



**National Center for Healthy Housing**  
Creating healthy and safe homes for children through practical and proven steps.

## National Healthy Housing Standard, Healthcare Financing, Environmental Burden of Disease from Inadequate Housing & Other Developments

David E. Jacobs, PhD, CIH  
Ohio Healthy Housing Conference  
Cleveland 2015




**National Center for Healthy Housing**  
Creating healthy and safe homes for children through practical and proven steps.

## Florence Nightingale

“The connection between health and the dwelling of the population is one of the most important that exists.”



Cited in Lowry, S, BMJ, 1991, 303, 838-840

## Interior Windows, Ventilation & Tuberculosis




**National Center for Healthy Housing**  
Creating healthy and safe homes for children through practical and proven steps.

## Cuyahoga River ca. 1960



5



**National Center for Healthy Housing**  
Creating healthy and safe homes for children through practical and proven steps.

## Is Housing a Shared Commons? Is Housing Part of the Infrastructure?

### What is The Commons?

“The commons is everywhere. It is the air we breathe, the words we speak, the traditions we respect. It is tangible and intangible, ancient and modern, local and global. It is everything we inherit together, as part of a community, as distinct from things we inherit individually. It is everything that is not privately or state-owned. ...”

6



## Housing Market Price & Health

- Why are Health Investments in Housing Unlike Other Home Improvements?
- Cost of NOT Making Homes Healthy
- Cost Shifting

7



## Today

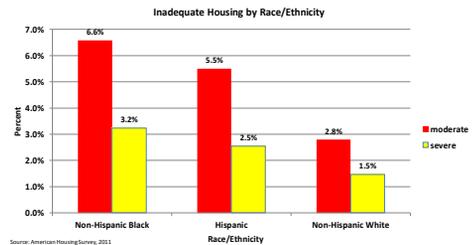
- Housing codes are fragmented, each jurisdiction designs and enforces their own, often not reflecting recent science & practice, complaint-driven, not proactive
- Most housing codes have traditionally ignored chronic public health issues, e.g., lead poisoning, radon, asbestos, mold-induced illness – categorical responses
- But categorical efforts on health & housing are limited
- Healthy housing initiative launched by HUD in response to Congressional concern on mold in Cleveland

8

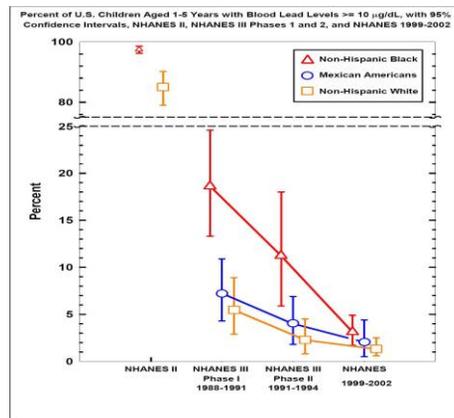
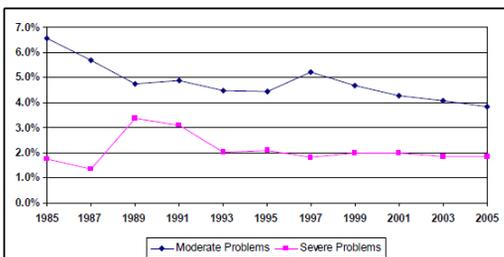
## Re-establish the Collaboration Between The Built Environment & Health

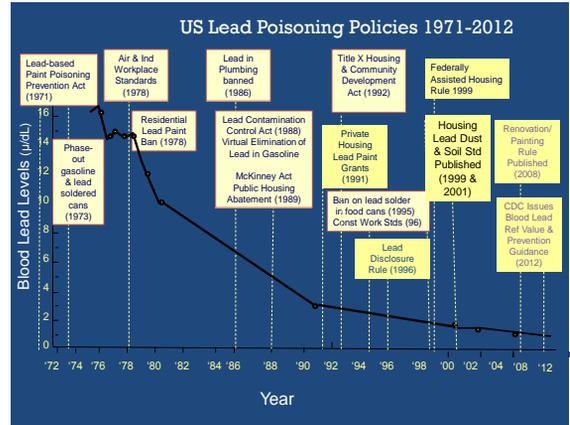
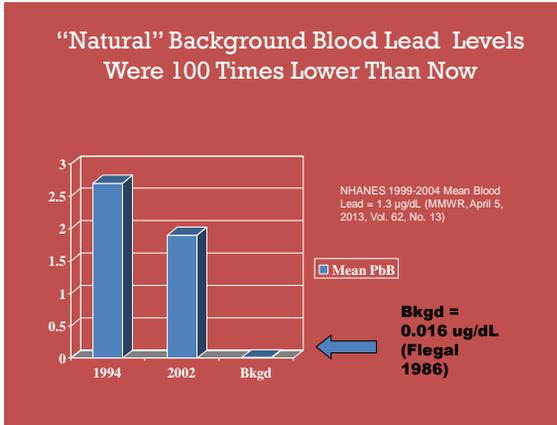
- Builders & Weatherization Professionals
- Green Developers
- Public & Environmental Health
- Medical Professional
- Housing Professionals
- Banks & Other Financial Institutions
- Government
- Rehab Professionals
- Many others

