

Tools to Help You Make the Case for Local Action

EPA Mid Atlantic Lead Forum

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October 2, 2019



National Center for
HEALTHY HOUSING

Individual v Broad Action

- Case Management



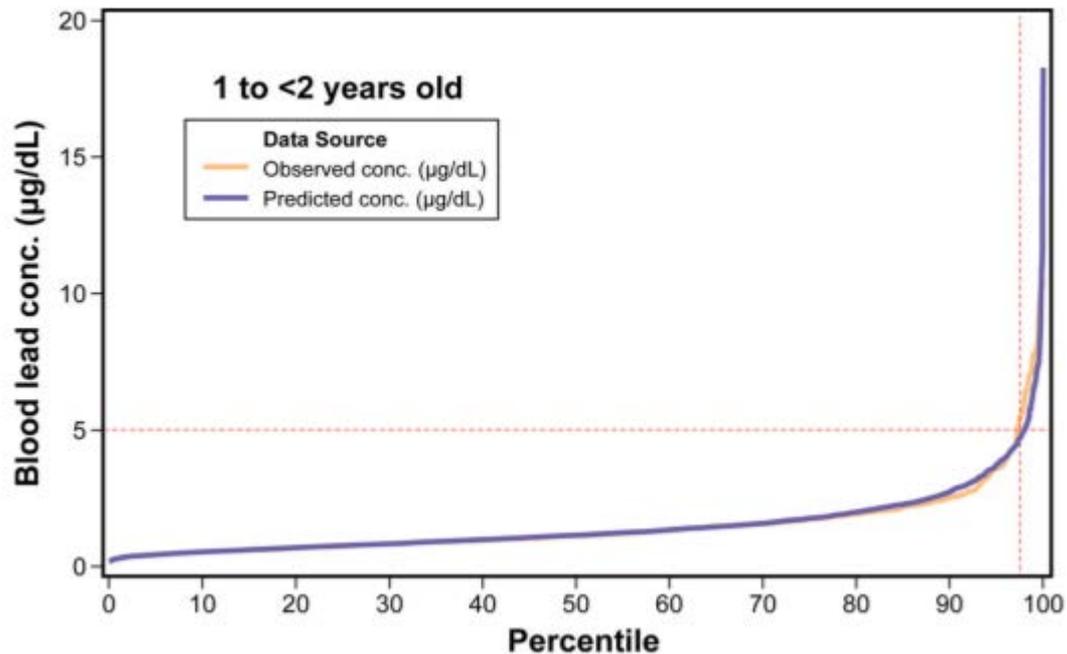
- Public Health Response



Children's Lead Exposure: A Multimedia Modeling Analysis to Guide Public Health Decision-Making

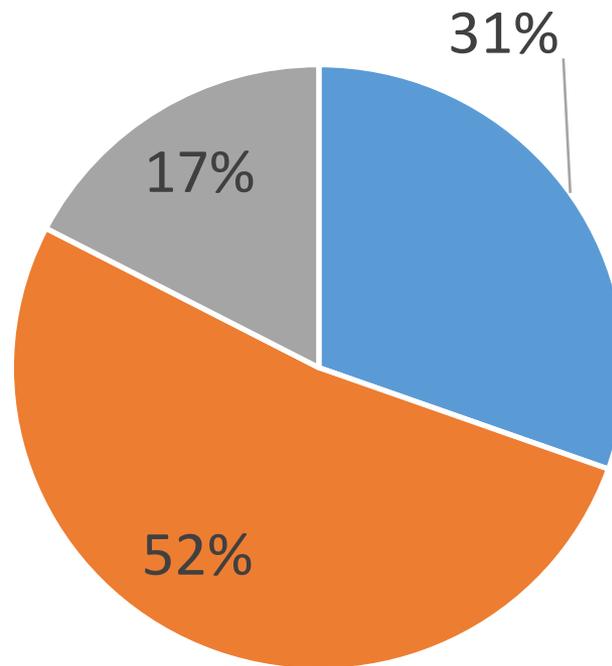
Valerie Zartarian , Jianping Xue, Rogelio Tornero-Velez and James Brown

Published: 12 September 2017 | CID: 097009 | <https://doi.org/10.1289/EHP1605> | Cited by: 3



Lead Sources for Median Child

Proportion of
Lead Sources
1-2 yr old
50th percentile
blood lead level
Median
1.2 $\mu\text{g}/\text{dL}$



