

**CUYAHOGA
COUNTY**



**Board
of
Health**

PREVENT ♦ PROMOTE ♦ PROVIDE™



BUILDING A FRAMEWORK FOR HEALTHY HOUSING

2008 National Healthy Homes Conference

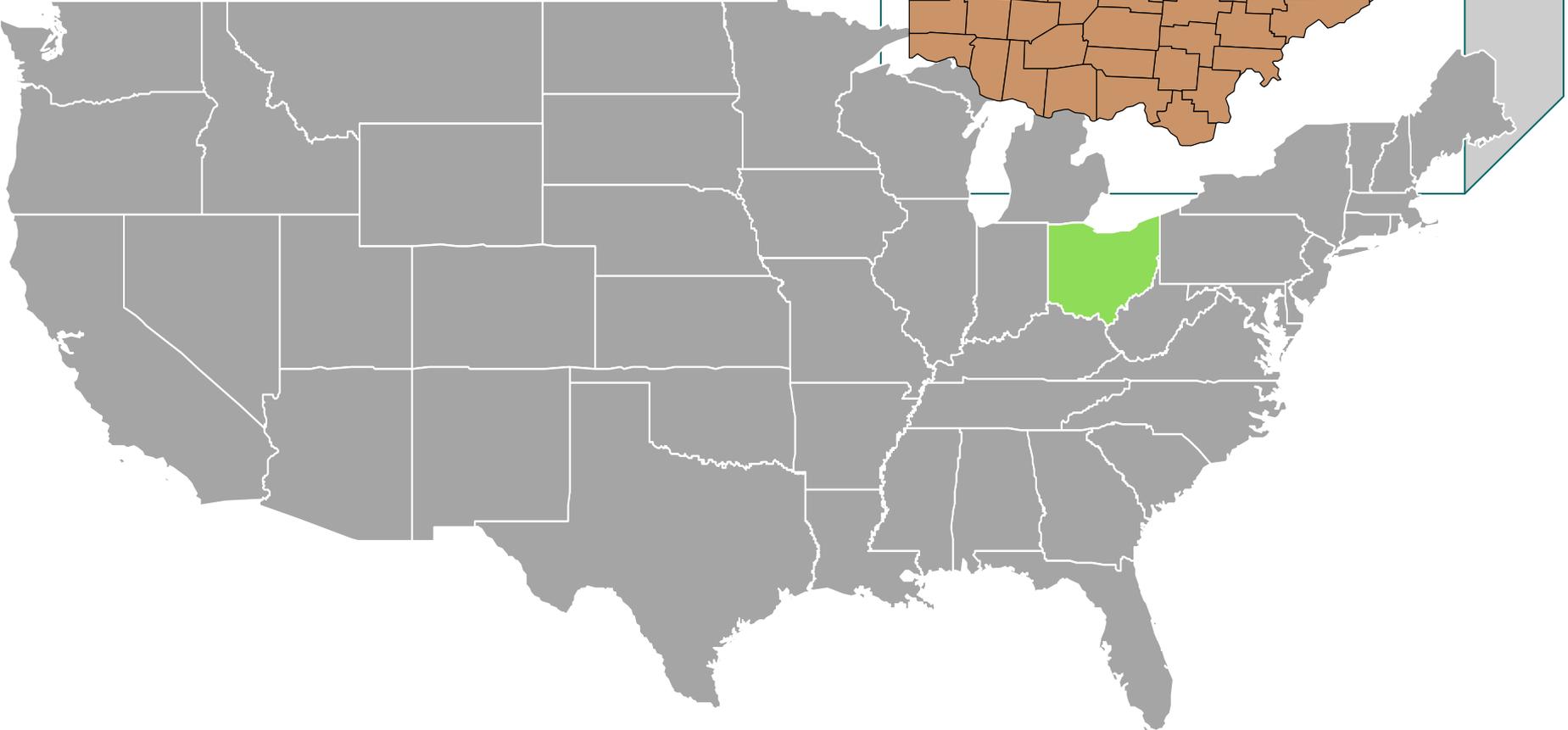
Building a Framework for Healthy Housing

***“Moving from Lead to Healthy Housing-
Cuyahoga County’s Experience”***

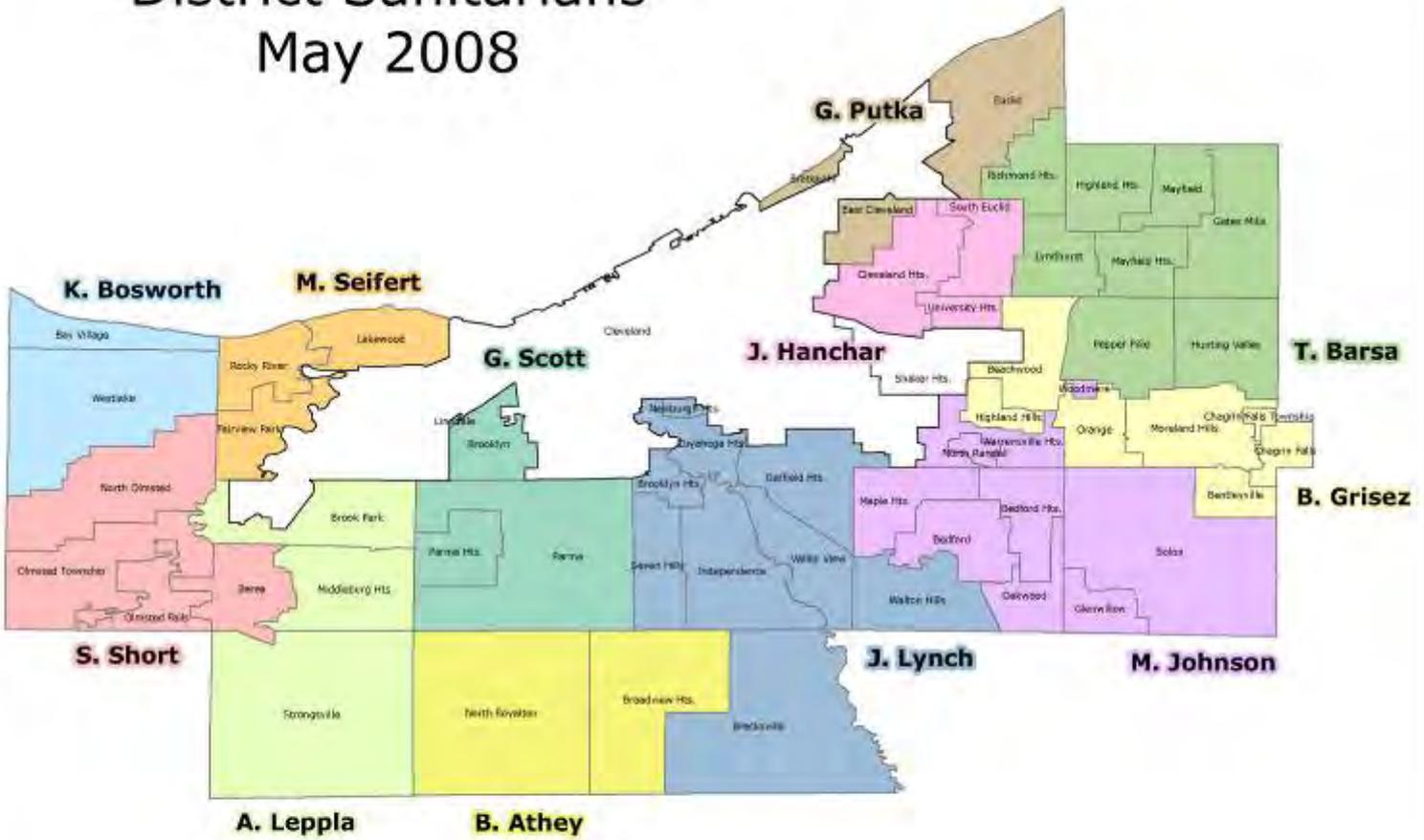
Cuyahoga Co. Board of Health
John Sobolewski, R.S.
September 16, 2008