## Housing with Severe and Moderate Deficiencies 2011



## Percent of Housing with Problems Shows Little Improvement Since 1985





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

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



APRIL 1999



- Apply the lessons learned from lead poisoning prevention to the many other housing-related diseases and injuries

16



### Cost of Inadequate Housing

- Causes significant illness, injury, and deaths at a very high cost to society.
- \$3.5 billion per year for asthma induced by dampness and mold in homes
- \$50 billion per year for childhood lead poisoning
- \$217 billion from unintentional injuries in the home

17

### Surgeon General's Call to Action

The Surgeon General's Call to Action To Promote Healthy Homes

2009

A healthy home is sited, designed, built, renovated, and maintained in ways that support the health of residents.



**WHO Estimates**



19

## Environmental Burden of Disease from Housing (1)

Summary of exposure, population-attributable fraction (PAF) and EBD from inadequate housing conditions

Exposure	Health outcome	Exposure-risk relationship	PAF	EBD from housing per year
Mould	Asthma deaths and DALYs in children (0–14 years)	RR = 2.4	12.3%	45 countries of the European Region: 83 deaths (0.06 per 100 000) 55 842 DALYs (40 per 100 000)
Dampness	Asthma deaths and DALYs in children (0–14 years)	RR = 2.2	15.3%	45 countries of the European Region: 103 deaths (0.07 per 100 000) 69 462 DALYs (50 per 100 000)
Lack of window guards	Injury deaths and DALYs in children (0–14 years)	RR = 2.0	33–47%	European Region: ~10 deaths (0.007 per 100 000) ~3310 DALYs (2.0 per 100 000)
Lack of smoke detectors	Injury deaths and DALYs (all ages)	RR = 2.0	2–50%	European Region: 7523 deaths (0.9 per 100 000) 197 565 DALYs (22.4 per 100 000)

## Environmental Burden of Disease From Housing (2)

Crowding	Tuberculosis	RR = 1.5	4.8%	EURO B and EURO C subregions* 15 351 cases (3.3 per 100 000) 3518 deaths (0.8 per 100 000) 81 210 DALYs (17.6 per 100 000)
Indoor cold	Excess winter mortality	0.15% increased mortality per °C	30%	11 European countries: 38 203 excess winter deaths (12.8 per 100 000)
Traffic noise	Ischaemic heart disease including myocardial infarction	RR = 1.17 per 10 dB(A)	2.9%	Germany only: 3900 myocardial infarcts (4.8 per 100 000) 24 700 ischaemic heart disease cases (30.3 per 100 000) 25 300 DALYs (30.8 per 100 000)
Radon	Lung cancer	RR = 1.08 per 100 Bq/m <sup>3</sup>	2–12%	Three western European countries: France: 1234 deaths (2.1 per 100 000) Germany: 1896 deaths (2.3 per 100 000) Switzerland: 231 deaths (3.2 per 100 000)
Residential SHS	Lower respiratory infections, asthma, heart disease and lung cancer	Risk estimates range from 1.2 to 2.8 OR = 4.4	PAF estimates range from 0.6% to 23%	European Region: 64 700 deaths (7.3 per 100 000) 713 000 DALYs (80.7 per 100 000)

## Environmental Burden of Disease from Housing - 3

Lead	Mental retardation, cardiovascular disease, behavioural problems	Care fatality rate 3%;	66%	European Region: 694 980 DALYs (79.2 per 100 000)
Indoor carbon monoxide	Headache, nausea, cardiovascular ischaemic insufficiency, seizures, coma, loss of consciousness, death	DMS/PMS incidence 3–40%	50–64%	EURO A subregion* 114–1545 persons with DMS/PMS (0.03–0.4 per 100 000) 114 ± 97 deaths (0.03 ± 0.02 per 100 000)
Formaldehyde	Lower respiratory symptoms in children	OR = 1.4	3.7%	EURO A subregion* 0.3–4.6% of wheezing in children
Indoor solid fuel use	COPD, ALRI, lung cancer	RR = 1.5–3.2	6–15%	European Region: 8490 ALRI deaths in children < 5 years (16.7 per 100 000) 203 600 ALRI DALYs in children < 5 years (577 per 100 000) 5800 COPD deaths in adults ≥ 30 years (1.3 per 100 000) 100 700 COPD DALYs in adults ≥ 30 years (19.3 per 100 000)