■ Soil/Dust ■ Food ■ Water

Housing Makes Children Sick

Proportion of Lead Sources

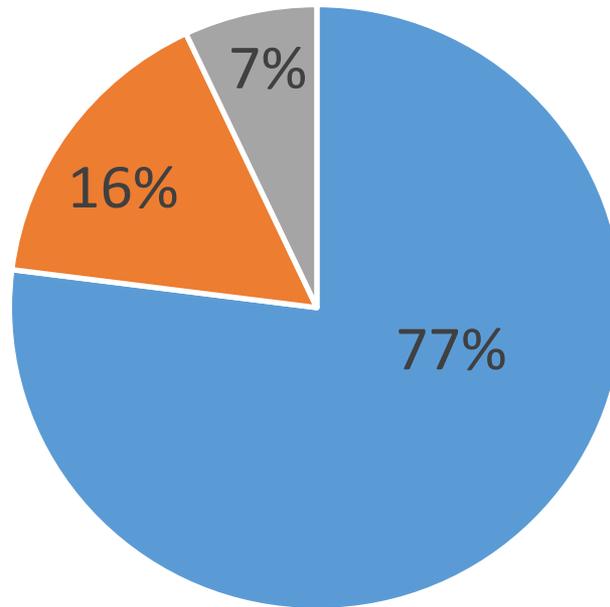
1-2 yr old

> 90th percentile

blood lead level

Median

3.3 $\mu\text{g}/\text{dL}$



■ Soil/Dust ■ Food ■ Water

Difference Between Median and Exposed Child: Dust and Soil Pb

Change from 1.2 $\mu\text{g}/\text{dL}$ to 3.3 $\mu\text{g}/\text{dL}$ is totally explained by additional dust lead and soil lead in the exposed child's environment



Risk Factors for Elevated PbD

Floor > 10 $\mu\text{g}/\text{ft}^2$

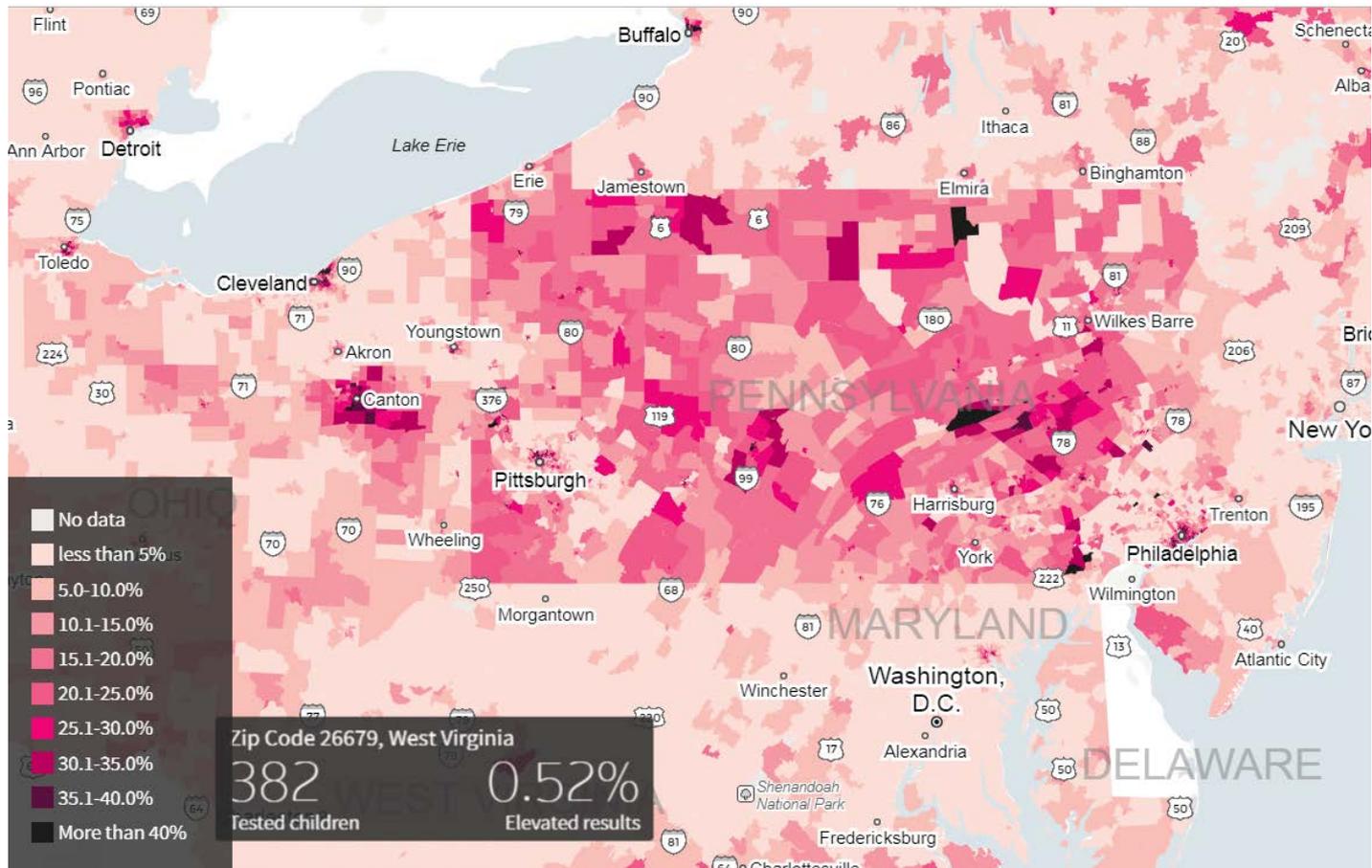
- Pre-1960 housing
- <10 units in bldg
- Higher sill PbD
- Uncarpeted flooring