Where in the World is Cuyahoga County?



District Sanitarians May 2008



WARNING

Lead Work Area

POISON

No Smoking, Eating or Drinking

**LEAD CAN DAMAGE THE BLOOD,
KIDNEYS, NERVOUS, AND
MALE AND FEMALE REPRODUCTIVE SYSTEMS**

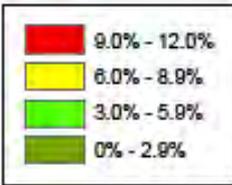
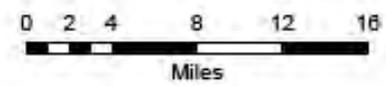
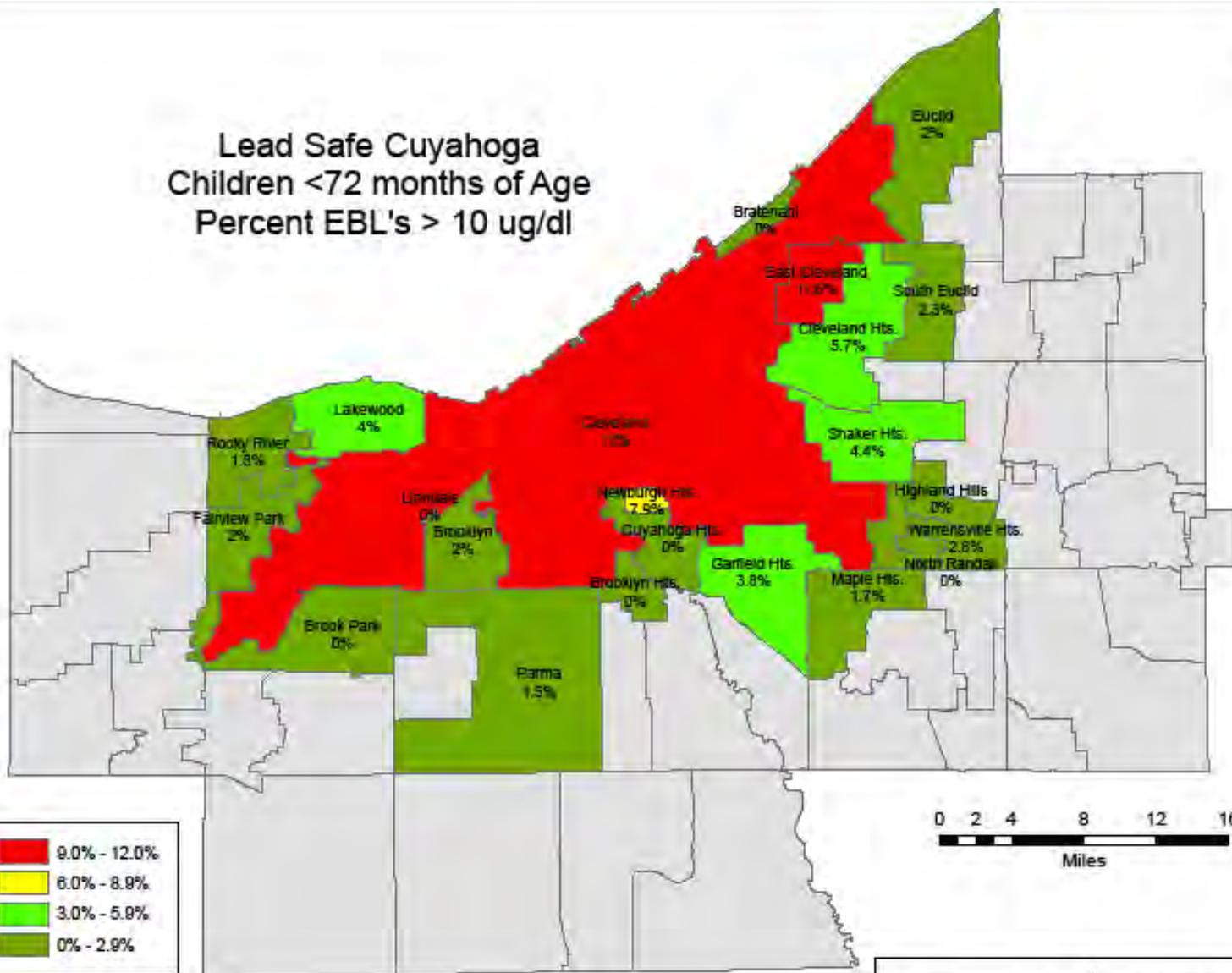
EARLY SYMPTOMS OF LEAD POISONING

Unusual feeling of tiredness, irritability & depression, trouble sleeping and concentrating, stomach cramps, constipation, weakness, in arms and legs.

