

Testimony of Patrick MacRoy  
Deputy Director, Defend Our Health  
before the Joint Standing Committee on Health and Human Services regarding  
LD 206, Resolve, Regarding Legislative Review of Portions of Chapter 234:  
Lead Testing in School Drinking Water Rule, a Major Substantive Rule of the  
Department of Health and Human Services, Maine Center for Disease Control  
and Prevention  
February 9, 2021

Senator Claxton, Representative Meyer, and members of the Health and Human Services Committee:

Defend Our Health believes that the rules as proposed by the Department, while desperately needed, are inadequate to protect children’s health and ensure safe drinking water in our schools and fail to meet the statutory requirements. Therefore, we are opposed to their approval and urge the committee to instead require amendments as further discussed below. We have provided recommended language for these amendments at the conclusion of this document.

Defend Our Health, formerly known as the Environmental Health Strategy Center, is a non-profit public health organization that believes that all people have a right to safe food and drinking water, healthy homes and products that are toxic-free and climate friendly. Our organization has been involved in lead poisoning prevention activities in Maine since 2002, including participating in stakeholder discussions leading to the drafting of “An Act to Strengthen Testing for Lead in School Drinking Water” (the “Act”) that required the rules now before the committee for review. Personally, I also have a deep background in lead poisoning prevention and lead in drinking water, having served as the Director of the Lead Poisoning Prevention Program at the City of Chicago Department of Public Health, and having served as a consultant to a national environmental organization working to identify solutions to lead service line replacement prior to joining Defend Our Health.

The tragedy that occurred in Flint Michigan helped open our eyes to the seriousness of old lead pipes and lead containing fixtures contaminating drinking water. Nationally, our school infrastructure is often older, and it’s unsurprisingly that tests in jurisdictions across the country, including here in Maine, have identified high levels of lead coming from the taps at our children’s’ schools.

Lead is a potent neurotoxin, robbing children of their potential by irreversibly damaging their brain and lowering their IQ. It is widely accepted by health scientists as well as Federal agencies, including the U.S. Centers for Disease Control and Prevention<sup>1</sup> as well as the USEPA,<sup>2</sup> that there is no identifiable safe level of lead. While lead-based paint may be the most significant source of exposure for most children with very high blood lead levels, lead in drinking water is a substantial contributor to the total lead burden of the average child, with the USEPA estimating it as the source of about 20% of a person’s lead intake.<sup>3</sup> Given the lack of a “safe” level and the fact that all children with lead exposure, not only those with “elevated” blood lead levels are being harmed, addressing the significant contribution of drinking water lead to the average child should be an important public health objective. It is therefore unsurprising that experts, including the American Academy of

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<sup>1</sup> “No safe blood lead level in children has been identified. Even low levels of lead in blood have been shown to affect IQ, the ability to pay attention, and academic achievement.” <https://www.cdc.gov/nceh/lead/prevention/default.htm>

<sup>2</sup> “No safe level of lead exposure has been identified.” 84 FR 61724 (2019).

<sup>3</sup> 84 FR 61690 – For formula fed infants, USEPA estimates as much as 60% of lead intake is via water. While it is less likely that many school taps are being utilized for formula mixing, it’s also not without precedence. (2019).

Pediatrics (AAP),<sup>4</sup> have called for requirements to ensure school water does not exceed 1 part per billion (ppb) of lead.

Unfortunately, the Department did not heed the Academy's recommendation.

### Setting a Health Protective Standard

Our largest concern with the proposed rule is its reliance on a standard for lead in school drinking water that was never intended to be health protective and fails to account for the fact that schools have many options to inexpensively reduce lead levels.

The Department borrowed a federal standard of 15 ppb for lead in drinking water systems. However, the USEPA has always made clear that this standard of 15 ppb is not sufficient to protect health,<sup>5</sup> but rather was based on what it viewed as feasible *for water utilities* to address. Besides replacing relatively uncommon lead distribution pipes, utilities are largely limited to adjusting water chemistry to reduce the amount of lead that leaches from their customers' pipes and fixtures. (However, even the USEPA, in its December 2020 revisions to rules for utilities, has started to require some systemic actions at 10 ppb.<sup>6</sup>)

Schools, however, have control over the actual water fixtures. In nearly all cases, lead levels are not elevated in the source water supplying the school, but rather is leaching from pipes and fixtures. Rarely do all taps in a school show high levels, and addressing a high result from a particularly problematic one may be as simple as disconnecting a single fountain or even ensuring that classroom sinks aren't used for drinking.