Window Sill > 100 $\mu\text{g}/\text{ft}^2$

- Pre-1950 housing
- Peeling exterior paint
- Smoker in home

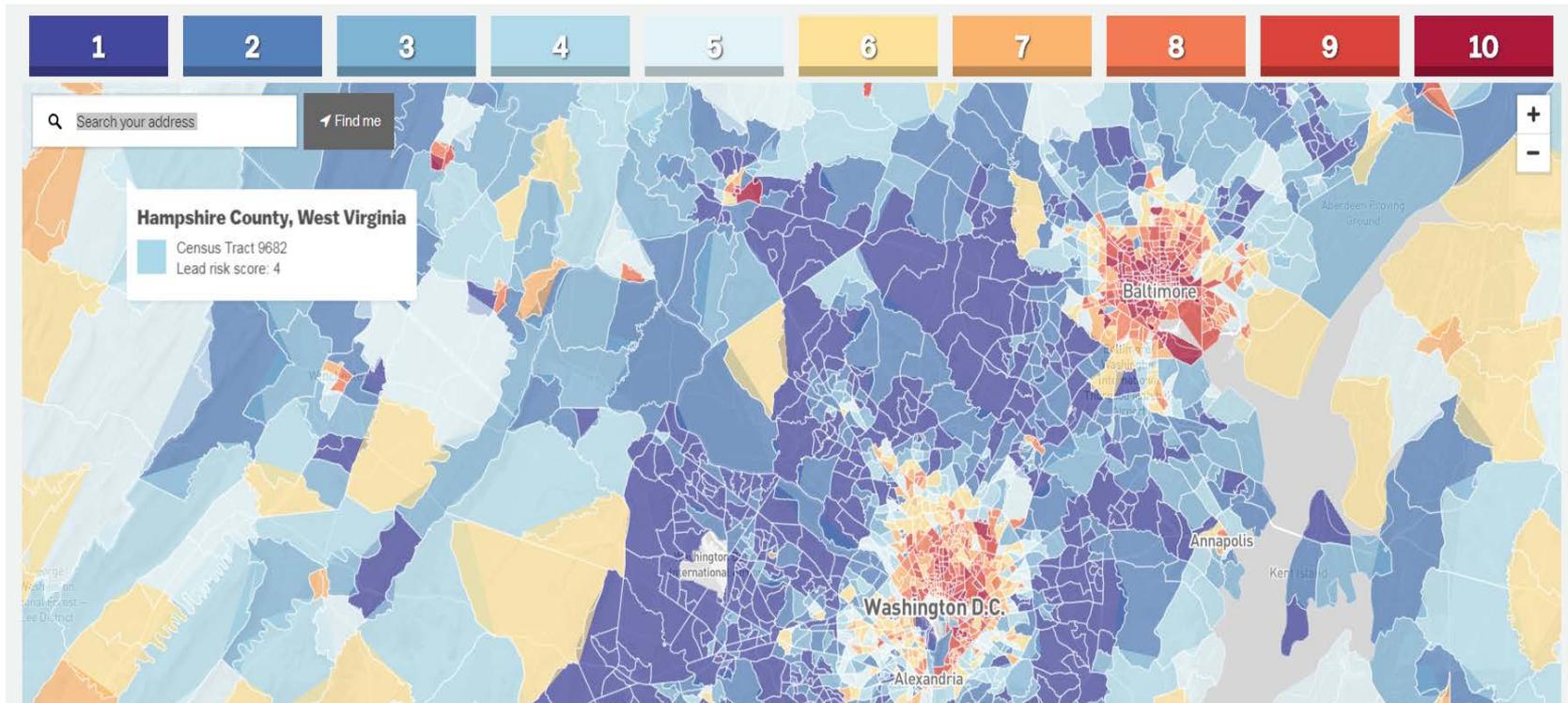
Note: Soil not collected in this survey.
Prior studies found a pathway from
soil > window troughs > sills > floors