PREVENT LEAD EXPOSURE WITH THESE METHODS:

- Local exhaust ventilation – most important
- Respirators – clean, properly selected, fit tested
- Lunch and break areas – free of lead, wash before eating
- Health tests – physical exam, blood lead tests
- Keep lead away from your home and family – shower, wear clean clothes home

Lead Safe Cuyahoga Children <72 months of Age Percent EBL's > 10 ug/dl



Cuyahoga County Board of Health
Office of Epidemiology, Surveillance and Intervention
Data Reported by:
LSC Central Bureau
Original data obtained through the Ohio Department of Health's
Childhood Lead Poisoning Prevention Program
Data from Ohio South
May 10, 2010

Lead

Grant	Start Date	End Date	\$ Awarded	# of Units
LSC round 5	1999	2001	1.5	141
LSC round 9	2002	2004	2.71	150
LSC round 12	2005	2007	3.0	160
GCLRG 1	2004	2007	0.58	46
LSC round 15	2007	2010	3.0	190
LHR	2007	2010	4.0	303



Lead as the Foundation

- Develop Infrastructure
- Develop relationships
- Establish partnerships





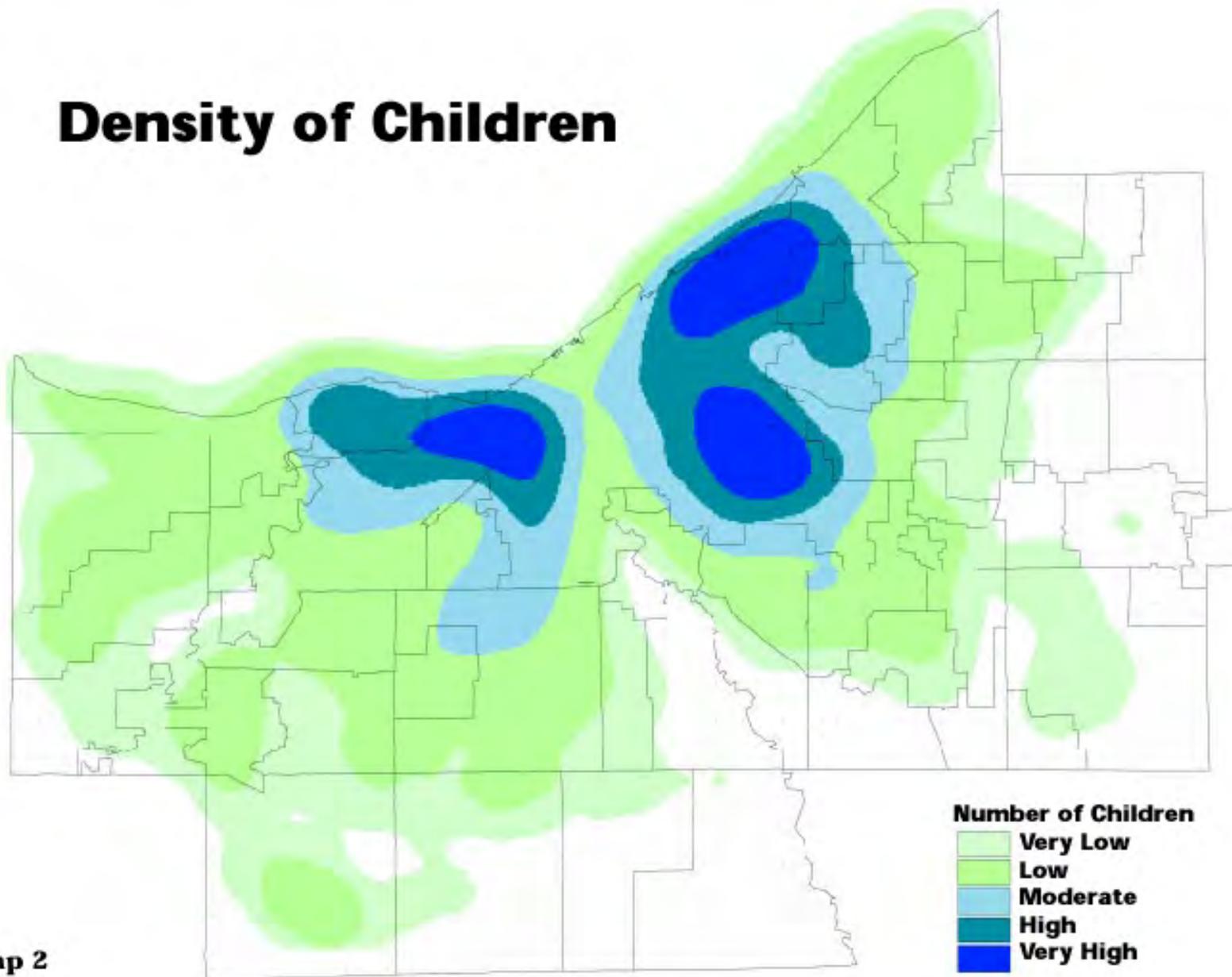


HUD & CDC's HHI

- Coordinated, comprehensive, holistic approach to preventing injuries & disease
- HUD initiated HHI in 1999

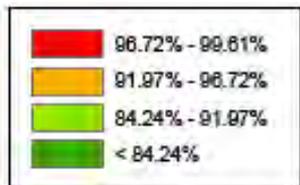
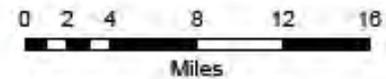
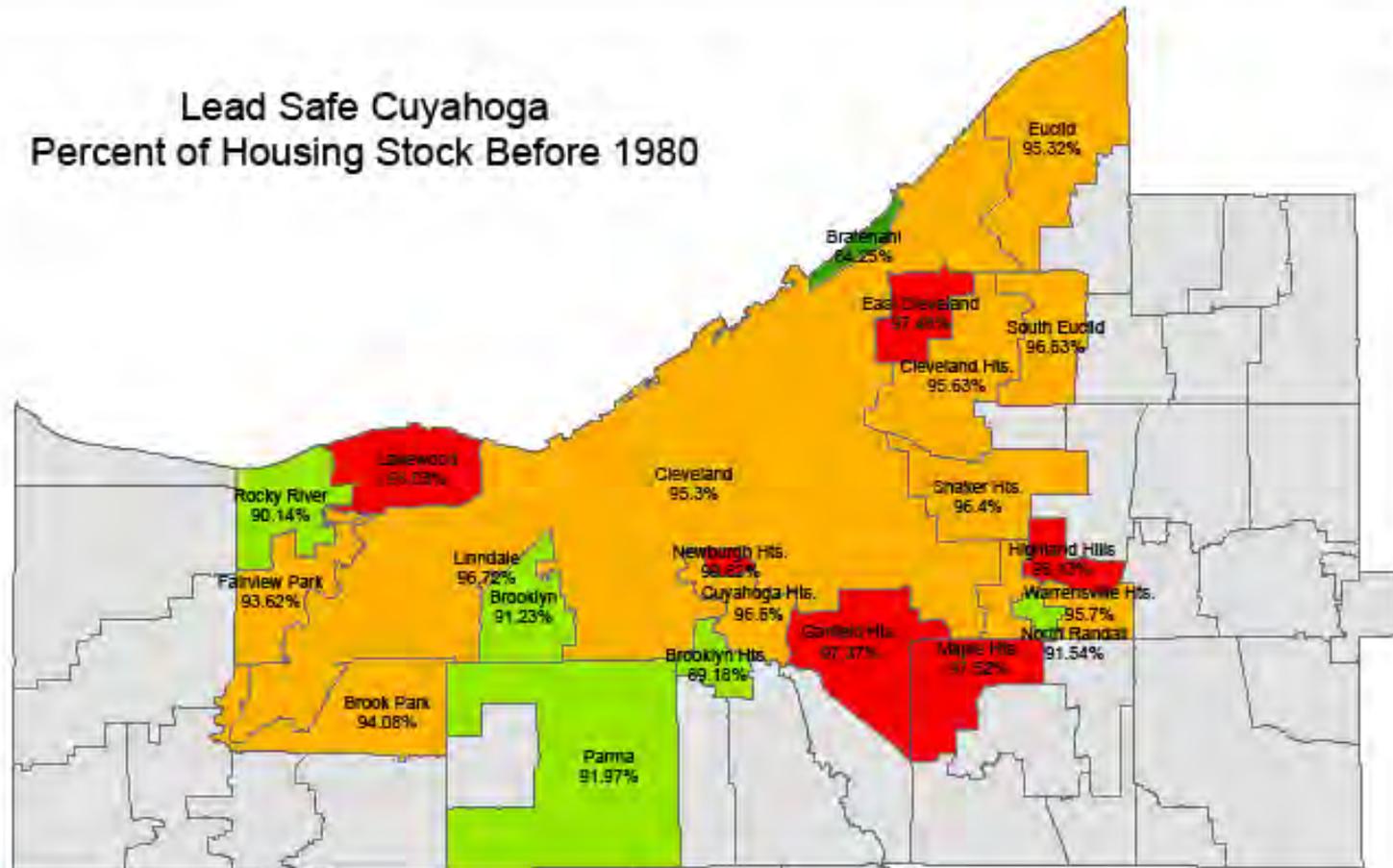