Note: OR = odds ratio; RR = relative risk; DALYs = disability-adjusted life years; N/A = not available; COPD = chronic obstructive pulmonary disease; ALRI = acute lower respiratory infection; DMS/PMS = delayed or persistent neurological sequelae.

www.cppah.com      Volume 43 • Number 8 • September 2013 • Pages 185–224

**CURRENT PROBLEMS IN**

**Pediatric and Adolescent Health Care**

Housing and Child Health  
 Michael Weltzman, MD, Ahmaren Baston, MD, David G. Rosenthal, MD, Risa Hoshino, Ellen Tohn, David E. Jacobs, PhD

## Recent Studies

- Health and Housing Outcomes From Green Renovation of Low-Income Housing in Washington, DC. J Environmental Health 76(7): 8-16. 2014
- Moving Into Green Healthy Housing. J Public Health Manag Pract. 2014 Jan 7. [Epub ahead of print] PMID: 24378632
- CLEAR-Win – Comprehensive Lead Education & Reduction through Window Replacement
- HEALTH-V – Housing & Env Aspects Linked to Health Through Ventilation
- The Highline Communities Healthy Homes (HCHH) Project: Home Education and Weatherization Improve Asthma. Am J Public Health. Nov 14, 2013: e1–e8. doi:10.2105/AJPH.2013.301402.
- Watts-to-Wellbeing: Does residential energy conservation improve health? J Energy Efficiency 2014. 7:151–160.
- Health Outcomes and Green Renovation of Affordable Housing. Public Health Reports 126:2011 supplement 64–75.
- The Breathe Easy Home: Am J Public Health. 2011;101:55–62.

### Breathe Easy Homes Asthma (Seattle)

Takaro, TK, Krieger J, Song L, Sharifly D, Beaudet N. 2011. The Breathe-Easy Home: The impact of asthma-friendly home construction on clinical outcomes and trigger exposure. *Amer J Public Health* 2011;101(1):55-62.

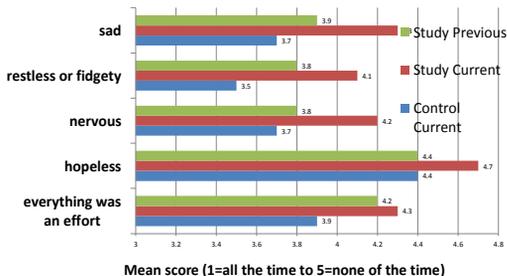
Health Outcome	Change
Symptom-free days/2 weeks	4.8 fewer days/2 weeks (p=0.004)
Urgent Clinical Care Trips (% reduction)	41.2% (p=0.002)
Asthma Triggers in House Dust	2.0 before/0.03 after
Caretaker Quality of Life Score	4.9 before/5.8 after

### Statistically Significant Self-reported Physical Health Improvements Reported in Several Green Healthy Housing Studies

- General health
- Asthma (measured by lost school/work days, disturbed sleep and symptoms)
- Hay fever
- Headaches
- Sinusitis
- Angina
- Respiratory allergy

### Mental Health

Moving Into Green Healthy Housing. *J Public Health Manag Pract.* 2014 Jan 7.



27

### Adults

(1-year followup)



- General health reported as either very good or excellent increased from 33% to 62% (p=0.052)
  - Chronic bronchitis 10% → 0% (p=0.025);
  - Hay fever (12% → 4% (p=0.046);
  - Sinusitis (12% → 2%; p=0.025);
  - Asthma (12% → 4%; p=0.046);
  - Hypertension (10% → 4%; p=0.083).

28

### Moisture



- Fewer people reported that their newly renovated homes had:
  - moisture problems (29% → 4%; p=0.020)
  - evidence of water or dampness due to broken pipes, leaks, heavy rain, or flooding
    - (39% → 18%; p=0.083)
  - a need for either a dehumidifier
    - (24% → 3%; p=0.014)
  - or a humidifier (17% → 7%; p=0.083).

29

### Energy & Water

1 year followup



- 46% reduction in total energy use
- An estimated 39% reduction in CO<sub>2</sub> emissions from power plants.

30

### The Highline Communities Healthy Homes Study

Breyse et al. Am J Public Health. Nov 14, 2013: e1-e8

Outcome	Study Group		Comparison Group		P-value
	Baseline	1-Year	Baseline	1-Year	
% children not well-controlled/very poorly controlled asthma	100%	28.8%	100%	51.6%	0.040
Avg Caregiver Quality of Life score	5.1	6.7	5.3	6.2	0.002
Avg Home Asthma Trigger Score	1.8	0.8	1.2	0.7	0.089

**Combining weatherization and healthy homes interventions with CHW asthma education significantly improves childhood asthma control**

31



National Center for Healthy Housing  
Creating healthy and safe homes for children through practical and proven steps.