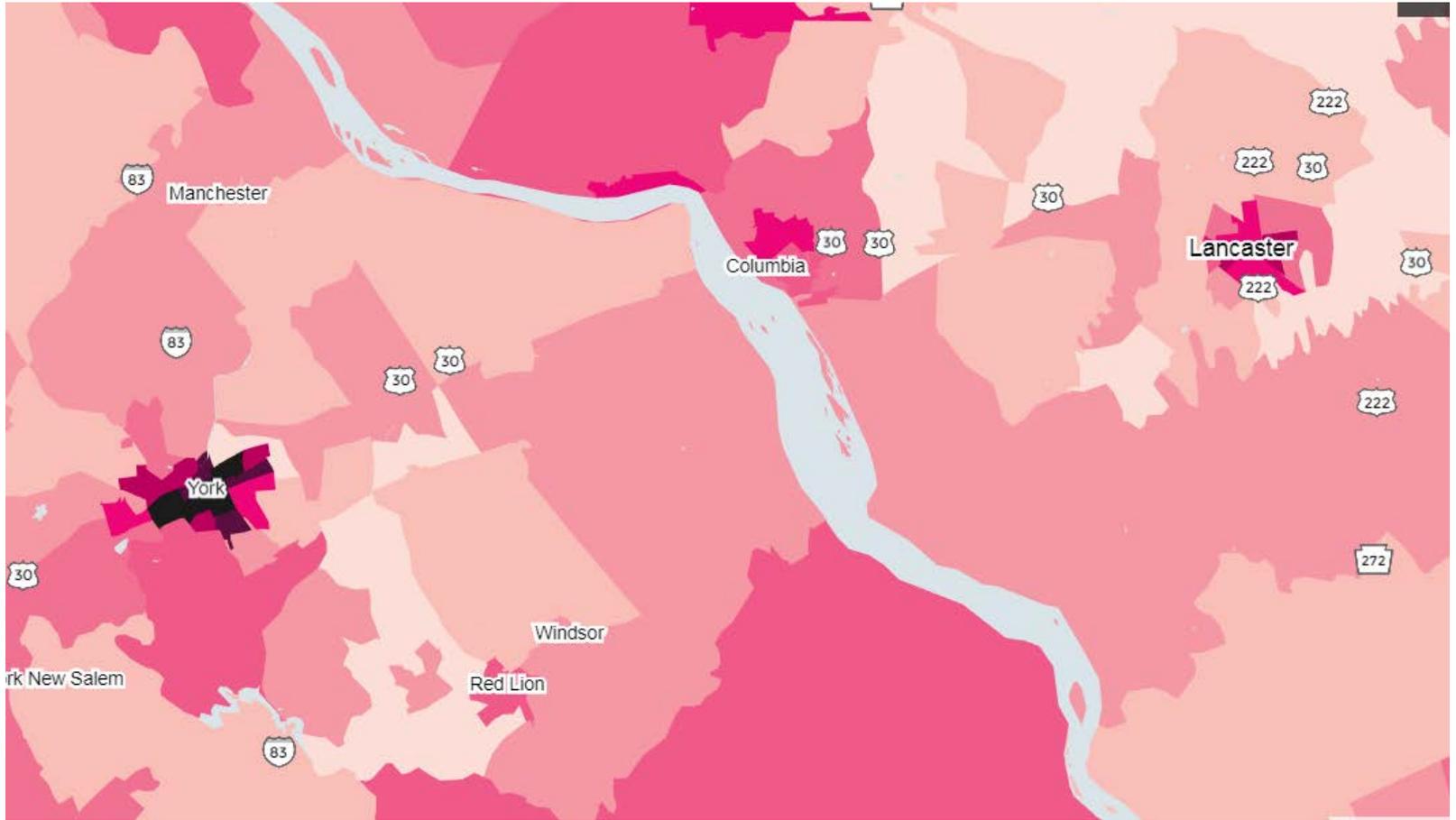
Mapping Areas of Risk Blood Lead Test Data

