MICHIGAN STATE UNIVERSITY | HURLEY CHILDREN'S HOSPITAL

PEDIATRIC PUBLIC HEALTH INITIATIVE

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before the:

Committee on Energy and Commerce
Subcommittee on Environment and Climate Change
"EPA's Lead and Copper Proposal: Failing to Protect Public Health"

February 11, 2020

Good morning. I would like to begin by thanking Chairman Paul Tonko, Ranking Member John Shimkus, and all of the distinguished Members of the sub-committee for the opportunity to testify at today's hearing regarding the proposed Lead and Copper Rule revisions. A special thank you to Michigan Congresswoman Debbie Dingell for all her support of Flint's kids during the crisis and since. I would also like to thank your respective staff members for their concern and dedicated work on this issue. This is a very important topic, and I am pleased this sub-committee has chosen to devote today's hearing to the safety of our nation's drinking water and to our public health.

SUMMARY STATEMENT

The EPA's proposed revisions to the Lead and Copper Rule (LCR) are minimalistic and insufficient. In the midst of the Flint water crisis, I have testified twice that a perfect storm of horrible circumstances, including a denial of science, caused the Flint water crisis. One of the ingredients in the perfect storm was the weak and confusing LCR. For the past four years, I have urged the EPA to rethink, modernize, strengthen and simplify the LCR. The current LCR revisions take a small step in the right direction, but fail to change the rule's underlying structural problem - it does not reflect the science of lead exposure, which tells us there is no safe level. It also does not recognize, nor address, that the confusion intrinsic to the LCR itself played a detrimental role in perpetuating the crisis. The current LCR has long-standing problems, including permitting problematic testing methods that do not accurately reflect lead exposure, and opportunities for states to avoid the actions needed to truly protect children. The proposed revisions do not fix these underlying issues, and will not address the national public health crisis of lead in our drinking water delivery system swiftly enough. More simply said, the millions of lead pipes in this country need to be replaced as soon as possible, and now is the time for EPA to mandate it. Following the examples of Madison, Wisconsin; Lansing, Michigan; and now Flint, this can and should be done in ten years.

THE LEAD AND COPPER RULE FAILED FLINT

Like you, I also took an oath. As a pediatrician, I literally put my hand up and vowed to care for and protect the children entrusted in my care. Much of that work centers around the child in front of me - in clinic for a checkup or hospitalized with the flu; but more importantly, my work as a pediatrician is nestled in protecting and promoting the promise of our children. From immunizations to injury prevention, the oath that I took is about making sure that our kids grow up healthy and strong.

Yet in Flint, there was something in our water - something that you couldn't see or taste or smell - that was threatening the potential, the tomorrows, of all our children. By now, you all know that what happened in Flint was the signature environmental and public health disaster of our time. In a breakdown of democracy and driven by austerity, our drinking source was changed without proper corrosion control treatment. Our water was so corrosive that it corroded engine parts at a Flint auto plant.[1] The corrosive water leached lead from our aged and outsized infrastructure into our drinking water, in the hundreds and thousands of parts per billion.[2,3] Hazardous waste levels of lead. **It was the current Lead and Copper Rule that provided the vehicle of loopholes, minimal oversight, and non-health based standards that helped create and perpetuate our crisis, and this proposed rule will not address those problems.**

It has been said that pediatricians are the ultimate witnesses to failed social policies. It is in our exam rooms where we see the everyday consequences of policy decisions such as Medicaid cuts, food assistance rollbacks, staggering child poverty rates, inaction on gun violence, and lax public health protections. Our children disproportionately shoulder these burdens, both in their bodies and in their blunted potentials. And as a pediatrician in Flint, I can attest and bear witness that once again our children were the victims of a failed policy, specifically the Lead and Copper Rule, that did not prioritize their health and development.

It was over four years ago, with my doctor's white coat on, that I stepped out of my pediatric clinic and blew the whistle on behalf of my children: sharing the research that lead was increasingly in the blood of Flint's kids.[4] Research that I never should have had to do considering that we already knew there was lead in the water. The powers-that-be tried to silence me, just as they had done to everyone else who had raised concerns about our contaminated water; but persistence, teamwork and science prevailed. Since then, and with your bipartisan support, Flint has been on a slow but sure path toward long-term recovery.