32

32

2014



National Center for Healthy Housing  
Creating healthy and safe homes for children through practical and proven steps.



33



National Center for Healthy Housing  
Creating healthy and safe homes for children through practical and proven steps.

- <http://www.nchh.org/Policy/NationalHealthyHousingStandard.aspx>

34

### Expertise

- Public health
- Environmental/Industrial Hygiene
- Building science
- Pediatrics/Medicine
- Housing code enforcement
- Landlord/tenant law
- Government
- Housing Providers
- Community Development
- Others

35

### Key Elements

1. Duties of Owners and Occupants
2. Structures, Facilities, Plumbing, and Space Requirements
  - Kitchen
  - Bathroom
  - Minimum Space
  - Floors and Floor Coverings
  - Noise

36



**National Center for Healthy Housing**  
Creating healthy and safe homes for children through practical and proven steps.

## Key Elements

3. Safety and Personal Security
  - 3.1. Egress
  - 3.2. Locks/Security
  - 3.3. Smoke Alarm
  - 3.4. Fire Extinguisher
  - 3.5. Carbon Monoxide
  - 3.6. Walking Surfaces
  - 3.7. Guards
  - 3.8. Chemical Storage
  - 3.9. Pools, Hot Tubs, and Other Water Features
4. Lighting and Electrical Systems
  - 4.1. Electrical System
  - 4.2. Outlets
  - 4.3. Natural Lighting
  - 4.4. Artificial Lighting

37



**National Center for Healthy Housing**  
Creating healthy and safe homes for children through practical and proven steps.

## Key Elements

5. Thermal Comfort, Ventilation, and Energy Efficiency
  - 5.1. Heating, Ventilation, and Air-Conditioning Systems
  - 5.2. Heating System
  - 5.3. Ventilation
  - 5.4. Air Sealing
6. Moisture Control, Solid Waste, and Pest Management
  - 6.1. Moisture Prevention and Control
  - 6.2. Solid Waste
  - 6.3. Pest Management

38



**National Center for Healthy Housing**  
Creating healthy and safe homes for children through practical and proven steps.

## 7. Chemical and Radiological Agents

- 7.1. General Requirements
- 7.2. Lead-Based Paint
- 7.3. Asbestos
- 7.4. Toxic Substances in Manufactured Building Materials
- 7.5. Radon
- 7.6. Pesticides
- 7.7. Methamphetamine
- 7.8. Smoke in Multifamily Housing

39



**National Center for Healthy Housing**  
Creating healthy and safe homes for children through practical and proven steps.

## Example

**3.5 Carbon Monoxide Alarm.**

Every dwelling unit shall have at least one functioning carbon monoxide (CO) alarm on every habitable floor and outside each separate sleeping area, in the immediate vicinity of every bedroom. In the event a CO alarm sounds, the cause of the alarm condition shall be identified and corrected.

**3.5.1.** Battery-operated CO alarms shall be powered with lithium batteries. Hardwired CO alarms shall have lithium battery backup.

**3.5.2.** Alternative visual notification shall be provided for hearing-impaired occupants.

**Stretch Provisions:**

- CO alarms and combination smoke/CO alarms shall include voice notification.
- If a combination ionization sensor smoke/CO alarm is used, a second smoke alarm utilizing photoelectric smoke sensors shall be installed.
- CO present at or above 30 ppm (35 mg/m<sup>3</sup>) when measured over one hour, or above nine ppm (10.5 mg/m<sup>3</sup>) measured over eight hours, shall be deemed hazardous. The cause of a hazardous indoor CO level shall be investigated to identify and eliminate its source.

40



**National Center for Healthy Housing**  
Creating healthy and safe homes for children through practical and proven steps.

## Example contd

### Rationale

- CO is a colorless, odorless, and extremely toxic gas. Blood hemoglobin has a greater affinity for CO than it does for oxygen, which means that inhalation of this gas will reduce the ability of the blood to take up oxygen. At high concentrations, CO can cause unconsciousness and death. The highest rate of deaths from CO poisoning occurs in older age groups, especially in people aged 75-plus years. This may be for several reasons, including the increasing prevalence of cardiovascular illness and neurological decline at older ages, and the fact that the elderly tend to spend a high proportion of their time at home indoors.
- At lower concentrations, CO may cause a range of symptoms from headaches, dizziness, weakness, nausea, confusion, and disorientation to fatigue. These symptoms are sometimes confused with influenza and sometimes with depression. In people with ischemic heart disease, it can result in episodes of increased chest pain. CO may also impair fetal development. Those most vulnerable to ill health effects caused by low-level CO exposure include unborn children, infants, children, the elderly, and people with anemia or heart or lung disease.