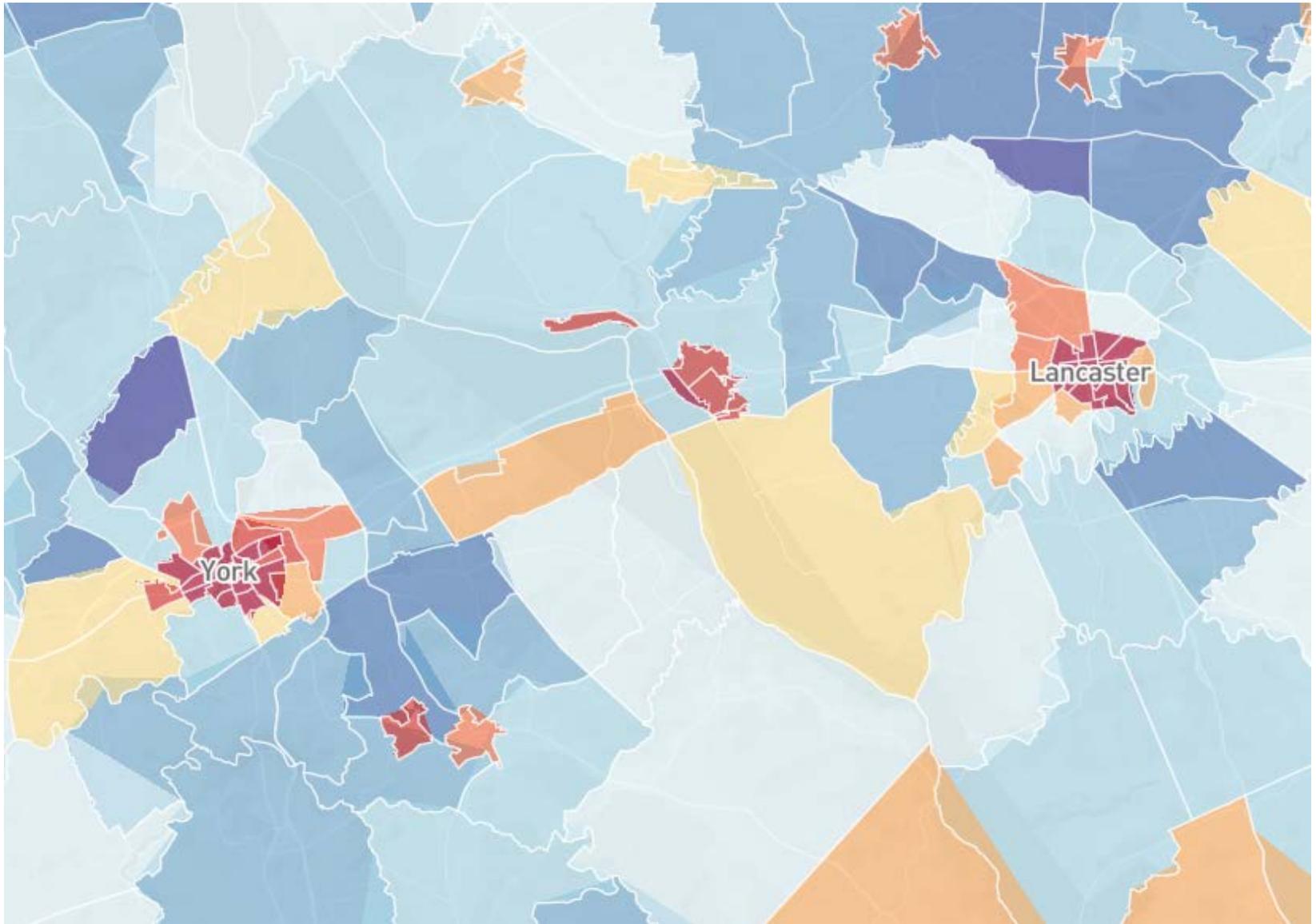


Mapping Areas of Risk

Pre-1950s Housing and Poverty







10 Policies to Prevent and Respond to Childhood Lead Exposure

The report was developed with support from the Health Impact Project, Robert Wood Johnson Foundation, and Pew Charitable Trusts. Report available at: <http://www.pewtrusts.org/en/research-and-analysis/reports/2017/08/10-policies-to-prevent-and-respond-to-childhood-lead-exposure>



Key Housing Actions

Do no harm

- Enforce renovation, repair, and painting regulations
- Return: \$3.10 per dollar spent

Fix It

- Invest in prevention actions in low-income older housing *before* a child is poisoned
- Return: \$1.39 per dollar spent

http://www.pewtrusts.org/media/assets/2017/08/hip_childhood_lead_poisoning_report.pdf

Key Water Utility Actions

Fix It

- Removing leaded drinking water service lines at properties with children