Density of Children



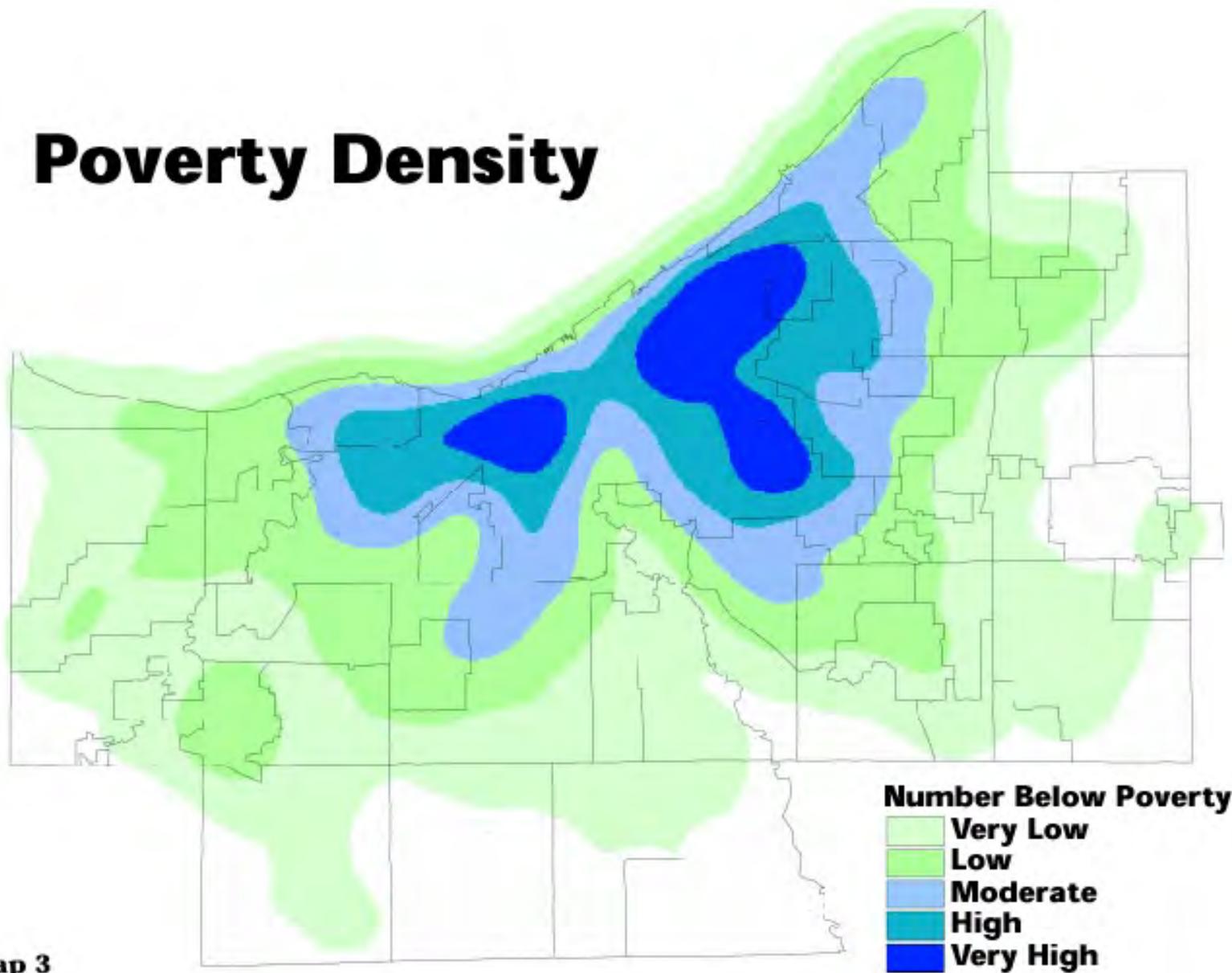
Map 2

Lead Safe Cuyahoga Percent of Housing Stock Before 1980



Cuyahoga County Board of Health
Office of Environmental Health and Safety
Date Reported by: [Redacted]
100 Canal Center
Original data obtained through the Ohio Department of Health
Child Lead Poisoning Prevention Program
State Project Office
May 30, 2007

Poverty Density



Map 3

Healthy Homes Programming

- Pulmonary Hemosiderosis Prevention Program (PHPP)
- Urban Mold & Moisture Program (UMMP)
- Cleveland/Cuyahoga Co. Healthy Homes Initiatives (CCHHI)
- Project Reach
- Senior Safety Program (SSP)