41



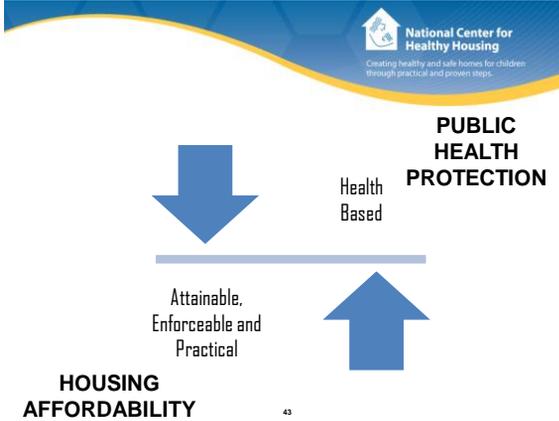
**National Center for Healthy Housing**  
Creating healthy and safe homes for children through practical and proven steps.

## Example 3

### References

- American Academy of Pediatrics Council on Environmental Health. (2012). Carbon monoxide. In Etzel R. A., ed. *Pediatric environmental health, 3rd edition*. Elk Grove Village, IL: American Academy of Pediatrics, 367–377.
- National Fire Protection Association. (2012, August 13-14). NFPA technical committee on residential occupancies, NFPA 101 and NFPA 5000 first draft meeting minutes. Retrieved from <http://www.nfpa.org/assets/files/aboutthecodes/101/101-draft-08-12.pdf>
- National Fire Protection Association. (2009). *NFPA 720, Standard for the installation of carbon monoxide (CO) detection and warning equipment*.
- Underwriters Laboratories. (2009). *ANSI/UL 2034, Standard for single and multiple station carbon monoxide alarms*.
- U.S. Consumer Product Safety Commission. (2001, January). CPSC recommends carbon monoxide alarm for every home. Retrieved from <http://www.cpsc.gov/en/Recalls/2001/CPSC-Recommendations/Carbon-Monoxide-Alarm-for-Every-Home/>
- U.S. Consumer Product Safety Commission. (n.d.). Carbon monoxide questions and answers. <http://www.cpsc.gov/en/Safety-Education/Safety-Education-Centers/Carbon-Monoxide-Information-Center/Carbon-Monoxide-Questions-and-Answers/>
- U.S. Environmental Protection Agency. (n.d.). An introduction to indoor air quality (IAQ): Carbon monoxide. <http://www.epa.gov/iaq/co.html>
- World Health Organization. (2010). *Guidelines for indoor air quality: Selected pollutants*. Copenhagen: World Health Organization Regional Office for Europe. Retrieved from [http://www.euro.who.int/\\_data/assets/pdf\\_file/0009/128169/e94535.pdf](http://www.euro.who.int/_data/assets/pdf_file/0009/128169/e94535.pdf)

42



### Promoting adoption

- Gain federal agency adoption of the Standard
- Engage national housing organizations for dissemination
- Provide technical assistance
- Adopt at local level

### Healthy Homes and Healthcare Reform:

#### Healthcare Financing of Healthy Homes Services

- APHA/CDC funded project
  - What is the current reimbursement landscape?
    - Through lens of asthma and lead
  - What opportunities exist for state/local agencies or organizations interested in exploring healthcare financing of healthy homes services?

The resource library, technical briefs and survey were made possible through a contract between the American Public Health Association and the National Center for Healthy Housing, funded through cooperative agreement 1U3807000132 between the Centers for Disease Control and Prevention and the American Public Health Association. The contents of the resource library, technical briefs and survey are solely the responsibility of the authors and do not necessarily represent the official views of the American Public Health Association or the Centers for Disease Control and Prevention.

### Healthy Homes and Healthcare Reform:

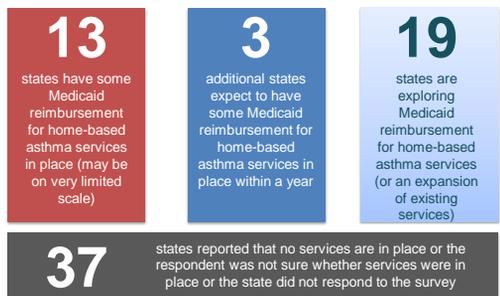
#### Healthcare Financing of Healthy Homes Services

- Products:
  - **Resource library**
    - [www.nchh.org/resources/healthcarefinancing.aspx](http://www.nchh.org/resources/healthcarefinancing.aspx)
  - **Three new technical briefs**
    - *Pathways to Reimbursement: Understanding and Expanding Medicaid Services in Your State*
    - *Hospital Community Benefits: Opportunities for Healthy Homes*
    - *Reimbursement for Healthy Homes Services: A Case Study of Leveraging Existing Medicaid Authority in Texas*
  - **Survey results and report**

