

# **The Evolution of Lead Poisoning Prevention: Lessons from the Past to Inform Our Future**

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Chief Scientist

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Ohio Healthy Homes Conference May 2023

# Key Points

- Lead Paint is a Rare and Important Example of Science-Based Policy & Practice
- Parents & Community Members with Scientists, Government, Private Sector & Others Can Create Enormous Political Will
- Housing, Health and Environment: An Emerging New Consensus
- The Role of Standards—Getting Them Right
- Reforming the Federal Lead Paint Law
- Ending the Policy Paralysis Paradox: A Story of Hope

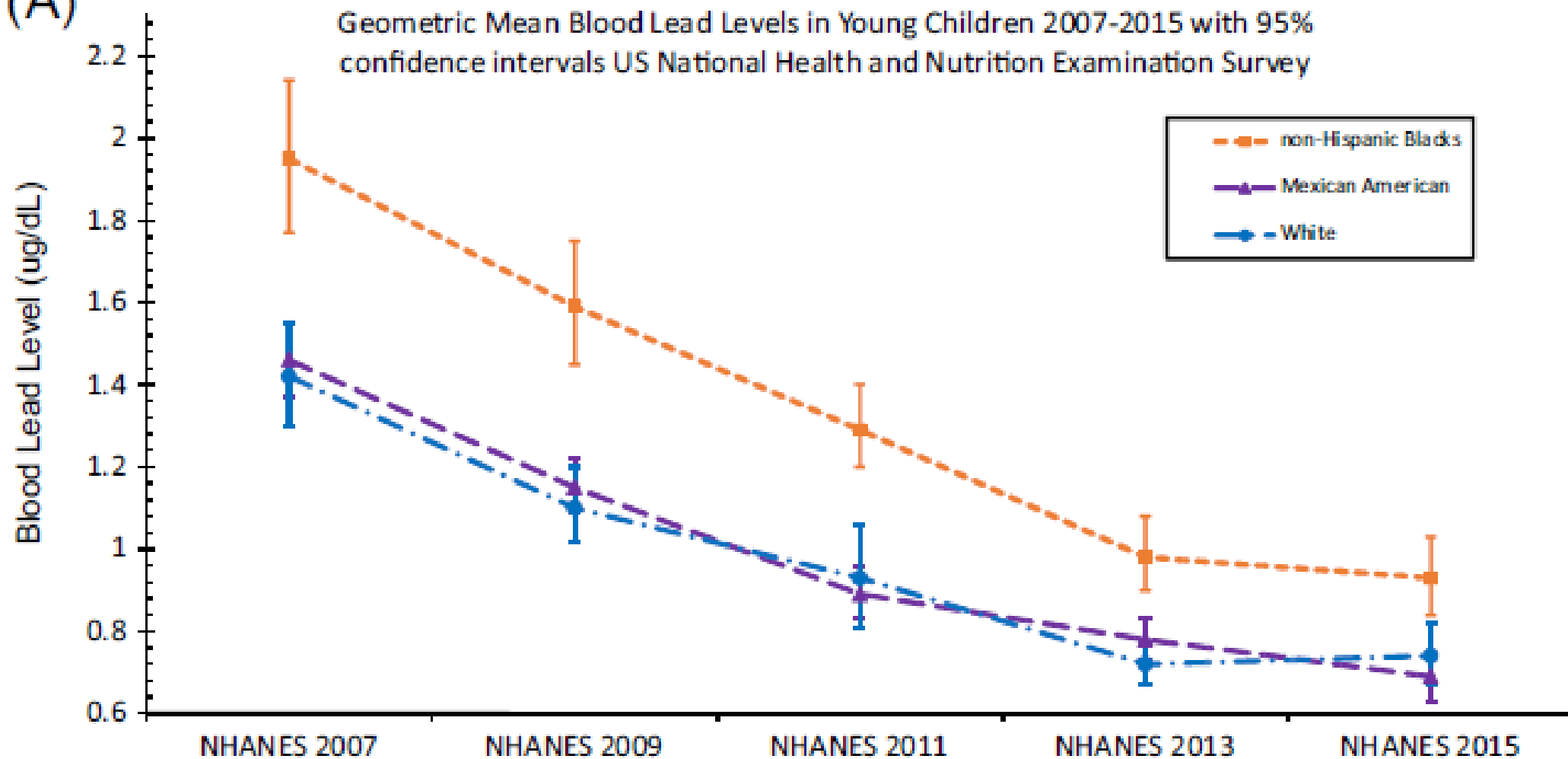
# From the 1970s to 2016:

Blood lead levels in the US improved  
by 93.6% (from 12.8 to 0.82  $\mu\text{g}/\text{dL}$ )

Dignam T, Kaufmann RB, LeSturgeon L, Brown MJ. Control of Lead Sources in the United States, 1970-2017: Public Health Progress and Current Challenges to Eliminating Lead Exposure. J Public Health Manag Pract. 2019 Jan/Feb;25 Suppl 1:S13-S22

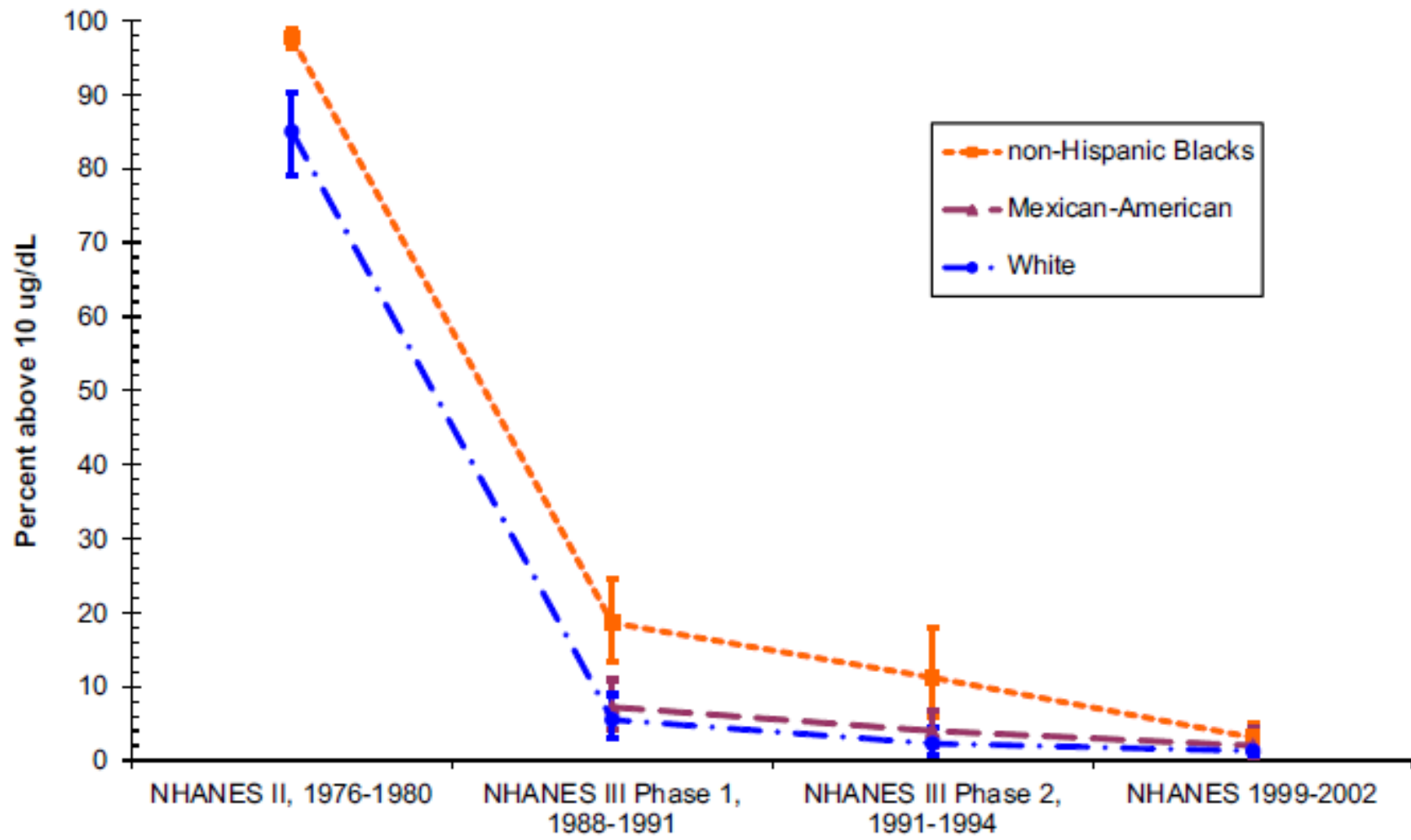
(A)

