CHILDHOOD LEAD POISONING IN CONNECTICUT

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WHAT WE'LL BE TALKING ABOUT

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- Prevalence of lead poisoning in Connecticut
- Connecticut specific data
- Uses of lead
- Health effects of lead
- State Lead Program
- Role of the local health department
- Drinking Water Section Partnership

WHAT IS LEAD?

- Lead is a naturally occurring element found in small amounts in the earth's crust
- Bluish in color when cut, then turns gray
- Malleable
- Heavy

- **Lead is not good for anyone in any amount**
  - **It has no health benefit**

IN THE BEGINNING

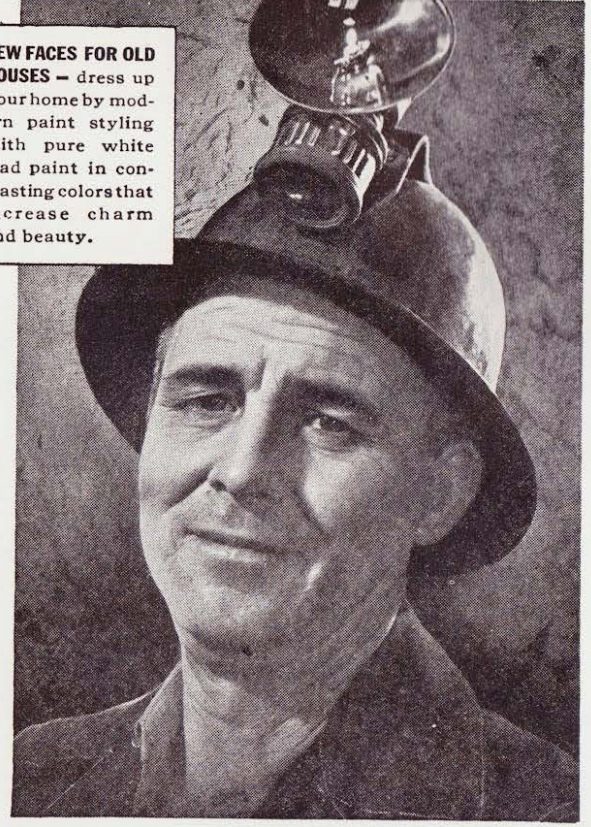
- Ancient Uses
  - Statues in Turkey 6500 BC
  - Sweetener for wine (fall of the Roman Empire?)
  - Eating utensils
  - Water vessels, viaducts, piping, wine storage containers

- Recognized as a poison
  - 370 BC – Hippocrates
    - Described colic in a man who extracted metals and recognized lead as the cause
  - 1700 AD Bernardino Ramazzini
    - Wrote of 54 occupations associated with lead poisoning
    - Description of ailments for potters and painters; suffer from palsied hands, abdominal colic, fatigue

“MODERN” TIMES

- Lead added to paint to:
  - Increase it’s durability to the weather/moisture
  - Decrease drying time
  - Brighten the color
- Lead pipes
- Lead solder:
  - Does not conduct electricity
  - Helps with watertightness
- Tetraethyl Lead was added to gasoline:
  - Help reduce engine knock
  - Boost octane ratings
  - Help with wear and tear on valve seats within the motor

NEW FACES FOR OLD HOUSES — dress up your home by modern paint styling with pure white lead paint in contrasting colors that increase charm and beauty.



Let a miner tell you what lead means in PAINT!

I DON'T claim to be any expert on painting and decorating, but I sure know plenty about lead — and lead is great stuff in paint!

It's white lead I mean, made from the sturdy metal we dig down here in the mines. Lead, as you know, is one of the toughest weather-fighting metals there is.

White lead is hard-boiled, too, when it comes to resisting time, sun and rain. It puts gumption into paint, makes it stick tight without cracking and scaling, adds extra life to paint jobs.

That's why a white-lead-painted house holds its looks so well. The paint film wears down so slowly and evenly it doesn't have to be burned and scraped off when you finally repaint. That's a big saving, too.

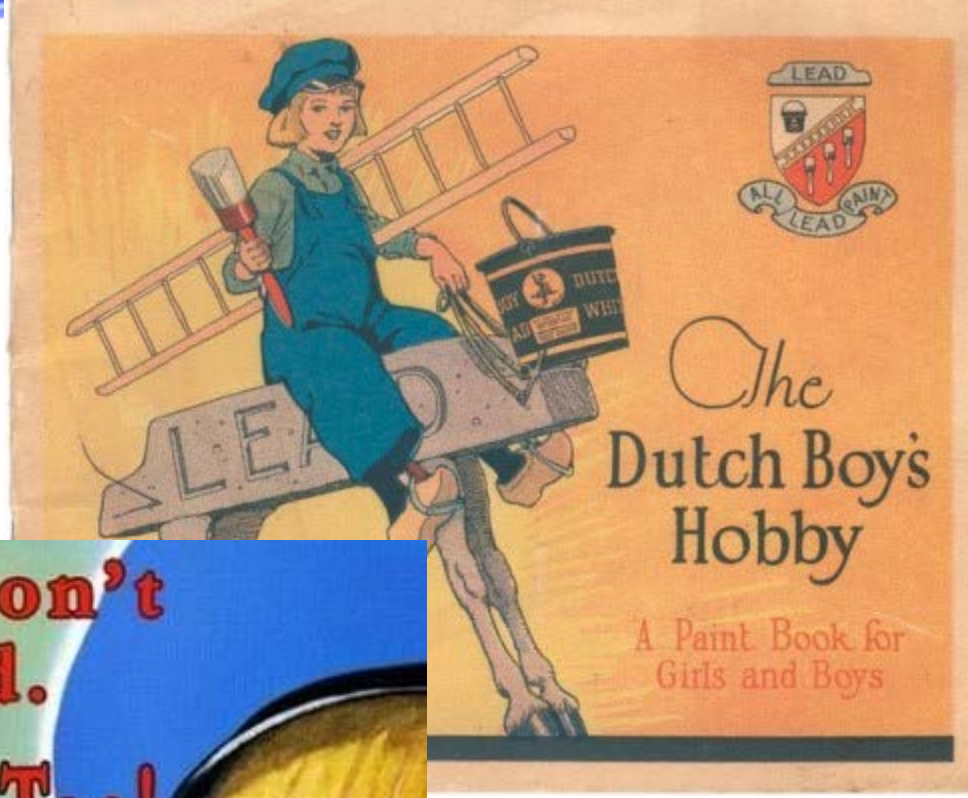
If you want this money-saving long wear, be sure to find out how much white lead is in the paint you buy. It's a pretty safe rule to follow: *the higher the lead content, the better the paint!* You can't, for example, get a more durable paint than one containing one hundred per cent white lead. This is the kind good painters mix from lead-in-oil. It's also being sold now in many places in prepared ready-to-use form, *in white and colors.*