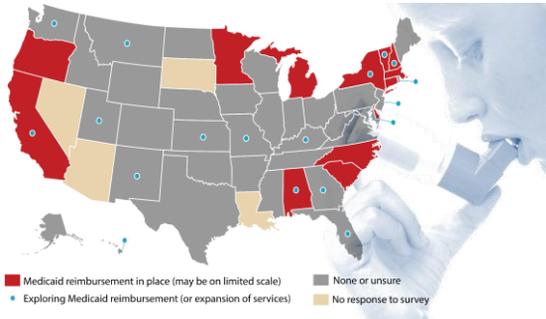
### Medicaid Reimbursement Policies: 2014 Survey

- Online surveys
  - Home-based asthma services
  - Lead poisoning follow-up services
- Sent to program contacts and Medicaid Directors in Spring 2014
- Responses from 46 states for asthma and 49 states for lead

### Reimbursement by the numbers: Home-based asthma services

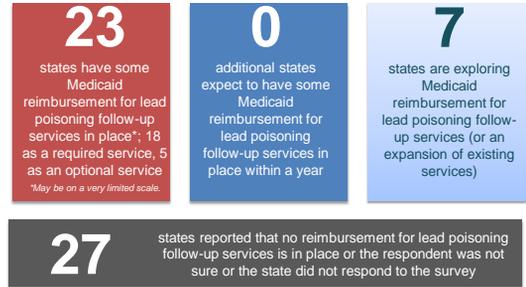


### Current State of Play: ASTHMA

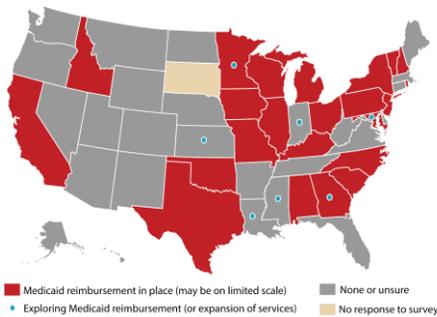


### Reimbursement by the numbers:

Lead poisoning follow-up services



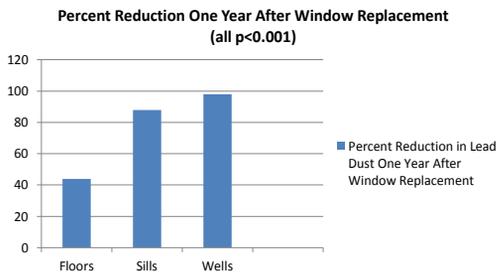
### Current State of Play: LEAD



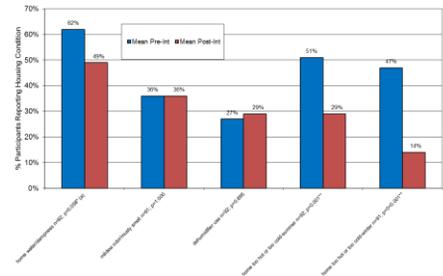
### Two New Studies

- Comprehensive Lead Education & Reduction Through Window Replacement (CLEAR-WIN)
  - Window replacement financed entirely through Illinois State Bonds, operated by Illinois Health Dept
- Health and Environmental Aspects Linked to Housing Ventilation (HEALTH-V)
  - Study of Weatherization & 2 Vent Standards

### CLEAR WIN (n=95 houses)



### CLEAR WIN Dampness & Temp Results



## CLEAR WIN Health Results (Children at One Year Follow-up)

- General Health: 0.2 point improvement in 5-point scale (p=0.013)
- Headaches: 7% improvement (p=0.019)
- 3 or More Ear Infections: 5% improvement (p=0.059)
- Respiratory Allergy: 12% improvement (p<0.001)
- Asthma: 2% improvement (p=0.046)

## Clear Win Economics

- For the entire ClearWin cohort of homes (n=500):
- Total economic benefits = \$5,912,219
- Cost = \$3,451,841
- Net monetary benefit = \$2,460,378

## HEALTH-V

- Randomized controlled trial
- All houses weatherized
- Half got ASHRAE 1989 std (controlled leakage through Building Tightness Limit)
- Other half got ASHRAE 62.2-2010 (mechanical ventilation)
- Most Wx programs still use the 1989 standard due to cost