I wish there was a magic pill or an antidote to take away our crisis; but when it comes to lead, the treatment is prevention. A well-studied poison, lead is a potent, irreversible neurotoxin - it erodes cognition and twists behavior - with lifelong, multisystem and multigenerational impacts. As pediatricians, we respect the science that now clearly understands that there is **no safe level of lead.**[5,6,7] And we recognize that efforts should focus on ensuring children are never exposed to lead - also known as primary prevention. And that is why in Flint, after our population-wide exposure,

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[1] General Motors shutting off Flint River water at engine plant over corrosion worries. Oct 13, 2014. mlive.com. https://www.mlive.com/news/flint/2014/10/general_motors_wont_use_flint.html

[2]Pieper KJ, Martin R, Tang M, Walters L, Parks J, Roy S, Devine C, Edwards MA. Evaluating water lead levels during the Flint water crisis. *Environ Sci Technol*. 2018;52(15):8124-8132. DOI: 10.1021/acs.est.8b00791

[3] Flint water test results. State of Michigan. https://www.michigan.gov/flintwater/0,6092,7-345-76292_76294_76297---,00.html

[4] Hanna-Attisha M, LaChance J, Sadler RC, Champney Schnepp A. Elevated blood lead levels in children associated with the Flint drinking water crisis: A spatial analysis of risk and public health response. *Am J Public Health*. 2016;106(2):283-290.

[5] Centers for Disease Control and Prevention, Advisory Committee on Childhood Lead Poisoning Prevention. Low level lead exposure harms children: A renewed call for primary prevention. Atlanta, GA: Centers for Disease Control and Prevention; 2012. Available at: www.cdc.gov/nceh/lead/ACCLPP/Final_Document_030712.pdf.

[6] See, e.g., National Institute of Environmental Health Sciences, Lead, https://www.niehs.nih.gov/health/topics/agents/lead/index.cfm

[7] AAP Council on Environmental Health. Prevention of childhood lead toxicity. *Pediatrics*. 2016;138(1):e20161493.

our only option has been to move forward, to create a sanctuary where our children can recover and thrive. Flint is an incredibly resilient community with a proud past; and we have been working around the clock determined to create an even more promising future. The evidence-based interventions we have implemented span the domains of education, nutrition, and health - including early intervention, high quality childcare, home visiting and parenting support, healthcare and behavioral health expansion, nutrition support, trauma informed services and more. Developmental neurobiology has taught us that adverse childhood experiences and toxic stresses, like lead exposure, change the trajectory of a child's life in graded and predictable ways. But science also gives us hope. We can reduce the impact of adversities like lead exposure when we wrap children in evidence-based interventions to promote their health and development.[8] All vulnerable children need these interventions, but kids exposed to lead especially need them.

One of the critical ingredients of our holistic recovery has been the congressionally-supported **Flint Registry**.[9,10,11] With funding set to expire next year absent congressional action, the Flint Registry has been an essential resource for identifying individuals exposed to the crisis, connecting them to public health promoting resources, and sharing best practices with similarly impacted communities. Just as the potential effects of lead exposure are long-term, the work of the Flint Registry is also long-term, and we are optimistic that Congress will continue its bipartisan support for this crucial component of Flint's recovery.

FLINT'S RIPPLES

And as much as the story of Flint is the story of a preventable crime committed with absolute indifference against some of the most vulnerable people in this country, it is also a story of how **we can do better**, especially on behalf of our children. That is what we are trying to model in Flint and that is why I am privileged to be here with you today. We can do better. The much-awaited revision of the Lead and Copper Rule is an opportunity to respect science, right historic wrongs, and prioritize public health over minimal compliance.

Flint's lead-in-water crisis is an extreme case, but not unique, nor the first. A positive ripple effect of our Flint crisis has been the growing awakening that our drinking water regulations never intended for us to consume lead-free water; a troubling number of cities and schools across the country are now recognizing and struggling with elevated lead in their drinking water. It's one of the legacies of the profit-driven and largely unaccountable lead industry that thwarted science, fought regulations and forced its use in our gasoline, paint, and plumbing. On behalf of kids in Flint and kids in

[8] Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, Section on Developmental and Behavioral Pediatrics, Garner AS, Shonkoff JP, Siegel BS, et al. Early childhood adversity, toxic stress, and the role of the pediatrician: Translating developmental science into lifelong health. *Pediatrics*. 2012;129(1):e224-e231.

