



# Healthy Homes

Coalition of West Michigan

Where does the  
lead come from?

# POSSIBLE SOURCES OF EXPOSURE

## OCCUPATION OF PARENTS

- Battery manufacture/repair
- Bridge/tunnel/elevated highway repair
- Firing Range Workers
- Plumber, pipe fitter (older buildings)
- Welding and cutting painted metal
- Wrecking and Demolition
- Cable (telephone/electric) repair & reclamation
- Renovation/remodeling older homes
- Lead soldering (e.g., electronics)
- Brass/copper/bronze/lead/iron foundries
- Paint removal (lead remediation or painters)
- Paint manufacture (non-residential paint)
- Machining/grinding/melting lead alloys
- Leaded glass manufacturing
- Stained glass manufacture/repair

# POSSIBLE SOURCES OF EXPOSURE

## HOBBY OF PARENTS

- Lead shot, bullets, and fishing sinkers
- Jewelry/Pottery/Stained Glass making
- Indoor pistol shooting  
Reloading bullets

## IMPORTED COSMETICS:

- **Middle East, India, Pakistan, Africa:** Kohl, Surma, Al Kohl

## FOODS:

- **Middle East:** Lozeena
- **Mexico:** Tamarind Candy, Chocolate-Covered Grasshoppers

# POSSIBLE SOURCES OF EXPOSURE

## FOLK REMEDIES:

- **Hispanic:** Azarcon, Alarcon, Coral, Luiga, Maria Luisa, Rueda  
**Mexico:** Greta
- **Tibet, India:** Ayurvedic Medicine, Tibetan Herbal Vitamin
- **India:** Ghasard, Surma
- **Iran:** Bint Al Zahab  
**Saudi Arabia:** Bint Dahab, Santrinj, Traditional Saudi Medicine
- **Kuwait:** Bokhoor
- **China:** Jin Bu Huan, Po Ying Tan, Ba-Baw- San
- **Vietnam:** Pay-Loo-Ah

# POSSIBLE SOURCES OF EXPOSURE

## ENVIRONMENTAL

- Ceramics/pottery/lead crystal
- Lead-soldered cans (imported)
- Mini-blinds (imported)
- Candles with lead wicks
- Some imported painted toys
- Burning lead-painted wood
- Soil/dust near industries/smelters/heavily-traveled roadways
- Use of water from lead pipes
- Lead dust from deteriorating paint

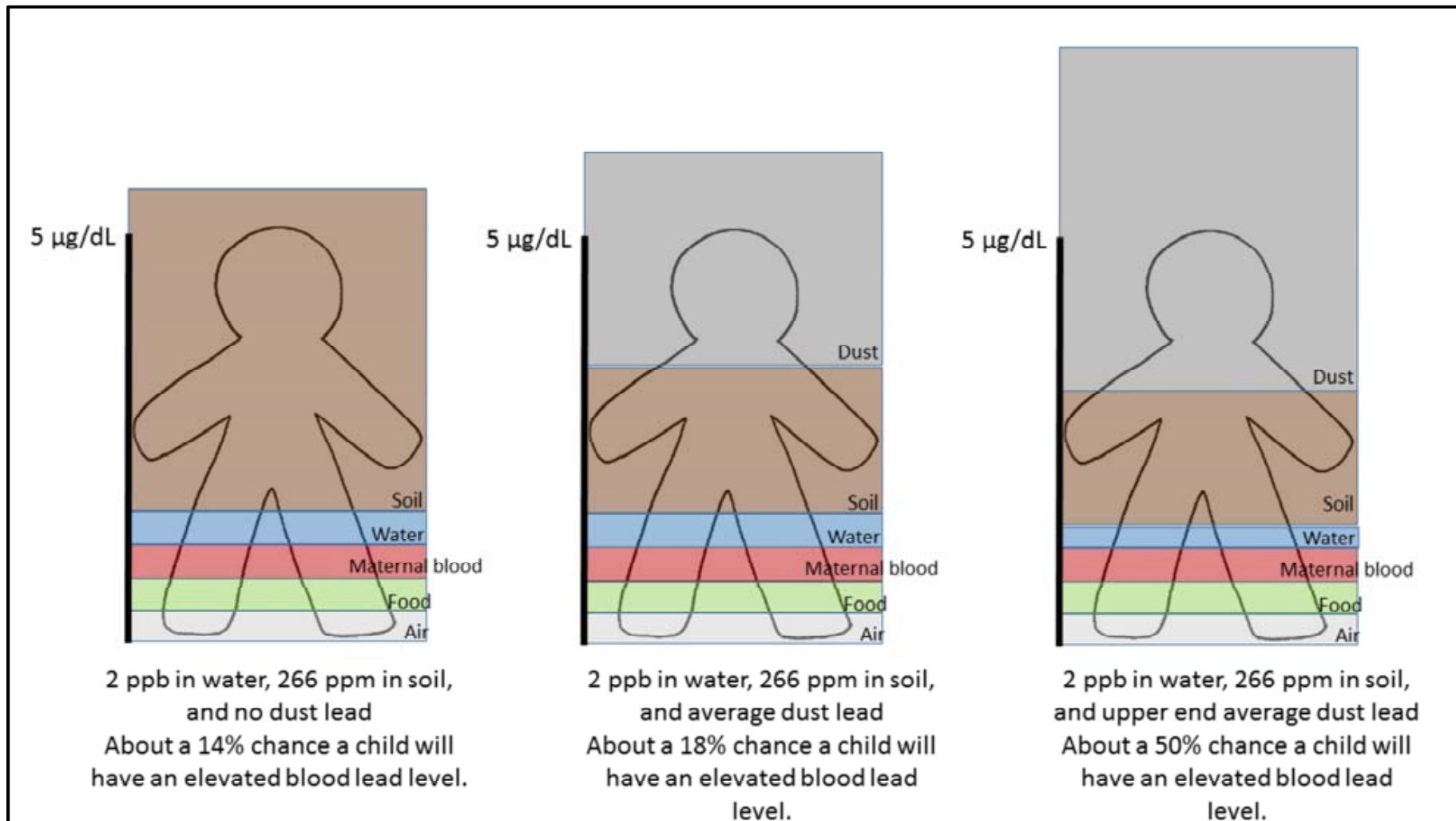
# **Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children (US-EPA)**