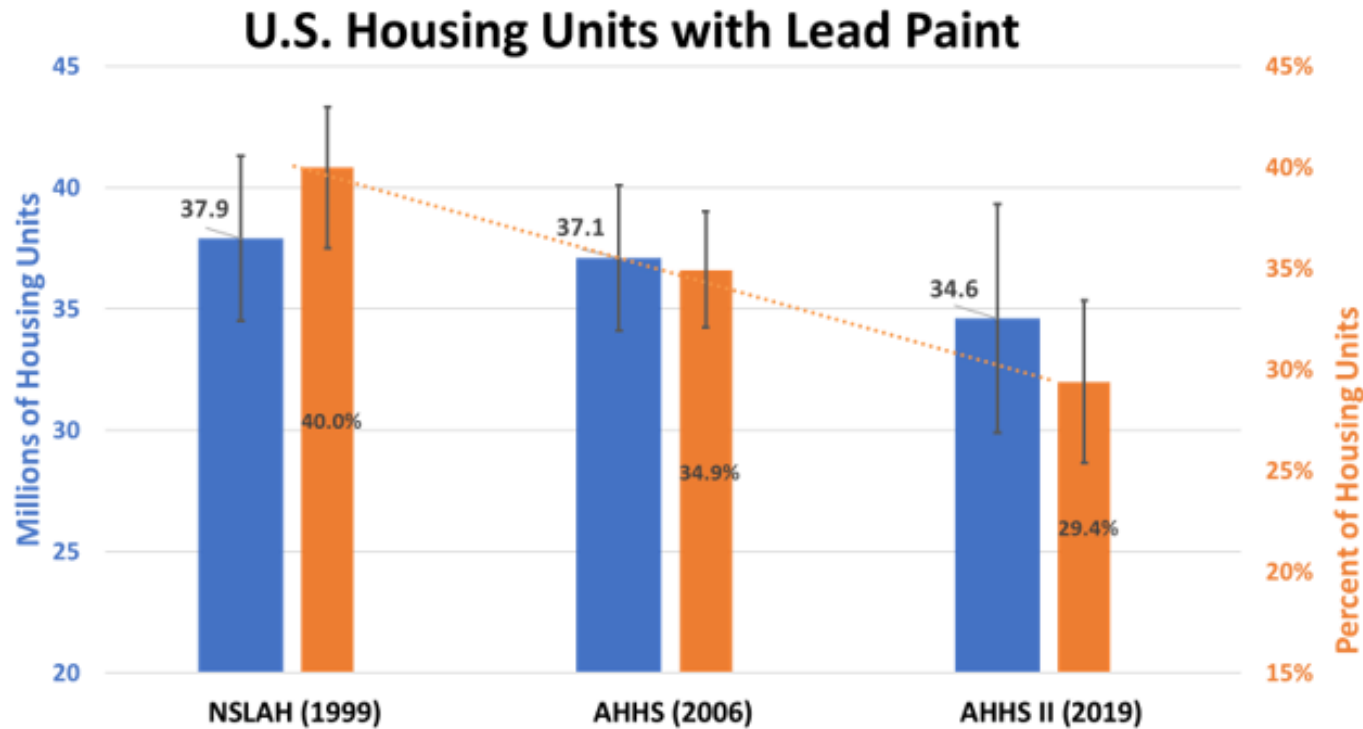
Geometric Mean Blood Lead Levels in Young Children 2007-2015 with 95% confidence intervals US National Health and Nutrition Examination Survey



(D)

Percent of U.S. Children Aged 1-5 Years with Blood Lead Levels  $\geq 10 \mu\text{g/dL}$ , with 95% Confidence Intervals, NHANES II, NHANES III Phases 1 and 2, and NHANES 1999-2002





Abbreviations: NSLAH = National Survey of Lead and Allergens in Housing, AHHS = American Healthy Housing Survey

Source: US Department of Housing and Urban Development. Findings on Lead-Based Paint/Hazards from the American Healthy Homes Survey II, CDC Lead Exposure and Prevention Advisory Committee Meeting, May 14, 2021

**From 1990 to 2019:**  
**Homes with lead paint declined from 64 to 35 million**

HUD Comprehensive & Workable Plan 1990 and American Healthy Housing Survey II, 2019

# Where We are Today

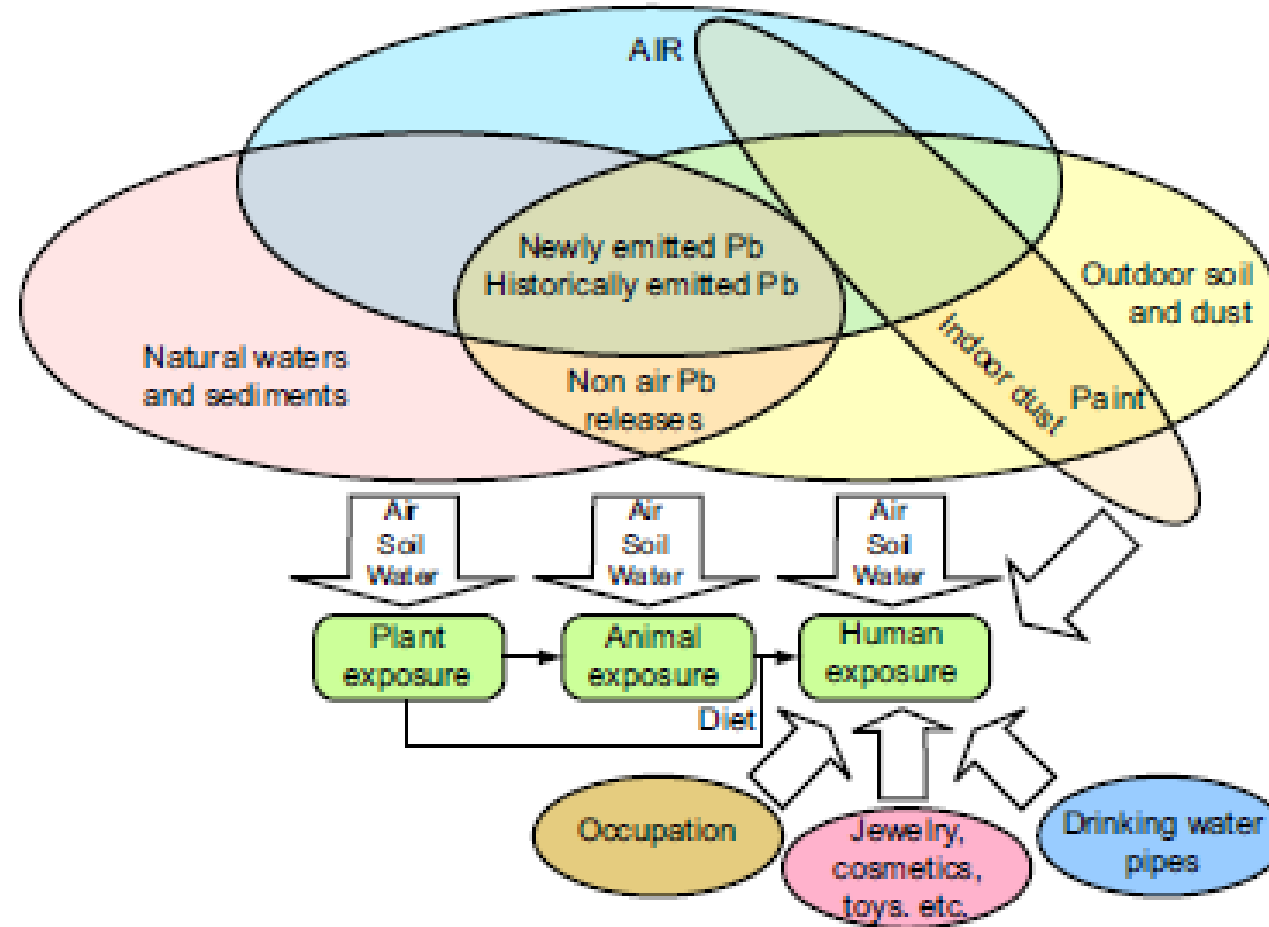
- 590,000 children still have elevated blood lead levels  $\geq 3.5 \mu\text{g}/\text{dL}$
- Disparities by race, ethnicity, income, housing quality remain
- Homes with deteriorated lead paint **increased** by 4 million from 2012 to 2019 (aging housing stock)

## Fifty Years: 3 Phases from 1971-2022

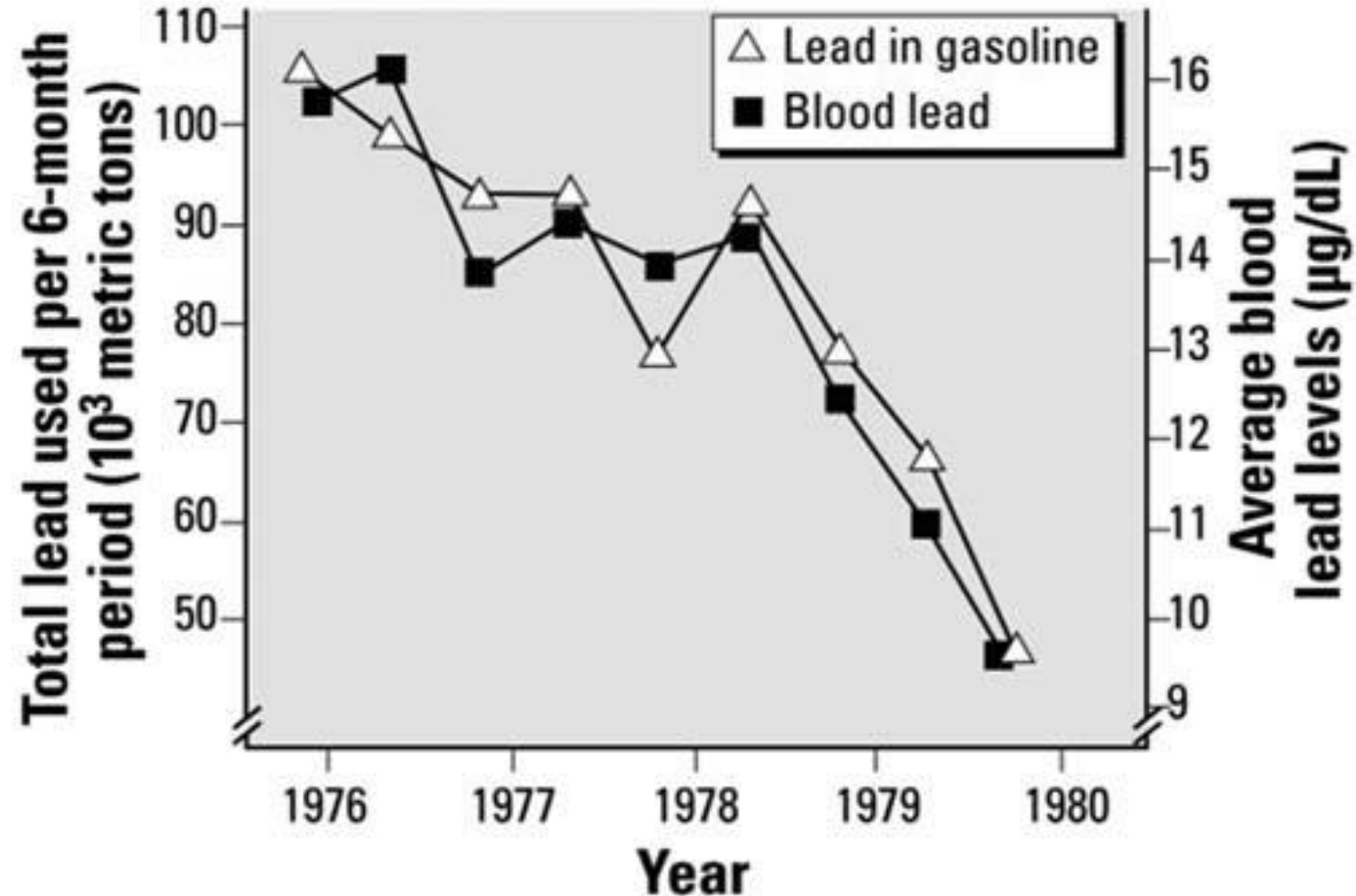
- A medical triage approach from 1971-1991;
- An emergent (but small) prevention housing-focused approach from 1992-2015; and
- Expansion to take proven solutions to scale