Given the level of 15 ppb is not health protective AND that it is feasible for schools, even with resource constraints, to achieve lower levels, it is no surprise that other states have set lower limits for school drinking water. In 2019, the Vermont legislature set that state's action level for school drinking water at 4 ppb.<sup>7</sup> In 2018, the District of Columbia also decided to use the level of 5 ppb for triggering action in their schools.<sup>8</sup> In 2017, the Illinois legislature required comprehensive school testing with "prompt" notification to parents of all levels in excess of 5 ppb.<sup>9</sup>

**To address this, we encourage this committee to advance an amendment that would replace "15 ppb" with "1 ppb" everywhere it occurs in the rule.**

### Prohibiting Methodologies That May Mask the Problem

The rule "recommends" that schools test water that has sat in pipes for a maximum of 18 hours. This effectively recommends that schools conduct what is known as pre-stagnation flushing, or running all the water the day before a test. This has the effect of "cleaning out" pipes and has been shown to reduce lead levels, even after a 6-8 hour stagnation period, thus minimizing the likelihood of finding elevated lead in water levels. For this reason, the USEPA has specifically directed water utilities to NOT instruct samplers to

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<sup>4</sup> AAP calls for, "legal requirements... to ensure water fountains in schools do not exceed water lead concentrations of more than 1 part per billion." <https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/With-No-Amount-of-Lead-Exposure-Safe-for-Children,-American-Academy-of-Pediatrics-Calls-For-Stricter-Regulations.aspx> (2016).

<sup>5</sup> "The EPA established the lead action level in the 1991 based [*sic*] on feasibility and not based on impact on public health. The proposed trigger level is also not a health based standard." [84 FR 61691](https://www.federalregister.gov/documents/2018/04/04/84-fr-61691)

<sup>6</sup> [https://www.epa.gov/sites/production/files/2020-12/documents/lcr\\_overview\\_fact\\_sheet\\_12-21-2020\\_final.pdf](https://www.epa.gov/sites/production/files/2020-12/documents/lcr_overview_fact_sheet_12-21-2020_final.pdf)

<sup>7</sup> [Act 66](https://www.healthvermont.gov/environment/school/lead-drinking-water-schools) (2019). See also: <https://www.healthvermont.gov/environment/school/lead-drinking-water-schools>

<sup>8</sup> <https://dcps.dc.gov/page/water-testing-lead>

<sup>9</sup> [225 ILCS 320/35.5\(c\)\(3\)](https://www.ilcs.gov/legislation/bills/2019/225ILCS320/35.5(c)(3))

perform a pre-stagnation flush for lead samples since 2016.<sup>10</sup>

Further, this methodology is not reflective of how water is actually consumed in schools: It would be a rare situation in reality where school staff goes around and runs water from all the taps the evening before school resumes after a weekend, break, or even summer vacation.

**This is not a minor or theoretical concern.** The very real impact of pre-stagnation flushing on school lead sample results was clearly demonstrated in New York City. The city first tested its school water outlets in 2016, requiring a pre-stagnation flush before sampling. In response to criticism from experts<sup>11</sup> and pressure from parents, the city re-sampled the schools without a pre-stagnation flush. The second round without the pre-stagnation flush found **nine times** as many water outlets with levels over 15 ppb.<sup>12</sup>

We believe that the water samples should be collected in a way that reflects the worst-case scenario, not the unrealistic case recommended in the rule. To collect samples that can reasonably and legitimately be questioned by concerned parents as having “masked” the extent of the problem is a waste of state resources.

**To address this, the committee should remove the two references to 18-hour maximums and insert language discouraging pre-stagnation flushing.**

### Require Ongoing Testing

As proposed, the rule is a single time effort, unless the Department determines the need for additional tests based on either unspecified or vague criteria like “major” changes in source water. However, additional factors can impact lead, including changes to treatment techniques that alter the water chemistry which change the extent to which lead leaches. Remodeling activity may disturb pipes increasing leaching as well. Given that little is known about the changes in lead leaching over time as well as the need to capture changes to the plumbing system or source water chemistry that has not been reported, a routine testing program should be required to be implemented on a rolling basis every three to five years. It is noteworthy that the Act itself clearly envisions ongoing testing, not a once-and-done approach, as evident from the fact that it requires the Department to specify the frequency of testing and to provide *annual* reports to the legislature.<sup>13</sup>