[9] Flint Registry Home. Flint Registry, 2019. https://www.flintregistry.org

[10] Ruckart PZ, Ettinger AS, Hanna-Attisha M, Jones N, Davis SI, Breysse PN. The Flint water crisis: A coordinated public health emergency response and recovery initiative. *J Public Health Manag Pract*. 2019;25(Suppl 1):S84-S90.

[11] Centers for Disease Control and Prevention. Lead exposure registry of Flint residents - Michigan, CDC-RFA-EH17-1704. Notice of funding opportunity. https://www.cdc.gov/nceh/lead/docs/CDC-RFA-EH17-1704.pdf

Pittsburgh,[12] Chicago,[13] Newark,[14] Portland[15] and throughout this country - and the kids who walk through the halls of congressional buildings - [16] **we need a stronger Lead and Copper Rule.**

It has been approximately fifteen years since the United States Environmental Protection Agency (EPA) committed to writing "long-term revisions" to the Lead and Copper Rule. To much anticipation, the proposed revisions were released in November of 2019. Rather than learning the lessons of Flint and respecting the science of lead's neurotoxicity, **the proposed Lead and Copper Rule Revisions (LCRR) are a missed opportunity** to protect the public's health and to rebuild trust in our nation's drinking water.

OPPORTUNITIES FOR IMPROVING THE LCRR

The EPA should take this opportunity to shift the focus of the LCR to public health, focusing on lead removal and primary prevention. Even in buildings without lead service lines, most of our plumbing contains lead, in fittings and fixtures, lead solder, and galvanized steel.[17] This creates a continuous risk of lead in water, in an exposure pathway intended for human consumption and necessary for survival. To both simplify the LCR and improve public health protection, EPA should include the following improvements in the final LCR revision:

1. ***Lower the action level & remove the trigger level***

The current EPA LCR and proposed LCRR's lead action level of 15 ppb is a measure of utility feasibility and corrosion control effectiveness, not a measure of public health protection.[18] It is not a health-based action level, yet too often interpreted as a "safety level." As noted by the EPA's non-enforceable Maximum Contaminant Level Goal (MCLG) of 0 ppb,[19] there is no safe level of lead. When a water system exceeds the lead action level they are then triggered into additional steps – corrosion control studies, more frequent sampling, public education, and lead service line replacement. This is a missed opportunity to protect public health. The lead action level should be as low as possible, at least at par with the Food and Drug Administration's (FDA) standard for bottled water (5 ppb) or the American Academy

[12] Natural Resources Defense Council. Pittsburgh agrees to terms for tackling its lead-contaminated water. Feb 7, 2019. https://www.nrdc.org/experts/nrdc/pittsburgh-agrees-terms-tackling-its-lead-contaminated-water

[13] Hawthorne M, Reyes C. Brain-damaging lead found in tap water in hundreds of homes tested across Chicago, results show. Apr 12, 2018. Chicago Tribune. https://www.chicagotribune.com/investigations/ct-chicago-water-lead-contamination-20180411-htmlstory.html

[14] Aratani L. 'Damage has been done': Newark water crisis echoes Flint. Aug 25, 2019. The Guardian. https://www.theguardian.com/us-news/2019/aug/25/newark-lead-water-crisis-flint

[15] Portland Water Bureau. Recent monitoring results found elevated levels of lead in tests at some high-risk homes. City of Portland, Oregon. https://www.portlandoregon.gov/water/article/660840

[16] Milman O. High lead levels force workers in Congress building to drink bottled water. Jun 29, 2016. The Guardian. https://www.theguardian.com/us-news/2016/jun/29/congress-building-water-lead-levels

[17] United States Environmental Protection Agency. Use of lead free pipes, fittings, fixtures, solder and flux for drinking water. Updated Jan 27, 2020. https://www.epa.gov/sdwa/use-lead-free-pipes-fittings-fixtures-solder-and-flux-drinking-water