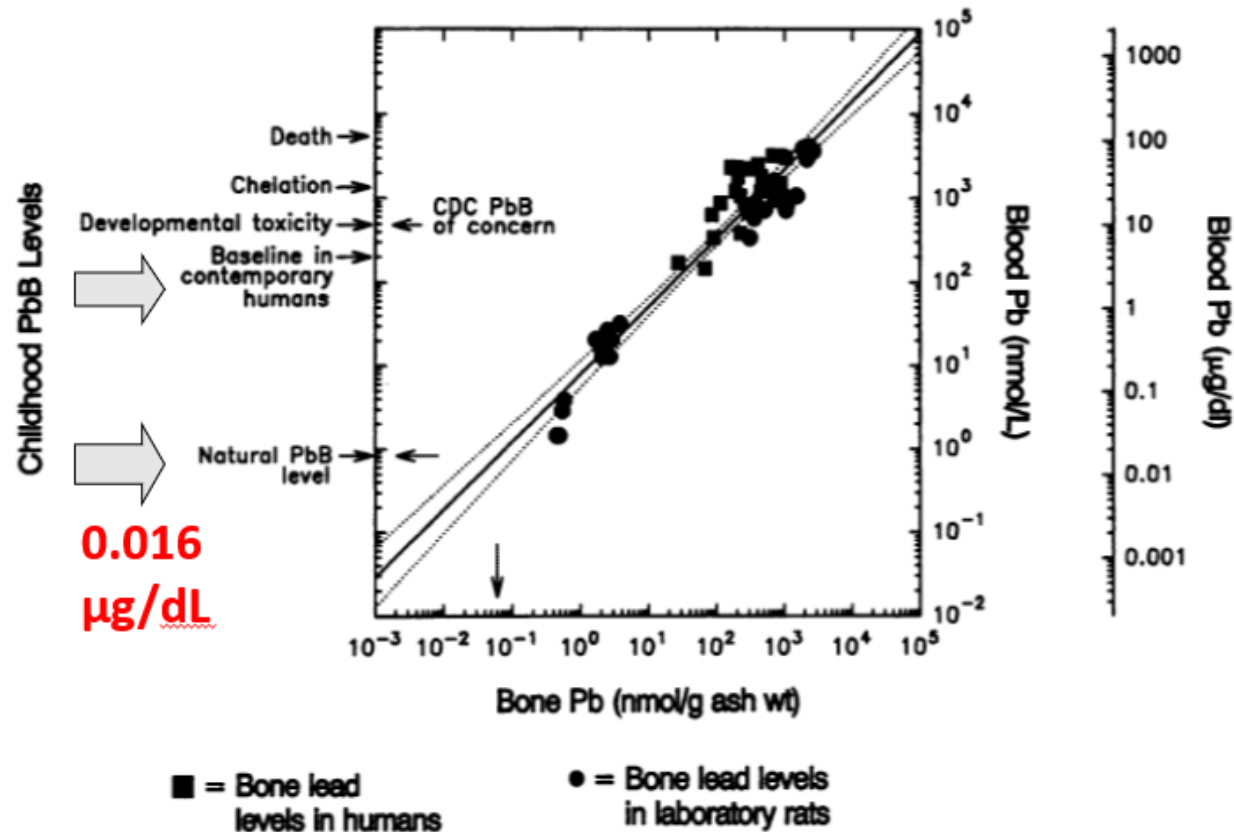
# Minimizing the Importance of Lead in Paint



# One View: The Problem Was Solved



# Second View: Problem Was Not Solved: Blood Lead is still 100 times higher than “Natural” background



Smith &  
Flegal. Am J  
Pub Health  
(1992) 82;11  
1565

# Lead Paint Industry Finger Pointing

**Gasoline, food, water, landlords, parents, even children themselves**

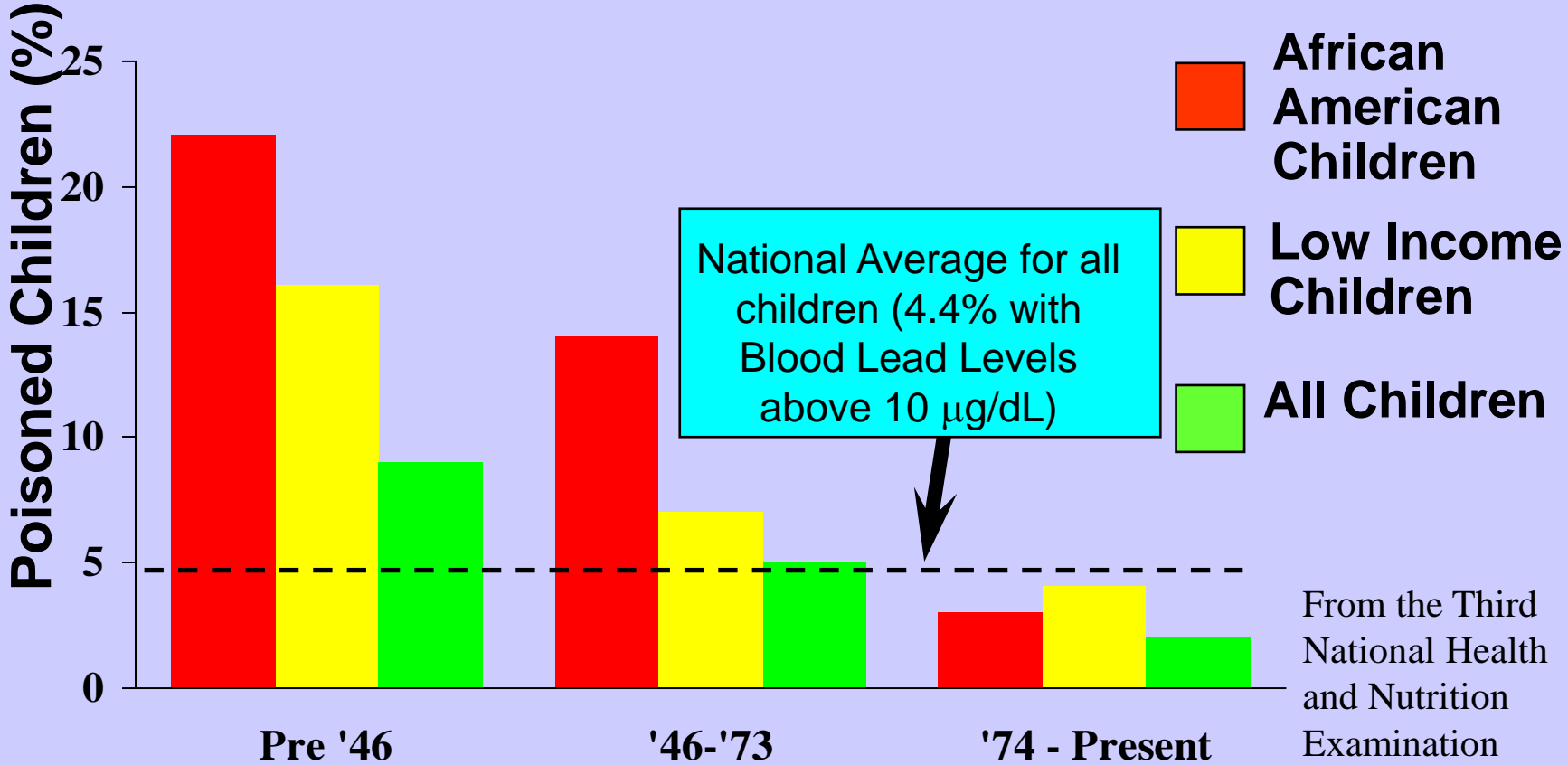
Simple, vigorous, periodic scrubbing of floors, sills, walls of inner home surfaces . . . can reduce dramatically and sufficiently the perceived and persistent lead now detected in homes of children. . . “Cleanliness is next to Godliness” was practiced by those legendary Dutch housewives who vigorously scrubbed their homes [and is] now needed above all other aspects of the lead-in-child[ren] problem. . .<sup>40</sup>

