

POLICY BRIEF FOR LOCAL LEADERS AND ADVOCATES:
Recommendations to Prevent and Mitigate the Effects of Lead Poisoning



In August 2017, the Health Impact Project, a collaboration between the Robert Wood Johnson Foundation and Pew Charitable Trusts released a report: *Ten Policies to Prevent and Respond to Childhood Lead Exposure*. The Trust for America's Health, National Center for Healthy Housing, Urban Institute, Altarum Institute, Child Trends and many researchers and partners contributed to the report.

The report notes that, according to the most recent data, about 500,000 children ages 1 to 5 years have dangerously elevated blood lead levels.² And, while every child can be at risk and no level of lead in blood is safe,³ the most affected are children of color and those living in low-income communities.⁴

“We need public awareness... we need the public to know that this [lead] is...in their homes.”

– Health Impact Project, Focus Group Participant, New Orleans, Louisiana

* Cost data are not available for all the interventions that contribute to total prevention of lead poisoning. However, cost-benefit ratios are provided in the report for several strategies, including lead water line replacement, lead paint eradication, and lead-safe renovation and repair practices.



Lead poisoning is devastating for children and can lead to lifelong problems, including decreased IQs and poor academic performance, memory and executive function. Even at very low levels, lead exposure affects impulse control and the ability to grasp information, making children more likely to struggle in school, drop out, get into trouble with the law and, later, underperform at work.⁵

The problem, and sources, of childhood lead exposure can vary greatly from one community to another. Children in

urban settings—especially those from low-income and minority families—are significantly affected by paint in older homes and the dust and soil contamination it generates and drinking water.⁶ In rural communities, there is some evidence that children may be exposed to contaminated soil from lead-containing pesticides that were once applied to crops and often spend time in old farmhouses which could potentially have lead-based paint and live in areas with potentially antiquated water systems.⁷

DISPROPORTIONATE RISKS OF LEAD EXPOSURE



A **Chicago** study of more than 1 million blood tests collected between 1995 and 2013 found

that, regardless of socioeconomic factors, children from predominantly Black, and to a lesser degree, Hispanic, neighborhoods had high rates of lead poisoning, even as blood lead levels fell dramatically citywide. Another study



in **Rochester, New York**, found that Black children were at higher risk of elevated blood

lead than their peers of other races.⁸ Additionally, American Indian and Alaska Native children are much more likely than other children to be exposed to potentially lead-contaminated runoff and other effects of former mining sites.⁹

Societal Benefits of Prevention

Preventing lead exposure from all sources for all children born in 2018 could generate \$84 billion in future benefits. The \$9.6 billion for state and local governments includes about \$4 billion from increased tax revenue and roughly \$6 billion in decreases in expenditures. In essence, more children would thrive, resulting in improved high school and college graduation rates, leading to greater employment, higher lifetime earnings and significant savings in healthcare, special education and criminal justice costs.

The report also found that additional interventions at the local level would have significant positive results.

- **Removing Lead Water Pipes** from homes would protect more than 350,000 children and yield nearly \$2.7 billion in future benefits (about \$1.33 per \$1 invested). The total includes health and education savings and increased tax revenue of \$250 million for states and municipalities.
 - (EPA) Renovation, Repair and Painting (RRP) Rule would protect about 211,000 children in 2018 alone and provide future benefits of \$4.5 billion (about \$3.10 per \$1 spent). This includes \$500 million in state and local health and education savings and increased revenue.
- **Eradicating Lead-Paint Hazards** from the homes of children from low-income families would protect more than 311,000 children and provide \$3.5 billion in future benefits (approximately \$1.39 per \$1 invested). The total benefits include \$320 million in state and local health and education savings and increased revenue.
- **Airplane Fuel:** In 2018, 226,000 children will be born and live near airports. Curtailing lead emissions from airplane fuel would generate \$262 million in future benefits and remove roughly 450 tons of lead from the environment every year.
- **Lead-Safe Contractor Practices:** Increasing enforcement of Environmental Protection Agency's **Targeted Interventions:** Providing the roughly 1.8 million children with past lead exposure with targeted, evidence-based interventions could increase their lifetime family incomes by almost \$100,000.