[18] United States Environmental Protection Agency Office of Water. Lead and Copper Rule revisions white paper. Oct 2016. https://www.epa.gov/sites/production/files/2016-10/documents/508_lcr_revisions_white_paper_final_10.26.16.pdf

[19] United States Environmental Protection Agency. Ground water and drinking water: Basic information about lead in drinking water. Updated Nov 18, 2019. https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water

of Pediatrics recommendation for the maximum in drinking water in schools and child care facilities (1 ppb).[20] The proposed lead trigger level of 10 ppb adds outstanding complexity to an already very complicated rule. If 15 ppb is too high for systems to begin taking action, it will be far more simple to reduce the action level to 10 ppb.

2. Mandate removal of lead pipes & ban partial line replacements

There are 6.5 to 10 million lead service lines serving tens of millions of Americans.[21] We must remove lead service lines proactively. If we wait until sampling confirms there is a problem (triggered by an action level exceedance), we have waited too long. The best time to remove a lead service line is before a water treatment failure that could cause high lead release into the water. The LCRR should mandate a requirement to remove all full lead service lines, regardless of lead levels measured in drinking water. This requirement should be completed within 10 years of the rule becoming final. This requirement will be most effective if coupled with an appropriation for lead service line replacement. Funding for lead service line replacement should be prioritized for water systems with a high ratio of lead service lines to population served living under the poverty level. The revised rule should also prohibit all partial lead service line replacements because of their potential to increase risk of lead release.[22]

3. Improve sampling to better detect lead in water

The current EPA LCR and the proposed LCRR requires water systems to collect the first liter of water from the tap; this first liter typically does not include water from the lead service line, which is the largest source of lead in drinking water. These first liter samples are inadequate for identifying at-risk systems, communicating the risk of lead service lines, triggering public education and lead service line replacement programs, and measuring the effectiveness of corrosion control treatment. The final LCRR must include a requirement for water systems with lead service lines to collect sequential samples (ie: first liter and fifth liter) to better detect lead in water.

4. Improved communication/public education/transparency

Revise public education to provide more timely and informative information regarding the risk of lead in drinking water. This includes annual notification to all consumers of lead and unknown service lines as proposed, improved language regarding the risk of lead service lines and the need to use lead-reducing filters, and more complete information on the health risk of exposure to lead in water. While the proposal includes a requirement to make compliance sampling data publicly available, the final rule should make ***all*** sampling data publicly available including investigation and source water sampling data, and there must be a requirement to notify the public how to access the publicly available data. In lead crises all over the country, consumers have been left uninformed about source water and treatment changes that affect water quality in their homes. The final rule should require water systems to notify all consumers when they are considering source water and treatment changes, and make any studies investigating potential changes - including corrosion control studies - available to the public. Consumers need this critical information in easily accessible and acceptable non-technical language to understand their own role in reducing their exposure to lead in drinking water.

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[20] AAP Council on Environmental Health. Prevention of childhood lead toxicity. *Pediatrics*. 2016;138(1):e20161493.

[21] United States Environmental Protection Agency Office of Water. Lead and Copper Rule revisions white paper. Oct 2016. https://www.epa.gov/sites/production/files/2016-10/documents/508_lcr_revisions_white_paper_final_10.26.16.pdf

[22] Del Toral MA, Porter A, Schock MR. Detection and evaluation of elevated lead release from service lines: A field study. *Environ Sci Technol*. 2013;47(16):9300–9307.

MICHIGAN'S MODEL LEAD AND COPPER RULE

Michigan's experience with the Flint water crisis tragically demonstrated the inadequacies of the LCR. Driven by public health protection, Michigan revised the state LCR in 2018. Now implemented, Michigan's LCR better locates lead service lines through mandatory comprehensive inventories, improves education and transparency, mandates replacement of lead service lines, more optimally samples for lead in water (first and fifth liter sampling) and will eventually lower the lead action level.[23,24] Preliminary analysis from the first year, using the new sampling procedures, reveals that more than three times the number of systems (4% to 13%) exceeded the lead action level when fifth liter samples were collected. Communities across Michigan are now becoming better informed about the risk of lead in drinking water, and how they can best minimize their risk. Preliminary economic research also notes a 40% return on investment for replacing lead service lines.[25] Michigan's LCR experience can serve as a model for the entire nation. It shows that proactive prevention-based practices coupled with improved transparency has the potential to reduce lead in drinking water.