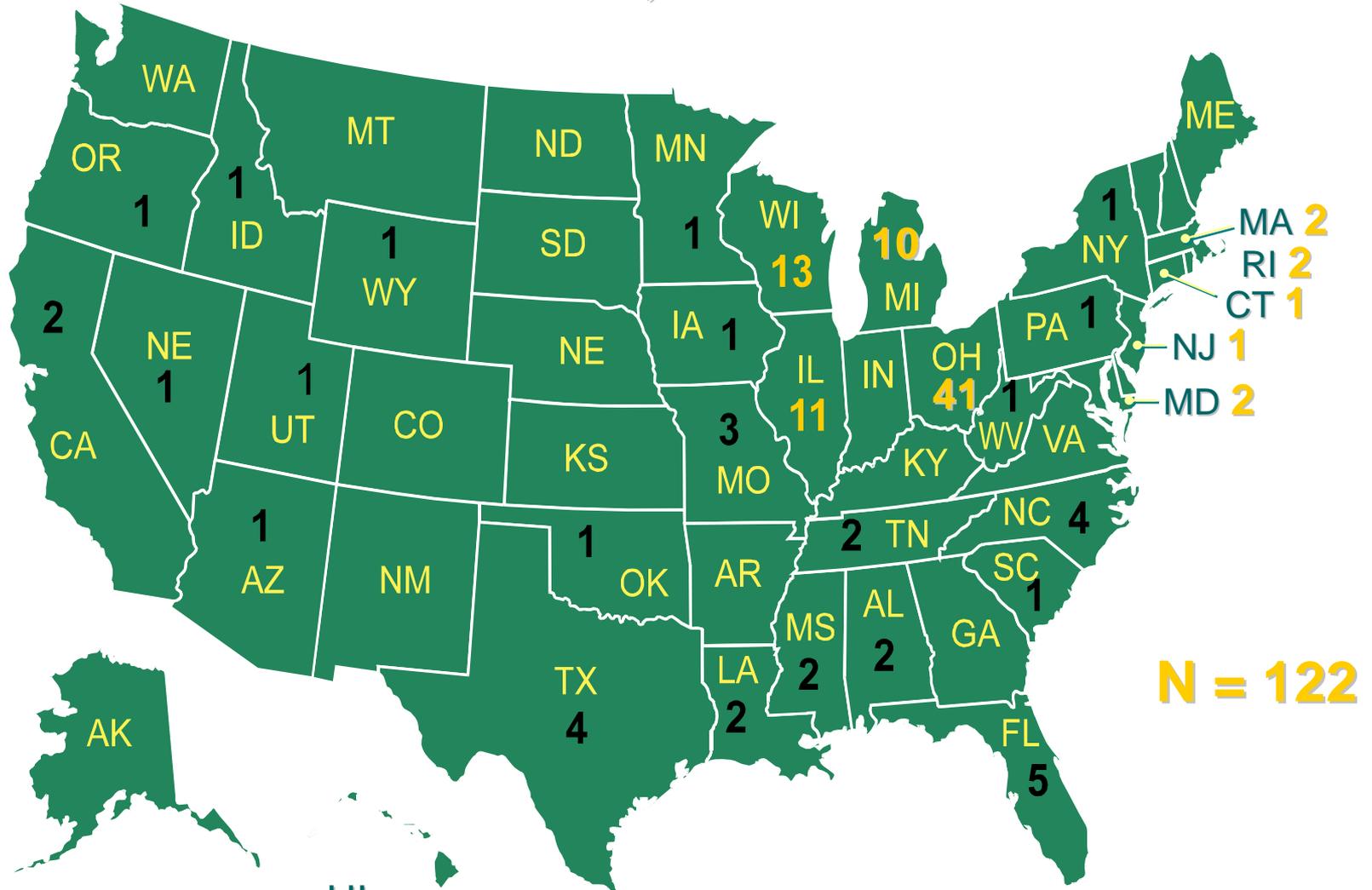


HUD Funded Healthy Homes

Grant	Start Date	End Date	\$ Awarded	# of Units
UMMP	2000	2003	3.15	104
CCHHI 1	2004	2006	0.95	96
CCHHI 2	2006	2009	1.0	100



Number of Infants with Pulmonary Hemorrhage Reported in the United States, 1993-1997