Ten Local-Level Policy Recommendations

1. Reduce lead in drinking water in homes built before 1986 and other places children frequent.

Replacing lead service lines (LSLs) is the only permanent method to remove lead from drinking water.¹⁰ Research indicates that corrosion in LSLs account for the largest share of lead in water.¹¹ Additionally, residences with LSLs are at even greater risk if the techniques used to manage the corrosivity of water are not effective.

The 1991 Lead and Copper Rule set forth “corrosion control”—treating water with chemicals that create barriers between pipes and water or adjusting the pH or hardness of water—as the primary method for reducing lead in water. Since the rule’s inception, corrosion control has dramatically decreased water lead levels, but the various methods can differ substantially in effectiveness, so EPA requires utilities to monitor selected water quality parameters, such as pH.¹²

Further, the risk to consumers from their home drinking water may be underestimated because utilities typically draw too few samples within each home, and the samples are not consistently taken after the water has sat in the pipe. Cities and towns should ensure that there is better sample collection, testing and reporting. They should also work with states to require that schools and licensed child-care providers test for lead in drinking water and release the results publicly.

Local governments should require properties built before 1986 to be



The **Lansing** Board of Water and Light (BWL) has developed a faster, more efficient

method for replacing lead pipes. What had been a nearly eight-hour, \$9,000 job requiring a trench to be dug from the main to the foundation of the house, was streamlined to four hours and \$3,600. Now, rather than trenching, BWL digs a hole in the street and another at the shut-off valve and pulls a new pipe in behind the old one. Where possible, the program has followed planned street, sewer and other infrastructure projects to minimize street closures and reduce reconstruction costs. Over 12 years, the BWL replaced 12,150 LSLs at a cost of \$44.5 million. And, water quality reports indicate a decrease in lead levels in water, with nine out of 10 homes experiencing significant decreases.¹³ BWL prioritized lines serving schools and licensed day care centers, areas where testing showed that children had high blood lead levels, households with pregnant women or children under 6, and other places with large concentrations of LSLs.¹⁴

tested for drinking water lead risks before sale or lease. Municipalities should require developers to conduct full LSL replacement during residential property development.¹⁵

2. Remove lead-paint hazards from low-income housing built before 1960 and other places children spend time.

More than half of the homes built in the United States before 1978 have some lead-based paint, and the share jumps to more than three-quarters for houses built before 1960. Nationwide, about 3.6 million houses have lead hazards and are also home to children under 6. Minority children and those living in poverty have significantly higher average blood lead levels than their more affluent counterparts, with aging, dilapidated rental housing carrying the greatest lead risks.¹⁸

Towns, cities and municipalities can play a major role in preventing future lead poisoning. Notably:

- Local laws should require housing inspections at regular intervals and removal of lead-paint hazards, including peeling or chipped paint and contaminated soil and dust, before a home is sold, rented or financed. Units in which a child was poisoned or a lead hazard exists should not be re-rented until the lead contamination has been removed;
- Localities should prevent displacement of tenants in homes with lead hazards by freezing any eviction proceeding initiated without just cause and within 6 months of a finding of a high blood lead level or lead hazard in the home;
- City and town governments should make lead-paint hazard control affordable to property owners through low-interest loans, tax credits and other incentives;
- Using State Medicaid funds, local health departments should conduct environmental hazard testing of homes in high-risk neighborhoods; and
- Local governments, with EPA and states, should offer funding to schools and child-care providers to support lead-paint hazard identification and mitigation.



Experts describe **Rochester, New York's**, 2005 law requiring regular

inspections of most pre-1978 rental housing for lead-paint hazards as part of the city's certificate of occupancy process for most rental properties as the smartest in the nation.¹⁶ In the decade-plus since it was created, the city has inspected more than 141,000 homes and the number and proportion of children with high blood lead levels has decreased.¹⁷



The **District of Columbia** prohibits lead-based paint hazards in housing, multifamily property common areas and daycare and prekindergarten facilities constructed before 1978.¹⁹ Before a buyer or tenant is obligated under contract to buy or lease a unit, the property owner must prove no lead-based paint hazards were present within the past 12 months.²⁰ Owners who discover lead-based paint in their properties must disclose it to their tenants within 10 days.

3. Enforce the federal Renovation, Repair, and Painting Rule, requiring contractors to control the amount of lead dust and debris created by workers.

EPA supervises compliance with the rule through its 10 regional offices and is responsible for enforcement in 36 states and has delegated this responsibility to 14 states.

Local leaders should urge states—that do not have the authority—to pursue obtaining responsibility for enforcing RRP.

