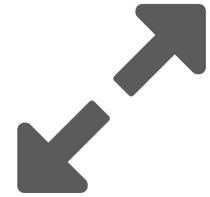


Brain-damaging lead found in tap water from most Illinois communities during the past 6 years, Tribune analysis finds

By MICHAEL HAWTHORNE
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Kyle McCradie, a laborer with J.C. Dillon Inc., gets ready to replace a lead service line with new polyethylene tubing in Galesburg on March 4, 2021. Pipes known as service lines connect homes to municipal water supplies. (Jose M. Osorio / Chicago Tribune)

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More than 8 of every 10 Illinoisans live in a community where brain-damaging lead was found in the tap water of at least one home during the past six years, a new Chicago Tribune analysis found.

The alarming results are from a limited number of samples collected under federal regulations by the state's 1,768 water utilities. Depending on the number of people served by each utility, only a handful or a few dozen homes are occasionally monitored, but when combined the tests provide snapshots of a widespread threat to public health that for decades has been largely ignored.

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Most exposure to lead in water can be traced to pipes known as [service lines](#) that connect homes to municipal water supplies. Illinois has more service lines made of the toxic metal than any other state. Chicago has more than any other city.

“Too many people still get their water from what essentially is a lead straw,” said Miguel del Toral, a retired U.S. Environmental Protection Agency scientist who discovered high levels of toxic metal in water at homes in [Flint, Michigan](#), and [East Chicago, Indiana](#).

[Was lead found in tap water in your town? Search our analysis of Illinois EPA data to find out. »](#)

Between 2015 and 2020, tap water in dozens of Illinois homes had hundreds and even thousands of parts per billion of lead — just as extreme as what researchers found during the same period in Flint, where mismanagement of the public water system exposed children to the toxic metal and drew a world spotlight to the scourge.

East Moline found one home with 3,000 ppb of lead in tap water, records show. The Rockford suburb of Loves Park detected 2,700 ppb of lead in a home. Southwest of Joliet, the water system in Coal City found 1,260 ppb of lead in one of its samples.

Utilities in the three cities were among 224 statewide where at least one home had lead levels at or above 40 ppb, a threshold the U.S. EPA once declared an “imminent and substantial threat to pregnant women and young children.” Others in the Chicago area included Bartlett, Cicero, Lake Barrington, South Elgin and Wauconda.

Nearly 60% of the state’s water systems found at least one home with levels greater than 5 ppb — the Food and Drug Administration’s limit for bottled water.

By far the state’s worst lead-in-water problems in recent years are in University Park, a south suburb on the border of Cook and Will counties.



An old lead service line is removed from a home in Galesburg. Pipes known as service lines connect homes to municipal water supplies. Galesburg is planning to replace all of its lead service lines by the end of the year. (Jose M. Osorio / Chicago Tribune)

Samples of tap water collected since 2019 in the predominantly Black community contained as much as 5,300 ppb of lead and averaged 54 ppb, according to the Tribune analysis of data obtained from the Illinois EPA through a Freedom of Information Act request.

“There is no training for a water crisis,” said Mayor Joseph Roudez, who took office less than a month before the staggeringly high levels of lead began turning up across the village, including at his own home. “The experience has been horrible, and it’s still horrible.”

The U.S. EPA and Centers for Disease Control and Prevention stress that lead is unsafe to consume at any level. More than [400,000 deaths a year in the U.S.](#) are linked to the toxic metal. Even tiny concentrations can permanently damage the developing brains of children and contribute to heart disease, high blood pressure, kidney failure and other health problems later in life.

Yet federal regulations allow the vast majority of water utilities to hide the hazards from customers. Once a year, water bills include a brochure that almost always declares tap water is safe to drink.

Reality is more complicated in cities, towns and villages with lead service lines. Unless water drawn from household faucets is [properly filtered](#), scientists and former government officials say, the only way to keep the lead out is by replacing toxic pipes.

After little progress during the Obama and Trump administrations, President Joe Biden is pledging to tackle the problem as part of his efforts to overhaul the nation’s infrastructure and fight for environmental justice.

Earlier this month the Biden EPA [suspended regulations](#) adopted during the last days of the Trump administration that [effectively delayed lead service line replacements](#) for up to three decades and, in some cases, allowed cities to keep toxic pipes in the ground indefinitely.

“We’re urging EPA to require that every service line in the country should be pulled out within the next 10 years,” said Erik Olson, senior director for health and food at the nonprofit [Natural Resources Defense Council](#), which in a recently filed [lawsuit](#) demanded a more aggressive strategy from the agency. “Until then they should be providing filters to keep people safe.”

Other lawsuits and legislation filed after the 2015 Flint crisis already are prompting a long-delayed reckoning with the nation’s reliance on lead during the last century to convey drinking water.

Cities including [Cincinnati](#), [Denver](#), the [District of Columbia](#) and [Newark](#), New Jersey, are aggressively replacing lead service lines with safer materials. State governments in Michigan, New Jersey, New York and Wisconsin created funds during the past five years to speed up replacements, while Indiana and Pennsylvania authorized utilities to finance the work through water bills.

Illinois and Chicago lag far behind, though there are signs the state and city are taking the problem more seriously after years of denials.

The [Chicago Department of Water Management](#) just began accepting applications for [free service line replacements](#) at homes and two-flats where the owner’s household income is less than 80% of the regional median (\$72,800 for a family of four). The department also is [waiving permit fees](#) for homeowners who opt to pay for the work themselves.

Initial work will be modest compared with the scope of the dangers. City officials estimate this year they will only replace 750 of the roughly 400,000 lead service lines connecting homes to street mains, [according to slides prepared by the water department](#).