## HEALTH-V Results Formaldehyde & TVOCs

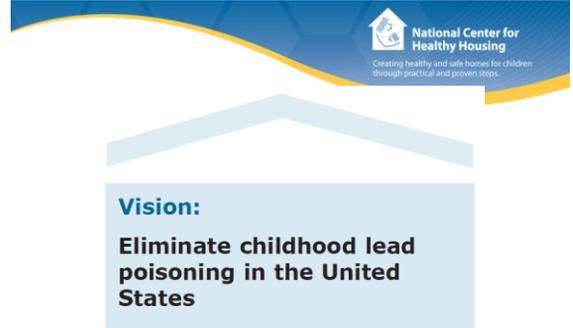
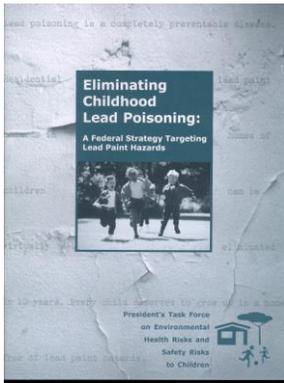
Contaminant	N	Pre- Wx Geo Mean	Post- Wx Geo Mean	GM Change	p-value
<b>Formaldehyde, ppb</b>					
All homes	71	28	23	-5	0.002**
62-1989	30	31	25	-6	0.019**
62.2-2010	41	26	21	-5	0.041**
<b>TVOCs, ppb</b>					
All homes	68	163	134	-29	0.180
62-1989	31	124	124	0	0.989
62.2-2010	37	204	142	-62	0.041**

## HEALTH-V Results Radon & CO<sub>2</sub>

Basement radon, pCi/l	N	Pre-Wx GM	Post-Wx GM	GM Change	p-value
All homes	51	2.6	3.0	+0.4	0.330
62-1989	23	3.0	2.9	-0.1	0.888
62.2-2010	28	2.4	3.1	+0.7	0.073*
<b>1<sup>st</sup> floor radon, pCi/l</b>					
All homes	46	1.8	1.4	-0.4	0.143
62-1989	21	1.7	1.6	-0.1	0.824
62.2-2010	25	1.9	1.3	-0.6	0.067**
<b>Carbon Dioxide, ppm</b>					
All homes	66	914	797	-117	0.005**
62-1989	29	888	810	-78	0.266
62.2-2010	37	936	787	-149	0.004**

## Clear Win & Health-V conclusions

- Lead safe window replacement yields sustained long-term lead dust reductions
  - Clearance is necessary
  - Large gains in jobs, energy, property value, reduced lead
  - State & local governments should finance window replacement
- Weatherization should be accompanied by a ventilation Standard
  - ASHRAE 62.2 – 2010 provides better indoor air quality compared to ASHRAE 1989
  - Weatherization should include energy efficient mechanical ventilation



### The Lead Experience

- A Public Health Success Story
- A “Pyrrhic Victory”

### New Goal Vision

- 2000 Goal
- 2010 Goal
- 2020 ??

### New Paint Lead Levels

Country	Median Paint Lead (ppm)	Maximum Paint Lead (ppm)
China	3,280	73,400
India	16,720	187,200
Malaysia	21,300	143,000
Singapore	9	3,500



- **Calling for a Global Ban on Lead Use in Residential Indoor and Outdoor Paints, Children’s Products, and All Nonessential Uses in Consumer Products**
- **Policy Date: 11/5/2007**
- **Policy Number: LB-07-01**



## The California Ruling

10 Counties Successfully Sue Lead Industry and Lead Paint Companies  
 Public Nuisance Law Theory  
 Fix Housing, not provide awards  
 \$1.1 Billion to remediate virtually all pre-1978 housing in half of the State

## Court's Findings

- “As long as lead paint remains on homes in the Jurisdictions, children living in those homes will be at significant risk of lead poisoning.
- “Prevention of childhood lead poisoning due to lead paint requires, at minimum, identification of lead paint on pre-1978 homes and removal of the most immediate lead paint hazards in those homes.”
- “Experts have demonstrated that abatement of lead paint substantially reduces the likelihood that a child will be lead poisoned.”

## People's Plan 2

- “Both the People’s and Defendants’ abatement experts agreed that abatement of lead paint hazards in homes is necessary to protect the children living in those homes.
- “The benefits of abating lead paint arguably exceed the costs of maintaining the status quo. Medical treatment, special education costs, lost lifetime earnings, lost tax revenue, and other costs associated with lead poisoning amount to hundreds of billions of dollars.
- “Every dollar spent on reducing lead paint exposure results in societal savings between \$12 and \$155.
- “This cost-benefit ratio is even better than for vaccines, which have long been described as the single most cost beneficial medical or public health intervention.”

## People's Plan 3

- “The People’s proposed abatement plan (Plan), as revised by the Court, is consistent with the 2012 recommendations of the CDC’s Advisory Committee on Childhood Lead Poisoning Prevention.
- “The Plan targets pre-1978 homes in the Jurisdictions that pose the greatest risk of lead poisoning to children, requires outreach and education to homeowners, requires trained individuals to inspect homes for lead paint, it utilizes abatement techniques that have been used for decades and have been proven to be safe, and it takes appropriate measures to protect the safety of residents and community members.
- “The People contend an abatement plan containing these elements will effectively and efficiently abate the nuisance.
- “And Defendants’ abatement expert agreed that lead paint inspections and prioritization of abatement based on those inspections, as set forth in the Plan, are a sensible way to direct limited resources.
- “The Plan can be implemented in a reasonable amount of time and at a reasonable cost.”