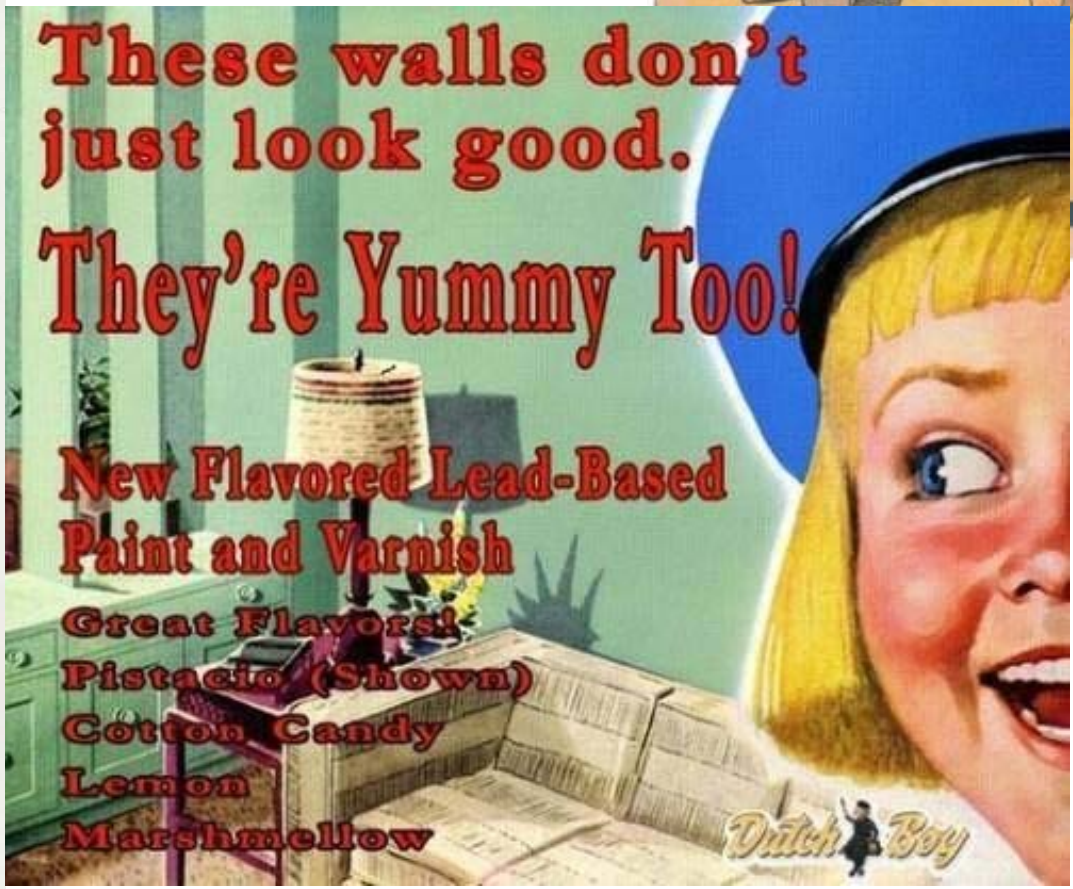
Any good painter or architect will tell you the same. They've learned from experience that using white lead paint is one case where the best is cheapest.

• • •

HOW MUCH SHOULD A GOOD PAINT JOB COST? You'll find the answer to this and many other important painting questions in free booklet "WHAT TO EXPECT FROM WHITE LEAD PAINT." Send postcard for your copy today.

LEAD INDUSTRIES ASSOCIATION
420 Lexington Avenue, New York, N. Y.