**To address this, the committee should amend the rule to provide for a five year rotating testing schedule.**

### Shortening Time to Notify Staff and Parents

While we appreciate the changes the Department made to the rule based on comments in this regard, we would note that the rule provides schools a substantially longer time to notify staff and parents about the results than water utilities are allowed under Federal rules. Under revisions to USEPA rules finalized in December of 2020, utilities must announce water systems that exceed lead standards widely in the community within 24 hours. If individual homes are found with elevated levels, utilities must share the

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<sup>10</sup> [https://www.epa.gov/sites/production/files/2016-02/documents/epa\\_lcr\\_sampling\\_memorandum\\_dated\\_february\\_29\\_2016\\_508.pdf](https://www.epa.gov/sites/production/files/2016-02/documents/epa_lcr_sampling_memorandum_dated_february_29_2016_508.pdf)

<sup>11</sup> Taylor, Kate. “Lead Tests on New York City Schools’ Water May Have Masked Scope of Risk.” *New York Times*. 9/1/2016. <https://www.nytimes.com/2016/09/01/nyregion/lead-tests-on-new-york-city-schools-water-may-have-masked-scope-of-risk.html>

<sup>12</sup> Taylor, Kate. “New York Changes How It Tests for Lead in Schools’ Water, and Finds More Metal.” *New York Times*. 2/3/2017. <https://www.nytimes.com/2017/02/03/nyregion/new-york-dept-education-lead-water.html>

<sup>13</sup> 22 MRSA §2604-B(5)

results as soon as possible, and always within three days.<sup>14</sup> In contrast, the Department allows schools ten days to share results with staff and parents under the proposed rule. We believe that applying the same three day time limit public water systems have to schools is reasonable.

**To address this, the committee should amend the requirement for schools to share results to occur as soon as practicable and within 3 days.**

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Without these amendments, we are deeply skeptical that the Department's rule will fulfill the Act's goal of identifying hazards that may harm our children and provide parents with reassurance in the safety of our schools. Given that the health hazards associated with lead in school drinking water can often be addressed for little to no cost, the Department's testing policies should apply health-protective standards rather than ones that wrongly compromise on trade-offs that may be reflective of burdens on utilities, and are simply not applicable to schools.

Thank you again for the opportunity to share our views on LD 206, and we are happy to provide any addition information or resources that may assist the committee in advance of its work session.

## Recommended Amendment Language

1. Replace "15 ppb" with "1 ppb" everywhere it occurs in the rule.
2. Amend section 1(b)(4) to read: "First-Draw Sample means a lead water sample that is collected from an outlet where the water has sat motionless in the school's plumbing for a minimum of eight hours ~~and a maximum of no more than 18 hours.~~ Prior to the 8 hour period, normal use is acceptable, but no attempt may be made to deliberately run outlets or otherwise flush the pipes." Amend section 3(b)(3) to read: "For each identified drinking water outlet, the school must collect a first-draw sample of 250 milliliters (mL) in volume. ~~In accordance with the United States Environmental Protection Agency's (EPA's) "3Ts for Reducing Lead in Drinking Water in Schools," the school must ensure that the water has been motionless in the pipes for at least eight hours. The Department, in accordance with the 3T's guidance, recommends that the water be motionless no longer than 18 hours, before the collection of samples begins.~~"
3. Add Section 3(C): "After an initial round of testing, the Department shall assign schools to a testing schedule that will ensure roughly 1/5 of schools are tested each year, such that each school is tested once per five years. After the initial testing, the Department may exempt schools that were constructed after January 1, 2014 from further testing. The Department will notify schools of the schedule and provide testing materials in accordance with section 3(A)."
4. Amend section 6(c) to read: "Schools must distribute public notice as soon as practicable within ~~10~~ 3 days of receiving lab results."

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<sup>14</sup> [https://www.epa.gov/sites/production/files/2020-12/documents/lcr\\_overview\\_fact\\_sheet\\_12-21-2020\\_final.pdf](https://www.epa.gov/sites/production/files/2020-12/documents/lcr_overview_fact_sheet_12-21-2020_final.pdf)

# With No Amount of Lead Exposure Safe for Children, American Academy of Pediatrics Calls For Stricter Regulations

*Amid growing evidence that even low levels of lead can cause permanent cognitive, academic and behavioral difficulties in children, the AAP urges national commitment to eliminating its sources before exposure occurs.*

ELK GROVE VILLAGE, IL – Even at half the levels previously considered safe, growing evidence shows a child’s exposure to lead can cause irreversible cognitive and behavioral problems. In updated recommendations published online Monday, June 20, the American Academy of Pediatrics (AAP) urges policy makers and the medical community to take new action to protect children from this critical health threat.