Communities should require proof of EPA-compliant lead-remediation training before issuing a permit for work likely to disturb paint in housing built before 1978. They should widely distribute information about the rule’s requirements.

Using EPA funding, local agencies should educate businesses and consumers on the perils of unsafe renovation.



To identify potentially unsafe renovations in **New York City**, health department inspectors who observe uncontained paint dust or debris must take samples and stop the work. Owners or contractors must then post a “conspicuous” sign with a phone number to access additional information, including inspection results, until they are cleaned up and re-inspected to confirm that the source of potential lead exposure has been addressed.²¹



In the **District of Columbia**, where about 75 percent of housing was built before 1978, contractors seeking renovation permits must show proof of EPA-required training.²² **Providence** and **Pawtucket, Rhode Island**, will not issue permits for construction work at homes and child-care facilities without proper certification.²³

4. Remove lead from food and consumer products.

Information about lead in consumer goods should be accessible to recent immigrants and refugee families. For example, Spanish-speaking residents in **Flint, Michigan**, did not learn about the water crisis until Univision reported on the issue four months after the story first broke. The oversight points to the importance of cultural competency.²⁴

Local agencies should target education and outreach to at-risk neighborhoods where local surveillance data show children are being exposed to lead from candy or other consumer goods. Involved agencies should also increase investigation and enforcement of small retailers.

In focus groups conducted by the Health Impact Project, participants worried about lead contamination of food, including imported spices, breast milk, toys, jewelry, and other products,

wanted improved labeling, and expressed concerns for refugees and a desire to ban lead from health remedies. The Centers for Disease Control and Prevention (CDC) created lead poisoning prevention recommendations for newly arrived refugee children that should be implemented at the local level where possible.²⁵

“Companies need to stop making toys with lead.”

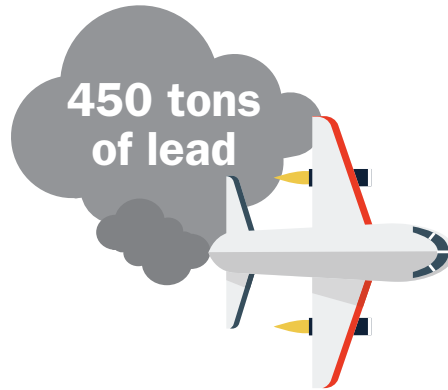
– Health Impact Project, Focus Group Participant, Baltimore, Maryland



5. Reduce air lead emissions.

A 2001 study found that EPA's index of regulated recycling facilities for lead-containing products listed only a third of existing sites,²⁶ many located in or near residential areas and causing widespread contamination of neighborhood soil.²⁷ Local governments should impose fees on airports serving piston engine aircraft that use leaded gas and use the revenue to pay for the cleanup of soil in nearby neighborhoods, parks and school districts.

Amount of lead emissions generated by piston engine aircraft per year



6. Clean up contaminated soil.

A small but consistent set of studies demonstrate an association between elevated blood lead in children and residing near a Superfund site. Soil can be contaminated from prior industrial uses, prior use of lead in motor vehicle gas, industrial emissions, leaded aviation gas, and lead paint dust from buildings. Local agencies must work with appropriate state and federal agencies to ensure children are safe.

CONTAMINATED SOIL IN COMMUNITIES



In 2004, more than 40 percent of soil in **New Orleans** exceeded EPA's cleanup standard.²⁸ After Hurricane Katrina deposited cleaner, less hazardous surface soil over the high-lead topsoil, combined with citywide removal efforts, lead dust in homes and the surrounding soil decreased.²⁹ Before the storm, 15 of the city's 46 census tract neighborhoods exceeded EPA's regulatory soil lead standards—by 2010, only six neighborhoods exceeded standards.³⁰ Based on this success, researchers used a similar approach to clean up soil at the city's public playgrounds, schools and federal public housing projects,³¹ decreasing lead poisoning among children in high-lead, largely inner-city areas from 64 percent in 2005 to 19 percent in 2015.³²



In 1974 more than 95 percent of children within two miles of the **Bunker Hill Superfund Site** in northern **Idaho** had highly elevated blood lead levels.³³ In 2001, after cleanup, only 3 percent of children in neighboring residential areas had elevated blood lead levels.³⁴



In 1998, the **Omaha** City Council requested EPA assistance after nearly 10 percent of children tested in the county had elevated blood lead levels.³⁵ In 2003, approximately 14 square miles of property in **East Omaha** was deemed at high risk and added to the national priorities list.³⁶ Cleanup included soil testing at child-care facilities, schools, playgrounds, parks and homes; removal and replacement of contaminated soil; planting of new sod and grass seed and an interior dust program to provide affected residents with education and a free vacuum.³⁷

7. Improve blood lead testing among children at high-risk of exposure and find and remediate the sources of their exposure.