John Weaver, Sherwin-Williams, 1985

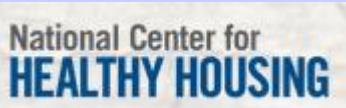
National Center for  
**HEALTHY HOUSING**



# Housing, Lead Paint & Blood Lead

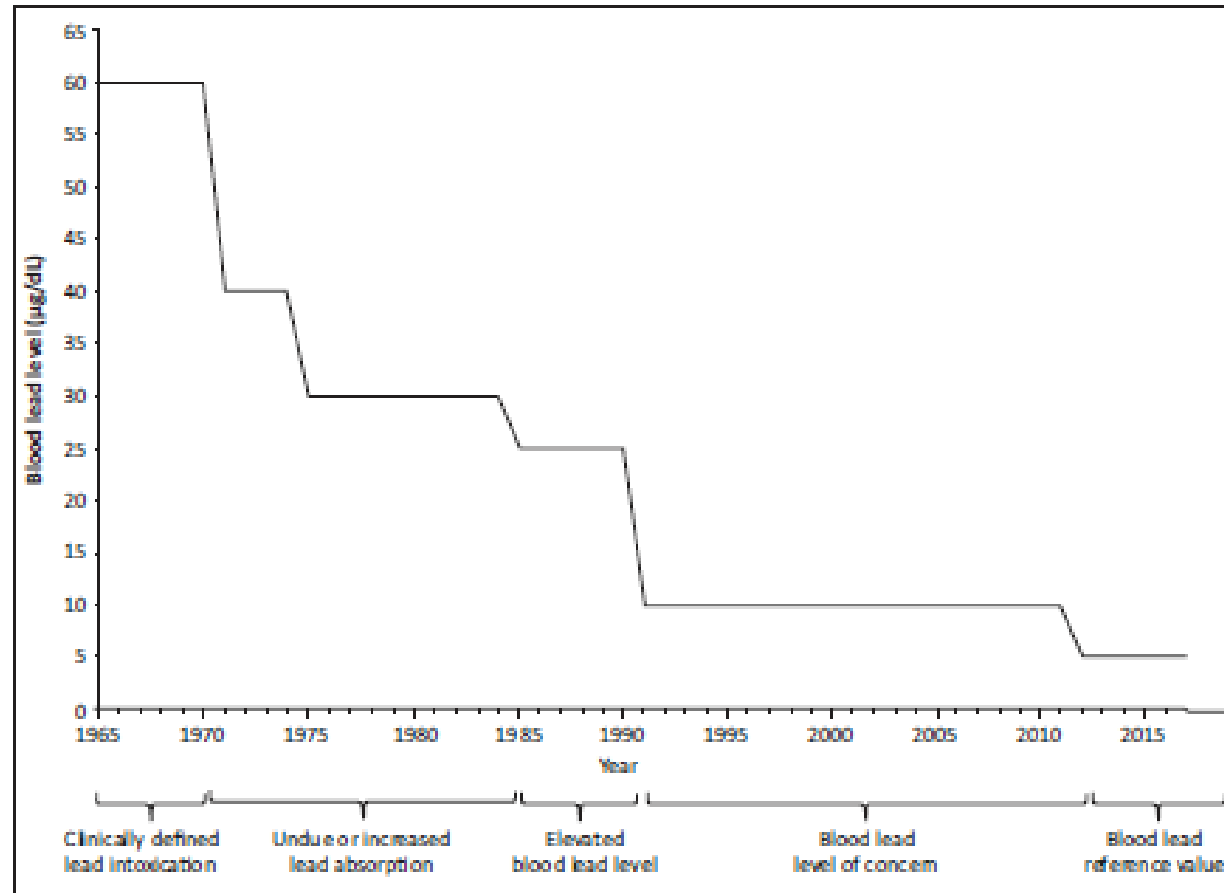


From the Third National Health and Nutrition Examination Survey (NHANES III), Phase 2, 1991-1994



Age of Residence, year built

# CDC Blood Lead Trigger Levels



Surgeon General  
**1971: 80 µg/dL**  
was an  
“unequivocal  
case of lead  
poisoning.”

**2022: 3.5 µg/dL**  
CDC blood lead  
reference value

FIGURE 2.1 CDC historical blood lead levels triggering action (in 2021 CDC reduced the blood lead reference value from 5 µg/dL to 3.5 µg/dL). Reproduced with permission: Ettinger *et al.* CDC lead poisoning prevention program. *J Public Health Manage Protect* 2019; *Jan/Feb (suppl 1):S5–S12.*

# Where was the Housing World 1970-1990?

“The scientists told us it was gasoline; we were clearly wrong about that, but that’s what we were told.”

- Donna Shalala, former HUD policy assistant secretary, later HHS Secretary

EPA & FDA concluded in the 1970s that “Food is the largest contributor of lead to the general population.”

- Source: EPA’s Position on the Health Implications of Airborne Lead, EPA; November 28, 1973 & Bureau of Foods, Compliance Program Evaluation, FY 1974 Heavy Metals in Foods Survey (7320.13C); June 19, 1975

# Paralysis: HUD, EPA & CDC Issue Their Own 1990 Separate Plans

“Incredibly, no one in the key offices at EPA or HUD could name a single person at the other agency when I asked them in 1988. Lead paint had fallen through the cracks.”

Don Ryan, Congressional Staffer



U.S. Department of Housing and Urban Development  
Office of Policy Development and Research

## **Comprehensive and Workable Plan for the Abatement of Lead-Based Paint in Privately Owned Housing**

Report to Congress

**STRATEGIC PLAN FOR THE  
ELIMINATION OF CHILDHOOD  
LEAD POISONING**

Developed for the Risk Management Subcommittee, Committee  
to Coordinate Environmental Health and Related Programs,  
U.S. Department of Health and Human Services.

February 1991



# Lawsuits & Affordable Housing – 1970s-1990

- Most poisoned children never had their day in court
- A few “jackpot” awards paralyzed the low-income housing world
- No standards
- The failure of the 1971 Lead Paint Poisoning Prevention Act

# Focus on Presence of Lead Paint Backfires: Dangerous Removal Methods *Increased* Blood Lead



**Research  
results in  
banning  
such  
practices**

# The Perfect Storm

- Public health focused on screening & medical management
- Housing failed to include health into their operating and capital improvement budgets
- Environment remain focused on gasoline, water and industrial releases

# Missed Opportunities

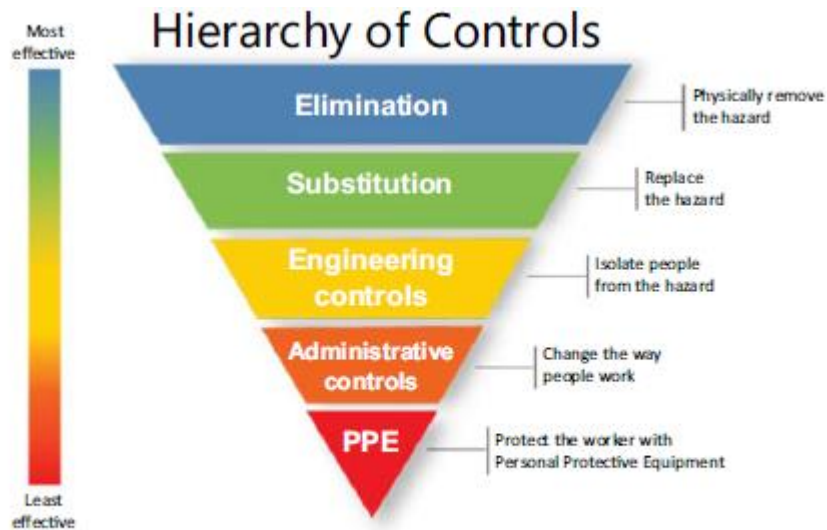


FIGURE 1.11 Hierarchy of controls by effectiveness. Source: National Institute for Occupational Safety and Health. <https://www.cdc.gov/niosh/topics/hierarchy/default.html>.