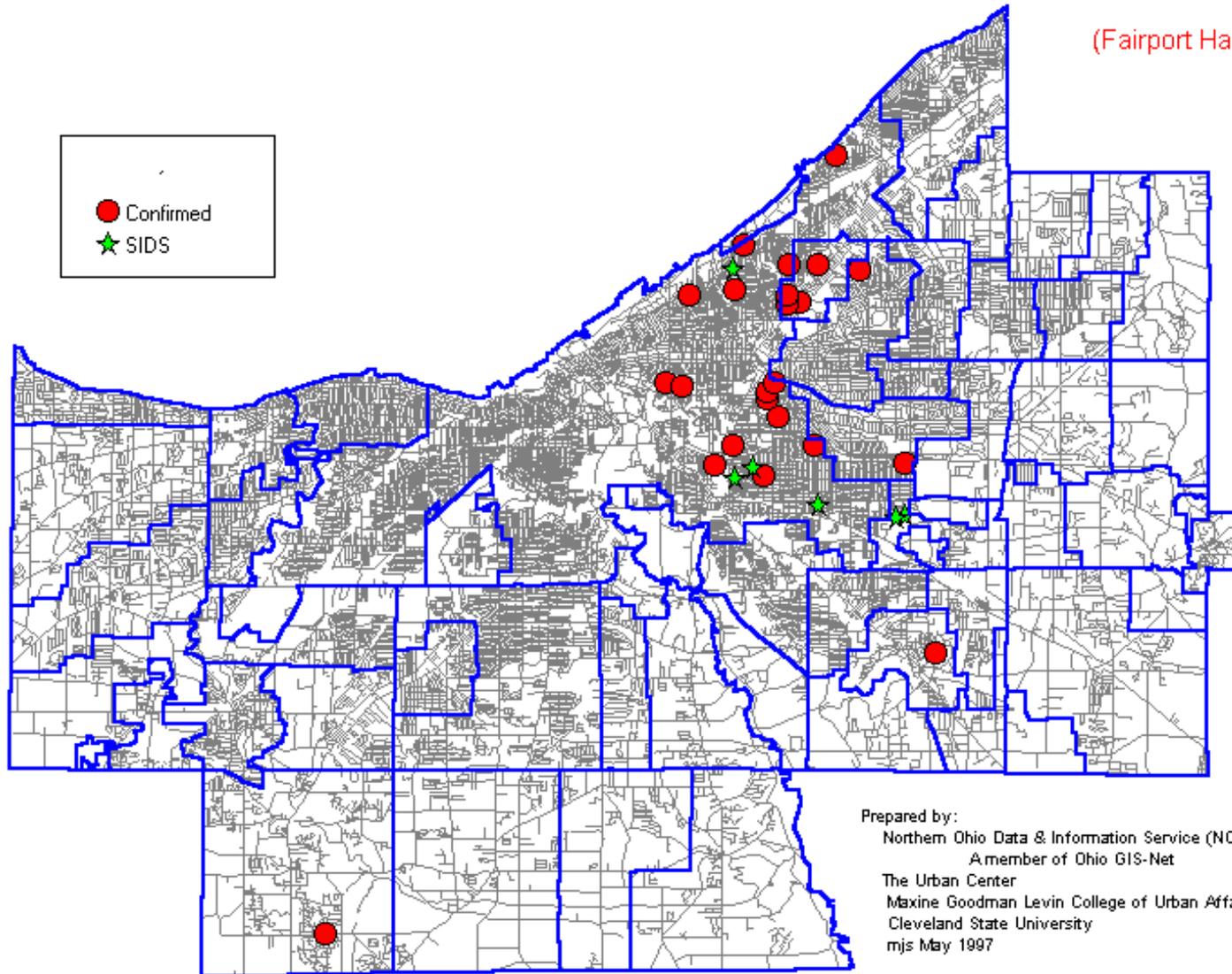
N = 122

PULMONARY HEMOSIDEROSIS IN INFANTS

Cleveland Metropolitan Area



(Fairport Harbor)



Prepared by:
Northern Ohio Data & Information Service (NODIS)
A member of Ohio GIS-Net
The Urban Center
Maxine Goodman Levin College of Urban Affairs
Cleveland State University
mjs May 1997



PHPP Background

- 1995 CDC recommendation
- Cooperative public health initiative
- 10 zip codes/162 census tracts
- Housing/Health inspection





UMMP Background

- 3 year
- 3.15 million dollar
- HUD Office of Lead Hazard Control



Primary Objectives

- Practical, Cost Effective Remediation (Limited Build Back)
- Long Term Moisture Control
- Trigger Reduction
- Positive Health Outcomes





Asthma Triggers



Asthma Triggers

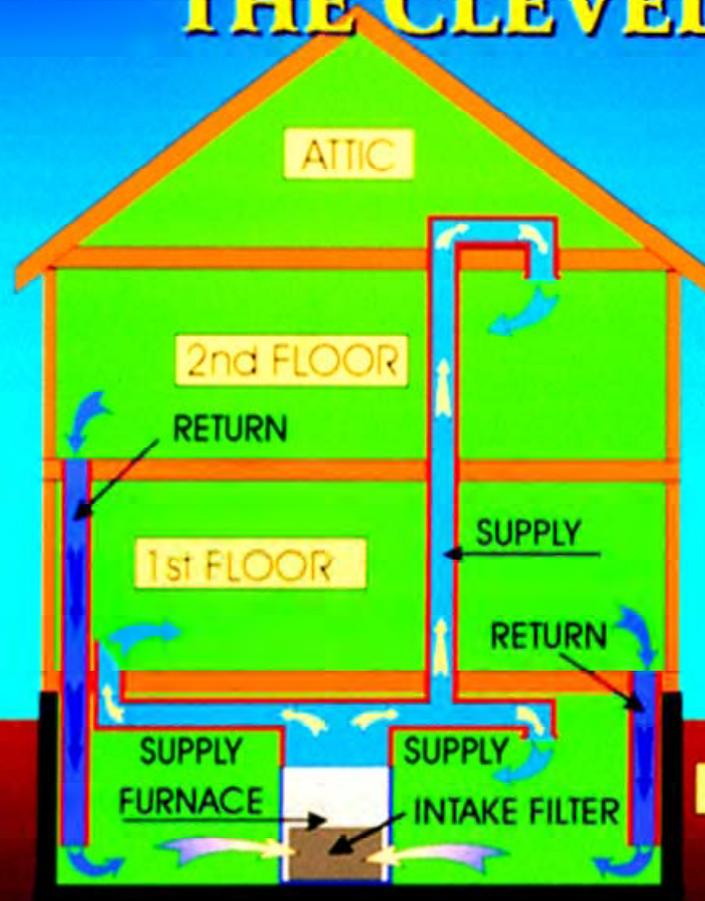


Environmental Sampling



HVAC Alterations

THE CLEVELAND DROP



A type of configuration for an HVAC system where the cold air return ducts drop down to the basement near the floor, and are not connected to the furnace. The return air for the furnace is drawn directly from the basement via the filter intake.

PREPARED BY THE CUYAHOGA COUNTY BOARD OF HEALTH

Mean Change in Symptom Score

	Control	Remediated	p-value comparing groups
10mo - baseline	-0.08 ± 0.22 (p=0.71)	-0.43 ± 0.16 (p=.0078)	0.20
CV3-baseline	-0.15 ± 0.14 (p=0.30)	-0.41 ± 0.18 (p=.0213)	0.26
Ave(10mo+CV3)-baseline	-0.12 ± 0.17 (p=0.50)	-0.42 ± 0.15 (p=0.0059)	0.19
Ave(10mo+CV3)-Ave(0-4mo)	0.07 ± 0.04 (p=0.13)	-0.08 ± 0.06 (p=0.18)	0.048

The remediated group showed significant improvement compared to baseline at 10 months and at the CV3 visit, and also when averaging the 10-month and CV3 visit whereas the control group did not show significant improvement.



ED/Hospitalizations Occurring > 6 months after Randomization

	Control	Remediated	P
# with ED or inpatient visit	11/33	1/29	.003
Mean # ED/inpatient	.52	.07	.004



CCHHI Background

- HUD Healthy Homes Demonstration Grant
- 36 months
- \$950,000/\$1,000,000
- 96/100 units



CCHHI Objectives

- Partner with existing weatherization programs to provide an integrated approach to asthma trigger reduction
- Improve IAQ to benefit children suffering from chronic respiratory disease
- Increase community wide awareness



What did We Learn?

- Moisture is the root of all evil
- HVAC design impacts IAQ (Cleveland Drop)
- Interventions affected symptom days, ER visits



What did We Learn?

- IPM
- Client behavior can undermine the interventions
- Small \$ amounts can make a big improvement (\$3147)



Program Development

- Local and universal health concerns will determine program design
- Based upon these opportunities we have developed programs and partnerships
- Integrated the HH approaches into other programming including lead.



