



Fifty Years Fighting Lead in Chicago The Plan for a Lead Free Generation

HISTORIC PROGRESS AGAINST LEAD POISONING

For centuries, humans viewed lead as a useful and necessary to improving lives. Lead was a regular ingredient for a variety of products, ranging from coins and food condiments to, most recently, paint and gasoline. Lead was also used for plumbing as early as the Roman Empire. Though used regularly for centuries, lead is also toxic, with high levels of exposure leading to kidney damage, sterility, stillbirths, neurological disease and even premature death. More recently, elevated blood lead levels have been shown to affect IQ and academic achievement. Concern about lead exposure coalesced into strong public health action in Chicago and across the nation a half century ago.¹



FIFTY YEARS OF PROGRESS

In Chicago, the Chicago Department of Public Health (CDPH) launched citywide lead poisoning screening and intervention in 1966. In 1972, Chicago became the first city in the nation to limit lead content in household paint to .06 percent.²

Beginning in 1975, the Environmental Protection Authority issued regulations calling for the gradual reduction in lead content in gasoline, which was completely banned for use in vehicles in 1996 under the Clean Air Act. Lead-based paint was banned for resident use in 1978 by the U.S. Consumer Product Safety Commissioner. The Safe Drinking Water Act of 1986 required the use of 'lead free' plumbing and pipes. The results of these federal laws, coupled with local efforts like those in Chicago to identify and mitigate potential lead hazards, have led to one of the greatest accomplishments in public health history - the dramatic reduction of lead exposure in children. This fight is far from over, but great progress has already been made.

CDPH continues to operate a major home inspection and remediation effort, primarily focused on the lead-based paint still found in older housing. Young children are at highest risk of exposure to lead paint in homes, as they are more likely to put paint chips in their mouth from peeling areas and to chew on painted windowsills. Pediatricians are directed to test every Chicago child's blood for lead and report high levels to CDPH.³

According to the Centers for Disease Control and Prevention, children are identified as having a blood lead level of concern

if a blood test showed 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$) or more; CDPH inspects homes of every Chicago child with a blood lead level of 10 $\mu\text{g}/\text{dL}$ or more. In addition, CDPH exceeds these recommendations by conducting inspections of homes where a child younger than one year old has a blood lead level of 6 $\mu\text{g}/\text{dL}$ or higher.⁴

As recently as the late 1990s, one in four Chicago children tested had a blood level of 10 $\mu\text{g}/\text{dL}$ or more. Today, fewer than 1 in 100 Chicago children tested has a blood lead level of 10 $\mu\text{g}/\text{dL}$ or more. This means that in 2015, 25,000 more Chicago children were saved from lead poisoning, than would have been just twenty years before.

MOVING FORWARD

Even with this tremendous progress, victory can only be declared when the number of children who develop lead poisoning has fallen to zero. Though lead is no longer used in paint, plumbing, gasoline and a myriad of other products in the United States, Chicago's older housing stock creates a persistent problem as homes built prior to 1978 that have not been properly maintained may still have older paint that can result in exposure to lead in children. This is especially true in some communities on the south and west sides of Chicago.

To ensure success in the fight against lead poisoning, the CDPH is launching this plan that provides concrete steps that are being taken by the department and its partners to further reduce and eventually eliminate lead poisoning in Chicago's children.

FIGHTING FOR A LEAD FREE GENERATION

In order to build on the significant success of reducing lead poisoning in our youth, CDPH will launch a number of key strategies to further drive down the decreasing number of children testing positive for lead poisoning. As part of these efforts, Healthy Chicago 2.0, the city's new health improvement plan has called for an annual 10% reduction in the number of children testing positive for elevated blood levels over the next four years.

Below are the strategies currently being implemented by CDPH and our fellow City agencies to help meet this ambitious goal.



CONDUCT INSPECTIONS

Trained and licensed CDPH inspectors assess homes of children with blood lead levels of 10 ug/dl or greater, as well as homes of infants with levels of 6 ug/dl or greater. The inspectors identify lead-based paint hazards and work with the property owners to ensure the hazards are fixed (CDPH Inspectors support this by offering free lead-safe work practices classes in both English and Spanish), or face fines and a referral to Administrative Hearings or Circuit Court. In addition to inspecting homes of children with lead poisoning, inspections can occur as a result of a request from a resident or from a health care provider.



PROVIDE FINANCIAL ASSISTANCE TO REMOVE LEAD-BASED PAINT HAZARDS

Through grants made available by the U.S. Department of Housing and Urban Development (HUD) and the Cook County Department of Public Health, CDPH, in cooperation with Neighborhood Housing Services, provides 100% financial assistance to fix lead-based paint hazards in eligible homes. A unique aspect of the HUD grant is that tenants can apply. Since 2003, CDPH has helped ensure lead hazards have been fixed in more than 2,800 homes.



ENSURE CHILDREN RECEIVE CASE MANAGEMENT SERVICES

Nurses and Public Health Aides from the Lead Program provide case management services to children poisoned by lead. To help support the program, nurses from the Maternal Infant Children and Adolescent Health Program are now providing case management services to children less than 24 months of age with blood lead levels of 5-19 ug/dL, as well as working to integrate these services into those under the High Risk Infant Follow-Up Program.