Hierarchy of Lead Paint Hazard Control From Most to Least Effective



**1895 – Australians Diagnose Lead Paint Poisoning**

**1920 - Lead Paint Ban by the International Labour Organization**

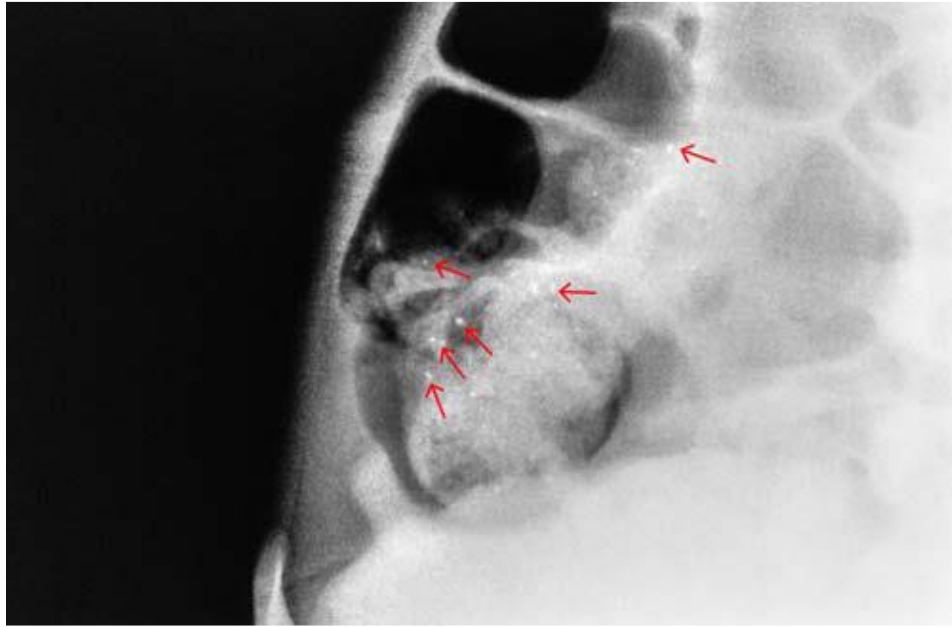
**1978 - Lead Paint Ban in the US**

# Driving the Divide: Toxicity vs. Intervention Research

- 28,900 studies on lead toxicity (2014)
- Less than 50 studies on remediation (2019)

# Part 2 Seeds of Success Emerge Late 1980s

# Pathway Studies & Importance of Lead Dust Recognized in the mid 1980s



1971 Lead Paint Poisoning  
Prevention Act & 1973  
Amendments: Focus on  
Lead Content, not Lead  
Exposure

1983 Ashton v. Pierce Court  
Case

# 1988 Bombshell ATSDR Report to Congress

“Existing leaded paint in U.S. housing and public buildings remains an **untouched and enormously serious problem** despite some regulatory action in the 1970s to limit further input of new leaded paint to the environment. For this source, **corrective actions have been a clear failure.**”

TABLE 3.1 Number of children exposed to lead sources and pathways.

Source/pathway	Number of children at risk
Lead paint chip, dust, and soil ingestion	12 million
Lead gasoline inhalation	5.6 million
Industrial point sources	230,000
Lead plumbing and drinking water	1.8 million
Lead in food ingestion	1 million

*Adapted from ATSDR. Nature and Extent of Childhood Lead Poisoning: A Report to Congress; 1988.*



# 1988 ATSDR Report Author: Paul Mushak

- Publicly resigned from the Public Health Service in protest

Mushak said: “No way in hell can you comprehend the complexity of this problem in a boiled down, very misleading and essentially neutral document.”

--Washington Post 1988

# The Birth of Lead Paint Risk Assessments

- The Untenable Position of Public Housing Authorities
- Housing Authority Risk Retention Group
- Miles Mahoney & Gordon Cavanaugh
  - Focus on both immediate and long-term sources & pathways

# The Scandal that Led to the Creation of the HUD Lead Paint Office

- New Orleans Public Housing Authority White Paper showed hundreds of poisoned children in late 1980s
- Congressional Hearings:
  - The public housing witness stated, “this is a policy issue” and referred to the policy office as the entity within HUD that was responsible.
  - The policy witness stated that because the New Orleans situation was public housing, it was their responsibility”
- Senate creates a new “Office of Lead Abatement & Poisoning Prevention” within the powerful immediate office of the HUD Secretary to end the finger-pointing (1991) (Senate Report 102-107, p. 51)

# Internal Resistance to the New HUD Lead Paint Office (early 1990s)

“The Office of Lead Based Paint suffers from neglect, both from the Department and the Congress. During the Kemp years, it was treated as something of a nuisance, forced on the Department by Senator Mikulski—one of Secretary Kemp’s least favorite persons.

“It was never given the appropriate number of staff to do anything but the minimum effort. . . . Except for Bruce Katz’s efforts I don’t see any substantive change in the Department’s attitude towards the Office or the [lead poisoning] issue.”

--Mike Hill

# Two Non-Profits Emerge In the Early 1990s to Overcome the Paralysis

- **Alliance to End Childhood Lead Poisoning (advocacy)**
  - First national lead poisoning prevention conference (1991):
  - Over White House Objections, Dr. Louis Sullivan (HHS Secretary) declares “Lead poisoning is the No. 1 environmental threat to the health of children in the United States.”
- **National Center for Lead-Safe Housing (research, training, technical guidance, policy)**
  - (now National Center for Healthy Housing, 1992)



# Congress Acts: Title X of the 1992 Housing & Community Development Act

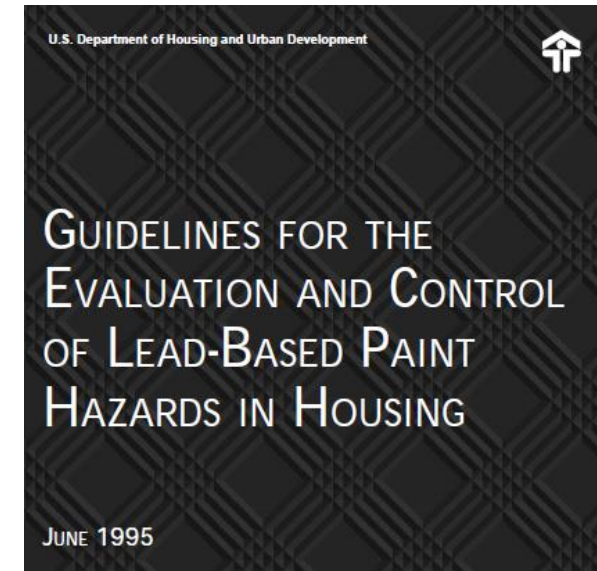
- Health, Environmental & Housing Law
- How it was passed, overcoming industry objections
- Pathway science to redefine lead paint hazard (dust)
- Disclosure, new dust standards, interim controls and long-term abatement
- Ordered OSHA to protect construction workers
- First funding for privately owned housing remediation

# HUD Builds Its Scientific Capacity

- Secretary Cisneros & Katz hire new scientific staff
- CDC details staff to HUD and NCHH
- Growing Pains:
  - Local governments struggle to spend the new lead abatement funding (capacity 1992-95)
  - 1995 Congress rescinds lead paint funding
- 1996 funding restored - emerging confidence

# Science Based HUD Guidelines - 1995

- Translating the new exposure pathway science into practice
- Including both short and long-term remediation & dust testing
- Evaluation of the HUD Lead Grant Program (3,000 housing units in 14 jurisdictions)





# Lead Dust Testing Standardization



# Reforming all Federal Housing Regulations

- Mandated by Title X in 1992
- Proposed in 1996
- Finalized in 1999
- Two more years to implement – Why it took a decade
- Overcoming measurement uncertainty
  - Lead paint XRF analyzers
  - Lab QA/QC
- Overcoming political sabotage

# Enforcement

## Landlord jailed, fined in lead-based paint warning case

**A**NY doubts over the federal government's seriousness about enforcing lead-based paint regulations could have dissolved with the recent criminal conviction of a Maryland landlord for brushing over the truth with the Department of Housing and Urban Development.

The 65-year-old landlord was sentenced to two years in prison and fined \$50,000 for obstructing a HUD investigation and making false statements to investigators. He lied to hide his failure to tell tenants about the lead-based paint in his low-income apartment buildings in suburban Washington.

It was the first criminal prosecution related to failure to give lead hazard warnings, which are required by the federal Lead Hazard Reduction Act of 1992, according to the Department of Justice, which brought the case in federal court in Greenbelt, Md.

As part of a plea agreement, the landlord has provided tenants with notices about lead paint assessments performed by an independent contractor, the Justice Department said in a news release posted on its Web site, [www.usdoj.gov/](http://www.usdoj.gov/).

The owner "admitted that he had notice of actual lead-paint hazards in one of his apartment buildings from District of Columbia lead inspectors, who informed him that they found lead in the building. However, (he) failed to disclose actual and potential lead hazards before leasing to tenants," the Justice Department said.

The landlord admitted trying to obstruct a HUD investigation "by backdating his signature, backdating tenant signatures and directing tenants to backdate forms by entering the date they moved into their apartments, rather than the date they were actually warned about health risks, which was after they had moved in," the Justice Department said. "In some cases, the tenant signatures were signed by ... resident property managers."

The Apartment Association of Central Okla-

**RICHARD  
MIZE**



**REAL ESTATE**

homa takes steps to make sure its member landlords follow the law, a spokeswoman said. The association even sells the required forms to its members.

It's in the association's interest to make sure its members stay up to date on all aspects of the law. The convicted landlord in Maryland didn't start out as a scoff law. He attended the continuing education classes state law required in 1997 and 1998.

Owners of older duplexes and smaller apartment houses, with no association to help look out for them, could be breaking the law — out of ignorance, or out of carelessness.

And, of course, that's bad news for people living in their buildings, who are the ones potentially exposed to the dangers of lead-based paint.

The Justice Department took the opportunity of the conviction to remind landlords, and interested tenants, of the basics:

"The Lead Hazard Reduction Act requires landlords to give tenants warnings, which can be done by using a standard disclosure form, about actual and potential lead paint hazards present in the property, and an Environmental Protection

Agency pamphlet about how to minimize the dangers to children. The law also directs landlords to document their compliance with the law by keeping lead disclosure forms and tenant signatures on file."

All of which is regulation. Let's not forget the real reasons for it:

"Lead poisoning is a significant health risk for young children," the Justice Department said. "Although ingesting lead is hazardous to all humans, children under 6 are at the greatest risk of lead poisoning because their bodies are still developing and because ordinary hand-to-mouth activity brings them into frequent contact with lead in paint chips, dust and soil.