Integration

- Standardized interventions
- Project coordination
- Education (lead & healthy homes)
- Universal environmental cleaning



Integration

- Integrated Pest Management
- Home safety items: smoke, CO, child safety locks
- HVAC alterations



Lead and Healthy Homes

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

-Florence Nightingale

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BUILDING A FRAMEWORK FOR HEALTHY HOUSING

Moving from Lead to Healthy Housing – Cuyahoga County's Experience

**Environmental Health Watch –
A Local Non-profit's Role**
Stuart Greenberg

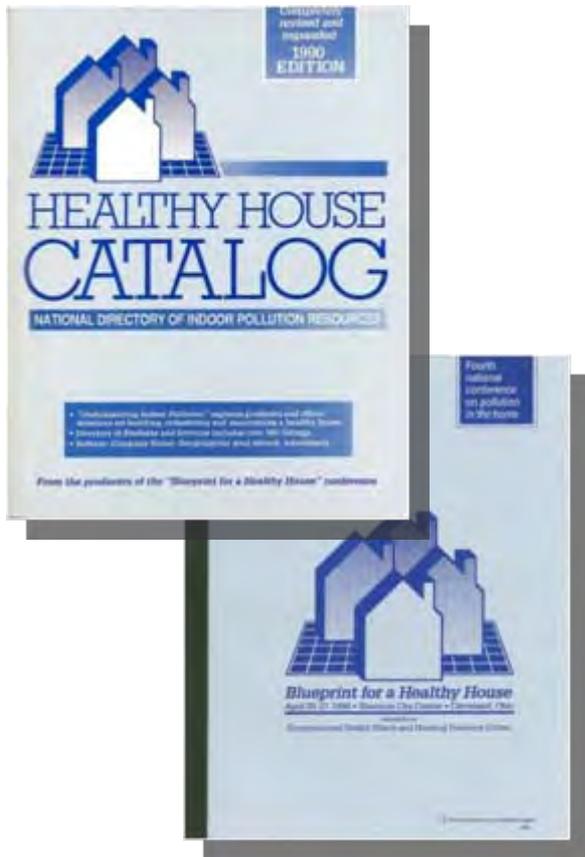


Environmental Health Watch

- Community organization formed in 1980
- Focus- indoor environments, chemical accidents, affordable green housing
- Activities-
 - education, training & direct service
 - research & demonstration
 - policy & advocacy
- Staff: 4 FT, 5 PT



Healthy House Conferences and Catalog



- *Blueprint for a Healthy House* (1985-91) -
 - first national conferences for health and housing organizations
 - EHW and the Housing Resource Center
- *Healthy House Catalog* (1990) -
 - First national catalog of healthy house resources

Environmental Health Watch and the Housing Resource Center

Healthy House *Catalog* (1990)

Blueprint for a Healthy House
Conferences (1985-91)



Lead Hazard Control Projects

- Cleveland Lead Hazard Abatement Center (Cleveland Dept. Public Health 1992-94)
- HUD LHC Projects
 - Cleveland Dept. Public Health (1995-)
 - Cuyahoga County Board of Health (2000-)
- Lead Technical Studies
 - Soil Lead Remediation Follow-up (University of Cincinnati, 2004-08)
 - Lead Window Treatment Follow-up (NCHH, 2008-09)



Evolution of LHC Strategy



- From abatement to interim controls to maintenance to prevention.
- From reactive to proactive.
- From high risk housing to all older housing.



Lead poisoning and asthma - same kids, same housing, similar approach

- Inner-city, poor, minority children
- Sub-standard housing
- Address excess moisture and dust contamination
- Educate owners and occupants





Indoor asthma triggers

- Inhaled allergens and lung irritants
- Allergen sources - roaches, mice, dust mites, mold, pets
- Irritant sources - ETS, products with strong odors, combustion appliances





Lead + Asthma Project (1998-99)

- Asthma trigger controls piggy-backed onto LHC
- Integrated with weatherization
- Cleveland Department of Public Health and Cleveland Housing Network
- HUD, EPA, foundation funding





Lead + Asthma Project

- National & local experts for all-day meeting -
 - Dennis Livingston - lead
 - Joe Lstiburek - moisture
 - Thad Goodish - IAQ
 - Richard Kramer - pest control
 - Jim LaRue - home renovation
- Developed integrated treatments





Lead + asthma strategy

- Correct moisture problems - reduces paint failure, dust mites, mold and roaches
- Cleanup - lead dust, roach, mold, other triggers
- Remove carpet - reservoir for lead, mold, irritants and other allergens
- Make surfaces cleanable - lead, allergens
- Educate occupants & owners - to reduce lead hazards and indoor asthma triggers
- Use integrated pest management (IPM)





Multiple housing-related health concerns

- Lead poisoning - still epidemic
- Asthma - rate higher than 20 years ago
- Carbon monoxide - deaths almost yearly
- Infant pulmonary hemorrhage - cluster in Cleveland
- Toxic exposures - building materials and household products
- Home injuries - falls, fires, poisoning





Healthy House Projects

- Lead + Asthma (1995-98)
- Roach Allergen Reduction (1999-2002)
- Urban Mold & Moisture (1999-2003)
- Community Environmental Health Resource Center (AHH) (2002-04)
- City-County Healthy House (2004-09)
- Case Healthy Homes & Patients (2006-08)
- Urban Mold & Moisture Follow-up (2008-09)



Healthy House Primary Partners

- Cleveland Department of Public Health
- Cuyahoga County Board of Health
- Cleveland Housing Network
- Swetland Center for Environmental Health - Case School of Medicine
- American Lung Association
- Cleveland Tenants Organization
- Community Housing Solutions

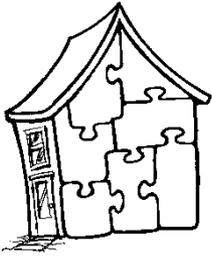




EHW roles in HH projects

- Assessment tools & interventions development
- Parent, building owner education
- Environmental sample collection
- Hazard assessment & low-level remediation
- QC & follow-up
- Technical assistance - database
- Outreach education and training





EHW HH strategy (1)

- Encourage self-protective actions
 - small group and home visit education
 - direct hazard reduction assistance
 - information via presentations, printed material, website.
- Help make or secure building repairs
 - **tenants:** use law and joint action to encourage/compel building owners
 - **homeowners:** information/assistance on hazard assessment, low-cost repairs, and subsidy programs.





EHW HH strategy (2)

- Influence policy to increase resources and improve regulatory tools
 - policy recommendations,
 - leadership on policy/advocacy coalitions
 - lobby regulatory agencies and legislative bodies

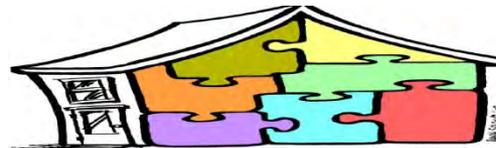




Next - Affordable Green House

Green housing for people who need it most

1. **Healthy** - dry, ventilated, clean & uncluttered, free of contaminants
2. **Affordable** - lower utility costs
3. **Environmentally friendly**- reduced CO_2 & local air pollution, sustainable materials
4. **In a sustainable community**



Thanks for your attention

www.ehw.org

216-961-4646





Healthy Homes

Partnerships and their role in building
a framework for successful Healthy
Housing.