The AAP calls for stricter regulations, expanded federal resources and joint action by government officials and pediatricians in the policy statement, “[Prevention of Childhood Lead Toxicity](#),” published in July 2016 Pediatrics. Identifying and eliminating sources before exposure occurs is the only reliable way to protect kids from lead poisoning.

“We now know that there is no safe level of blood lead concentration for children, and the best ‘treatment’ for lead poisoning is to prevent any exposure before it happens,” said Dr. Jennifer Lowry, MD, FAACT, FAAP, chair of the AAP Council on Environmental Health and an author of the policy statement. “Most existing lead standards fail to protect children. They provide only an illusion of safety. Instead we need to expand the funding and technical guidance for local and state governments to remove lead hazards from children’s homes, and we need federal standards that will truly protect children.”

The AAP calls for new federal standards defining and testing for lead hazards in house dust, water and soil. It also urges legal requirements that lead be removed from contaminated housing and child care facilities and to ensure water fountains in schools do not exceed water lead concentrations of more than 1 part per billion.

Until recently, children were identified as having a blood lead “level of concern” if test results showed a concentration of 10 or more micrograms per deciliter. But extensive evidence now indicates problems begin at levels less than half that amount, including lower IQ scores and academic performance, inattention, impulsivity, aggression and hyperactivity.

Preventing young children from ever coming into contact with the metal would have substantial population-wide benefits -- saving more than 20 million total IQ points among U.S. children and billions of dollars in annual costs associated with lead exposure. For every \$1 invested to reduce lead hazards in housing units, for example, society would benefit by an estimated \$17 to \$221--a cost-benefit ratio comparable with that for childhood vaccines.

"Eliminating lead from anywhere children can be exposed to it should be a national priority," said AAP President Benard Dreyer, MD, FAAP. "The drinking water crisis in Flint was just one indication of how our country's aging infrastructure is jeopardizing children's health, especially in areas already dealing with toxic effects of poverty," he said. An estimated 37 million homes in the United States still contain lead-based paint, for example.

Despite dramatic drops in children's blood lead concentrations after the U.S. eliminated lead from gasoline, paints and other consumer products, children are still exposed to lead in their homes and communities. Children's risk of lead exposure increases as soon as they begin crawling and teething. Children who live in older homes that are poorly maintained, or being renovated, are at particular risk. So are those who live near airports and factories, where lead-contaminated exhaust has settled into the soil, or where pollution from rivers and lakes have leached lead from aging pipes into the tap water. Some toys, dishware, vinyl miniblinds, imported aluminum cans, hobby materials and other consumer products also contain lead. Adults who work in certain settings such as firearms ranges, where lead dust is prevalent from the use of lead bullets, also can expose children to lead on clothing.

The AAP recommends pediatricians and other primary care providers conduct targeted screening of children for elevated blood lead concentrations if they are between 12 and 24 months of age and live in areas where 25 percent or more of housing was built before 1960. They should monitor children who have blood lead concentrations of more than 5 micrograms per deciliter and routinely recommend individual assessments of older housing, particularly if it is not well-maintained or has undergone renovation or repair within the past six months that may have generated lead-contaminated dust.

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The American Academy of Pediatrics is an organization of 64,000 primary care pediatricians, pediatric medical subspecialists and pediatric surgical specialists dedicated to the health, safety and well-being of infants, children, adolescents and young adults. For more information, visit [www.aap.org](http://www.aap.org).

# *New York Changes How It Tests for Lead in Schools' Water, and Finds More Metal*

By **Kate Taylor**

Feb. 3, 2017

When experts said last year that New York City's method of testing water in public schools for lead could hide dangerously high levels of the metal, officials at first dismissed the concerns. They insisted that the city's practice of running the water for two hours the night before taking samples would not distort results.

Still, the city changed its protocol, and the results from a new round of tests indicate that the experts were right.

So far, the latest tests have found nine times as many water outlets — kitchen sinks, water fountains, classroom faucets or other sources — with lead levels above the Environmental Protection Agency's "action level" of 15 parts per billion as last year's tests found, according to a report released by the state health department last week.