How much lead children (0-84 months) could absorb and what that means for blood lead levels.

Includes lead in air, food, soil, dust, mother's blood, and water.

Doesn't include:

- Directly eating paint chips,
- Swallowing metal particulate in drinking water, or
- Other behaviors that could result in large amounts of lead exposure.



Source: 10/3/16 presentation *Modeling Lead Exposure in Children*, Jennifer Gray, PhD, Toxicology and Response Section, Division of Environmental Health, Michigan Department of Health and Human Services



# IEUBK Flint Conclusions

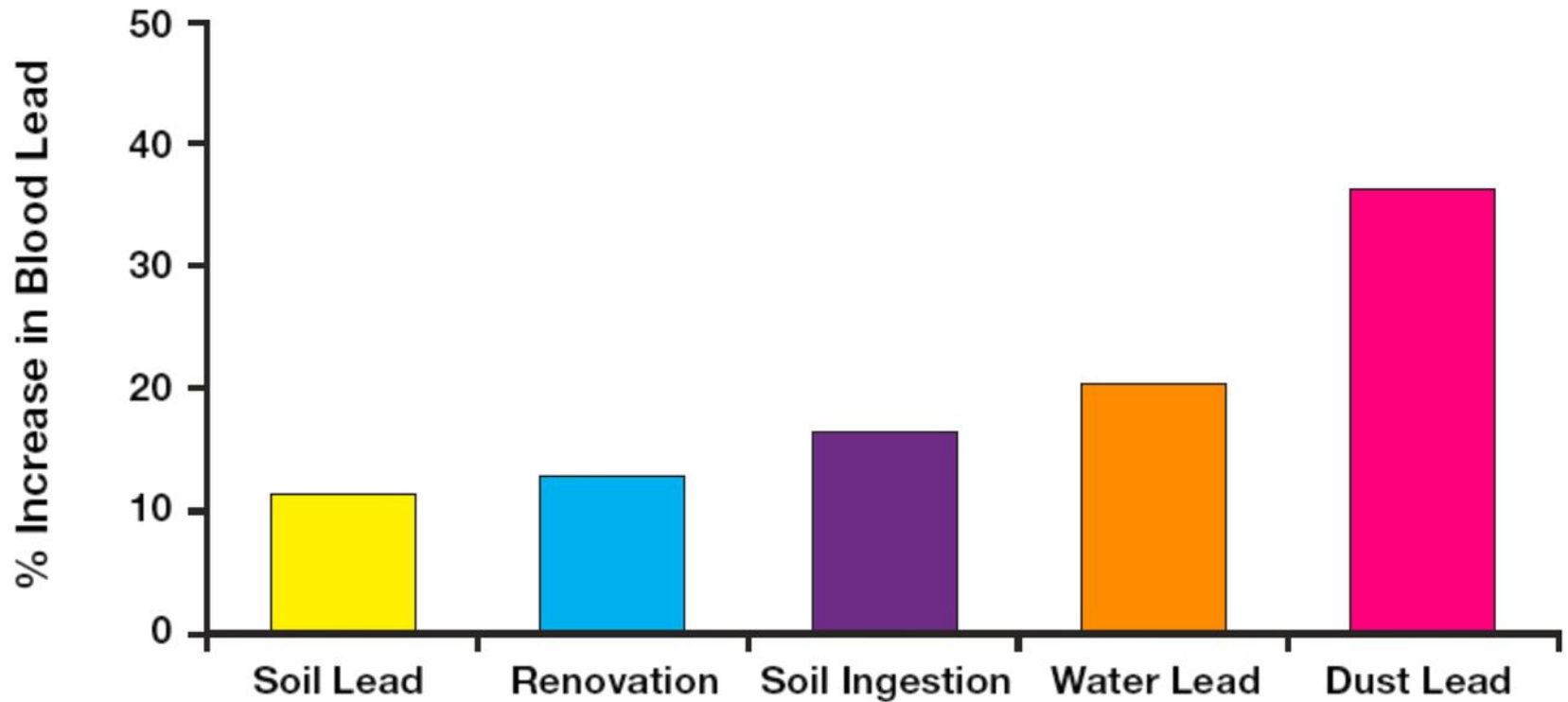
Based on modeling lead exposure in children in the EBL investigations in Flint