LEAD BANS

- 1978 – lead was banned in paint for residential use (manufacturers were phasing it out slowly)
- 1986 – lead solder was banned for use on plumbing
- 1996 – lead was banned in gasoline (after a phase out)

CDC’S LEVELS OF CONCERN OVER THE YEARS

Year	CDC’s Level of Concern (µg/dL)
1960	60
1970	30
1985	25
1991	10
2012	**5** **Reference Value**

SYMPTOMS OF LEAD POISONING

- **Typically none**
  - Mandatory Universal Screening (implemented 2009)

High blood lead levels

- Abdominal pain
- Sluggishness and fatigue
- Poor muscle coordination

HEALTH EFFECTS OF LEAD POISONING

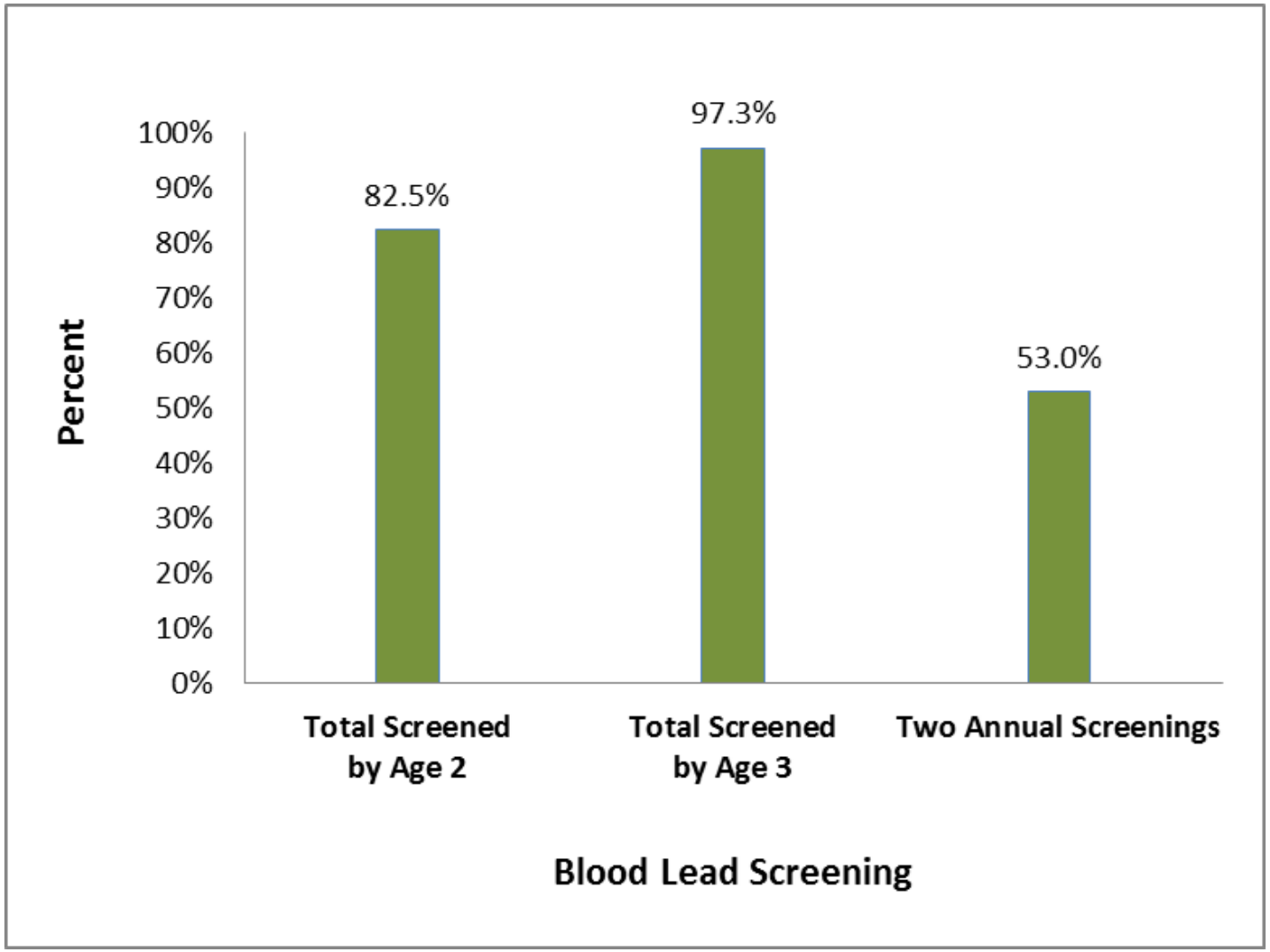
- Attention deficit disorder
- Developmental delays
- Learning difficulties
- Damage to the nervous system and kidneys
- Hearing loss

BLOOD LEAD TESTING BY 2011 BIRTH COHORT

Percentage screened for lead:

(1) at least once by age 2 or 3 and

(2) annually under age 3

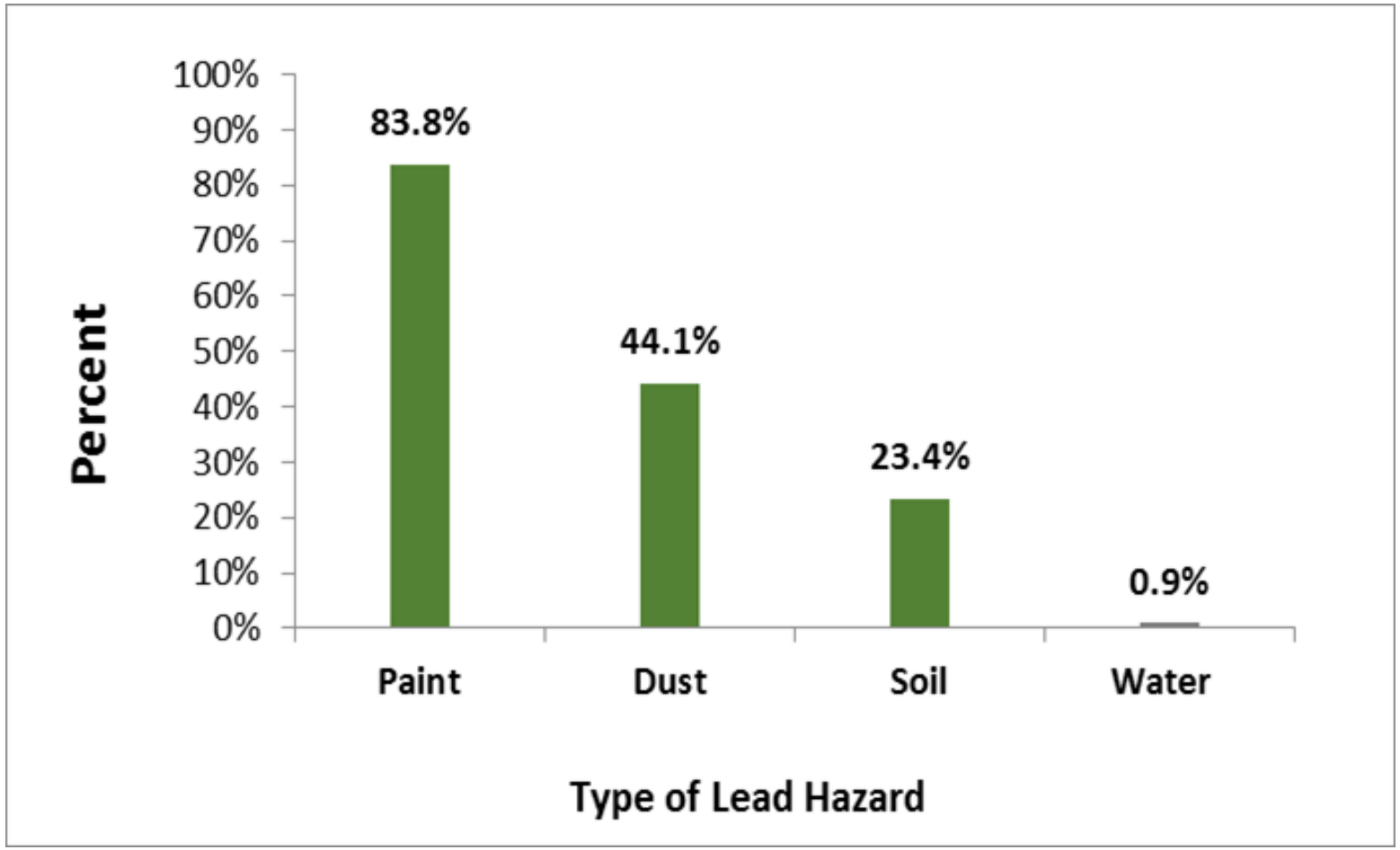


HOW ARE CHILDREN BECOMING POISONED?

- Deteriorated lead-based paint
  - Ingestion of lead contaminated dust
  - Ingestion of lead paint chips
  - Ingestion of soil containing lead paint

Percentage of environmental lead hazards identified by source – CY 2014

- 111 dwelling units investigated and reported
  - 93 were identified with a lead-based paint hazard
  - 49 were identified with a lead dust hazard
  - 26 were identified with a lead soil hazard
  - 1 was identified with a lead in drinking water hazard from a private well



ENVIRONMENTAL TOXIC LEVELS OF LEAD

- Paint: offered for sale (wet paint) > 0.06 percent lead by weight
  ≥ 0.50 percent lead by dry weight (paint chip sample)
  ≥ 1.0 milligrams lead per square centimeter (XRF tested)

- Dust: floors - 40 µg/sq. ft. (micrograms per square foot);
  window sills – 250 µg/sq. ft.;
  window wells – 400 µg/sq. ft.