"Lead adversely affects virtually every system of the body, and it can impair a child's central nervous system, kidneys and bone marrow. At high levels, lead poisoning can cause coma, convulsions and death. Lead poisoning is especially acute among low-income and minority children living in older housing."

*Real Estate Editor Richard Mize can be reached by e-mail at [richardmize@oklahoman.com](mailto:richardmize@oklahoman.com) or by phone at (405) 475-3518.*

# Working with the Department of Justice



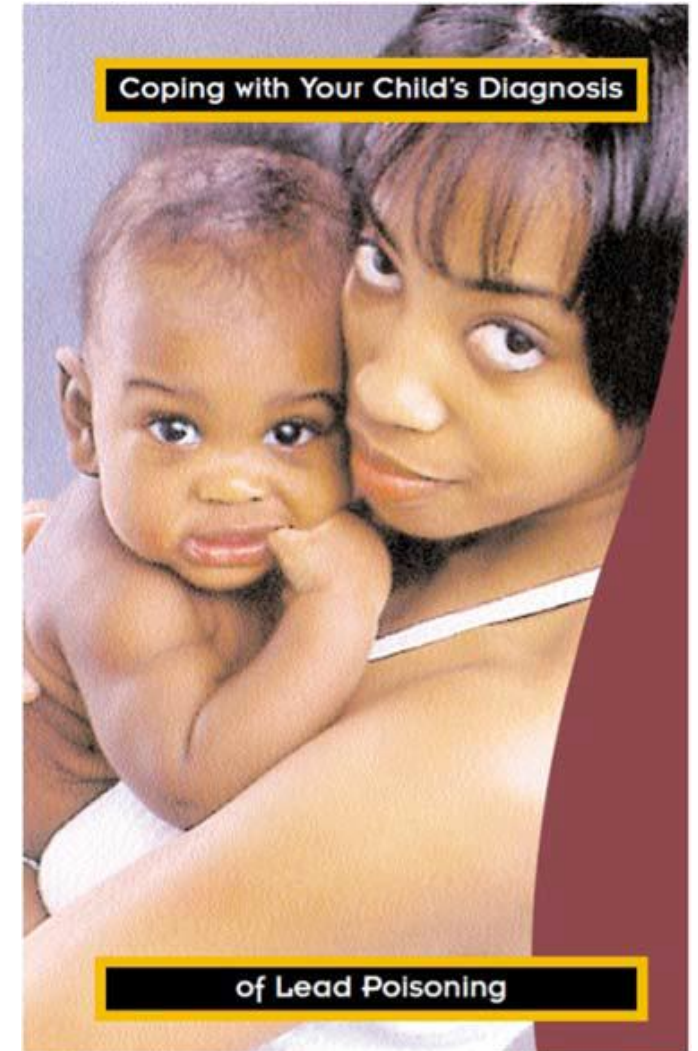
National Center for  
**HEALTHY HOUSING**

# By the End of the 1990s

- HUD acquired scientific capacity & improved management;
- Congress appropriated additional funds - increased capacity;
- Scientific foundation for lead dust standards completed;
- Evidence that the new lead hazard control methods worked;
- HUD reformed regulations for virtually all federally assisted housing;
- New and better instruments & lab quality control;
- Large public education efforts; and
- Subsidy & Enforcement

# Parents and Community Groups

- United Parents Against Lead & Other Groups
- The Campaign for a Lead Safe America
- Documenting their stories, creativity, power
- Collaborating with scientists





Leann  
Howell  
(Leadie  
Gaga)

Ohio Parent



United Parents Against Lead





**Margaret  
Sauser &  
Family**

**United Parents  
Against Lead of  
Michigan**

**White House  
Press  
Conference,  
1998**

# President's Lead Paint Task Force, 2000

- Cabinet Secretaries
- First time all agencies had a single plan & budget
- Proposed lead poisoning elimination by 2010
- HUD makes lead paint a priority with record funding in 2001 – HUD Secretary Martinez
- Why the plan failed; an outline for a new plan & budget

# Rhode Island & California Cases Hold the Paint, Pigment and Lead Industries Accountable for the First Time

- Public Nuisance vs. Product Liability Law
- 2009 – Rhode Island jury rules the industry should pay for remediation
  - Rhode Island Supreme Court overturns jury verdict
  - Remediation plan
- 2014 – California Judge rules industry must pay for remediation
  - Remediation now proceeding in 10 jurisdictions (\$350 million)
  - “Blaming the well-worn stereotypes of ‘slum landlords,’ ‘bad parents,’ ‘the poor,’ and ‘the government’ does not relieve [the industry] of liability,” wrote California Judge Kleinberg.
  - Remediation plan adopted by the court
  - Closing argument: “If you make a mess, you have to clean it up”

# The Industry Knew: The Secret Sherwin Williams Internal Memo Surfaces in the California Case

“A memo of the meeting will be prepared by the University, but no individual comments will be quoted. . . . When acute cases are detected, they nearly always can show by x-ray that the child has ingested flakes of paint. The child is hospitalized and treated... However, this de-leading of the blood is . . . temporary. . . . ***The entire population is becoming more and more exposed to lead. . . .***”

***“The entire problem is certainly depressing and the outlook for an economical practical solution is not too optimistic”***

Source: Baldwin EC. Building Research Advisory Board Meeting, New York City. Inter-Office Letter for Cleveland Executive Office of Sherwin Williams Paint Company; June 2, 1969. The University of Illinois Chicago Special Collections & University Archives, School of Public Health, “David E. Jacobs papers” the University of Illinois Chicago School of Public Health Library.

# HUD and CDC Lead Programs Attacked

- HUD Secretary Jackson attacks HUD lead paint program -2004  
"If we can educate young mothers before their child ends up in an emergency room, then we've done our job."

## Nationwide protests

- CDC Director Friedan attacks lead program – 2012



## Nationwide protests

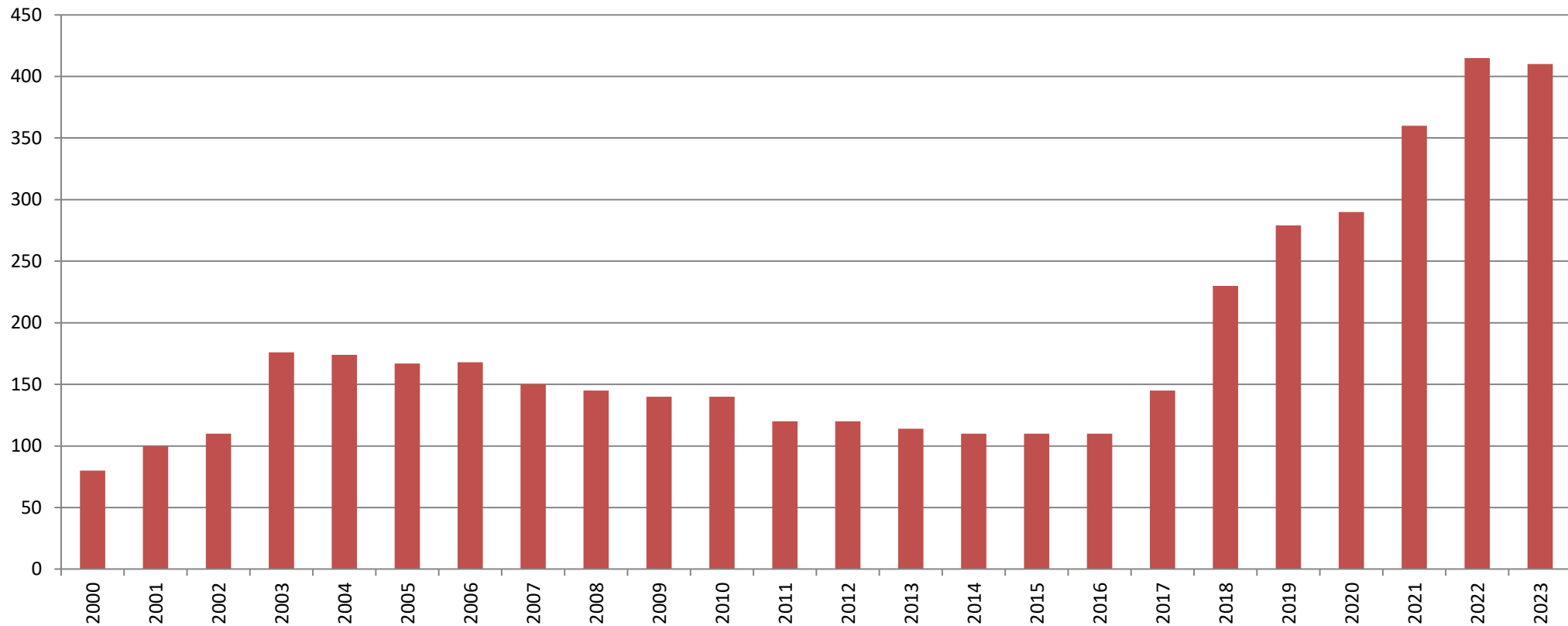


## Part 3: A New Consensus Emerges

- Protests Restore Funding
- National Safe & Healthy Housing Coalition
- The California and Rhode Island Court Cases
- Birth of the Healthy Housing Movement

