frame recommended on the “Rainbow Chart”

• Higher BLLs require quicker response
  – Priority should be give to children with the highest BLL and those less than 2 years of age

• Highest BLLs are treated as medical emergencies
  – Chelation Therapy is required at 45 µg/dL
Important Note

If a child is identified with an elevated blood lead level, the primary and secondary addresses **must have an environmental investigation regardless of the date of construction**, in an effort to locate the source of the elevated blood lead levels.
Reference Level Defined

5.0 – 9.9 μg/dL

- Notify primary medical provider within **10 working days** of receipt of test results by the Local Health Officer.
- Provide educational materials to the parent/guardian or family of the child regarding prevention of lead poisoning. You can find educational material at:
  - ISDH Lead & Healthy Homes Program [http://www.in.gov/isdh/26552.htm](http://www.in.gov/isdh/26552.htm),
  - The CDC [http://www.cdc.gov/nceh/lead/publications/default.htm](http://www.cdc.gov/nceh/lead/publications/default.htm),
  - The EPA [http://www2.epa.gov/lead](http://www2.epa.gov/lead)
  - Or call the ISDH Lead & Healthy Homes Program (317) 233-1250
- Any additional actions the Local Health Officer believes will assist the family in preventing the child’s blood lead level from increasing.
Action Levels Defined

10 – 14.9 μg/dL

- Begin case management services within **10 working days**
- Notify the primary care provider within **5 working days**
- Arrange testing of all children under 7 years of age and pregnant women in the home.
- Conduct an initial home visit
- Forward your assessment form to your Case Coordinator
- Refer primary and secondary addresses for:
  - Risk Assessment and/or
  - Environmental Investigation
- Ensure coordination of long-term services and retesting
15 – 19.9 μg/dL

- Begin case management services within 5 working days
- Notify the primary care provider within 5 working days
- Arrange testing of all children under 7 years of age and pregnant women in the home.
- Conduct an initial home visit
- Forward your assessment form to your Case Coordinator
- Refer primary and secondary addresses for environmental investigation and/or Risk Assessment
- Ensure coordination of long-term services and retesting
Action Levels Defined

20 – 24.9 μg/dL

• Begin case management services within 5 working days
• Notify the primary care provider immediately
• Arrange testing of all children under 7 years of age and pregnant in the home.
• Conduct an initial home visit
• Refer primary and secondary addresses for environmental investigation or Risk Assessment within 5 working days
• Ensure coordination of long-term services and retesting
Action Levels Defined

25 – 44.9 μg/dL

• Begin case management services within 24 hours
• Notify the primary care provider immediately
• Arrange testing of all children under 7 years of age and pregnant in the home.
• Conduct an initial home visit
• Refer primary and secondary addresses for environmental investigation or Risk Assessment within 5 working days
• Ensure coordination of long-term services and retesting
Action Levels Defined

45 – 69.9 µg/dL

- Begin case management services within **24 hours**
- Notify the primary care provider **immediately**
- Arrange testing of all children under 7 years of age and pregnant in the home.
- Conduct an initial home visit
- Refer primary and secondary addresses for environmental investigation or Risk Assessment within **2 working days**
- Ensure **coordination of chelation therapy**, long-term services and venous blood lead retesting **1 month after completion of chelation therapy**
Action Levels Defined

410 IAC 29-1-6-5 (C)(i)
Chelation Therapy may be conducted at the child's home if the home does not have any lead hazards.

410 IAC 29-1-6-5 (C)(ii)
If the home has lead hazards, the child must be admitted to a hospital and chelation therapy performed at the hospital.
Action Levels Defined

>70 μg/dL – MEDICAL EMERGENCY

- Begin case management services immediately
- Notify the primary care provider immediately
- Arrange testing of all children under 7 years of age and pregnant women in the home.
- **Refer primary and secondary addresses for environmental investigation and/or Risk Assessment within 24 hours.**
- **Admit child to the hospital for chelation therapy**
- Ensure long-term services and venous blood lead retesting 1 month after chelation therapy
What do I do?