## Scope

- “Of course, by any measure, the remedy sought by the People is of substantial, even massive proportions.
- “Seeking the abatement of lead by inspections and rehabilitation of tens of thousands of homes – at a minimum -- is a daunting decision.
- “But the Court is convinced that...thousands of children in the jurisdictions are still presently and potentially victimized by this chemical.”

## Target Others

- The plan contemplates that the first prioritization of any lead hazard control plan is replacement of lead painted windows and doors, which will yield the largest health benefit in the shortest time period.
- The decision ends the finger pointing—it's a problem of the poor, or no education, or gasoline, or bad slumlords
- Weaver debate

## Ruling

- It recognizes that government programs, the ones that so many of us have labored for so long, have reached their limits, and that thousands of CA children will be needlessly harmed if nothing further is done.
- **If you make a mess, you have to pay to help clean it up**

## Lead Industry Line

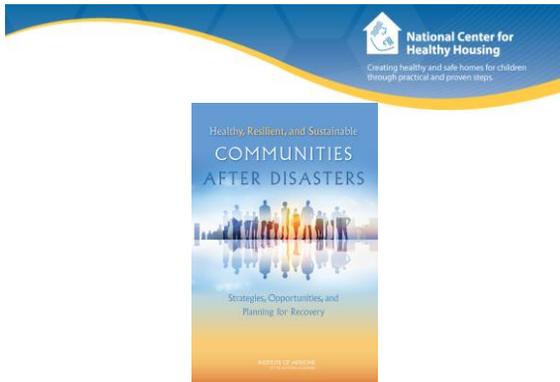
- “Slumlords are the big winners” – In fact, no money will go to property owners, and all will go to fix the problem
- “The abatement plan will provide new roofs” – In fact the plan will only stop water leaks that will make interior abatement short-lived
- “The abatement plan is inconsistent with state and federal policy” The abatement plan uses the tried and true methods we have been practicing for years and is entirely consistent

## More Misinformtion

- “Abatement will hurt children” – Evidence is to the contrary, abatement works. Clearance stds
- Abatement means “removing lead paint from walls”
- Bonnie Campbell, a former state attorney general tries to quote some of my own work on the importance of windows as proving it doesn't work—it does and the data are clear
- “It's not paint it's the soil and gasoline”

## Conclusions – What is Needed

- Get ready (after appeals, nuisance theory has already won)
- 4 years to spend \$1.15 billion.
- Shows that the progress we have made is by our hard work, that means all of us—parents, scientists, inspectors, labs, abatement pros, housing pros, public health & others
- Recognize that this has huge implications on several fronts:
  - A solution in a defined geographic area
  - Other jurisdictions, e.g. Milwaukee
  - Govt works
  - Investment in our people and children is a good thing
  - Science does in fact drive policy (sometimes)



79

## A National Conversation

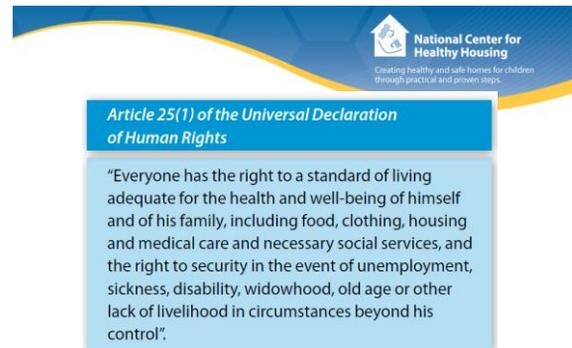
- High Costs of Health Care/Health Insurance
- Mortgage Crisis & Affordable Housing
- Economic Recovery
- Disaster Recover
- Lead Poisoning Prevention & Window Replacement, Healthy Homes, Green Development, Climate Change

## Disaster Recovery & Healthy Homes

Recommendation 12: Ensure Healthy and Affordable Post-Disaster Housing

Federal, state, and local governmental housing agencies should:

- Require that new residential construction and substantial rehabilitation of existing residences financed with public funds after disasters comply fully with
- Enterprise Green Communities standards or their equivalent
- The National Healthy Housing Standard.
- Federal and state funding agencies should tie these requirements to recovery funds
- Private funders should consider incentivizing compliance with these standards.
- Affordable housing options should be considered during redevelopment to ensure that people of all income levels can remain in the community.





The views and opinions expressed in this presentation are those of the author and do not necessarily represent official policy or position of the Ohio Department of Health.

## Contact Information

David Jacobs, PhD, CIH  
Research Director  
National Center for Healthy Housing  
Washington DC  
202-607-0938

djacobs @nchh.org  
www.nchh.org