Legislation introduced in Springfield would add a small fee to most water bills statewide, raising \$200 million a year to [speed up service line replacements](#). Based on typical water use by a family of four, the fee would range from \$1.20 to \$5.40 a month depending on how a community’s median income compares with the statewide average. (The fee would be waived in census tracts with a median household income less than \$39,532.)

“Illinois must step up and take action to replace the thousands of contaminated pipes throughout the state, particularly in Black and Brown communities that are struggling with countless other crises,” said Naomi Davis, founder and chief executive of Blacks in Green, one of the groups backing the measure. “Babies, pregnant mothers, seniors — all residents have a right to clean water.”

Every Chicago home and two-flat built before 1987 likely gets water from a lead pipe. The city’s plumbing code required use of the toxic metal until Congress banned the practice.

Street work made the problem worse, in particular water main replacements launched under Mayor Richard M. Daley, rapidly expanded during Mayor Rahm Emanuel's eight years in office and continued through the first years of Mayor Lori Lightfoot's administration.

Studies by del Toral and others during the past decade have found that when service lines are jostled by street repairs or plumbing work, [spikes of lead can intermittently flow out of household taps](#) for weeks or months afterward.

"There's no way to make these pipes safe," del Toral said in a recent interview.

Chicago officials attempted to undermine the research until their own testing found spikes of lead in more than 1 in 5 homes where a water meter had recently been installed.

Lightfoot ordered the water department to [stop installing new meters in 2019](#), but city workers are still digging up streets to install new water mains, which they continue to hook up to existing lead service lines.

This summer the water department plans to combine service line replacements with the installation of a new water main on a single city block — a more cost-effective solution that already is standard practice in other communities.

Most of the money to pay for the city's new programs will come from low-interest federal loans. Since 2012, the water department has borrowed more than \$487 million from the same pot of federal money to replace water mains. Emanuel doubled water rates to pay back the loans.



Tom Gorham, left, feeds new polyethylene tubing through the opening where the lead service line was in a home in Galesburg. (Jose M. Osorio / Chicago Tribune)

Other Illinois cities also are tapping into federal funds for service line replacements, most notably Galesburg in Knox County, where high rates of childhood lead poisoning prompted more rigorous EPA scrutiny in 2015.

Galesburg is on track to replace all of the city's lead service lines by the end of the year, said Wayne Carl, the city's works director.

"Most people in our community know we had concerns about lead in drinking water," Carl said. "Replacing the service lines became a smoother process over time."

A major reason why lead service lines remain in other cities is most water utilities aren't required to replace them under the federal Lead and Copper Rule, a 1991 regulation that underestimates the hazards and, in several ways, keeps them hidden from the public.

Researchers have found that lead levels in tap water can vary widely between homes and during different times of day, depending on water usage, the length of individual service lines and other factors that can limit the effectiveness of corrosion-inhibiting chemicals added to the water supply.

Yet all of the tests analyzed by the Tribune were collected using EPA protocols that require sampling of just the first liter of water drawn after faucets have been turned off overnight. More extensive sampling in Chicago, Flint and other cities showed the highest levels of lead often flowed out of taps after water had been running for several minutes.

Marc Edwards, a Virginia Tech researcher who led a team that flagged lead problems in Cicero, Flint and the District of Columbia, compares the unpredictable spikes to Russian roulette, the lethal game of chance.

Changes in water chemistry also can affect lead levels. High levels of the toxic metal began leaching out of service lines in Flint and household plumbing in University Park after local utilities switched water supplies and tweaked treatment methods.

Utilities are considered to be in compliance with the federal rule as long as lead levels are lower than 15 ppb in 90% of the samples collected during a particular sampling period. If 10 homes are tested and just one has exponentially higher levels of lead flowing out of the tap, the utility still meets federal requirements and isn't required to inform the public about potential risks.

Flint met the 15 ppb "action level" in regulatory sampling even as other testing found high levels of lead in tap water across the city.

Though the 15 ppb threshold often is described as a safety limit for individual homes, it actually is an arbitrary level the EPA set years ago to help determine if a utility's corrosion controls are working. The only safe level is zero.

Another drawback is the federally mandated sampling is limited.

Despite having hundreds of thousands of lead service lines, Chicago is one of several big U.S. cities that are only required to test 50 homes every three years.

Most of the Chicago homes where regulatory sampling is conducted are [owned by people who work for or retired from the water department](#), the Tribune reported in 2016. None are in neighborhoods with higher than average rates of childhood lead poisoning.

As a result, Chicago hasn't violated the Lead and Copper Rule since the early 1990s. But a [2018 Tribune analysis](#) of free testing kits distributed throughout the city revealed that lead had been detected in more than two-thirds of the homes tested. About a third of those homes had more lead in tap water than would be allowed in bottled water.

Even people within the EPA know the agency's tap water regulations are woefully inadequate.

"Consumers do not get timely, or often any information to protect themselves from elevated levels of lead in drinking water," Robert Kaplan, the EPA's former acting regional administrator in Chicago, wrote in a [2017 memo](#) to the agency's top water official. "Public needs to know when water is acceptable to drink based on the level of lead, or if a water filter or bottled water should be used."

The Trump administration's overhaul would have required homeowners to be promptly informed if high levels of lead were detected during compliance sampling. But the revised regulations would have allowed lead service lines to remain underground for years or even decades.

Del Toral, the retired EPA scientist, helped draft Kaplan's [memo](#). He advises the Biden administration to keep its own version of the regulations simple.

"Tell people if they have a lead service line so they're aware of the dangers and can start filtering their water," del Toral said. "Provide filters to low-income folks. And damn it, just get the pipes out."

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