Priority should be given to children with the highest BLLs and those less than (2) two years of age.
All Blood Lead Test Results

Did you know?

Must be reported to ISDH within one week.
Reporting of Blood Lead Test Results (410 IAC 29-3-1)

“A person who examines the blood of an individual for the presence of lead must report to the department the results of the examination not later than one (1) week after completing the examination.”

The results must include at least the following:

Name, DOB, gender, race, ethnicity, address, guardian name & phone, test date, sample type, result, physician or specimen submitter, and testing laboratory.
What happens when a child has an elevated blood lead level?

CASE MANAGEMENT
The Team Approach

• The case management team (in ideal cases) includes:
  • Case manager
  • Child’s caregiver
  • Health educator
  • Nutritionist
  • Environmental Health Specialist
  • Child’s primary care provider

“Local Health Officers shall ensure the provision of case management. . . “
Definitions

• **Case management** – the process of providing, overseeing, and coordinating services for children with elevated blood lead levels (410 IAC 29-1-4).

• **Case manager** – a person authorized by a health department and trained by ISDH to perform case management protocols (410 IAC 29-1-5)

* Case managers must be trained within 6 months of hire.
Case Management
(410 IAC 29-2-1)

Child case management includes:

- Outreach and identification of EBLL children
- Service planning and resource identification
- Service implementation and coordination
- Retesting
- Monitoring of child case management service delivery, program advocacy, and program evaluation
Effective case management includes:

- Ongoing communication with the caregivers and other providers.
- A cooperative approach to solving any problems that may arise.
- Eliminate lead hazards in the child’s environment.
- Efforts to decrease the child’s EBLL.
Retest Chart

Use this chart to determine when to retest children who are confirmed as lead poisoned. Venous testing is strongly preferred, but capillary testing is acceptable.

<table>
<thead>
<tr>
<th>If the child’s last confirmed BLL was…</th>
<th>test the child again within…</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 – 9.9 µg/dL</td>
<td>3 months</td>
</tr>
<tr>
<td>10 – 24.9 µg/dL</td>
<td>1 month</td>
</tr>
<tr>
<td>25 – 44.9 µg/dL</td>
<td>1 month</td>
</tr>
<tr>
<td>45 µg/dL or higher</td>
<td>1 month after chelation therapy, venous method only</td>
</tr>
</tbody>
</table>

Located at the bottom of the Rainbow Chart
Case Management Responsibilities

• Conduct an environmental investigation
  • Refer primary and secondary addresses for environmental investigation or Risk Assessment, regardless of the age of the home, if there is an CEBLL.

• Ensure retesting (per 410 IAC 29-1-21)
  • Arrange tests for other children in the residence who are under the age of 7 years, or pregnant women

• Provide written notice, including Risk Assessment, to the property owner of lead hazards present and required remediation options.
  • The licensed Risk Assessor will provide the written notification and report to the property owner
Case Management Responsibilities

Providing continuing child case management services until case closure includes:

• At least 1 contact every 3 months
• Monitoring the blood lead levels by retesting when appropriate
• Notification of the primary care provider of the results and ensure testing of other children and pregnant women in the home . . .
Case Management Responsibilities

• Follow up!
  – Coordinate the activities of the case management team
  – Evaluate compliance and success of the plan
  – Provide continuing child case management services until the case is closed

• Although environmental services may be provided by the case manager, the Environmental Health Specialist, or other program staff; the case manager is responsible for ensuring that a child receives services in a timely fashion!
TIME OUT
What is your role?