More likely to have a blood lead level of more than 5  $\mu$ g/dL when:

- Lead containing dust is in the home.
- Soil lead levels are higher than 120 ppm
- Water lead levels are higher than 30 ppb

**If lead levels in the dust are high enough, no other sources need to be present, and elevated blood lead levels are very likely (~10 to >70% chance to be more than 5  $\mu$ g/dL).**

# Contribution of lead exposure to children's blood lead concentrations.



COUNCIL ON ENVIRONMENTAL HEALTH Pediatrics doi:  
10.1542/peds.2016-1493

“Lead-based paint and lead contaminated dust are the most hazardous sources of lead for U.S. children.”

U.S. Centers for Disease  
Control and Prevention

# A Lesson Learned from Flint

## **Before Flint:**

Focused on getting lead out of children.

## **After Flint:**

Focusing on eliminating sources of lead in the environment.

# PRIMARY PREVENTION VS. SECONDARY PREVENTION

## Secondary Prevention

- ▶ Before Flint
- ▶ Emphasizes testing children's blood
- ▶ Reactive
- ▶ Prevent poisoning
- ▶ At-risk children only (typically those poisoned)
- ▶ Chases the problem

## Primary Prevention

- ▶ After Flint
- ▶ Emphasizes testing environments for lead hazards (ex. testing houses, water)
- ▶ Proactive
- ▶ Prevent exposure
- ▶ All children
- ▶ **Stops the problem**

# **Ideas for Action** drawn from:

- Federal *Find It, Fund It, Fix It* campaign
- State of MI Lead Board report
- Green and Healthy Homes Initiative white paper
- Healthy Homes Coalition experience