- Soil: 400 parts per million

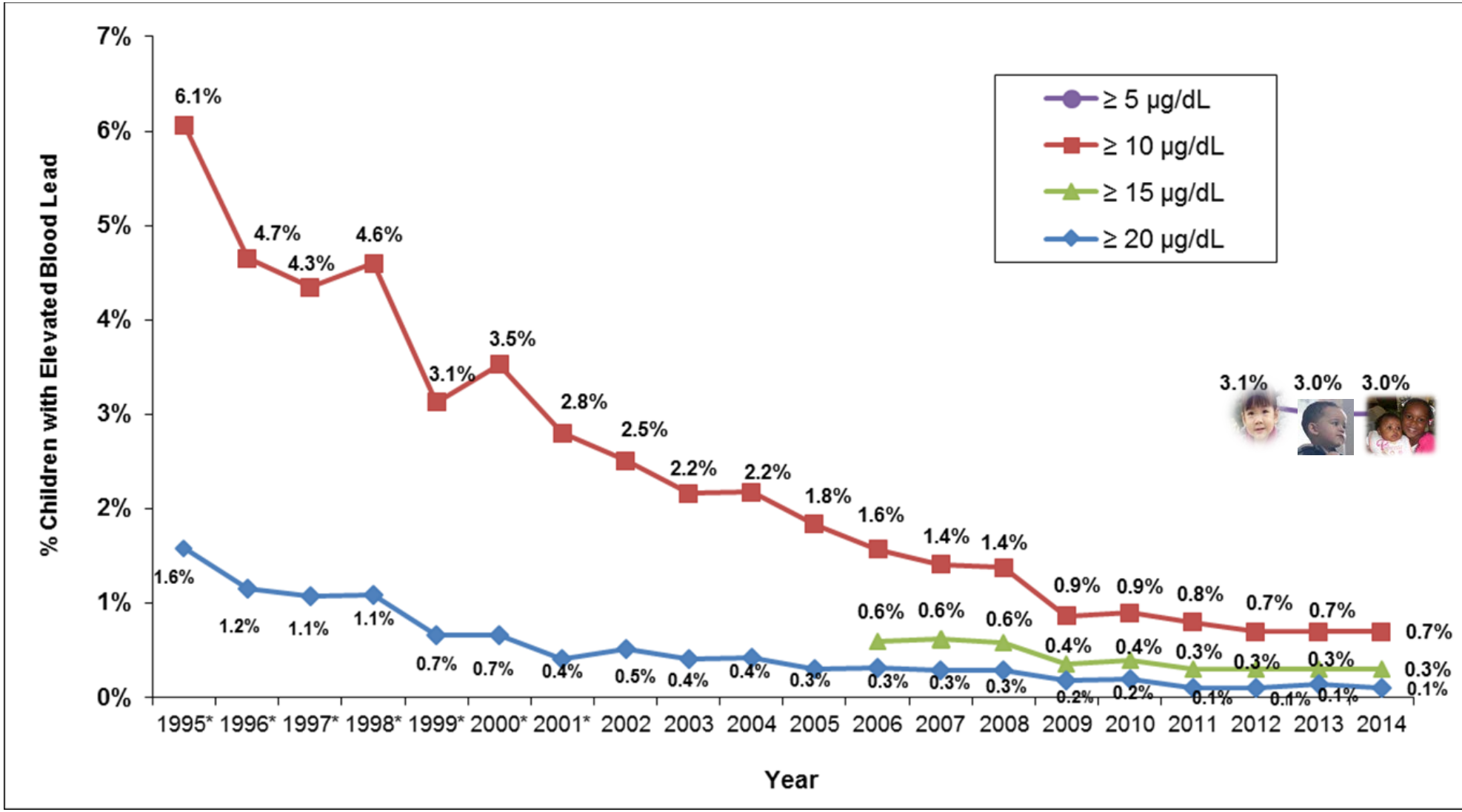
- Water: 15 parts per billion

PREVALENCE OF CHILDHOOD LEAD POISONING IN CONNECTICUT

- Children are considered lead poisoned when diagnosed with a confirmed blood lead level ≥5 μg/dL

- Among children under the age of 6 who had a confirmed blood lead test in 2014:
  - 2284 children ≥5 μg/dL
  - 213 children ≥15 μg/dL
  - 99 children ≥20 μg/dL

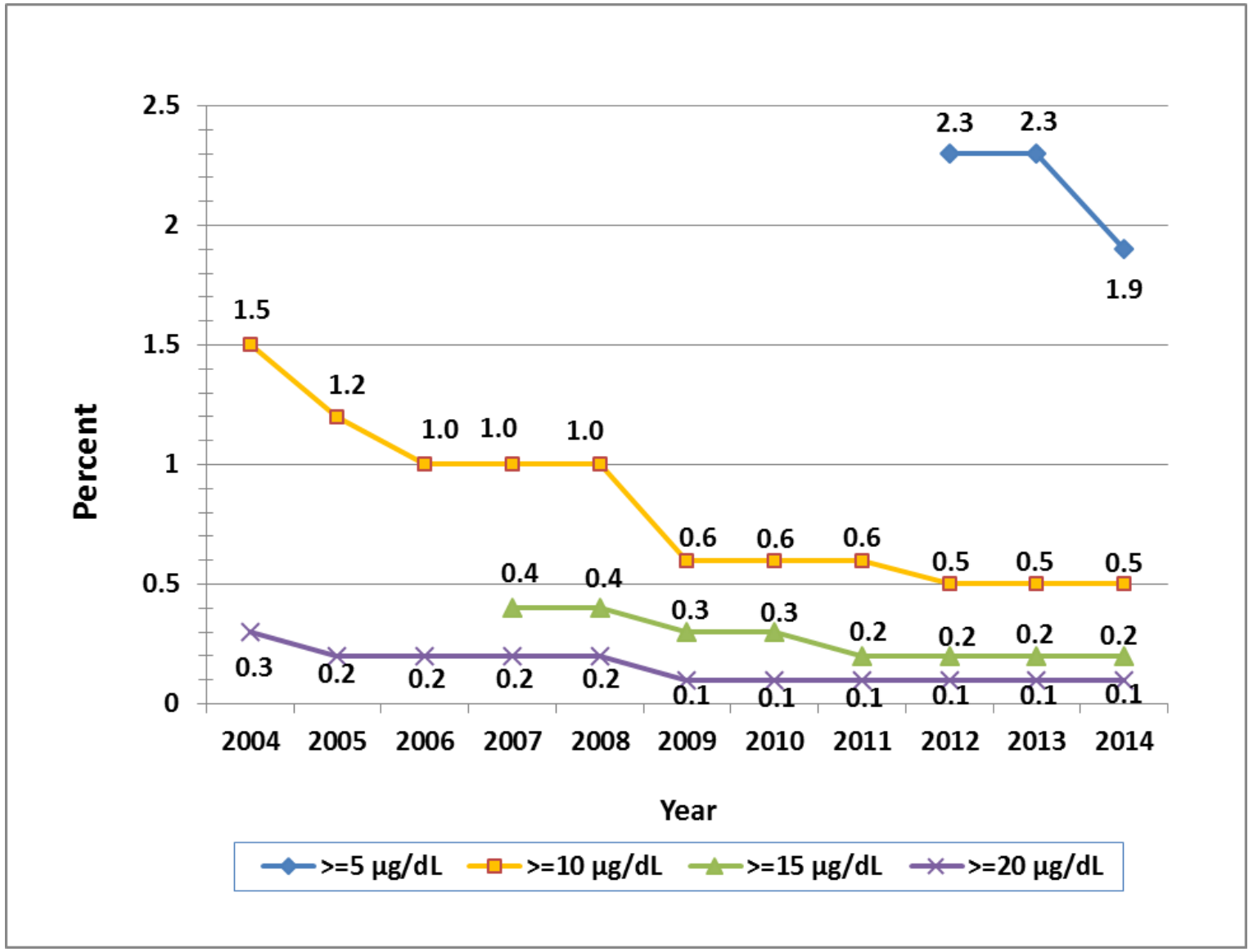
PREVALENCE OF CHILDREN UNDER THE AGE OF 6 WHO ARE LEAD POISONED, BY CALENDAR YEAR AND BY BLOOD LEAD LEVEL – CONNECTICUT 1995-2014