LOCAL HEALTH DEPARTMENT
Role of the Local Health Department

• “The Local Health Officer shall ensure the provision of case management” (410 IAC 29-1-6)
  ✓ 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
Conduct an initial **home visit** to include the following:

1. A medical, developmental, and behavioral history
2. Educate on elevated blood lead levels, including medical effects and environmental sources
3. A determination of potential household exposures
4. An evaluation of the risk of other family members, including pregnant women
5. A nutrition assessment or referral for nutrition assessment
6. A developmental assessment or referral for development assessment
7. Referrals to other social services as appropriate
Notifications

• Notify the child’s primary medical provider

• Notify the child’s parents/guardian
  – Visit the child’s primary residence
  – Telephone call to child’s parents/guardian
  – Leave information to contact you, at the door
  – Mail a letter to parents/guardian
Remember . . .

• It is VERY important that EBLL history be included as part of the permanent medical problem list on a child’s medical chart!

• Why?
  – Family may move
  – Family may change providers
  – Alerts schools of the need to provide more intensive monitoring of the child
## Initial Home Visit and Physician Notification After Receipt of BLL Test Result

<table>
<thead>
<tr>
<th>BLL (µg/dL)</th>
<th>Home visit</th>
<th>Notify Physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 – 14.9</td>
<td>W/I 10 bus. days</td>
<td>W/I 5 bus. days</td>
</tr>
<tr>
<td>15 – 19.9</td>
<td>W/I 5 bus. days</td>
<td>W/I 5 bus. days</td>
</tr>
<tr>
<td>20 – 44.9</td>
<td>W/I 5 bus. days</td>
<td>Immediately</td>
</tr>
<tr>
<td>45 – 69.9</td>
<td>W/I 24 hours</td>
<td>Immediately*</td>
</tr>
<tr>
<td>≥70</td>
<td>Immediately</td>
<td>Immediately**</td>
</tr>
</tbody>
</table>

*Ensure coordination of chelation therapy

**Medical emergency, admit to the hospital for chelation therapy

For blood lead levels ≥ 45 µg/dL, a venous blood lead test is required one month after completion of chelation therapy.
The Home Visit

• Visit the child’s residence (and other sites where the child spends significant amounts of time)
  – Provide educational materials to parents and caregivers
  – Assess factors impacting the child’s BLL (including sources of lead, nutrition, access to services, family interaction and caregiver understanding)

410 IAC 29-4-1 “...enter upon and inspect private property...”
What are you looking for?
The Case Manager conducts home visit using this form

Submit a copy of your Home Visit to your Case Coordinator at ISDH.

See website: www.in.gov/isdh/26552.htm for additional forms
The Case Manager conducts home visit using this form.

Submit a copy of your Home Visit to your Case Coordinator at ISDH.

See website: www.in.gov/isdh/26552.htm for additional forms.

Stellar users: Allen, Elkhart, Gary, Howard, Marion, LaPorte, Wayne, & Vanderburgh.

Put info into Stellar.
Home Visit Referrals

If referrals are **not** made, please document on the Home Visit form: “**Why**”? For example: *Already receiving WIC*.

- First Steps
- WIC
- Early Head Start/Head Start
- Parents as Teachers
- YMCA programs
- FSSA (Medicaid, Food Stamps, TANF)
- Other local agencies
Can you find the source of the EBLL?

ENVIRONMENTAL INVESTIGATION
Solve the Mystery

If a child is identified with an elevated blood lead level of 5 µg/dL or greater, a Risk Assessment must be performed by a Licensed Risk Assessor.
How are we exposed to lead?

- Dust from paint
- Dust from soil
- Water pipes containing lead pipes, brass faucets, or lead solder
- Imported home remedies and cosmetics
How are we exposed to lead?

- Jobs that involve lead:
  - Mining or smelting
  - Construction and remodeling
  - Automobile repair
  - Plumbing
  - Police/Military
  - Recycling Center
How are we exposed to lead?

• Hobbies that involve lead:
  – Car repair
  – Painting
  – Stained glass
  – Pottery glazing
  – Soldering
  – Target shooting
  – Making bullets, slugs or fishing sinkers
Lead is still used in many Commercial products . . .