LAUNCH A PREDICTIVE ANALYTIC PROJECT TO PREVENT LEAD POISONING

Through collaboration with the University of Chicago Center for Data Science and Public Policy, a predictive model was developed that can assign a risk-score to addresses: those with higher risk-scores being associated with a higher likelihood of having lead-based paint hazards that could cause harm to a young child. As those homes with the higher risk-scores are identified, an inspection for lead-based paint hazards would occur and if such hazards are identified, they would be fixed, helping prevent children from developing lead poisoning. CDPH is working with its partners now to validate the model before rolling it out across the city.



OTHER USES OF THE PREDICTIVE ANALYTIC MODEL

In partnership with ideas42, the Mayor's Office, Imagine Englewood if... and Metropolitan Tenants Organization, the model is being used to help evaluate strategies to encourage families with young children to get an inspection. Additionally, with the support of the Robert Wood Johnson Foundation and in partnership with Alliance, efforts are underway to integrate the model into an electronic medical record, with the goal of alerting health care providers to patients living in homes with a high-risk of having lead-based paint hazards so they can provide information and/or a referral for an inspection.



KEEP CHICAGO'S WATER SUPPLY LEAD-FREE

We know through ongoing data collection that Chicago's water supply is safe and clean. The Chicago Department of Water Management (DWM) meets or exceeds all federal regulations to ensure that drinking water in Chicago remains safe. To do this, DWM has a very aggressive corrosion control program that inhibits lead from leaching into the water, ensuring the water supply remains safe and clean. Adding to this effort and in response to nationwide interest in water supplies, CDPH reinstated a program with DWM in 2016 to collect water samples from homes of children with elevated blood lead levels. CDPH and DWM piloted this program in 2011 and found no connection between elevated blood levels and the water supply.



ENSURE SCHOOLS REMAIN FREE FROM LEAD

In 2016, the Chicago Public Schools (CPS) launched a new program to test water at every public school built in the city before 1986, the year lead pipes were outlawed. In the first month of the program alone, more than 25,369 samples were taken from 1,494 drinking fountains and sinks. If a sample shows an elevated level of lead, the fixture is turned off immediately while the source of the contamination is investigated and resolved. CPS provides a database on their website with real time updates on test results and has worked with CDPH to host school meetings for parents and to make lead testing available for children whose parents may be concerned. Chicago is the first major city to undertake a universal water testing program for lead in all public schools.



SHARE DATA WITH CHICAGO HOUSING AUTHORITY

CDPH works directly with the Chicago Housing Authority (CHA) to ensure residents are protected from lead. If a child living in a CHA Housing Choice Voucher (HCV) program residence is reported as having lead poisoning, CDPH conducts an inspection and requires the property owner to fix any lead hazards. As an added measure of protection, CHA provides CDPH a list, on a quarterly basis, of HCV program addresses where there is a child 6 years of age or younger living. CDPH then compares this list against its database. If CDPH identifies that a child with an elevated blood level or if the address has a lead-based paint hazard that has not yet been fixed, CDPH alerts CHA. CHA in-turn requires the owner to fix any lead-based paint hazards within 30 days or face possible suspension of payments. CDPH inspectors participating in CHA workshops for owners and families to share information and offer tips on keeping homes lead-safe.



EDUCATE AND INFORM AT-RISK COMMUNITIES

CDPH has launched a community outreach program aimed at providing additional information to residents in communities facing a disproportionate number of lead poisoning cases. As part of this program, CDPH is working with Imagine Englewood If and the Metropolitan Tenants Organization to provide education and information to pregnant women and families with young children.



PROVIDE EDUCATION MATERIALS TO AREA PAINT, HARDWARE AND HOME IMPROVEMENT STORES

To ensure customers understand the potential dangers associated with exposure to lead paint during home renovation or repair, CDPH is distributing mailings to paint, hardware and home improvement stores. The mailings include posters as well as a fact sheet detailing the legal requirements under the Renovation, Repair and Painting (RRP) rule. The RRP rule requires those performing work on child-occupied homes or other facilities built before 1978 to be trained and certified on lead-safe work practices.



PROMOTE PUBLIC POLICIES TO IMPROVE FUNDING OPPORTUNITIES AND INSPECTION OPTIONS FOR LOCAL GOVERNMENTS

Though we will continue to make progress across Chicago, total elimination of lead hazards will only occur following significant funding increases from the federal government. As such, CDPH is working to support new legislation and appropriations as part of our ongoing efforts to make lead poisoning a relic of the past.

Sources:

1. www.epa.gov/aboutepa/lead-poisoning-historical-perspective
 2. www.uic.edu/sph/prepare/courses/chsc400/resources/chicagohistory.htm
 3. www.cdc.gov/nceh/lead/tips.htm
 4. www.cdc.gov/nceh/lead/ACCLPP/Lead_Levels_in_Children_Fact_Sheet.pdf
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