- Return: \$1.33 per dollar spent

http://www.pewtrusts.org/media/assets/2017/08/hip_childhood_lead_poisoning_report.pdf

Preventing Childhood Lead Exposure: Costs and Benefits

Use this tool to calculate the cost of lead exposure and the economic benefits of key interventions to reduce lead exposure in your state. Data are available for each of the 50 states.

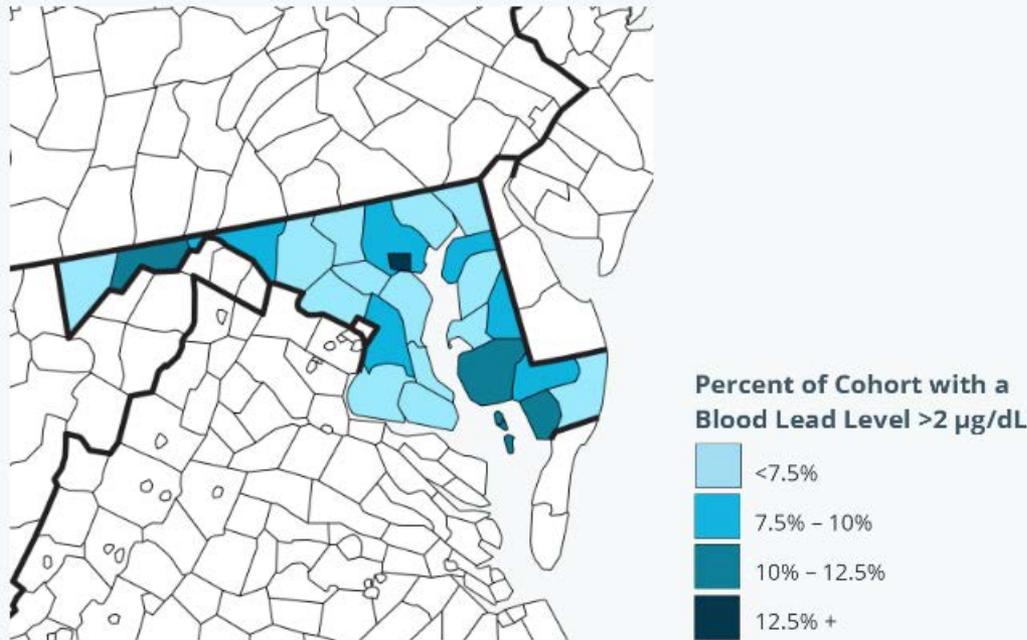
or select from the map below



Current Exposure Risks

Map of Current Exposure Risks ?

Lead exposure risks for children born in 2019, shown as the estimated percent of children who will have blood lead levels above 2 $\mu\text{g}/\text{dL}$ for each county in the State of Maryland. Darker shades indicate greater risks of lead exposure for children.



Exposure Burden

Maryland

Estimate Exposure Burden

Calculate Intervention Impacts

Total Cost

\$1.9B

Lifetime economic burden of childhood lead exposure in Maryland.