- Bridge Paint
- Computers
- Solder
- Pewter
- Ceramic glazes
- Jewelry
- Automotive batteries
Key Terms
What is a lead hazard?

**Lead Hazard**: Dangerous conditions/circumstances which may cause lead exposure at levels resulting in adverse health effects.
Providing an *environmental investigation* includes:

1. A Risk Assessment of the child’s primary and secondary addresses, *regardless of when it was constructed*:
   - A complete Risk Assessment including recommendations to mitigate identified lead hazards.
   - A written report to the family and the owner if the family does not own the home.
   - Education of the family and the owner on lead hazards in the home and measures to protect the child from further poisoning.
Key Terms

Environmental Investigation continued:

2. An environmental investigation, including:
   - Identification and evaluation of nonstructural exposure sources within the child’s environment.
   - Presentation of results of the environmental investigation, including recommendations for reducing or eliminating exposure.
   - Education of the family on hazards found and education on temporary and permanent measures to protect the child from further exposure.
A **Risk Assessment** of the CEBLL child’s primary and secondary addresses . . . is to include the following:

- Recommendations to mitigate identified lead hazards
- Written report to the family and the property owner if home is a rental
- Identification and evaluation of lead-based sources within the child’s environment

Your ISDH Case Coordinator will assist you with setting up an appointment with a Licensed Risk Assessor.
Environmental Investigation
(410 IAC 29-1-14)

• A *Risk Assessment* of the CEBLL child’s primary and secondary addresses . . .to include the following:

  ✓ Presentation of results of the environmental investigation including recommendations for reducing or eliminating exposure.

  ✓ Education of the family on hazards found and education on temporary and permanent measures to protect the child from further exposure.
Risk Assessment
(410 IAC 29-1-22)

• Conducted by a trained, licensed Risk Assessor according to “documented methodologies” established by law (410 IAC 32).

• The property owner is given a reasonable time to implement recommendations for remediating lead hazards. A clearance examination is conducted to establish the efficacy of remediation.

• Educate the family and the property owner on lead hazards in the home and measures to protect the child from further poisoning.

410 IAC 29-4-1 “. . .order what is reasonable and necessary. . . “
Documented Methodologies

Risk Assessment (410 IAC 32)

- Visual examination, underlying causes
- Exterior testing of deteriorated paint
- Soil testing of bare soil
- Interior testing of deteriorated paint
- Water Samples when applicable
- Dust samples and testing
The Property Owner’s Rights

If the risk assessment finds lead hazards, a written notice is provided to the property owner of the lead hazards and required remediation options.

• The notice shall include the risk assessment.

• The property owner shall be given a reasonable time to implement recommendations for remediating the lead hazards within 180 days.

• The property owner shall have a clearance examination performed by a properly licensed individual.
Levels for Lead-Hazards

Paint

• Residential property or child-occupied facility
  – Paint in poor condition
    > 20 square feet on exterior components
    > 2 square feet on interior components; or
    > 10% of the total surface area of the component (interior/exterior)
Levels for Lead-Hazards

Dust

• Residential property or child-occupied facility
  – Floor 40 µg/square foot
  – Window Sill 250 µg/square foot
  – Window Troughs 400 µg/square foot
Levels for Lead-Hazards

Soil

- Residential property or child-occupied facility
  - Play area soil-lead concentration > 400 ppm; or
  >1200 ppm bare soil composite of non-play areas in yard
Levels for Lead-Hazards

**Water**

- Residential property or child-occupied facility
  - Potable water
    - $> 15$ ppb
Small amount, right?!

Consider common prescription medicines

- Paxil 30 ppb
- Cialis 30 ppb
- Albuterol 2.1 ppb
- Birth Control pill 0.035 ppb
Remediation = actions that constitute either:

1. **Abatement** - Lead Free  
   “...permanently eliminate lead-based paint hazards”  
   (410 IAC 32-1-2)

2. **Interim control** – Lead Safe  
   “...temporarily reduce human exposure”  
   (410 IAC 32-1-43)

410 IAC 29-4-1 “...order what is reasonable and necessary...”
Lead Hazard Example

Lead based paint deteriorated on a window sill

Remediation Options*:
1. Remove and replace entire window with aluminum, vinyl, or wood painted with lead free paint.
2. Wet sand the sill to bare wood and repaint with non-lead based paint.
3. Remove loose paint and repaint.

