UNDERSTANDING SECONDARY PREVENTION INVESTIGATIONS IN THE FIELD

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Presenters

Claudia Meister MPH, RS
• 2 years with CDPH
• Public Health Lead Investigator
• Food Safety Sanitarian

Abraham Ewais B.S., SIT
• 2 years with CDPH
• Public Health Lead Investigator
• Food Safety Sanitarian

Brian Kimball, Environmental Health Commissioner
• 20 years with City of Cleveland
• Oversee multiple CDPH environmental health programs
• 16 years experience in the field of lead poisoning prevention and remediation
What is Lead Poisoning?

• **Lead poisoning** happens when lead gets into the body from breathing, eating, or drinking
• Lead is **everywhere** in the environment and used in many items
• Lead poisoning is a common, yet **preventable**, childhood health problem
  • Young children absorb lead more easily than older kids and adults, and lead is more harmful to them because their brains are still developing.
• The goal is to prevent lead exposure to children **before** they are harmed.
Definitions of common terms

• **Blood lead screening tests** - Blood lead screening tests are conducted either by:
  - Venous draw (from the vein); or
  - Capillary (Finger prick) test, collected in a capillary tube or on filter paper

• **BLL - Blood Lead Level** - is a measure of the amount of lead in the blood.

• **EBLL - Elevated Blood Lead Level** - A single blood lead test (capillary or venous) at or above the reference value of 5 µg/dL

• The amount of lead found in the blood sample is measured in **micrograms of lead per deciliter** of blood (µg/dL)
Primary vs. Secondary Prevention

- **Primary Prevention** - Interventions undertaken to reduce or eliminate exposures or risk factors **before** the onset of detectable disease.

- **Secondary Prevention** – Response to a problem after it has been detected.

Source: CDC
What is the role of CDPH’s lead investigator?

• Investigate the living environments to determine the source of lead poisoning
• Only go out to homes where a child under 6 years of age has been poisoned AND has a EBLL of 10 mcg/dL or above
  • A formal referral from Ohio Department of Health is required prior to inspection (OAC 3701-30-07)
  • This is called **Secondary Prevention**
Background Information

• Lead most commonly found in older homes
  • Lead paint was used because of its durability and ability to hold bright colors
• Lead paint was banned in 1978
• In 1945, household paints contained as much as 30-50% lead by weight
• Leaded gasoline outlawed in 1996
• Lead can also be found in soil and dust.
Background Information

Lead in Cleveland
• Most homes built prior to 1978
• Deferred maintenance or renovations are unaffordable. Paint peels and decays causing lead dust.
• In 2016 & 2017, 12% of children ≤6 years old that were tested had a lead level that required action. This is about four times the national average (Source: ODH)
• Lead poisoning affects a disproportionate number of poor children living in urban areas

How Children (under age 6) Get Poisoned

• Hand to Mouth activities
  • Pacifier or toy
• Inhalation of Lead Dust
• Folk remedies such as Greta or Azarcon
• Eating off hand painted ceramics
• Makeup such as Kohl and Kajal
Why is This Important?

This can cause:

• Lower IQ
• Decreased ability to pay attention
• Underperformance in school

Source: www.cdc.gov
Why is This Important?

The Impact

535,000
U. S. children ages 1 to 5 years have blood lead levels high enough to damage their health.

24 million homes in the U.S. contain deteriorated lead-based paint and elevated levels of lead-contaminated house dust.

It can cost $5,600 in medical and special education costs for each seriously lead-poisoned child.

4 million of these are home to young children.

Source: www.cdc.gov
Why is This Important?

• A Princeton University study found that exposure to lead in preschool years significantly increases the chance of suspension or incarceration later on in life (Princeton, 2017)

• The same study also found that reducing lead exposure in early preschool years reduced antisocial behavior
The Public Health Lead Investigation Process
Authority by ORC 3741 & OAC 3701-30
How Does CDPH Get Notified?