Calculated for the 2019 birth cohort. Includes costs of reduced lifetime productivity; increased health care, education, and social assistance spending; and premature mortality.

Number of Children Exposed ?

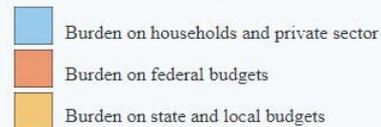
6,431

Blood levels >2 µg/dL

Children in the 2019 birth cohort predicted to have blood lead levels >2µg/dL. This is 9% of all births in Maryland.

Cost Breakdown ?

Hover for additional detail



Intervention Impacts (LHC)

Overview: Lead Hazard Control

This page estimates the costs and benefits of lead hazard control (LHC) to eliminate lead-based paint hazards for the homes of children born in 2019 in Maryland. Lead hazard control, described in detail [here](#), includes treating paint, dust, and soil, as well as replacing old windows where necessary.

The figures below show the estimates for an intervention that removes lead-based paint hazards from homes of children born in 2019. The intervention's size, costs, and impacts can be customized using the sliders on the right and then clicking Recalculate.

Cost Benefit Analysis for Lead Hazard Control (LHC)

for the Maryland 2019 Birth Cohort



Protect

24,757 children



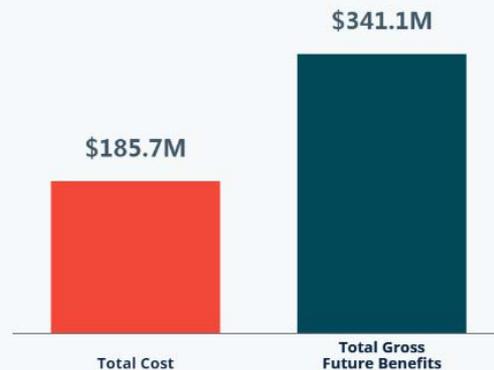
Net Benefit

\$155.3M



Return

\$1.9 per dollars invested



CUSTOMIZE YOUR INTERVENTION

Number of Homes Receiving LHC

18 944
0 37 887

Cost of Testing Lead Paint

1 000
\$0 \$2 000

Average Cost of LHC per Home

7 826
\$4 000 \$25 000

Starting Dust Lead Levels for Homes with Lead Paint

Intervention Impacts (LSLR)

Overview: Lead Service Line Replacement

This page estimates the economic costs and benefits of full lead service line (LSL) replacement for the homes of children born in 2019 in Maryland. Full LSL replacement, described in detail [here](#), includes the removal of both the homeowner and utility-owned portions of lead service lines.

The figures below show the estimates for an intervention that replaces all the lead service lines for homes of children born in 2019. The intervention's size, costs, and impacts can be customized using the sliders on the right and then clicking Recalculate.