*All of these should be done using lead safe work practices.
Lead-Safe Work Practices
(410 IAC 32)

- Find the cause of the problem
- Prioritize work
- Separate work and occupied spaces
- Isolate high dust areas
- Use Personal Protective Equipment
- Wet dust/sand, low temp heat guns
- Correct causes of the problem
  - friction, impact, or substrate deterioration
- Dispose of waste safely
- Educate occupants about risks from lead based paint

410 IAC 29-4-1 “. . .order what is reasonable and necessary. . . “
Lead-Safe Work Practices
Clearance Examination
(410 IAC 29-1-8)

- Licensed Clearance Examiner or Risk Assessor
- Required for all remediation
- Visual examination of the area
- Dust sample testing for lead

410 IAC 29-4-1 “followed by a dust clearance examination.”
Local Health Department (LHD) Enforcement Power

• Issue an Order to Abate* (IC 16-20-1-25)
  - Specify conditions in writing
  - Name shortest reasonable time for abatement
  - Enforceable by injunction in local court by county attorney

* Eliminating an unlawful condition – not necessarily abatement as defined in lead hazard control laws.
LHD Enforcement Power

• Dwelling Unfit for Human Habitation (IC 16-41-20-1)
  
  (1) - Want of repair and/or
  
  (4) – Unsanitary conditions

  ➢ Order to Vacate in 5 -15 days (IC 16-41-20-4)
  ➢ Declare a Public Nuisance (IC 16-41-20-6)
  ➢ Order Repair (IC 16-41-20-7)
  ➢ Serve on resident and owner
LHD Enforcement Power

• Nuisance Law (IC 32-30-6)
  – (6-6) Whatever is injurious to health
  – (6-7) County OR City attorney may bring a civil action to abate or enjoin a nuisance

• Other tools: Municipal Laws, County Ordinances, Local Building Codes
  – Build relationships with County/City Attorneys and local Judges
Alternate Option

Local Health Departments may submit cases to the Attorney General (AG) by providing the following documentation:

• Risk assessment;
• Statement about children living in the home OR children who used to live in the home;
• Copy of notice provided to property owner requesting lead hazard remediation within a reasonable time period;
• Referral letter stating that a property owner has failed to take steps to remediate;

AND
• Authorization for the AG to take action on behalf of the LHD.
When can we close the case?

CASE CLOSURE
Case Closure
(410 IAC 29-2-2)

There are two ways to close a case.

1. Case Complete
   - The child has at least 2 consecutive confirmed tests less than 5µg/dL at least three (3) 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.
Case Closure
(410 IAC 29-2-2)

There are two ways to close a case.

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 (4 documented attempts & 1 repeat)

* Case referral should occur within 10-days and notify your ISDH Case Coordinator.
“Administrative Case Closure”

If the child can no longer be located, you must document:

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, AND

*Any repeat attempt of the above, shows due diligence under the law (4 + 1 repeat).*
What does the State do?

INDIANA STATE DEPARTMENT OF HEALTH (ISDH) RESPONSIBILITIES
State Responsibilities

The Lead & Healthy Homes Program (LHHP) will:

• Provide oversight for county case management activities
• Notify counties via EBLL Manifest of children with elevated blood lead levels in their jurisdiction
• Provide guidance, support, and resources to local health departments, parents of children with elevated blood lead levels, physicians, health clinics and the general public
• Perform Risk Assessments for counties without a licensed Risk Assessor.
State Responsibilities

LHHP Case Coordination includes:

• Outreach and identification of EBLL children
• Service planning and resource identification
• Service implementation and coordination
• Retesting guidance
• Monitoring of child case management service delivery, program advocacy, and program evaluation
Data Collection

ISDH Responsibilities
Percentage of Pre-1980 Housing

2015 Statistics
- Less than 45%
- 45% to < 60%
- 65% and higher

Is there a risk for children with elevated blood lead levels in your jurisdiction?