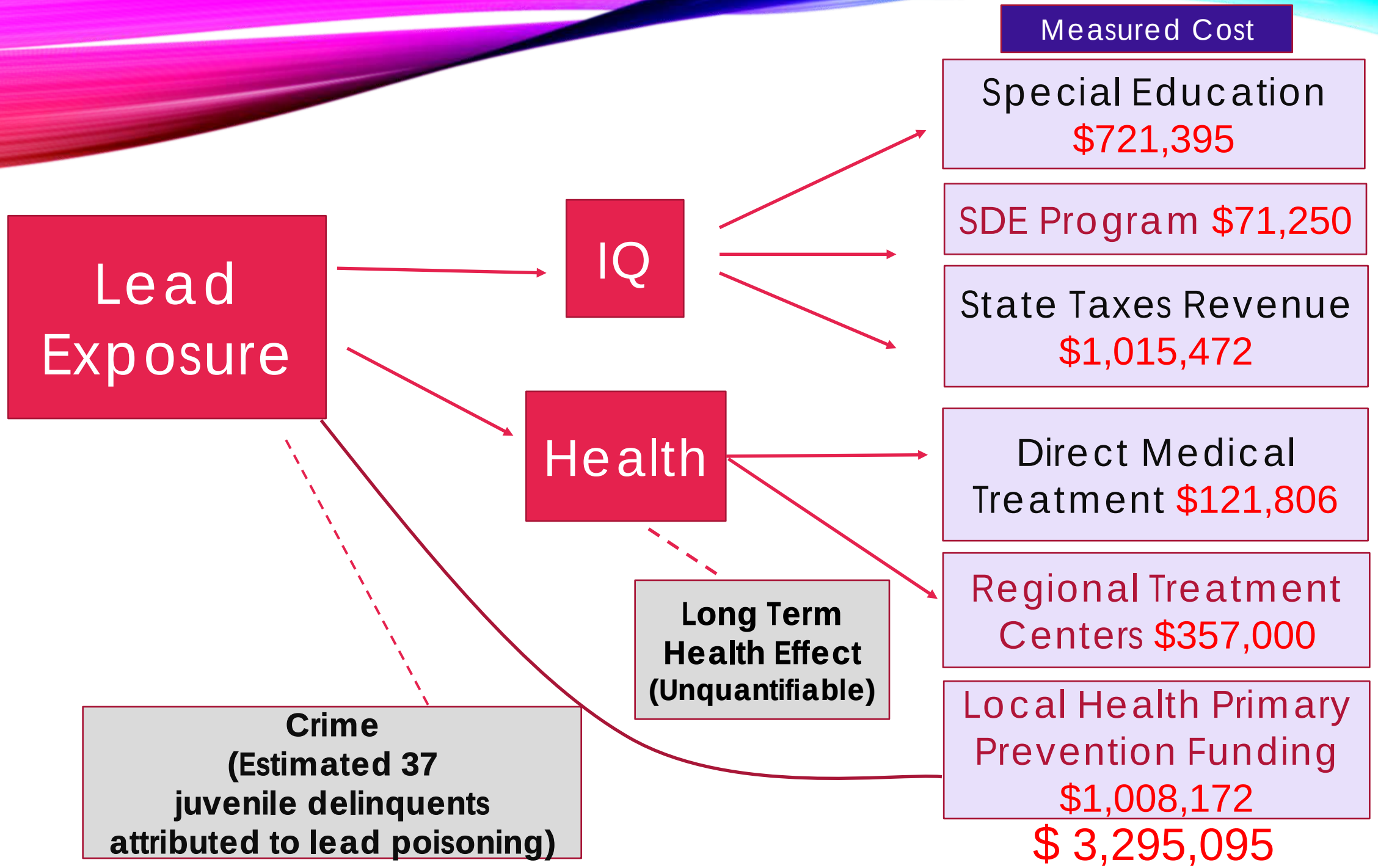


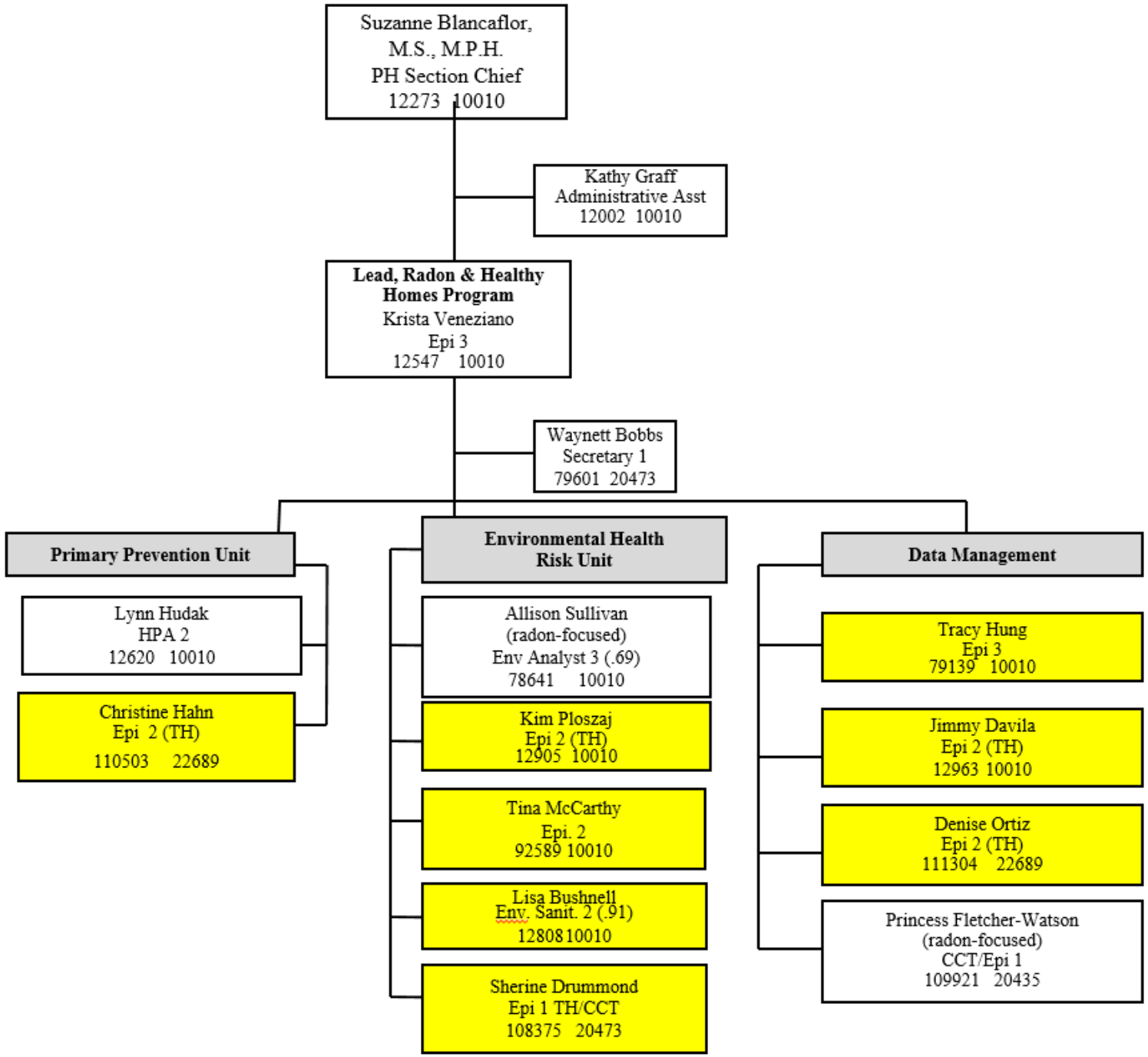
INCIDENCE OF CHILDHOOD LEAD POISONING IN CONNECTICUT

- Number of new cases identified (incidence) among children under the age of 6 who had a confirmed blood lead test in 2014:
  - 1473 ≥5 μg/dL
  - 164 ≥15 μg/dL
  - 74 ≥20 μg/dL

INCIDENCE RATE OF LEAD POISONING AMONG CHILDREN UNDER THE AGE OF 6, BY BLOOD LEAD LEVELS – CONNECTICUT CY 2004-2014




Measured Cost
Lead Exposure
IQ
Health
Special Education $721,395
SDE Program $71,250
State Taxes Revenue $1,015,472
Direct Medical Treatment $121,806
Regional Treatment Centers $357,000
Local Health Primary Prevention Funding $1,008,172
$ 3,295,095
Long Term Health Effect (Unquantifiable)
Crime (Estimated 37 juvenile delinquents attributed to lead poisoning)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STATE HEALTH IMPROVEMENT PLAN

- Lead was identified as one of the top five environmental risk factors
  - http://www.ct.gov/dph/lib/dph/state_health_planning/ship/hct2020/hct2020_state_hlth_impv_032514.pdf
- Highlighted on the Healthy Connecticut 2020 Performance Dashboard
  - http://www.ct.gov/dph/cwp/view.asp?a=3130&q=553676

CT STATE LEAD PROGRAM

- Connecticut is an EPA Authorized State
- **Lead Poisoning Prevention and Control Regulations** and various **statutes** pertaining to lead that cover:
  - Inspection for/and abatement of lead