Healthcare providers often wrongly assume that if patients do not live in a poor neighborhood or a community of color then they are not at risk. And, clinicians are not always up to date on the latest CDC guidelines regarding harmful levels of lead in blood.

Local health departments should offer blood lead testing at clinics and schools and through mobile health units to improve access for at-risk families. The results should be shared with children’s pediatricians and state agencies responsible for surveillance. And localities should require laboratories to electronically submit all blood lead test results to local and state health departments within a week of the result.

Make available all information on leaded drinking water pipes, lead-contaminated water, dust, paint and soil in homes, schools, child-care facilities and other places children spend time.



Under **Connecticut’s** Child Find program, the State Department of Education collaborates with local school districts and the Connecticut Parent Advocacy Center to identify children with a history of lead exposure or elevated blood lead levels and notify the parent, refer the family to medical providers and housing assistance, and obtain a health history.³⁸ The school team then creates a monitoring plan with an annual review and determines IDEA eligibility, conducts an evaluation, develops an Individualized Education Program, and places the child in an age-appropriate enrichment program. If the child is not eligible under IDEA, the team investigates eligibility under Section 504 of the Rehabilitation Act of 1973 and completes related evaluations as appropriate.

For a child with additional risk factors (poor housing condition, anemia, lack of enrichment, etc.) but no noted or suspected developmental delay, the team assesses eligibility for services under Section 504, which requires schools to meet the needs of children with disabilities who are not eligible for IDEA.³⁹

8. Ensure access to developmental and neuropsychological assessments and appropriate high-quality programs for lead-exposed children.

Working with state and local departments of education, local health departments should identify children with a history of lead exposure or high blood lead levels to make sure they receive necessary supports and services.

With federal and state supports, local governments should improve access to high-quality early and middle childhood education programs for children with a history of elevated

blood lead levels by increasing investment in evidence-based programs.

There is strong evidence to suggest children with lead poisoning respond similarly to high-quality interventions as children at developmental risk from trauma, poverty and stress. These include programs that help young children build vocabulary, read and write and other academic and behavioral school-based, community-

based and caregiver and parent training programs that can provide children in elementary and middle school with ways to manage anger, aggression and negative thoughts.⁴⁰ These interventions can increase the likelihood of earning a high school diploma and a four-year college degree and reduce the chance of becoming teen parents.⁴¹

9. Improve public access to local data.

In partnership with states, local health agencies and their municipalities should make available property-specific information on leaded drinking water pipes and lead in water, dust, paint and soil of homes, schools, child-care facilities and other places where children spend time. Data on elevated blood lead levels should be made available at the census tract and neighborhood levels. Messages about lead dangers tend to focus on specific populations—Medicaid-eligible children, for example—while overlooking others.



New York City's
Environment and
Health Data Portal
collects local data to
provide community leaders and others
with important public health statistics
to help track progress in meeting
health metrics. Through the portal,
anyone can create reports, tables,
charts and maps of water and other
lead-related public health issues.

10. Fill gaps in research to better target state and local prevention and response efforts.

Along with federal and state agencies and philanthropies, local agencies should conduct small-area population-based

studies to identify risks and compare the findings to the general population.

Conclusion

Childhood lead poisoning is preventable.

While over the past few decades, successful policies have removed a significant amount of lead in places where children live, learn and play, there is an urgent need for continued attention and action to protect children from lead's harmful effects.

Without lead exposure, hundreds of thousands of children would be more likely to reach their full potential in school and less likely to become teen parents, be incarcerated or underperform in school and at work.⁴²

While prevention of exposure from lead paint, lead water lines, and lead in air, soil, and consumer products is the

priority, the best opportunity for children who have already been exposed is for clinicians to follow blood lead testing guidelines and for local and state health agencies to eliminate further exposures. And, the nation must make available evidence-based, high-quality childhood interventions that have been shown to reduce skill deficits and behavioral issues.⁴³

Endnotes

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