YES!
Nationally: The Age of the House vs. Lead-based Paint Hazards

<table>
<thead>
<tr>
<th>Construction Year</th>
<th>% Houses with Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978-1998</td>
<td>3%</td>
</tr>
<tr>
<td>1960-1977</td>
<td>8%</td>
</tr>
<tr>
<td>1940-1959</td>
<td>43%</td>
</tr>
<tr>
<td>Before 1940</td>
<td>68%</td>
</tr>
</tbody>
</table>

Over 30% of housing had dust lead hazards although the interior lead-based paint was in good condition.

Source: National Housing Survey 1999-2000
Jacobs D.E
Statistics for each county are listed in the 2015 Childhood Lead Surveillance Report, available on the Lead & Healthy Homes website.

http://www.in.gov/isdh/19137.htm
Interactive Map by VOX and the Washington State Dept of Health

http://www.vox.com/a/lead-exposure-risk-map
ISDH Lead Risk Analysis & Tools

- 4 Sections
  - Home Demographics
  - Personal Demographics
  - Exterior Risk Assessment
  - Interior Risk Assessment

- Years 2013 - 2015
- I-LEAD
- Lead Data Flow
- Excel
Number of Risk Assessments with EBLLs ≥10ug/dL by Construction Year, Indiana 2013-2015

<table>
<thead>
<tr>
<th>Home Construction Year</th>
<th>Number of Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre 1950</td>
<td>177</td>
</tr>
<tr>
<td>1951-1978</td>
<td>33</td>
</tr>
<tr>
<td>Post 1978</td>
<td>13</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
</tr>
</tbody>
</table>
Population for Statistics

- Risk assessments were extracted and analyzed *per child*, not per home
- Children ≤6 years of age
- Indiana residents
- Only children tested with elevated blood lead levels of ≥10μg/dL
  - 2013: 78 risk assessments from 71 homes
  - 2014: 72 risk assessments from 70 homes
  - 2015: 74 risk assessments from 72 homes
• Not all children with elevated blood lead levels ≥10μg/dL were included

• Below are the number/percentage of identifiable cases reported in I-LEAD
  – 2013 – 78 out of 165 children, 47%
  – 2014 – 72 out of 125 children, 58%
  – 2015 – 74 out of 127 children, 58%
Why?

Not all children with elevated blood lead levels \( \geq 10 \mu g/dL \) were included???

The results must include at least the following:

Name, DOB, gender, race, ethnicity, address, guardian name & phone, test date, sample type, result, physician or specimen submitter, and testing laboratory.
Age of Children

• Most cases of EBLLs occur early in a child’s life; between 1 and 3 years of age with most occurring the first year.

• Percent between <1 and 3 years of age
  – 2013: 86%
  – 2014: 80%
  – 2015: 84%

• 2013 and 2014 predominantly had more cases in the <1 year age range while 2015 had more cases in the 2 year range.
Elevated Blood Lead Levels

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average EBLL Per Child</td>
<td>15.8</td>
<td>16.35</td>
<td>14.3</td>
</tr>
<tr>
<td>Range</td>
<td>10 - 54</td>
<td>10 - 45.5</td>
<td>10 - 38</td>
</tr>
</tbody>
</table>

- Average EBLL ranged from 14.3 – 16.35 µg/dL
- Decreasing trend among the range
Gender

- EBLL children of ≥10 µg/dL are more likely to be male
- An increasing trend among the males in this population demonstrates the following statement