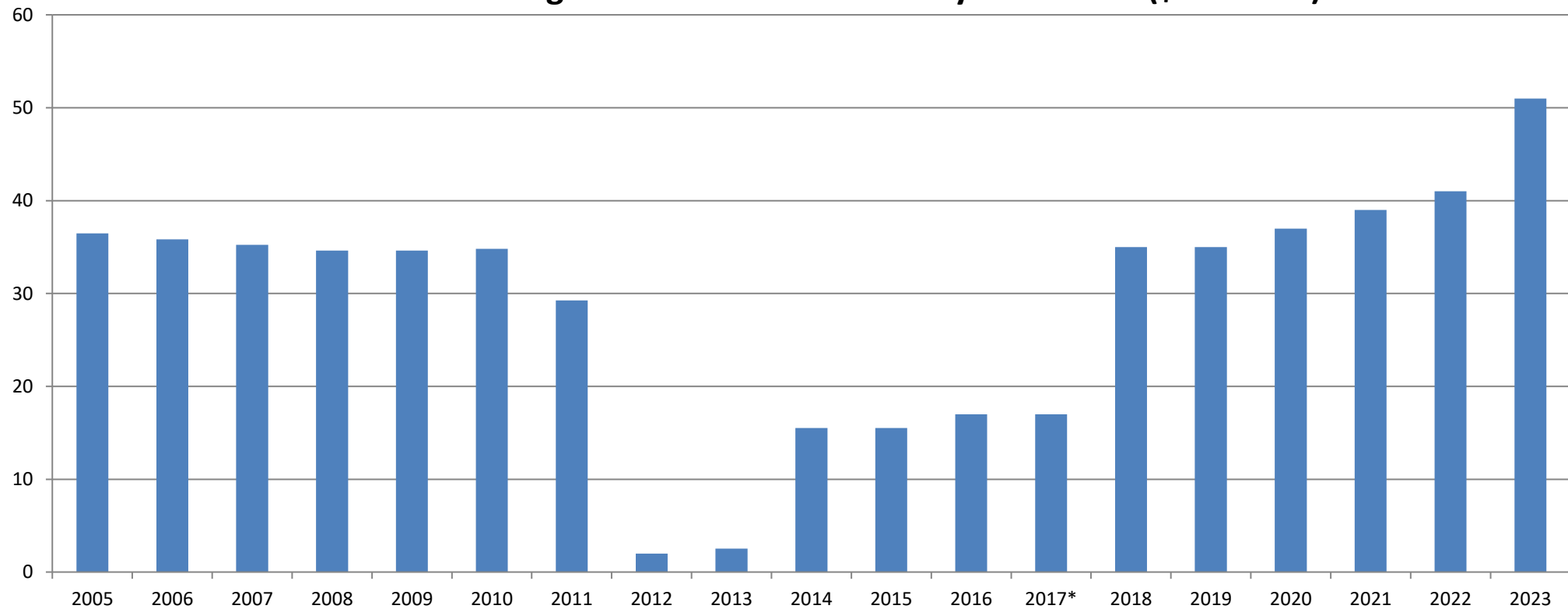
# HUD lead paint funding declines 2004-2014

HUD Lead Poisoning Prevention Investments by Fiscal Year (\$ Millions)



# CDC lead poisoning prevention funding wiped out in 2012-2013

CDC Lead Poisoning Prevention Investment by Fiscal Year (\$ Millions)



\* Does not include \$35 million additional one-time funding authorized by the WIIN Act of 2016





**National Safe and Healthy  
Housing Coalition**

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c/o National Center for Healthy Housing  
10320 Little Patuxent Parkway #500, Columbia, MD 21044  
Phone: 202-280-1982 Fax: 443-539-4150

[www.nchh.org/Policy/National-Safe-and-Healthy-Housing-Coalition.aspx](http://www.nchh.org/Policy/National-Safe-and-Healthy-Housing-Coalition.aspx)

**LEHA**

**Lead and Environmental  
Hazards Association**

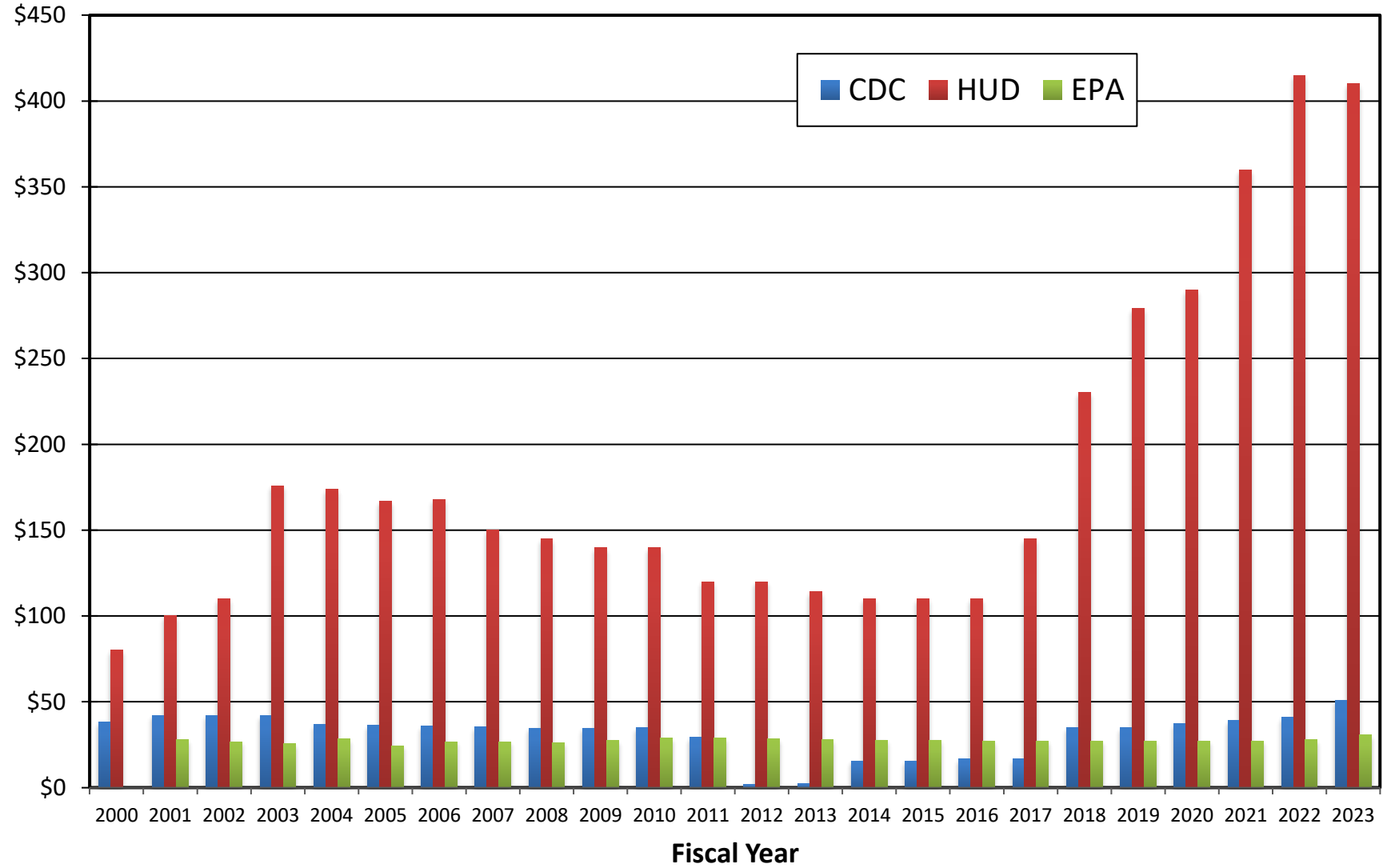
P.O. Box 535. Olney, MD 20830. Phone: 301.924.0804. Fax: 301.924.0265

# **2016 DECLARATION OF NATIONAL LEAD POISONING PREVENTION DELEGATES**

We are hundreds of delegates to the National Safe and Healthy Housing Coalition, the Lead and

# Lead Poisoning Prevention Investments by Federal Agency, 2000 - 2023

Millions



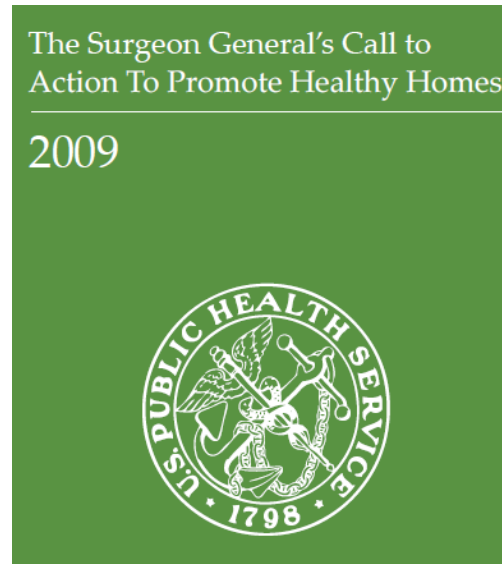
# Birth of the US Healthy Housing Movement

- 1999 HUD Report to Congress
- 2009 Surgeon General Call to Action
- International efforts from WHO – 2018 Housing & Health Guidelines