IT IS AN EQUITY AND JUSTICE ISSUE

It is well recognized that the burden of lead exposure does not fall equally on our nation's children. An environmental and social injustice, poor and predominantly-minority kids disproportionately suffer from lead exposure and consequently its pernicious and potentially life-altering impacts. The LCR further exacerbates this injustice by requiring private property owners to pay for private side lead service line replacement. The LCR has resulted, and the LCRR will continue to result in, two tiers of water quality - safe water for those who can afford it, and worse quality water for those who cannot afford to replace lead service lines. This means that the deleterious health and neurodevelopmental manifestations of lead exposure are further concentrated on individuals who already struggle with access to safe affordable housing, quality education, nutrition, and health care. These regulatory changes are not just a "water quality" issue, but an opportunity to address historic and socioeconomic disparities.

[23] University of Michigan Graham Sustainability Institute. What you need to know about Michigan's 2018 Lead and Copper Rule. http://graham.umich.edu/project/revised-lead-and-copper-rule

[24] MIchigan Department of Environment, Great Lakes, and Energy. Lead and Copper Rule. https://www.michigan.gov/egle/0,9429,7-135-3313_3675_3691-9677--,00.html

[25] Greene J. New lead water line study underway in Michigan. Nov 1, 2019. Crain's Detroit Business. https://www.crainsdetroit.com/health-care/new-lead-water-line-study-underway-michigan

CONCLUSION

In 1969 at the National Conference on Lead Poisoning, reflecting on the persistence of childhood lead exposure, scientist Rene DuBos warned that **". . . the problem is so well-defined, so neatly packaged, with both causes and cures known, that if we don't eliminate this social crime promptly, our society deserves all the disasters that have been forecast for it."**[26]

We have come a long way as a nation since 1969; with policies enacted that have restricted the industrial and commercial uses of lead, far less children are now exposed to lead. However, in some respects, we continue to reactively respond to the many disasters that have been so omnisciently forecast for us. Underneath layers of paint, hidden in the soil of our children's playspaces, and delivering our drinking water, remains the lingering legacy of lead. We have not eliminated this social crime. And as a pediatrician, I continue to diagnose in the bodies of our children, the consequences of our collective inaction and paralysis.

It is my hope that our discussion today, and this committee's interest in this subject, will help learn the lessons of Flint and truly strengthen the Lead and Copper Rule. Throughout time, and within these great rooms of Congress, we have respected science, learned from history, and boldly taken steps to protect our nation's children. I am hopeful that we will continue to do the same to finally address lead in drinking water in a meaningful way. Thank you again for the opportunity to address the committee today, and I look forward to your questions.

DR. MONA HANNA-ATTISHA

Mona Hanna-Attisha, MD, MPH, FAAP is founder and director of the Michigan State University and Hurley Children's Hospital Pediatric Public Health Initiative, an innovative and model public health program in Flint, Michigan. A pediatrician, scientist, public health advocate and author, Dr. Hanna-Attisha has testified twice before the United States Congress, awarded the Freedom of Expression Courage Award by PEN America, and named one of *Time* magazine's 100 Most Influential People in the World for her role in uncovering the Flint Water Crisis and leading recovery efforts. She is founding donor of the Flint Child Health and Development Fund (flintkids.org) and author of the 2018 *New York Times* 100 Notable book, *What The Eyes Don't See: A Story of Crisis, Resistance, and Hope in an American City*.

Trained in environmental health and health policy, Dr. Hanna-Attisha received her Bachelor's and Master of Public Health degrees from the University of Michigan and her medical degree from Michigan State University College of Human Medicine. She completed her residency and chief residency in pediatrics at Children's Hospital of Michigan in Detroit. She is currently an Associate Professor of Pediatrics and Human Development and a C.S. Mott Endowed Professor of Public Health at Michigan State University College of Human Medicine in Flint, Michigan.

[26] Bellinger DC, Bellinger AM. Childhood lead poisoning: The tortuous path from science to policy. *J Clin Invest*. 2006;116(4):853–857. doi:10.1172/JCI28232