And in some schools where the earlier tests detected problems, the lead levels identified by the new tests were much worse.

At Intermediate School 27, the Anning S. Prall School, on Staten Island, a first round of tests, conducted in April 2016 after the water had been allowed to run, a practice known as pre-stagnation flushing, found six outlets with lead levels above the E.P.A. threshold. The highest level was found in water from a classroom faucet, where the lead concentration was 49 parts per billion.

When the school's water was retested in December without letting the water run, 53 outlets had lead levels above the E.P.A. threshold. Fourteen had levels over 1,000 parts per billion, including a fountain with a lead concentration of 3,680 parts per billion, and a classroom faucet with a lead level of 32,500 parts per billion.

The results from the new tests were first reported by The Staten Island Advance.

At Public School 124, the Silas B. Dutcher School, in Brooklyn, testing done last March found no outlets with levels above the E.P.A. threshold. The tests in December found eight outlets with lead levels above the E.P.A. threshold, including a fountain with a level of 276



parts per billion.

At the Bronx High School of Science, water from one fountain just barely exceeded the E.P.A. threshold in the first round of testing.

Tests at the school last month found 13 outlets with levels over the threshold. A sample from one fountain had a lead concentration of 1,590 parts per billion, while a faucet in an office had a lead concentration of 7,480 parts per billion.

“This result illustrates how pre-stagnation flushing can mask serious lead in water problems in schools,” Marc Edwards, a professor of civil and environmental engineering at Virginia Tech who helped uncover elevated lead levels in the water in Flint, Mich., said in an email. “I applaud their retesting in a manner that better reveals the widespread scope of the contamination and health concern.”

Although no level of exposure to lead is considered safe, Professor Edwards said that any tap providing water with a lead level of more than 400 parts per billion represented “an acute health risk” to young children.

Water absorbs lead when it sits stagnant in pipes for long periods of time. For that reason the E.P.A. recommends that schools testing for lead take samples after water has been sitting in pipes for at least eight hours.

In 2016, amid the water crisis in Flint, New York moved to test the water in its more than 1,500 school buildings. Older buildings often have pipes and fixtures that contain lead, and young children are particularly at risk from exposure to lead, which can harm the developing brain.

Under the protocol the city used for the initial tests, workers went into schools at night, turned on all outlets and let the water run for two hours. The outlets were then turned off, and the water sat in pipes overnight for eight hours before samples were taken. The E.P.A.'s guidelines for schools do not address this practice, but experts say it temporarily reduces lead levels because it cleans the inside of pipes of soluble lead.

After finishing the tests, the city announced that only 1 percent of the outlets in schools had been found to have lead concentrations above the E.P.A. action level, that those outlets had been removed and that the water was safe.

In September, after The New York Times reported on the city's flushing practice, citing experts who said it could distort the test results, officials said the city would adjust its protocol and avoid pre-stagnation flushing in most cases.

In December, after the state health department issued regulations that discouraged pre-



stagnation flushing, the city said it would retest all school buildings “out of an abundance of caution” under a new protocol that did not include flushing.

So far, the city has retested the water in around a third of school buildings. While it has declined to publicly release the full results until all testing is completed in the next few weeks, it has communicated some results to the state health department, which summarized some of that data last week. And schools where tests have found lead levels over the E.P.A. threshold have sent letters home notifying parents about the results.

The Education Department said that, as the city gets results, any outlet used for drinking or cooking where the water is found to have lead concentrations above the E.P.A. action level were being turned off until they could be replaced. And any school where tests have found an outlet with water over the action level is supposed to have its drinking water outlets and kitchen faucets flushed for at least 10 minutes by a custodian every Monday morning.

“What the tests show continues to be that, overall, our water is safe,” Elizabeth Rose, the Education Department’s deputy chancellor for operations, said in an interview. “Any fixture where we had a positive test for lead we are addressing and remediating that fixture so that we remove the potential for absorption of lead by the water when it sits stagnant overnight.”

Asked if the new results validated experts’ concerns about the city’s original method of testing, Ms. Rose said, “We absolutely stand by all of our testing and testing results.”

Lead poisoning among children in New York City has declined significantly since 2005, and no cases of lead poisoning have been traced to schools.

The city said that its testing last year cost \$13 million. This year it is expected to cost from \$15 million to \$20 million.

A version of this article appears in print on , Section A, Page 17 of the New York edition with the headline: City Changes How It Tests for Lead in Schools' Water, and Finds More Metal