Cost Benefit Analysis for Lead Service Line (LSL) Replacement

for the Maryland 2019 Birth Cohort



Protect
4,150 children



Net Benefit
\$14.8M



Return
\$1.6 per dollars invested



Property Maintenance Codes

JUNE 19TH, 2019

Announcing NCHH's Code Comparison Tool... and Why You Should Use It

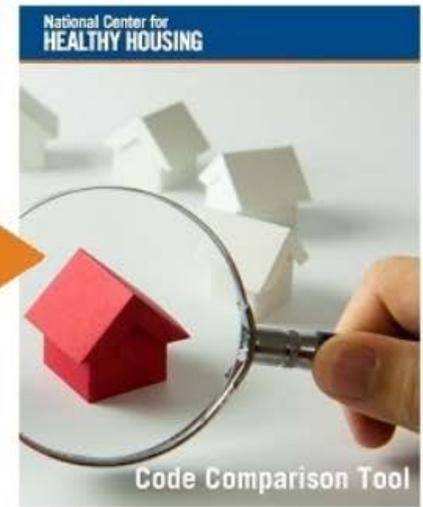
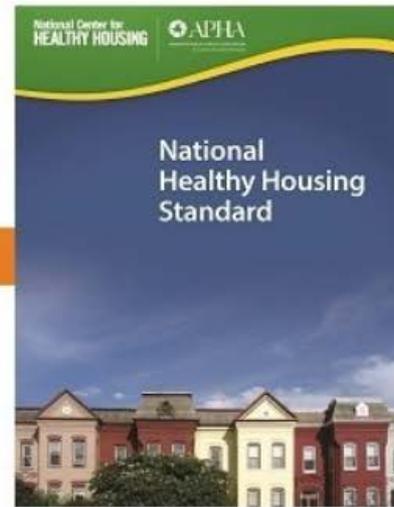
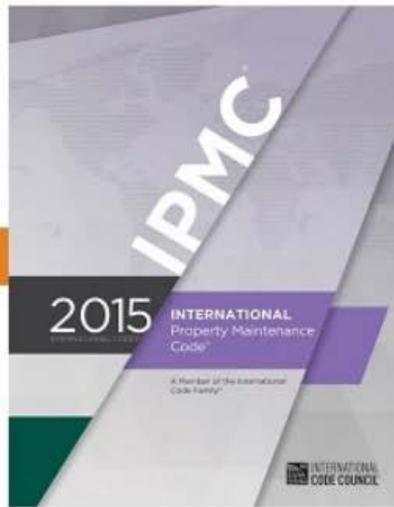
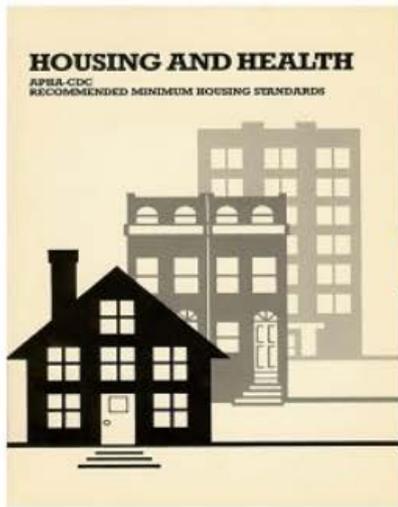
by Jo Miller and Christopher Bloom

With National Healthy Homes Month in full swing, and while you're thinking about healthy housing, now's the perfect time for us to show you how to increase the number of safe and healthy homes in your community by understanding and strengthening your local housing and maintenance codes.

Maybe you've already heard that we at NCHH recently unveiled our new online Code Comparison Tool. (If you haven't, we suggest that you follow NCHH on Twitter to hear all of our latest news.) We're extremely excited about the tool, and we want everyone to use it right away. That's why we made it free.

<https://nchh.org/tools-and-data/housing-code-tools/cct/>

International Property Maintenance Code & National Healthy Housing Standard



Housing and Health: APHA-CDC Recommended Minimum Housing Standards (APHA and CDC), the International Property Maintenance Code (International Code Council), and the National Healthy Housing Standard (NCHH and APHA) all inspired our new interactive Code Comparison Tool.

See Section E – Does Your Code Include Lead?

START HERE: Tell Us About Your Codes

SECTION A: Moisture Control



SECTION B: Pest and Waste Management



SECTION C: Plumbing and Water Systems



SECTION D: Injury Prevention



SECTION E: Chemical Hazards – Building Products



SECTION F: Chemical Hazards – Other and Noise Hazards



SECTION G: Ventilation



SECTION H: Heating/Mechanical



SECTION I: Lighting Electrical



SECTION J: Fire Safety



SECTION K: Structural



SECTION L: Occupancy



You Might Be Surprised

Search 2012 Virginia Maintenance Code (USBC, Part III)



Section 310 Lead-Based Paint



310.1 General

Interior and exterior painted surfaces of dwellings and child care facilities, including fences and outbuildings, that contain lead levels equal to or greater than 1.0 milligram per square centimeter or in excess of 0.50 percent lead by weight shall be maintained in a condition free from peeling, chipping and flaking paint or removed or covered in an approved manner. Any surface to be covered shall first be identified by an approved warning as to the lead content of such surface.

Thank You!

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www.nchh.org ♦ [@NCHH](https://twitter.com/NCHH) ♦ facebook.com/HealthyHousing

**National Center for
HEALTHY HOUSING**

Resources

- <https://doi.org/10.1289/EHP1605>
- <https://www.reuters.com/investigates/graphics/lead-water/en/>
- <https://www.vox.com/a/lead-exposure-risk-map>
- <http://www.pewtrusts.org/en/research-and-analysis/reports/2017/08/10-policies-to-prevent-and-respond-to-childhood-lead-exposure>
- <http://valueofleadprevention.org/>
- <https://nchh.org/tools-and-data/housing-code-tools/cct/>