Liz Hernandez
Director of Property Services
Cleveland Housing Network



Overview

1. Healthy Homes - a necessary component of Affordable Housing
2. Maximizing resources/funding: no one program will handle it all! It's all about "piggybacking" and being part of a collaborative.
3. How to be an "expert" and bring something to the table. (when you thought you only knew about lead or weatherization!)
4. Who are our Partners and why we need each other.



Cleveland Housing Network & Healthy Homes

- CHN: Non-profit dedicated to the development of primarily single-family affordable housing with an emphasis on home ownership for families in poverty.
- CHN develops, own, and manages approximately 2000 homes in the City of Cleveland, predominately rehabbed homes.
- A commitment to affordable housing in northern Ohio, means a commitment to weatherization, energy conservation, and lead safe housing.
- In Cleveland, low-income families live in houses built prior to 1950; lead is huge concern. (Most live in homes built prior to 1920.)
- In Cleveland, wet basements are more common than not.
- In Cleveland homes are large and leaky!
- SO, if you are in the business of housing development, you need to be also in the business of lead safe, energy efficient, healthy homes.

Why does CHN or any community development organization get involved in lead or Healthy Homes? What are the benefits?
How does CHN contribute to the success of the program?

■ WHY?

- Learn lead safe techniques which can be applied to rehab and long term management of older, rehabbed units.
- Moisture reduction techniques, what we try and test out in the various healthy homes funded programs are essential to CHN as we continue to rehab effectively for our own programs.
- Throughout the years, residents have had complaints of kids with asthma, or kids with elevated lead blood levels. By partnering with the Health Depts., CHN has a direct connection to those with the health expertise.
- Elevates the knowledge and expertise of our staff.

WHAT DO WE CONTRIBUTE?

- Leveraged funds
- Experience with the low income population and their housing stock
- Knowledgeable field staff who know how to work with clientele and have evolved as housing professionals
- Pool of contractors who are willing to expand their base
- Presence at monthly meeting to share observations, offer suggestions.

Home Weatherization Assistance Program (HWAP)

- Partners:
 - ◆ US Depts of Energy & HHS
 - ◆ State of Ohio
- Key Characteristics
 - ◆ Ohio is progressive
 - ◆ Inspectors
 - ◆ Contractors





Utility Energy Conservation Programs

Housewarming Program

■ Partner: Dominion East Ohio Gas Company

■ Key Characteristics:

- ◆ Insulation and Furnace Replacement
- ◆ CHN contracts with 25+ non-profit agencies
- ◆ As lead agency, CHN has to stay apprised of latest developments in field, and keep our network of providers working to raise the bar.
- ◆ CHN has been administrator for 15+ years

Utility Energy Conservation Programs

Electrical Energy Programs

- Partners: Electric Utilities – First Energy and Cleveland Public Power
- Key Characteristics:
 - ◆ Conservation: Replace inefficient refrigerators and freezers, install compact fluorescent light bulbs
 - ◆ Wiring upgrades when necessary for insulation



Utility Energy Conservation Programs

Water Conservation

- Partners: City of Cleveland's Water Department
- Key Characteristics:
 - ◆ Conservation: Fix leaks, install low-flow shower heads, energy conservation toilets, faucet aerators
 - ◆ Client Education!!
 - ◆ Reduce moisture/Reduce mold's ability to grow.

Utility Energy Conservation Programs

Electric and Water Conservation

- Integrate Programs with “Piggybacking”
 - ◆ Integrate whenever possible
 - ◆ Train inspectors on aspects of all programs
 - ◆ Bring them all in at once when possible
- Develop expertise in conservation strategies



Lead-Safe Housing

- Partners: City of Cleveland Health Dept.
- Characteristics:
 - ◆ Commitment to Healthy Homes as part of affordable housing mission
 - ◆ Based on Housing Stock, CHN recognized that Lead-safety is critical
 - ◆ Steep learning curve
 - ◆ Develop techniques and protocols
 - ◆ Contractor training/resident training critical.

Contractor using lead techniques

- Must be willing to invest in training!



Mold & Moisture Reduction Demonstration Project

- Partners: Cuyahoga County Health Dept., Cuyahoga County Dept. of Development, University Hospitals of Cleveland, Environmental Health Watch, Housemender (Jim Larue)
- Characteristics:
 - ◆ Inter-disciplinary Demonstration Project: reduce mold/moisture in homes of children with respiratory illnesses
 - ◆ Structured much like the lead program whereby CHN became the construction management partner.



On Becoming an Expert . .

How does a housing development group become a partner that brings something to the table??

■ Train the field staff!!

◆ Residential Energy

- ◆ Weatherization skills/theory
- ◆ Blower door
- ◆ House Diagnostics
- ◆ Furnace Inspection
- ◆ Using Infrared equipment
- ◆ Energy Star raters training
- ◆ Electric baseload

◆ Lead Training

- ◆ Lead inspector
- ◆ Lead Clearance technician
- ◆ Lead risk Assessors
- ◆ Use of XRF

◆ Mold and Moisture

- ◆ Prevention of moisture problems
- ◆ Indoor air quality training



On Becoming an Expert . . .

- Develop Contractor Network
 - ◆ Good Contractors will:
 - ◆ Train crews and have a good grasp of the house as a system
 - ◆ Be conscientious about company and have a quality track record
 - ◆ Be creative on-the-job problem solvers
 - ◆ Communicate well with the inspector and client
 - Honor warranties and take responsibility for the job over the long run

❖ Nurture the “Good” Contractors

Make contractors aware of training opportunities
Sponsor trainings whenever possible.



Discuss with them the goals and future of their business, and the future of the programs.

- You need them as much as they need you!
- Their success is also your success.





Recap of partners: Not Just Community Development Corporations!!

- City of Cleveland Health Department
- Cuyahoga County Health Department
- Cuyahoga County Dept of Development
- Environmental Health Watch
- Housemender – consultant Jim Larue
- University Hospitals of Cleveland
- . . . And local CDCs



... and Partnering with Experts

**Be an active
member
of the team.**



Expertise in Healthy Homes and Affordable Housing

1. Healthy Homes is an important part of Affordable Housing.
2. Integrate Programs to increase impact.
3. Develop Expertise through training and innovation.
4. Identify Partners and bring them to the community, the neighborhood and homes.