    - Ensure that inspections and abatements are done correctly and at the appropriate times
  - Training providers
    - Ensure that the workforce is trained
  - Licensing/Certification requirements for lead professionals
    - Ensure professionals are trained and licensed/certified in the correct discipline
  - Reporting of blood lead analysis results from laboratories (80,000/year)
  - Blood lead screening requirements for medical providers

CT STATE LEAD PROGRAM

Workforce Development:

- Conduct reviews/approvals of the training materials before a training provider is approved to train students
- Conduct audits of training providers once they are approved to ensure that they are following their training plan

Workforce Oversight:

- Conduct audits of lead abatement jobs
  - Tough to find because we don't require notification of the start of abatements

CT STATE LEAD PROGRAM

Funding:

- Administer grants from EPA and CDC
- Administer over $960,000 in primary prevention funding that is given to local health departments (LHD) throughout Connecticut
  - 42 elected to take the funding for 2016-2017
    - Provide oversight of contracts between State Lead Program and LHD
- Administer contracts with the two Regional Lead Treatment Centers in CT
- Administer three-year Health and Human Services Block Grant Contracts for LHDs
  - Two for Lead totaling ≈$155,500
  - Two for Healthy Homes totaling ≈ $137,000

CT STATE LEAD PROGRAM

Case Management:

- Manage child and environmental cases (≈3,300)
- Work with LHDs to ensure children's blood lead levels are declining
- Work with LHDs to ensure lead abatement is completed

Encapsulants

- Review and approve applications for new products
- Maintain the current list of approved encapsulants

CT STATE LEAD PROGRAM

Education/Outreach:

- Implement two media campaigns to targeting health disparities for lead poisoning by race and ethnicity

Colorful Babies Campaign

- Blacks (5.8%) were twice as likely to be lead poisoned at levels ≥5 µg/dL than Whites (2.5%), or Asians (2.5%)
- Billboards, bus ads, social media (Facebook), Radio (Pandora, 101.3)

- **www.ct.gov/preventlead**

Saca el Plomo Campaign (Get the Lead Out)

- Hispanics (4.0%) were 1.5 times as likely to be lead poisoned at levels ≥5 µg/dL than Non-Hispanics (2.6%)
- Two television commercials, radio (Pandora, Spanish stations), newspaper advertisement, Public Service Announcement

- **www.ct.gov/plomo**


LEAD POISONING
IS 100%
PREVENTABLE
DPH
Connecticut Department
of Public Health


Por la Salud de tu Familia...
SACA EL PLOMO DE TU CASA
Un mensaje de la Comisión de Asuntos Latinos y Puertorriqueños de Connecticut


DON'T GIVE
LEAD DUST A HOME
DPH
Connecticut Department
of Public Health


PREVENT LEAD
POISONING
BEFORE YOU CAN'T
DPH
Connecticut Department
of Public Health

CT STATE LEAD PROGRAM

- **Office of Early Childhood**
  - Child Care
    - Developed protocol for the inspection and remediation of lead in child care facilities
    - Assist with the review of lead inspections and submitted remediation plans
  - Birth to Three
    - Memorandum of Understanding (MOU) to provide a list of children with blood lead levels at or above the level of automatic entitlement of enrollment

- **Department of Housing**
  - MOU for data sharing of subsidized housing units
  - Training on lead for Housing Quality Standard inspections for subsidized housing

CT STATE LEAD PROGRAM

- **Department of Social Service**
  - MOU for data sharing to determine Medicaid provider compliance with lead screening for children on Medicaid

- **Refugee Resettlement Agencies**
  - Perform a data match with refugee entry data to ensure children have had the required blood lead screenings

CT STATE LEAD PROGRAM

Provide the following to LHDs:

- Technical assistance
  - Answer any questions they have
  - Assist with cases if requested
- Training
  - Initial and refresher lead training
- Web-based surveillance system
  - Track all children's blood lead levels (BLL)/cases
  - Track all environmental cases
- Educational materials
- **Primary Prevention Funding**

WHEN IS A LEAD INSPECTION REQUIRED

- When a venous BLL of 20 µg/dL is reported
  - Epidemiological Investigation including a lead inspection
    - Complete the Epidemiological Investigation Form (collects information on the child and family to tries to target where the child is being exposed to lead)
    - Testing paint, dust, water, soil, and any other sources the inspector deems necessary
      - Especially important for Ayurvedics and/or ethnic remedies

- When a child (<6 years of age) with two venous BLL of between 15-19 µg/dL taken at least three months apart resides in the dwelling
  - Lead inspection
    - Testing paint, dust, water, soil, and any other sources the inspector deems necessary

WHEN IS LEAD ABATEMENT REQUIRED

- When a child resides in a dwelling unit with identified defective lead-based paint (regardless of the child's BLL) – per the regulations
  - Child is defined as a person under the age of six years

- Director of Health can order abatement under the CGS 19a-111 regardless of the person's age
  - Say a child is 8, a LHD can perform an inspection and issue an order to abate
  - But not many children are tested after the age of 5-6

WHAT IS REQUIRED TO BE ABATED

Per the Regulations:

- All defective lead –based surfaces
- All defective exterior surfaces and all defective surfaces in common areas containing toxic levels of lead
- All lead-based chewable surfaces whether or not that surface is defective
- All lead-based movable parts of windows and surfaces that rub against movable parts of windows must be abated when a child has an elevated blood lead level

WHAT IS NOT REQUIRED TO BE ABATED

- Surfaces that have been tested and found not to be leaded
- Intact surfaces (unless they are movable parts of windows or chewable)

ROLE OF THE LOCAL HEALTH DEPARTMENT

- Child case management
  - Correspond with medical providers, family, and anyone else who can help the family
  - Mail retest reminder letters
  - Mail out educational information
    - 10 µg/dL or higher capillary or 5 µg/dL or higher venous

ROLE OF THE LOCAL HEALTH DEPARTMENT

- Environmental case management
  - Conduct inspection
  - Issue Lead Abatement Order to the property owner
  - Review/approve lead abatement plan
  - Monitor abatement work
  - Re-inspect to ensure all work is complete
  - Conduct clearance dust wipe samples
    - Making sure no dust hazards are left behind
  - Issue a Letter of Compliance

- It’s a lot of work!

SUMMARY

- We’ve known lead has been a problem for a long time
- Laws are in place to prevent lead poisoning from occurring
- Lots of agencies are working together to reduce lead poisoning
- Connecticut has done a good job of reducing the number of cases of lead poisoning
- Local health departments do a great job of conducting inspections, issuing orders, and following up on lead cases

INTERNAL DPH COLLABORATION

Lead Program and the Drinking Water Section (DWS)

- Trying to ensure that if lead is identified in water sampling results reported to the DWS that:
  - It's not a trend
  - There is no poisoned child living at the address
  - Consumers know about it and think about having their children tested
  - Local health knows about it

CONTACT INFORMATION

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