

## Child Care Facilities Pilot: Chicago

# Lead in Water Testing and Remediation

The Environmental Defense Fund (EDF) conducted a pilot project to investigate new approaches for lead in water testing and remediation in child care settings. EDF worked with local partners in Illinois, Michigan, Mississippi, and Ohio to test drinking water for lead at 11 different child care facilities.

In Illinois, Elevate Energy partnered with EDF to pilot the new approach at four nonprofit child care center buildings in Chicago. These facilities, located in Albany Park, Pilsen/Little Village, and South Chicago, provide affordable child care services to low-income communities.



Results from the Chicago pilot are encouraging: **Lead in water has been addressed for nearly 600 children at critical child care facilities in our state.**

### What this Means for Illinois Child Care Facilities

The Chicago pilot presents valuable insights to help other Illinois child care facilities comply with upcoming state lead in water testing requirements and reduce lead exposure in water. In 2018, all licensed day care homes, day care centers, and group day care homes in the state serving children ages birth to six years and built on or before January 1, 2000, will need to test their water for lead. The Department of Children and Family Services (DCFS) will provide important updates on water testing requirements on its [Sunshine website](#).

### Why do we test for lead at child care facilities?

Children spend a lot of time at child care facilities and likely drink tap water or ingest food or formula prepared with tap water. Tap water can be a potential source of lead exposure in children, which can damage the brain and nervous system, impair development, and contribute to learning and behavior problems. Testing water for lead will help facilities identify potential lead sources and take appropriate action to protect children.

### How does lead get into the water?

It's rare for lead to occur naturally in drinking water or for lead in water to originate from a water treatment plant. Most often, lead ends up in drinking water through lead service lines or plumbing materials like lead solder and brass fixtures that leach lead into drinking water through a process called corrosion. A service line is a pipe that delivers water to a building or home from the water main under the street.

**The only way to confirm that a facility's drinking water contains lead is to have it tested.**



## How does the testing process work?

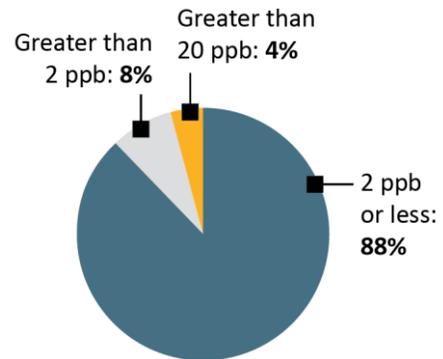
The Chicago pilot followed an expanded version of the [EPA's voluntary guidance](#) for testing drinking water for lead at child care facilities. The process is diagrammed below as an overview. The testing process that facilities will follow will differ from what is presented here; centers should plan to follow the guidance that will be provided by an Illinois EPA approved lab and/or DCFS.



### What did the Chicago pilot find?

The Chicago pilot tested for lead in water at 146 different fixtures at four child care buildings in Chicago. Of the 146 outlets tested, 129 (or 88%) had lead levels at 2 parts per billion (ppb) or less, 12 (8%) had lead levels greater than 2 ppb, and five (4%) had lead levels greater than 20 ppb, which is the level at which EPA currently recommends child care facilities and schools take action.

It is important to note that only one of the facilities had lead levels that exceeded EPA's 20 ppb trigger level, and two of the facilities we worked with required fixture replacement. Elevate Energy and EDF worked with the child care facilities to remove lead sources and take action at every drinking water outlet where the lead level came back greater than 2 ppb.



Elevate Energy and EDF tested the drinking water from **146** different fixtures



At **4**  
different child care  
buildings



Serving nearly  
**600** children in Chicago



**2** child care facilities  
required lead in water  
remediation



We replaced  
**1**  
lead service line at a  
childcare facility



We replaced **13** faucets  
with new NSF-61  
certified faucets



And installed **1** under-  
sink filter that is NSF-53  
certified for lead  
removal



The pilot's remediation  
efforts reduced all lead  
levels at drinking water  
outlets to **2 ppb** or below



### Important Findings from the Pilot

<p>Proper Aerator Cleaning is Important</p>	<p>At one of the participating child care facilities, lead levels increased at many of the outlets following aerator cleaning. This increase could be because the aerators were not soaked in vinegar; this weak acid should help ensure the removal of lead-contaminated sediment and debris.</p>
<p>All Samples Should Also be Sent to Approved Labs</p>	<p>While the portable testing devices used in the pilot provided valuable insight into which outlets had the highest lead levels, in comparison to lab results, the pilot found that the portable devices underreported lead levels.</p>
<p>Flushing Tap Water May Help Reduce Lead Levels</p>	<p>At the Chicago sites, and at pilot sites in other states, the 5 second and 30 second flushed samples had lower levels of lead. Flushing water for at least 5 seconds prior to use may help reduce lead levels at the tap. Facilities should flush the water longer if water has been sitting in the pipes for an extended period, such as after a long weekend or holiday.</p>
<p>Flushing Hot Water Heaters May Help Lower Lead Levels</p>	<p>All samples collected from hot water heaters had detectable levels of lead. Samples collected from the hot water heaters in Chicago ranged from 3 ppb to 320 ppb. However, we did not find <b>lead in the hot water samples collected from drinking water outlets at these facilities</b>. Because we were concerned that lead in the water heater could still end up at the hot water faucet, we flushed every hot water heater to help reduce lead levels. At all facilities, flushing the hot water heater helped lower lead levels.</p>

### Best Practices to Reduce Lead at Water Taps

There are many best practices to help child care facilities reduce children’s exposure to lead in water. While it is always best to remove the lead source when possible by replacing lead service lines and fixtures (especially brass fixtures installed before 2014), child care facilities should also consider the following tips:

- ✓ Avoid using hot water for cooking or drinking.
- ✓ Avoid using hose bibs (outdoors or at utility sinks) for drinking.
- ✓ Flush fixtures for 30 seconds at the beginning of the day to reduce lead levels.
- ✓ When [cleaning aerators](#), soak in vinegar for several minutes to dissolve lead particulates.
- ✓ Follow the manufacturer’s instructions for routine flushing of the hot water heater.
- ✓ If there is concern about lead at a specific faucet, install a water filter that is NSF-53 certified.



#### What does NSF certified mean?

This means a product such as a fixture, water cooler, or filter adheres to strict standards to reduce lead.

[Learn more about NSF certification.](#)



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## How can I learn more about the pilot?

EDF has resources to help other states, public health officials, and child care facilities learn from the pilot:

- [Tackling Lead in Water at Child Care Facilities](#)
- [Lead in Drinking Water Testing Requirements for Child Care Facilities](#)
- [Lead in Hot Water – An Issue Worth Testing](#)

### Learn More about Lead in Water Mitigation

The EPA's [3Ts Guidance for Lead in Drinking Water](#) provides useful information on short and long-term lead removal strategies (see sections 5.2 and 5.3).

### About Elevate Energy and the Environmental Defense Fund

Elevate Energy is a 501(c)(3) nonprofit organization with a mission to design and implement energy and healthy housing programs that lower costs, protect the environment, and ensure the benefits of energy efficiency reach those who need them most. In the process, we improve building health and safety for occupants. Elevate Energy has over 15 years of experience addressing complicated healthy housing challenges in the Chicago region and throughout the United States.

The Environmental Defense Fund is a 501(c)(3) nonprofit organization with a mission to preserve the natural systems on which all life depends. EDF has more than two million members and a staff of 700 scientists, economists, policy experts, and other professionals around the world. Its Health Program seeks to safeguard human health by reducing exposure to toxic chemicals and pollution, including lead in drinking water.