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>50%</td>
<td>57%</td>
<td>61%</td>
</tr>
<tr>
<td>Female</td>
<td>50%</td>
<td>42%</td>
<td>39%</td>
</tr>
<tr>
<td>Unknown</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>78</td>
<td>72</td>
<td>74</td>
</tr>
</tbody>
</table>
Race

• 2013: 4 race categories
  – 65% white (51/78)
  – 17% unknown (13/78)

• 2014: 6 race categories
  – 73% white (50/72)
  – 13% unknown (9/72)

• 2015: 5 race categories
  – 61% white (45/74)
  – 20% unknown (15/74)
Exterior Hazard Statistics

- Total hazards identified: 945 (2013 – 2015)
- Average number of hazards: 3.96 per risk assessment
  - Range: 0 – 22 hazards
57% of exterior hazards are in poor condition or covering ≥20 square feet
Exterior Risk Assessment Overview

Hazard Percentage by Location and Year, Indiana 2013 - 2015

Hazard Location (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Hazard Location</th>
<th>House</th>
<th>Porch</th>
<th>Garage</th>
<th>Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>62</td>
<td>22.8</td>
<td>4.5</td>
<td>9.2</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>58</td>
<td>15.22</td>
<td>10.7</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>55</td>
<td>18.7</td>
<td>14.1</td>
<td>5.1</td>
<td></td>
</tr>
</tbody>
</table>
**Interior Hazard Statistics**

- **Total interior hazards identified**: 1,720 (2013 - 2015)
  - Paint: 1,243 hazards or 72.3% of interior hazards
  - Dust: 477 hazards or 27.7% of interior hazards

- **Average number of hazards**: 7.44 per risk assessment
  - Range: 0 – 44 hazards
Interior Hazard Location

- Similar percentages to exterior hazard severity, 54% are poor or covering ≥2 square feet

Interior Paint Hazard Severity by Percent, Indiana 2013 - 2015

- 54% Poor
- 43% Fair
- 3% Unknown
Interior Hazard Risk Assessment Overview

• Interior hazards are generally from paint or paint chips
• Bedrooms are the “best: place to look for lead hazards
  – Other (2nd) and Living Room (3rd)
• Most of these hazards are found in predominant living areas
Interior vs. Exterior Hazards

Percentage of Lead Risk Assessment Hazards by Interior and Exterior Location, Indiana 2013 - 2015

- Interior: 35%
- Exterior: 65%

Total hazards: 2,650
Resources

• A list of licensed Risk Assessors can be found on the ISDH Environmental Public Health website under Lead & Healthy Homes Program http://www.in.gov/isdh/26550.htm
• 24 Local Health Departments have licensed Risk Assessors on staff
• Scholarships for LHDs to cover the costs of training are available from ISDH-Lead & Healthy Homes Program, budget limits apply.
• Risk Assessor training can be obtained from Environmental Management Institute (EMI) in Indianapolis.
Lead Poisoning
the Silent Menace...

Test Your Home. Test Your Child.

Is Your Child Safe?
Call: 1.800.433.0746
WHO TO CALL WITH QUESTIONS?
ISDH CONTACTS

• Teresa Kirby (South Region) Case Coordinator, LHHP
  (317) 233-8606
  tkirby@isdh.in.gov

• Gerri Anderson (North Region) Case Coordinator, LHHP
  (317) 233-1356
  ganderso@isdh.in.gov

• Kim Roe (Environmental Public Health) Health Educator
  (317) 233-7944
  KiRoe@isdh.in.gov
References


• Kayley Dotson, BS in Environmental Science from Purdue University, MPH with an Epidemiology concentration from East Tennessee University (pending), Intern, ISDH-EPH

• Cardno ATC. (n.d.) Retrieved April 18, 2016, Cardno.com: www.cardno.com

Elevated Blood Lead Levels are . . .

The #1 PREVENTABLE Illness in Children

Get your home tested. Get your child tested. Get the facts.

Kim Roe, Health Educator
Lead & Healthy Homes Program
Environmental Public Health
www.eph.in.gov