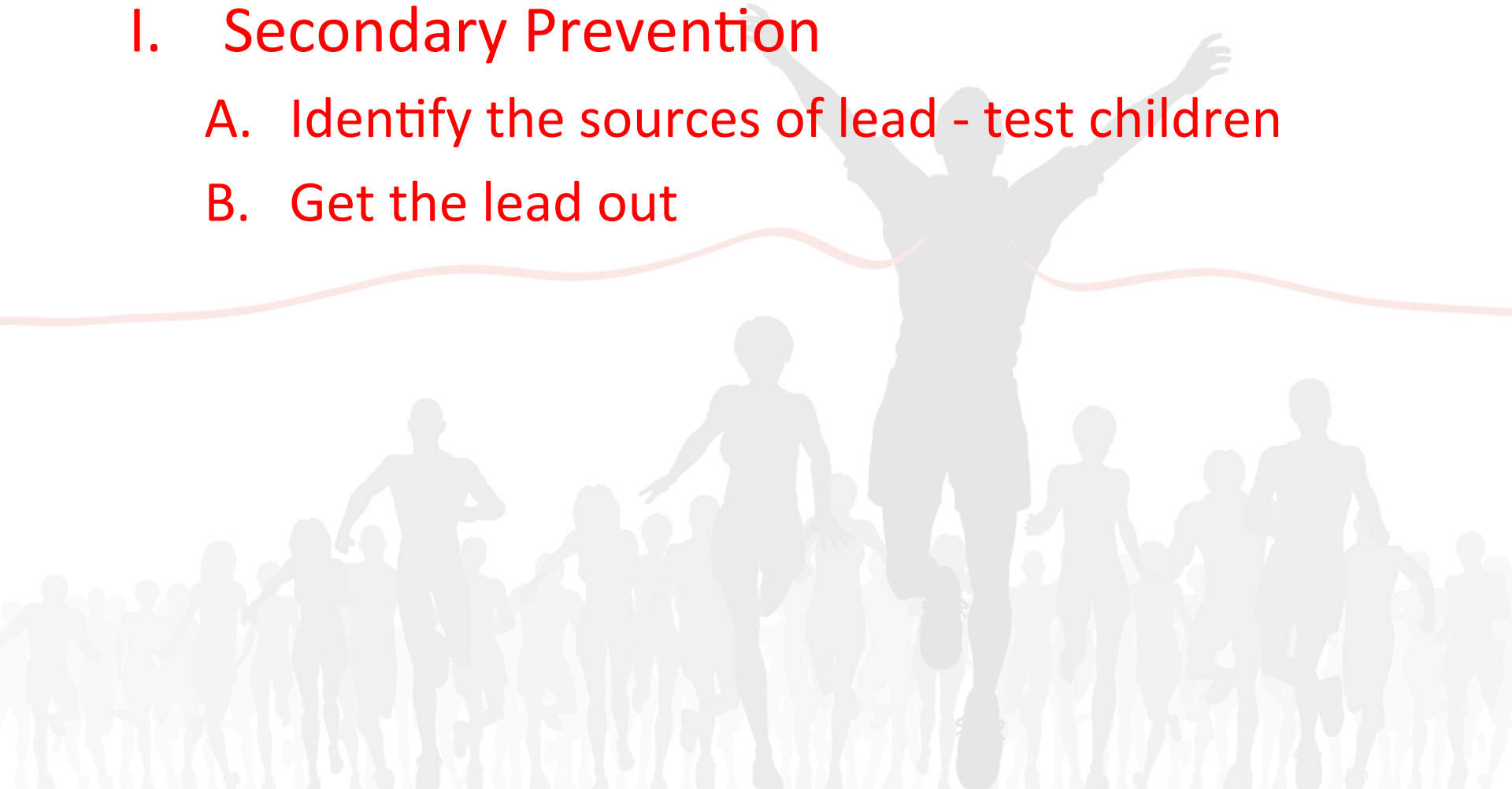
# Recommendations to Prevent and Eliminate Childhood Lead Exposure

- I. Secondary Prevention – chasing the problem by helping lead poisoned children.
- II. Primary Prevention – getting out in front of the problem by addressing environments.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Secondary Prevention

- A. Identify the sources of lead - test children
- B. Get the lead out





# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Secondary Prevention

### A. Identify the sources of lead - test children

1. Universal testing
2. Expand opportunities for testing
3. Remove payment as an obstacle
4. Share data and information

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Secondary Prevention

### A. Identify the sources of lead - test children

#### 1. Universal testing

- a. 100% of children should be tested for lead exposure.
- b. Establish a standard of two lead tests before the age of two.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Secondary Prevention

### A. Identify the sources of lead - test children

#### 2. Expand opportunities for testing

- a. Train more health professionals.
- b. Promote testing by embedding trained staff in home visiting programs to get tests during home visits
- c. Expand testing in WIC, other touch point programs.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Secondary Prevention

### A. Identify the sources of lead - test children

#### 3. Remove payment as an obstacle

- a. Improve Medicaid resources.
- b. Provide “free to the patient” testing: Require all insurance companies to cover testing.
- c. Increase incentives to local public health to conduct testing.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Secondary Prevention

### A. Identify the sources of lead - test children

#### 1. Share data and information

- a. Make population blood lead test results public
- b. Report blood lead test results to CDC

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Secondary Prevention

### B. Get the lead out

1. Respond to the data
2. Provide support services for children who are poisoned

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Secondary Prevention

### B. Get the lead out

1. Respond to the data by getting more aggressive in addressing sources of exposure after a child is lead poisoned.
  - a. More intense intervention
  - b. At lower levels