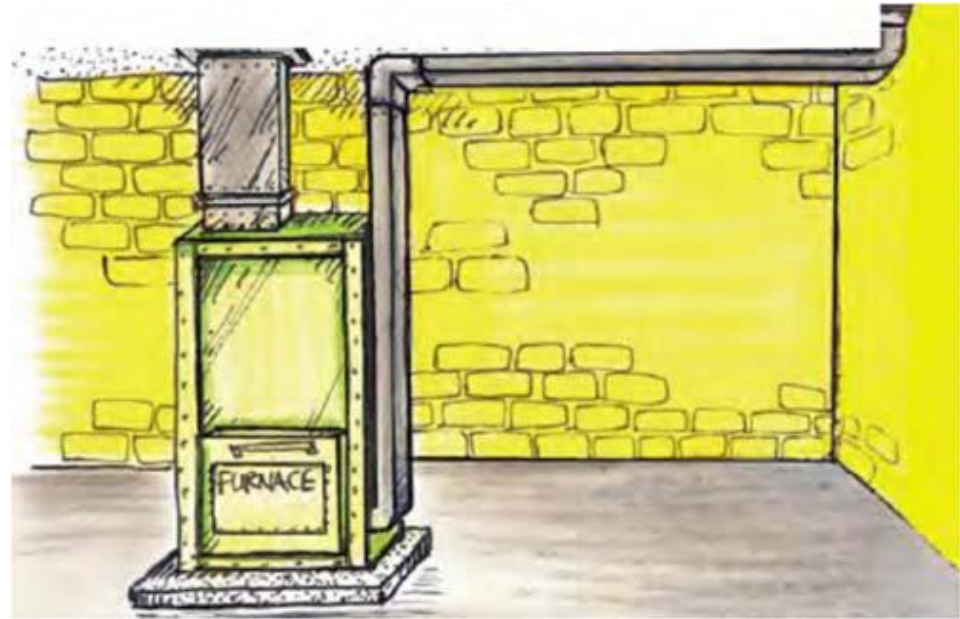
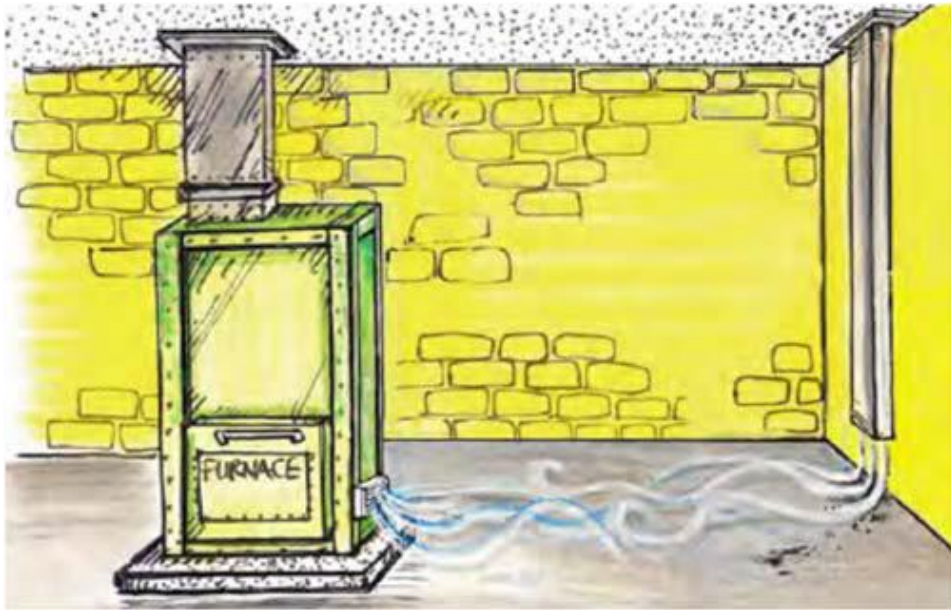
The Healthy Homes Initiative:  
A Preliminary Plan  
(Full Report)

U.S. Department of Housing and Urban Development  
Office of Lead Hazard Control

APRIL 1999



# Mold, Ventilation, the Cleveland Tragedy and the Courage of Scientists





**FIGURE 8.9** Healthy housing awards ceremony honoring Congressman Stokes, 2012. From left to right: Dr. Dorr Dearborn, Congressman Louis Stokes, Dr. David Jacobs, and Cuyahoga County Health Commissioner Terry Allan. Source: *David Jacobs*.

# Reframing Health, Environment & Housing

- “Communicable” vs. “Non-communicable” Disease
- Environmental “Shared Commons” does not include housing
- Housing world is focused on wealth creation
  
- Housing can “communicate” disease; “Housing Is Infrastructure”
  
- Social determinants of health

# The Role of Standards (1)

- Health basis, Measurability, Feasibility, Sustainability
- If there is “no safe blood lead level,” does that mean any level of lead above zero is a “hazard?”
- Distinguishing between risk and hazard
- Clear “rules of the road” – a zero standard is the same as no standard because there is no such thing as “zero”

# The Role of Standards (2)

- No one will collect dust lead samples if they will all be above zero.
- HUD estimates that there are more than 3 million homes with no lead paint but high dust lead levels above the current EPA hazard standard. Another 2.7 million homes have lead paint that is not deteriorated but also have high dust lead levels above the current EPA standards.
- A zero standard will mean that at least 5.7 million homes will not have “hazards,” even though they have high dust lead.
- This will harm millions of children.
- An EPA court case stated the Agency standards must be restricted to only health. Title X and TSCA have no such requirement.
- Historically, the problem has NOT been that standards are somehow too lax; the true problem has been not getting to the right scale.



# Health Basis of Existing Standards

- 1999/2001 dust standards
- Protected more than 95% of all children from developing a blood lead level above the CDC intervention level
- More recent standards have also been tied to a blood lead level and degree of protection
- Therefore, existing standards are indeed “health-based.”

# Key Reforms for Title X - 1

- EPA's lead exposure standards need clear evaluation criteria: protective, measurable, sustainable, feasible (Title X Sec 403).
- No cabinet-level federal interagency strategy with an interagency budget to eliminate childhood lead poisoning as a major public health problem since 2000 (new Title X section 1064).
- Disclosure is limited to “known” paint and/or hazards, and most houses remain uninspected; usually nothing to disclose (Title X Section 1018). - OHIO
- Tenant-based Section 8 housing choice vouchers (HUD's largest housing program) do not require lead paint risk assessments (Title X Section 1012).

# Key Reforms for Title X - 2

- Training requirements are needlessly complex (Title X Section 1021);
- U.S. corporations are still permitted to produce new lead paint in other countries (Title X section 1021, new subsection 409).
- Homeowners are ineligible for lead abatement tax credits or other tax incentives, unlike landlords (Title X new section 1062). – OHIO

# Key Reforms for Title X - 3

- Single-family housing mortgage insurance is the only federally assisted housing program not reformed (Title X Section 1012).
- Eligibility requirements for HUD lead paint grants for privately owned housing are needlessly complex; many low- and moderate-income families are left out (Title X Section 1011).
- Local nonprofit organizations are ineligible for HUD's lead hazard control grants, although many now have become skilled (Title X Section 1011). Lessons from Covid and eliminating "bottlenecks."

# Key Reforms for Title X - 4

- The National Healthy Housing Standard has not been adopted for federally assisted housing (new Title X section 1063).
- CDC blood lead surveillance data and NHANES were last released in 2016 (National Nutrition Monitoring and Related Research Act, Public Law 101-445).

Published Nov 29 2022



# Childhood Lead Poisoning 1970-2022: Charting Progress and Needed Reforms

By David E Jacobs and Mary Jean Brown

(Open Access, Journal of Public Health Management and Practice)

[https://journals.lww.com/jphmp/Fulltext/9900/Childhood\\_Lead\\_Poisoning\\_1970\\_2022\\_Charting.79.aspx](https://journals.lww.com/jphmp/Fulltext/9900/Childhood_Lead_Poisoning_1970_2022_Charting.79.aspx)

## Conclusion

A triumph of science and citizen  
action over a policy paralysis  
paradox

# 9 Key Lessons

- Research
- Guidelines to translate research into practice
- Legislation to turn guidelines into law
- Public education & advocacy
- Strategic plans
- Harnessing market forces
- Subsidy & enforcement
- Evaluation
- Primary Prevention & Expanding to Healthy Homes



# Overcoming a Policy Paralysis Paradox

1. The Problem Does Not Exist (lead paint was prohibited in 1978)
2. The Problem Is Too Big to Solve (millions of homes with lead paint)

Lead paint as a case study in responding to

- Covid, Climate Change, Others

Both Problems and Solutions Exist

## **“A Nation must believe in three things:**

- It must believe in the past.
- It must believe in the future.
- It must, above all, believe in the capacity of its own people to learn from the past so that they can gain in judgment in creating their own future.”

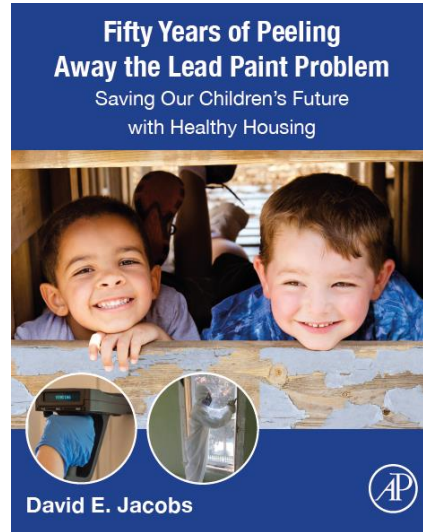
President Franklin Roosevelt, 1941, Dedication of the National Archives

# Conclusion

“Lead poisoning is ugly. It can rob us of our most precious gift—our future and the children who inherit it. The story of lead paint poisoning prevention is one of hope. It is full of people:

- who cared;
- who had the right skills and expertise;
- who took chances;
- who empowered citizens to act and tell their stories;
- who listened carefully to those stories;
- who established enlightened, practical and scientifically validated policies;
- who succeeded in fighting for the resources to make progress;
- who put policy into practice; and
- who were in key positions of power at the right time.”

# Thank You!



<https://www.elsevier.com/books/fifty-years-of-peeling-away-the-lead-paint-problem/jacobs/978-0-443-18736-0>



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