- Child’s blood is tested for lead
  - Regular Pediatrician visits
  - Lead Screenings at McCafferty and J. Glenn
  - Outreach Events
- All lab results are sent to the Ohio Department of Health (ODH)
- ODH sends all ‘referrals’ to Local Health Department Case Managers
  - 5-9 µg/dL receive educational information
  - 10 µg/dL or above are referred to CDPH for a public health lead investigation
Home Investigation Begins with Reaching Parent

• Initial letter is sent to known address.
• Telephone calls made to all known numbers.
• Staff goes to property to talk with family – hangs a Door Tag if no one home
• Attempts made to conduct initial questionnaire
• Inspection Scheduled
  • Inspections can take anywhere from 3-4 hours depending on the size and condition of the home
• Those who don’t respond:
  • Additional Calls and Parent/Guardian Letters (After 5pm calls)
  • Property Owner Letters are sent to gain access

....often, the appointments get cancelled or entry is refused
Materials Needed to Conduct an Investigation

- XRF Gun
- Camera
- Dust Sample Supplies
  - Tape
  - Ruler
  - Lab Test Tubes
  - Dust Wipes
  - Gloves
- Documents
  - Questionnaire
  - Visual Assessment
  - Exceptions List
  - Lab Form
  - Graph Paper
Investigation, Upon Arrival...

• Visual Assessment of Home (Outdoors)
  • Overall Building Condition
    • Foundation
    • Gutters
    • Roof Condition
    • Chimney Condition
  • Areas of Bare Soil

• Pictures taken of all surfaces (Outdoors/Indoors)
Investigation Components

• Visual Assessment of Home (Indoors)
  • Areas of Deteriorated Paint
  • Chewable Surfaces
  • Non-structural sources such as toys, furniture, ceramics
• Review/Conduct lengthy questionnaire
• Draw map the house including location of windows, doors, walls, etc
XRF Gun

- **XRF** - X-ray fluorescence
- Tests painted surfaces on the interior and exterior of the home
  - Walls, baseboards
  - Door casings and frames
  - Window casings, sills, troughs, frames, and sashes
  - Porch columns, floors, guard rails
  - Exterior wood siding, foundations
- Can read several layers deep
Dust Samples

• We take a minimum of 9 dust samples in a home plus one blank
• 4 rooms tested
  • Window Sill and Floor
• 1 entryway
• Focus on rooms that children spend a large amount of time in
  • Bedrooms
  • Play Area
  • Kitchen
Interesting Things We See
Education Provided at the Home to Reduce Lead Dust

- Avoid tracking dirt/debris in your home by removing shoes before entering home!
- Regularly clean floors, windowsills, & dusty places with wet mops or wet cloths to pick up any dust
- Use two buckets - one for soap and one for rinsing
- Outside toys are outside toys, inside toys are inside toys
- Avoid having children play in areas that have a lot of deteriorated paint
Tips for Lowering Lead Levels in Children

• Wash hands before eating or coming in from playing outside
• Wash toys that children frequently put in their mouth
• Diet must include foods rich in:
  • Calcium
  • Iron
  • Vitamin C
Back at the Office...

• Using the data received from the XRF gun and the lab results for the dust samples, a lengthy report is created along with the LHCO (Lead Hazard Control Order)

• LHCO lists all the lead hazards in the home that need to be addressed
  • Deteriorated Paint
  • Dust
  • Soil
Back at the Office...

• Both the tenant and property owner receive LHCO
  • ODH requires the property owner to provide the LHCO to the tenant of that home/apartment – and any subsequent tenant until compliance is reached.
• A copy of the report is sent to the parent/guardian
• Once the report is sent out and received by property owner the deadline is set. The property owner will have 90 days to complete the repairs and make the home Lead Safe
Steps of Enforcement

1. Issuing Lead Hazard Control Orders (1\textsuperscript{st} order)
2. Notice of non-compliance/order to vacate (2\textsuperscript{nd} order)
3. Placarding (warning sign placed on property)
4. Legal process
Being Proactive is Much More Advantageous

- **Educate parents & caretakers**
  - How they can make homes lead safe
  - How they can protect their children
  - Be present at community events

- **Test children living in high risk areas**
  - Partners in Health Lead Screening Project with CWRU/ School of Nursing & CMSD
  - Engage medical providers
  - Conduct more lead screenings
  - Ensure all children are tested at ages 1 & 2 (Minimum)

- **Proactive inspections**
  - Rental inspections/ dust sampling
Thank you

Cleveland Department of Public Health
Lead Poisoning Prevention Program
Contact us at (216) 263-LEAD (5323)
to ask a question or provide feedback
www.clevelandhealth.org