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Secondary Prevention

### B. Get the lead out

2. Provide support services for children who are poisoned
  - a. Lead-poisoned children should receive educational support and intervention pre-K through graduation.
  - b. Improve children's nutrition.
  - c. Support Health Departments in coordinating case management to track children with elevated blood lead levels.
  - d. Provide legal assistance



# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

- A. Identify the sources of lead – test environments
- B. Get the lead out
- C. Make sure there is no new lead



# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### A. Identify the sources of lead – test environments

1. Houses – paint and dust
2. Water
3. Soil
4. Air
5. Schools
6. Share data and information

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### A. Identify the sources of lead – test environments

#### 1. Houses – paint and dust

- a. Train and support tenants and low-income homeowners to conduct and report tests.
- b. Enforce health-based building codes.
- c. Require mandatory lead testing in high-risk housing.
- d. Require or encourage lead testing at sentinel events
  - Sale of home
  - Before renting

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### A. Identify the sources of lead – test environments

#### 2. Water

- a. Require water sample tests during lead risk assessment.
- b. Establish a health-based standard for action levels of the level of lead in water. Develop policy around this standard.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### A. Identify the sources of lead – test environments

#### 3. Soil

- a. Conduct periodic testing of soil for lead in high-risk areas.
- b. Increase availability and affordability of soil test kits.
- c. Align the standards various departments and jurisdiction have for lead in soil.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### A. Identify the sources of lead – test environments

#### 4. Air

- a. Increase lead air emission testing.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### A. Identify the sources of lead – test environments

#### 5. Schools – Assess for potential hazards in:

- a. Drinking water
- b. Paint and dust in pre-1978 buildings
- c. Soil and playgrounds

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### A. Identify the sources of lead – test environments

#### 6. Share data and information

- a. Compile and share data on exposure sources.
  - Homes,
  - Water service lines, and
  - Soil, etc.
- b. Analyze data and share results.



# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### B. Get the lead out

1. Houses – paint, dust, and soil
2. Water
3. Air
4. Work places
5. How to pay for it

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### B. Get the lead out

#### 1. Houses – paint, dust, and soil

- a. Increase capacity to remediate hazards.
  - Engage non-profits and private sector in leading efforts.
  - Train more workers at all levels.
  - Increase homeowner knowledge of LSWP.
- b. Revise State and Federal EBL standards in order to increase the number of children who qualify for services.
- c. More federal investment to remediate public housing, subsidized housing, and homes where vouchers pay the rent.
- d. Replace lead contaminated windows.
- e. Provide financial resources for low-income home owners, incentives for rental property owners.

*more...*

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### B. Get the lead out

#### 1. Houses – paint, dust, and soil

*...continued*

- a. Require lead abatement at sentinel events.
  - Prior to sale
  - Prior to lease
- b. Develop relocation plans for homes where remediation exceeds a cost-benefit ratio.
- c. Lead hazards in housing should be a factor in determining areas for demolition and redevelopment.
- d. Control lead contamination in demolition.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### B. Get the lead out

#### 2. Water

- a. Replace leaded service lines.
- b. Replace leaded household plumbing (lead solder, fixtures).

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### B. Get the lead out

#### 3. Air

- a. Strengthen incentives and inducements for manufacturers to reduce emissions.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### B. Get the lead out

#### 4. Work places

- a. Reduce lead exposure in occupational settings to eliminate take-home lead.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### B. Get the lead out

#### 5. How to pay for it

- a. State
- b. Federal
- c. Philanthropy
- d. Health Care and Community Benefit

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### B. Get the lead out

#### 5. How to pay for it

##### a. State

- General fund contributions.
- Create dedicated revenue sources, such as:
  - Paint surcharge.
  - Fee on secondary sale of mortgages.



# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### B. Get the lead out

#### 5. How to pay for it

##### b. Federal

- Congress should secure an increase in resources for HUD's Office of Lead Hazard Control and Healthy Homes and the EPA.
- Authorize use of CHIP funds.

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### B. Get the lead out

#### 5. How to pay for it

- c. Philanthropy
- d. Health Care and Community Benefit

# Recommendations to Prevent and Eliminate Childhood Lead Exposure

## I. Primary Prevention

### C. Make sure there is no new lead

1. Ban the manufacture, distribution, and use of products containing lead.
2. Strengthen soil standards to restrict the use of lead-tainted soil.



# Healthy Homes

Coalition of West Michigan